Université de Montréal

Protective Liberalization:
The state and the Mexican petrochemical industry 1958-2000

par
Ana Beatriz Vila Freyer

Département de Science Politique
Faculté des Arts et des Sciences

Thèse présentée a la Faculté des Arts et des Sciences
en vue de l'obtention du grade de doctorat
en Science Politique

Août, 2009

Université de Montréal
Faculté des études supérieures et postodctorales

Cette thèse intitulée

Protective Liberalization:
The state and the Mexican petrochemical Industry 1958-2000

présentée par

Ana Beatriz Vila Freyer

a été évaluée par un jury composé des personnes suivantes

Graciela Ducatenzeiler
Présidente - rapporteur

Jane Jenson
Directrice de recherche

Laura Loaeza Reyes
Examinatrice externe

Martial Foucault
Membre du jury

Catherine Poupeney-Hart
Représentant du doyen

ABSTRACT

This thesis follows and analyses the involvement of both social actors and the state in the industrial transformation of Mexico. While these actors have been key associates in the development of the Mexican economy for decades, with the 1982 debt crisis, and especially after the promotion of a structural reform in 1986, the patterns of their involvement changed. However, this change was more limited than expected, and the state did not abandon its participation in some key industrial sectors. This thesis will demonstrate that the role of the state remained important during the process of change towards an Export-Oriented developmental paradigm, although the state continued to participate in fashioning social relations, it did so in new ways that can be termed "protective liberalization."

Key words: Mexico, petrochemical industry, developmental state, protective liberalization, state participation

Cette thèse évalue et analyse la participation des acteurs sociaux et de l'État dans la transformation industrielle du Mexique. Alors que durant plusieurs décennies ces acteurs on été des partenaires stratégiques dans le développement de l'économie mexicaine, avec la crise de la dette de 1982 et spécialement suite à la réforme structurelle de 1986, le modèle de leur participation a changé. Néanmoins, ce changement a été plus limité que prévu et l'État n'a pas abandonné sa participation dans certains secteurs industrielles clés. Cette thèse démontre que le rôle de l'État n'a pas perdu de son importance pendant le transfert vers un paradigme du développement orienté vers l'exportation et que même si l´État a continué à participer dans la structuration des relations sociales, cela c'est fait d'une nouvelle manière que l'on pourrait dénommer "libéralisation protective".

Mots clés: Mexique, Industrie pétrochimique, participation de l'État, libéralisation protective.

To my Mom

I want to thank Jane Jenson for all her unconditional support

To Consejo Nacional de Ciencia y Tecnología (CONACYT) and the Edward E. Ford, John D and Catherine T MacArthur, and The William and Flora Hewlett Foundations' Graduate Fellowships in the Social Sciences Program for the scholarships supporting my graduate studies

To the Sociological Studies Center of El Colegio de Mexico for receiving me as invited researcher during my field research

To all my professors and friends

To my familly

Contents

Chapter 1. Introduction

This thesis follows and analyses the involvement of both social actors and the state in the industrial transformation of Mexico. While these actors have been key associates in the development of the Mexican economy for decades, with the 1982 debt crisis, and especially after Mexico joined the General Agreement on Tariffs and Trade (GATT) in 1986, the patterns of their involvement changed. However, this change did not mean that during this process the state abandoned its efforts to shape the national economy and domestic society. Indeed, this thesis will demonstrate that the role of the state remained important during the process of change towards an Export-Oriented developmental paradigm. It will also show that during the policy paradigm transition the state continued to participate in fashioning social relations, although it did so in new ways, that can be termed “protective liberalization.”

As the state gave greater space to private producers, its own role changed. This changement was not accompanied with the definition of proper regulations and reinforced private veto capacities. This limited the state’s manoeuvre possibilities for changing patterns in some strategic sectors that were closely related to the consolidation of the revolutionary state. Petrochemicals is one such sector. As a consequence, despite shifting the developmental paradigm, the state was unable to ensure the implementation of the structural reform strategy for the petrochemical industry and to define a coherent policy for the sector. Consequently, the industry shrank significantly in the second half of the 1980s and through the 1990s. The political processes that hindered the state in finding a new and successful role are at the core of this thesis until 2000, which marked the year in which the PRI lost control of the Mexican Presidency. This event marked much more than a change in government. It was also an end of an era, and therefore this thesis ends at that point.

Efforts to undertake structural reform of the petrochemical sector created a sort of cohabitation of two different development paradigms: the new neoliberal one and the former nationalist paradigm. This coexistence made the state unable to successfully reform a strategic sector, or define the state's promotional role on this industry. This thesis will analyse the reasons the state became unable to define a coherent petrochemical policy to adapt the industry to the conditions of the new policy paradigm.

In order to explain why the Mexican state became incapable of defining a congruent policy for the petrochemical sector, this analysis takes its distance from two bodies of literature that have sought to understand the last decades of changes in the international political economy. First, it moves away from the traditional visions of Mexican political economy that focussed almost exclusively on corporatism or neo-corporatism. Such approaches have difficulty understanding the post-1986 changes in state-society relations, because of their tendency to consider any state action as a result of the interaction between authoritarian structures and its national-populist clienteles. Second, this analysis is also sceptical of many approaches in international and comparative political economy. These approaches, while recognizing the importance of international economic forces and even the role of the state in preparing economic actors to participate in the new economy, put too much of an accent on the national-international connection, and lose sight of the–perhaps continuing–weight of domestic social relations.

Therefore, in order to provide a more nuanced understanding of the Mexican case, this thesis retains from the tradition of Mexican analysis a focus on national social relations and trajectories, but without seeing them exclusively through a corporatist lens. From the new international and comparative political economy literature, this thesis maintains attention to the developmental state. But it highlights the state's shaping of the domestic market more than many studies do. In doing so, this analysis uncovers continuities in the state's domestic development strategy, in particular its continuous support for the Mexican bourgeoisie.

As it is well known, in Spanish, both the words "developmental" and "developmentalist" are translated as *desarrollista.* Developmentalist policies are associated in the Latin American tradition with the policies promoted by the United Nations' Economic Commission for Latin America (ECLA) in the 1950s and 1960s. They included a state-led development program that rested on a political agreement, creating the conditions for building a domestic path of development from some corporatist or nationalist-populist policies that were already being implemented in Mexico in the 1920s. We therefore use the word *developmental* intentionally to mark a difference with these policies. Our aim is to put an emphasis on the state's transformative structures and the process of exchange established with the private sector, rather than on an authoritarian state structure and its national-populist clienteles.

Tracing the historical patterns followed by the Mexican state since the 1950s (albeit with a brief examination of the genealogy of the revolutionary state), this thesis maps the state's contribution to the transition from Import Substitution Industrialization (ISI) towards an Export-Oriented Industrialization (EOI) economy that is open to international trade. Contrary to the expectations of many analysts and observers this research finds that during the transition from ISI to EOI the Mexican state continued supporting and fostering the development of a national bourgeoisie, seeking to protect it from external determinants and influences. Mexican business has not been left solely to its own resources in facing the global economy. As in the past, we observe relations characterized more by what Peter Evans calls "embedded autonomy" than a totally "liberalized" economy.

In order to understand the relationships between the state and civil society (that is, sectoral and industrial organizations of labour, and private actors) even after 1986, this thesis examines the contribution of the state to patterning market arrangements. Most other studies examining Mexican liberalization stress structural conditions, over-valuing the constraints on political action or business strategies. Such analysis also tend to ignore the re-organization of the *domestic* market, concentrating almost exclusively on international markets and forces, in order to account for protected industries gaining competitive access to international markets.[1] Therefore, they assume two things: domestic arrangements matter little, and nationalist and protective

[1] See, for example, Evans, 1995; Riain, 2000.

visions of the domestic market have been eliminated in order for this transition to occur.

In part, these assumptions follow from a re-making of the definition of "development". In the past, development studies defined development as a local trajectory of transformation and change. However, more recently and especially in the work of Peter Evans, we find the notion that a developmental state will focus almost exclusively on the local economy's insertion into the international economy. With this shift, the interest in the state's involvement in domestic markets and the actors involved in them declined.

In contrast, the chapters that follow will document two things. The first is that while it may have altered its ways of intervening, after 1986 the Mexican state remained an important partner with business not only in helping to thrust Mexican exports into the international market, but also in protecting old associates in shaping domestic markets and national champions through the 1980s and 1990s privatization processes. Moreover, it retained its longstanding goal of fostering or supporting the national bourgeoisie, and indeed sought to shelter it from international forces. There was less change in social relations than one might have expected, although there was a clear shift from an ISI to an EOI strategy.

This observation was the initial puzzle of the thesis. Grappling with that puzzle led to the question of this thesis: what are the consequences if any, of using a strategy of protective liberalization during a paradigm shift? The argument of this thesis, that answers this question, is that because the Mexican state engaged in protective liberalization, it ultimately failed in its efforts to transform the petrochemical sector. Drawing from two paradigms simultaneously in the definition of petrochemical policy, as the term protective liberalization suggests, ultimately hindered the state's capacity to play its four developmental roles.

In order to make this argument, this thesis has two Parts. In the first we identify the construction of the structures of the developmental state and its embedded autonomy; in the second one, we track the ways in which the state performs four roles available to it –custodial, midwifery, husbandry, and demiurgic – in the promotion of a domestic petrochemical industry. These roles have been identified by Peter Evans in his classic book, *Embedded Autonomy. States and Industrial Transformation (1995)*.

However, despite employing Evan's typology, it must be supplemented, in order to understand change in a more complete way. Evans has a limited definition of development. In the current context only states that promote integration into the international market qualify as developmental states. Those which hang back and insist on designing domestic relations are considered backward. Evans defines development

> *"no longer as a local trajectory of transformation, (but) by the relation between local productive capacity and changing global array of sectors. The countries that fill the most rewarding and dynamic niches are 'developed'. Being relegated to niches that are less rewarding (…) reduces the prospect of progressive change"* (Evans, 1995: 8).

From this perspective, the Korean state is the ideal-typical developmental state because from the beginning, the Korean state promoted the country's insertion into the international economy, via the promotion of Export-Oriented conglomerates. It never sought to improve domestic markets, but only to be internationally competitive. Therefore, it never confronted the challenge of changing development paths to move from domestically focussed to Export-Oriented development (Kohli, 2004, Kohli, 1999: 93-137).

However, not all countries have been able to begin with a clean slate. Here Evans has less success in understanding how state strategy *both changes and remains constant*. In Latin American countries for example, the state sought to foster domestic market development in an autonomous way from the core countries, for decades. The state's objective was to improve ISI and this dominated the political economy long before EOI was on the agenda. Evans does not help us understand the choices made when the economy began to open to international markets, whether under pressure from international or domestic forces. Will the state be able to identify a strategy that will foster adaptation to the new international conditions? Or, will it crumble in the face of the impossibility of continuing along the well-trodden paths?

At this point, it is necessary to consider arguments about change and to ask whether or not prior practices affect subsequent state-business relations. This leads to analyses that consider elements of path dependency even when the state undertakes a significant shift in its policy paradigm (Kohli, 1999 and Schwartz 1996).[2] While recognizing the importance of the post-1986 shift from ISI to EOI–indeed describing this as what Peter A. Hall (1997: 90-113) calls a paradigm shift–, the thesis also identifies the

---

[2] For general visions of path dependency see for example North, 1990; Pierson, 1994; Steinmo, Thelen and Longstreth, 1997; Streeck and Thelen (eds) 2005.

continuities underlying the choices. It finds that the strategy continues to be influenced by the goal of shaping domestic social forces, particularly the well being of the national bourgeoisie. However, despite the constancy of this goal, state actors undertake puzzling and powering in order to respond to new pressures and needs coming from within the domestic society as well as without.

Therefore, this thesis will argue that:

1. The state's contribution to transformation is the result of accumulated institutions and practices that remain relatively constant, even if the paths to development change.
2. Both state interest and action are defined by paradigms that empower governments as a result of the bureaucracies' capacity to offer policy options to face critical problems. When paradigms show limits, bureaucracies seek different frames of references to define policy and in doing so, they shape actions and social actors (Hall, 1989; 1997).
3. Even if the state aims to change a policy paradigm, the previous development paths can be so difficult to overcome that they will end up blocking policy options in sectors that are considered to be strategic in the economy.

The challenging issue here is that even acting from a new ideological frame, the Mexican state's promotional roles for development maintained a basic constancy, and at the same time they affected the developmental transition in Mexico. In other words, there was *both* a paradigm shift in policy *and* a significant degree of path dependency in state-society relations. The Mexican state kept influencing the industrial landscape during the transition, for political reasons –gaining the support of the most important business groups in the country to assure the viability of the reform in the long-term – and for economic reasons, as businesses were made vulnerable by the reform, requiring state reinforcement to ensure their competitiveness.

The basic argument is this. There is no question that a paradigm shift occurred regarding the developmental objective and therefore, Mexico's location in the international economy. The state clearly shifted from ISI to EOI. However, at the same time – and perhaps in order to do so – the domestic trajectory during the reform process remained almost unchanged. The relationship between the state and business remained similar to what it had been since the 1930s. The Mexican state continued to protect and promote a national bourgeoisie and national champions, despite the openness of the markets. As a consequence the government's capacity to promote change and competitiveness was limited in the petrochemical sector, especially after the first push of reform lost strength, the political context changed, and political forces contesting structural reform reorganized.

The evolution of the political economy of the Mexican petrochemical industry provides a fascinating case study of the transformations, continuities and limits of state-society relations. It also illustrates how historical circumstances in which the authority of the state was consolidated constrained state choices to pursue new transformative goals, making change difficult, perhaps impossible.

This stability amidst change is documented via a detailed analysis of the petrochemical industry. Firstly, this sector has been chosen because Mexico has both oil and gas, which gives it a structural advantage to develop petrochemicals. This has been a state interest since the oil nationalization in 1938. Secondly, the petrochemical industry is particularly important to every industrial economy because it is a strategic propeller of industrial growth. Above all, basic petrochemical products are indispensable for more than 70 manufacturing processes. Thirdly, as the production of petrochemicals is relatively new, both in Mexico and throughout the world, the case works as an excellent indication of how the Mexican state consolidated domestic producers instead of allowing the expansion of transnational corporations (TNCs) in Mexico. Once TNCs expressed their interest in controlling the development of this industry in the 1940s, the state targeted it for the new ISI development strategy. With the liberalization of the economy in the 1980s, the petrochemical industry lost importance even though the state was unable to make all the reforms it sought.

The consolidation of a petroleum[3] industry was also affected by the consolidation process of the Mexican Revolutionary State. As the oil industries were nationalized in 1938 after a long fight with international corporations unwilling to recognize the authority of Mexican institutions, the petrochemical industry was marked with a nationalist label. Along with this, the study of the Mexican petroleum industry led us to offer an analysis in

[3] When mentioning petroleum, we are referring to crude oil, petrochemicals and natural gas industries.

which the state was connected to the society not only by capital but also by labour, in order to define and pursue collective goals in the country.

This is an important difference from what Evans (1995: 231) claims regarding the Korean case in which *"capital is connected, labor is excluded. The apparent connections [with labor] are more a means of repressive cooptation than channels for pursuing collective goals".* By contrast, in the Mexican petroleum industry, both capital *and* labour are connected with the state as a channel for pursuing collective goals. We thus offer a study that tests the viability of embedded autonomy in a tripartite context–labor, business, and the state. The three actors enjoyed spaces of embeddedness and autonomy to act in both economic and political arenas.

The golden years of this association are illustrated by a long period of rapid growth with large profits, and increasing real wages from the end of the Second World War until the 1970s. This is also the period in which domestic petrochemical production began and the industry was consolidated. However, domestic pressures for political reform and international pressures for improving the performance of the economy altered this picture. The Mexican state tried both to sustain the model and to reform it during the 1970s, creating a political economic crisis that destabilized the country in 1986. Since 1986, the state has tried to make necessary reforms in order to consolidate national petrochemical champions, capable of competing in international circuits. This action would have meant the modification of the old networks of embedded autonomy, the withdrawal of the state's demiurgic role, and a continued protective pattern provided to private producers. Yet the reform would have made the union's role redundant. It was hardly surprising that the oil union contested the reform with the interest of maintaining the *status quo*. It vetoed effectively a significant part of the reform policy. The result was the state paralysis in this specific sector, and the increased dependence on imports marked the industry disintegration. Ironically, then, the Mexican state found itself unable to carry through the reforms it initiated.

The entire analysis proceeds in three time periods, describing each of the four state roles:

- We found that for the first period (1957-1970) the state was able to implement an inclusive developmental agenda and to foster industry through an adequate blending of promotional roles. It was also capable of creating a national champions lead by Mexican business people.
- The period going from 1970 to 1986 is one of conflict and collaboration. As the private sector gained experience and coherence, it contested most of the state's regulation of the sector. At the same time, private-sector actors gained greater capacity to negotiate with *Petroleos Mexicanos* (PEMEX) in the face of the scarcity that the international oil crisis of 1973 created in Mexico. The new environment consolidated embedded autonomy in this sector, making public and private actors work together. This helped to plan the structural reform of the sector during the oil boom of the 1970s. Along with the oil industry, the petrochemical industry gained world-competitiveness.
- Since 1986, the state has reduced its demiurgic action, making itself unable to play any promotional role, and unable to adequately blend

midwifery, husbandry and custodial roles in an inclusive way. During this third stage, the main state actions focussed on private sector reinforcement and pushed for social adaptation to it. As a consequence, the state lost capacity to build consensus around the reform and to support the conditions for the petrochemical sector to prosper.

Chapter 2. Understanding states and development

Why, despite shifting the developmental paradigm, was the state unable to implement fully the structural reform strategy for the petrochemical industry and to define a coherent policy for it? In order to build an answer to this question, this chapter reviews the available literature on state and industrial actors, and then proposes a choice, that is based on the categories developed by Peter Evans in *Embedded Autonomy. States and Industrial Transformation*. Despite using that book the chapter ends with some additions to Evans' concepts that will provide a set of analytic tools for understanding the situation of states like the Mexican one, that have had a developmental strategy for many decades, and therefore do not start with a "clean slate" as did the Korean state which served as Evans exemplar. These tools are useful for understanding the limits faced by the Mexican state as it set out to change the policy paradigm in the era of liberalization.

2.1. The state of the art

The starting point of this thesis is that the relationship between the state and industrial actors is crucial to explain how some industrial sectors have been able to achieve comparative advantages that allow them to access the most rewarding niches of international markets without risking their positions domestically. Traditionally, research has explained the structural transformation of national economies emphasizing two theoretically opposed models: a market-pull or a state-directed one. This section provides an introduction to both of these theoretical traditions, with a particular focus on studies of Mexico.

2.1.1 Market-pull theoretical models

Market-pull explanations are presented at either micro or macro levels. In the case of the first, basic premises of methodological individualism underpin the model. They assume that the economy is a zero-sum game and that individuals are acting rationally in order to achieve the maximization of their interest. Collective action is the result of aggregating choices of rent-seeking individuals. In such a model, constructing a coalition with state officials, also looking out for their own advantages is a normal expectation (Olson, 1982). In an early work, Raymond Vernon observed that Mexico followed a pattern similar to that of many other countries since the 1950s. A highly specialized group of economists took control of state's financial agencies and pulled politicians towards economic policies they deemed "rational" (Vernon, 1963).

The emphasis on the competition between *tecnicos* and *politicos*, however, has been generalized in the 1990s, especially as the liberalization process began to take hold. Economic reform is explained as the result of a collective action that has allowed the reforming policy-making and technocratic elite to reduce the number of the potential losers through the formation of distributional coalitions with potential winners. Highly-qualified economists, in control of key positions of economic ministries and the Central Bank, facilitated rent-seeking coalitions with business. Coalitions between a technical and a business elite could aggregate enough interests in order to assure that the first group would continue in power and that the second would maximize its profits. This notion of a cleavage between *politicos* and *tecnicos* has been used to differentiate structuralist from monetarist economists. The assumption is that the first group is more "sensitive" to social needs and nationalist-populist agendas than the second group (Schamis, 2002; Schamis, 1998; Centeno, 1997; Erfani, 1995; Hernández, 1994; Tello, 1979 and 1982).

Some observers have taken the idea to an extreme. They even question if the *Partido Revolucionario Institucional* (PRI) had actually ruled the country, considering the fact that at least from the 1970s, until 2000 when PRI lost power, the President was nominated from among a group of cabinet members whose career has been within the bureaucracy and the government, rather than party officials. Many of these nominated presidents had no previous party career or electoral experience (Centeno, 1997). This argument neglects, however, the fact that while he perhaps started out in the public service, the President and cabinet members use the party structure to control policy-making and implementation. Therefore, the notion of maximizing competing elites in a conflicting market condition alone is too limited. This is true, even if as Thacker (2000) suggests, the state took the autonomous decision to push for a new commercial policy oriented to export. Afterwards, the state did seek to construct coalitions with business people that would support the long-term viability of the commercial policy.

At a macro-sociological level, Haggard, Maxfield and Schneider

(1997:33-55) have characterized five leading theoretical approaches to the political economy of the state/business relationship in the form of market pull. Business can be conceptualized as capital, sectors, firms, associations or networks, all which may or may not constrain the state.

Business analyzed as capital focuses on the structural constraints imposed by private control of physical and financial assets and capital mobility. Private sector actors need to be neither organized nor engaged in explicit lobbying efforts in order to influence government behavior. A number of studies conclude that as governments seek to maximize growth or returns to particular constituencies, they are limited by capital's ability to pull the government towards their own interest. They assume that liquid asset holders seek to maximize profits and favor strong property rights, low taxation, and favorable regulation (Maxfield, 1990; Schneider, 1997).

We can illustrate this position with analysis of the 1982 bank nationalizations in Mexico. Sylvia Maxfield (1990) begins by accepting the idea that the state represents the interest of dominant classes. She argues that (Maxfield, 1990:3)

> *"the influence of the Mexican bankers' alliance, including large-scale capitalists, their allies in the state, and their increasingly influential international partners, hindered effective implementation of the nationalization decree. The influence of the bankers' alliance shaped crucial decisions made during the implementation stage of the bank nationalization. These decisions limited the extent to which the original goals of the nationalization could met."*

However, important institutional constraints are ignored in this work. The nationalization decree was send to Congress by President Lopez Portillo on September 1, 1982, just 90 days before he was to leave office. Presidentelect Miguel de la Madrid's disagreement with the nationalization was well known. Therefore, it is hard to maintain the claim that only business opposition hindered the implementation stage. Secondly, businesses' capacity to negotiate was also limited by the fact that many industries were bankrupt and dependent on state-financed rescue programs to alleviate their foreign indebtedness. Therefore, they were not in a strong position to impose their will on the government. Thirdly, the state, not business, had the capacity to reshape the landscape of Mexican ownership. The government held, along with the banks, control of the main industrial groups, so giving ownership of industry back to the former owners was a decision of the state, not of business. Finally, the analysis ignores the fact that Central Bank officials enjoyed a great deal of autonomy inside the Mexican bureaucracy, because the Bank is one of the only three institutions in Mexico whose officials are recruited by civil service examinations, as we will describe in chapter 4.[4] In other words, it is an autonomous bureaucracy. Rather than being the relationship of one-way dominance that Maxfield suggests, this single detail suggests a relation that might be termed, following Peter Evans, one of embedded autonomy.

More recently Puga (2004: 64) traced a change in the state and big business relationship going from a corporatist exchange based in conflict to a collaborative action based on co-responsibility, in which the state accepted to implement the private sector national project. The negotiation of NAFTA

[4] The other two government institutions with similar recruitment practices are the diplomatic service and the Federal Electoral Institute (since the 1990s).

offered Puga (2004) a case study to explore this transition. As in the case of Maxfield, Puga's analysis of co-responsibility seems to offer support to the idea of Embedded Autonomous action in which private and public actors acted together in the definition of policy.

Haggard *et al*., also use a business-as-sector definition that draws distinctions among different types of economic activity, and emphasizes how the distribution of economic activity and different sector interests affect politics, policies, and growth. Authors that follow this approach predict that sectors will try to pull the state towards them, but the private sector does not have homogeneous preferences. Therefore, economic policy is understood as the resultant of a vector of divergent and often contending business' interests (Gourevitch 1986; on this approach in general see Milner, 1988; Rogowski, 1989; and Frieden, 1991).

Milner and Kubota (2005) focus on the question, why did political leaders in many developing countries choose to lower their trade barriers? Abandoning the main explanations in recent political economy models (external pressures, political leaders and their ideas, and economic crisis), Milner *et al*.'s explanation strains the correlation between democratization and the embrace of free trade policies in less developed countries. Their research supports the idea that previously disenfranchised groups provide the support political leaders need to use trade barriers *"as a strategy for garnering political support (…) Democratic political competition meant that leaders were likely to liberalize trade to appeal to these new groups to ensure their political survival"* (Milner et al, 2005: 163)

These studies mainly focus on the characteristics of commercial policy. Two studies exemplify this focus. The first by Dale Story (1986), examines the growing influence of industrialists on commercial policy, particularly at the level of openness to the international economy. It is a case study primarily focused on the decision of President Lopez Portillo's to reject Mexico's entry into the GATT in 1979. Despite having promoted a major policy to foster the internationalization of some industrial sectors, opposition from industrialists led him to back off the accord that had been negotiated already. The intense debate and final decision are, for Story, a classic example of how the state ends up being constrained by the over-protected interests of the industrial sector.

Flores Quiroga (1998) offers a very detailed study of the ups and downs of the Mexican commercial policy from the 1970s to the 1990s. Flores takes into account the state's decision to promote a gradual opening of the economy beginning in the early 1970s. However, the interests of different industrial groups affected by the liberalization diverged. On one hand, the domestic and international conjunctures combined in order to allow those who still clung to protectionist positions to prevail; on the other, those who benefited from liberalization were still too weak to ensure that their position would triumph. However, in the mid-1980s, Flores Quiroga demonstrates that an Export-Oriented industrial policy both coincided with the state's interest and responded to the international context. Therefore it would allow the Mexican economy to become one of the most open in the world.

A similar idea is developed by Fairbrother (2007: 266-268) who adds that the Mexican state used three strategies to construct politically crucial support for NAFTA on the part of domestic business: control over political representation, material concessions to potential critics, and careful strategic framing. However, these works are unable to explain how those Export-Oriented interests were constituted and how the state contributed to creating and consolidating the Export-Oriented wing of national industry.

In studying the definition of financial policy during the government of President Salinas (1982-1988), Kessler (1998:41) begins his analysis by assuming that the characteristically concentrated Mexican market, which is organized in business groups, complicates the analysis because it is based on a perspective of interest groups. He adds that…

> *When banks and manufactures are linked by cross-ownership and even run by the same families, the interest of large industrial firms cannot be neatly separated from those of financial firms. Indeed, even the traditional struggles between domestic and international producers over exchange-rate valuation can become meaningless within an industrial structure in which the firms that sell the most abroad also buy the most foreign goods. In such an economy, when the interest group policy stimulates exports only at the expense of more costly imported inputs, an interest group policy preference is not obvious…*

Kessler (1998) offers an interest group model to explain the political motivations of policy-making decisions for pushing market reform. The specific political challenges facing the reforming bureaucracy and their need to increase support from financial groups, created a heavy bias in the decisions. For this reason, the financial reform ended up disturbing the general rationality of policy-making in this sector leading to the 1994 crisis. Even if Kessler's focus is on the political motivations for the definition of financial policy, his analysis assumes that the interests of the *Partido Revolucionario Institucional* and Salinas' government in pursuing reform were one and the same. If economic interests can hardly be differentiated, as Kessler states, is it valid to assume that there is uniformity of political interests as he does? This question is relevant especially since we know that the most important opposition to the paradigm shift that initiated in 1986 was at the origin of the PRI schism in 1987, and that President Salinas was forced to negotiate support from *Partido Accion Nacional* to ensure that the principal reform would pass through Congress.

In addition to commercial policy, business-as-sector has been presented by Toledo and Zapata (1999), who follow the development of the Mexican steel industry. In doing so, they uncover a lack of coordination between private enterprises and the state. This absence affected the development of the whole sector, which was unable to take advantage of the technological developments and it never achieved the full productive capacity of the steel industry. Most importantly, according to the authors, businesspeople and the state were unable to coordinate their actions and to define a long-term plan for the steel industry that would benefit the whole country, and not only the particular interests of companies and state officials.

Along with this, MacLeod (2004; 2005) questions state's autonomy in Mexican case. In his argument

> *"the privatization program provides little evidence to support the contention that the Mexican state was strengthened either in the implementation or as a consequence of privatization. Instead, the privatization program entailed a variety of important links between the private sector and reformers in government that facilitated reform*

> *without strengthening the state's bureaucratic capacity. Moreover, these reforms transferred substantial resources to the private sector without providing much compensation to the state"* (MacLeod, 2005: 11).

As a result, the Mexican state lost autonomy while transfering both incomes and power to business sectors acquiring state assests during the privatization process.

In general, authors focusing on business-as-sector have found that there are problems with the notion of uniform sector interests. First, there is little evidence that all the actors in a sector have the same interests and will therefore engage in collective action. Why would sector interests be uniform if there is competition among firms and their organizations? (Milner, 1987; Milner, 1988). Therefore, there is little predictability in the ways sector interests are translated into policy outcomes.

The business-as-firm approach examines the market-pull dimensions of corporate organization. It looks for the characteristics of corporate structure that seem to affect both business preferences and the leverage that firms have vis-à-vis government actors. Much emphasis is put on firms seeking to grow (Chandler, 1990, and Chandler *et al*, 1998).

Studies of Mexican firms take two forms. Some focus only on business peoples' strategies to internationalize their business. A second one describes firms seeking what Gereffi *et al* (1995) have called the integration of commodity chains in order to gain access to the international market. In the first case, Salas-Porras (2005) has identified at least five different strategies defined by Mexican firms as they internationalize. Business groups have become transnational corporations by establishing subsidiaries in different countries around the world. With this, they support a second strategy, the establishment of distribution networks. Some others have established joint ventures in order to gain access to technology innovations, to gain niches in markets or to widen operations in different countries. Another important strategy is financing their growth through international capital markets. The fifth strategy is particularly relevant to our analysis. It includes efforts to compete internationally while defending a niche in the domestic market. The state is reduced to a witness of these private strategies, or eventually forced to create the conditions to assure the interests of business groups.

For those authors who stress the importance of the creation of commodity chains in order to internationalize, big businesses are the key actors in the new economic context (Pozas, 2002; 1999). They are seen as recovering the economic space left vacant when the state moved to promote liberalization. As big businesses increase their international competitiveness through the creation and consolidation of commodity networks and the adaptation to new labour conditions, the model predicts the entrance of small and medium firms into international circuits, making them part of the commodity chain. Therefore, autonomy for big businesses makes the state redundant; it does the work that the state previously did.

Within the business-as-firm approach there are also the studies made by researchers of the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), who traced the behaviour of the 15 most important business groups in Mexico. In a way, they found that the state is victim of its own success. Having successfully promoted Import Substitution Industrialization (ISI) in order to encourage these firms to become internationally competitive, business can call the shots. Successful and integrated business groups direct the state and "*some of the state's liberalization policies to their own needs*"; more recently the emphasis is on the definition and evaluation of industrial policies (Péres, 2006; Péres & Garrido, 1999; Péres and Garrido, 1998; Péres, 1997).

All these studies centred on firms' production clusters or/and managerial strategies. However, they neglect at their peril the fact that institutional arrangements, and particularly regulation, affect their capacity to consolidate the group. Moreover as we will see later, many conditions that induce business to make new investments are themselves the product of state regulations, not only a result of strategic decisions taken privately. We cannot assume that huge conglomerates will have a single "interest" towards which they seek to pull the state; they often are composed of subsidiaries that hold a variety of interests and make differentiated demands to the state.

2.1.2 State and Market: Corporatism

Work on what Haggard *et al* consider business-as-associations stresses the joint action to pull the state toward policies that favor business and labor's preferences in a conflicting set of social relations. In particular, many authors have applied a neo-corporatist framework (Schmitter *et al*., 1974) In this business-as-association model, the division of labor structures, society, and development is facilitated through the negotiation of policy agreements among functional organizations representing labor and business as well as the state. These agreements are implemented by the collaborative interest organizations and their willingness and ability to secure the compliance of their members (Schmitter 1985:33). The state turns out to be only a mediator, which helps avoid blockages to the natural order of capitalist development. In this sense, corporatism is used as a way to reduce social conflict.

This vision of the functional representation of labor and business predicts a non-competitive and inclusive industrial policy that represents the second best choice for maximizing actors. This second choice allows an optimal realization of the interest of each class. In this sense, the construction of policy seems to resemble a synthesis of the interests of *all* society, reduced to its socio-economic conditions.

Analyses using corporatism, drawing often in Ph. Schmitter's work on neo-corporatism, are one of the main theoretical frames used to analyze the Mexican political system. Corporatism is often confused with a state-led model because of the visibility of the state in the tripartite processes. David Collier (1995), for example, has used this concept to study Latin American politics corporatism is an umbrella concept, subsuming what many other authors call clientelism, concertation, consociationalism, unionism and syndicalism.

David Collier (1995:135) explains the merging of corporatism and statism in Latin America as follows:

> *Beginning in the 1970s 'corporatism' came to be a major focus of attention in research on Latin America. Analysts employed the concept to refer both to a pattern of interest group politics that is monopolistic, hierarchically ordered and structured by the state, and to a broader cultural and ideological tradition of the region that they viewed as patrimonial and statist.*

Many observers find that corporatism has been functional for Mexican economic development, even if the system involves co-opting, controlling, or repressing opposition as necessary (González Casanova, 1965). A focus on corporatism has also been used to account for the role of popular alliances recognized, if not promoted, by the state in its efforts to maintain the state's relative autonomy from the dominant classes and from the constraints that they have been able to apply (Hamilton, 1982).

Even when Denise Dresser (1994) does not address the consolidation of the revolutionary Mexican state as Hamilton does, she uses a similar conceptual frame to explain President Salinas' pretence of consolidating the structural reform of the revolutionary Mexican project. Dresser's argument stresses the state's promotion of institutional innovations and institutional dependency in order to make the economy shift to a more liberal environment. The main idea was that the center-right coalition created a 'modernized-authoritarian' regime. Not unlike Cardenas' reform in the 1930s, this hybrid statecraft offered 'neo-populist solutions to neoliberal problems' by constructing a new social–and eventually corporatist–basis for the Presidency in order to promote economic liberalization through social programs, such as the *Programa Nacional de Solidaridad* (PRONASOL). In contrast with the previous state actions, the reforming clique fostered institutional innovation and abandoned the closed-protectionist market in order to promote commercial accords such as the North American Free Trade Agreement (NAFTA), which would ensure long-term continuity of the reformist elite.

Classical analyses of Mexican authoritarianism by Meyer and Reyna also see corporatism as leverage for that political regime. Meyer (1977) has suggested that the Mexican Revolution did not represent a negation of the authoritarian past but rather an impressive step forward in the modernization of the authoritarian state, when corporatism was consolidated in the 1940s. For Reyna (1977:161), Mexican development was also the result of what he calls a *‘populist corporatist apparatus’, whose objective was to demobilize and depolitize social groups "to smooth the way to capital accumulation."*

Given the fact that the state action was supported by a popular alliance of labor and peasant organizations, corporatism was also expected to be a pathway to socialism. Therefore, some authors have expressed their surprise to discover that the state’s real objective was actually to consolidate a capitalist class rather than to make a socialist state (Valdés, 1997; Tirado 1998, for example). Analyses accept that the existence of state interests in order to foster some strategic sectors–such as in finance–nurtures conditions for private rent-seeking. For example, the state supports some specialized business groups in order to promote the development of the financial sector. Businesses, seeing state intervention as an opportunity for rent seeking, will end up hurting their own long-term interests and pushing the state to define policy in order to improve their short-term profits (Ceva, 1998).

The structural reforms implemented since the mid-1980s have also been presented as an intensification of corporatist relations in a transition period (Luna and Pozas 1992). Indeed, corporatism has been described as being reinforced by the privatization program and the negotiation of the North American Free Trade Agreement (Quintana 1992). Similarly, Schneider (1997) has seen the ability of the Mexican state to engage with organized businesspeople. This is observed as the explanatory variable accounting for the wider scope of the liberalization process in Mexico, rather than in Brazil, whose state appears to be constrained by dominant class interests.

In a more recent work Schneider (2004) implies that Mexican voluntary business associations respond more to circumstances of cooperation, conflict, and exclusion from politics. Moreover, both the state and business are interested in exchanging information in order to sustain policy choices and business viability. However, it is not clear in Schneider's argument whether business organizations respond to state interests or they are positively influenced by the state as in the corporatist argument. In a way, the state's need to embed its actions in private organizations is the basis of the embedded autonomy approach, as we will see in the second part of our discussion.

Heredia explains political stability and the continuity of the reform process (1994, 1995, 1997) as following from the fact that the reform was grounded in a structure of political authority based on hierarchical patronage and clientelist networks. Those networks granted the state officials considerable autonomy in the making of public policy. It is imperative to notice that unions play no functional role in these corporatist analyses.

A more original vision is offered by Richard Snyder's analysis of the state's reform of another important commodity sector in Mexico. Snyder (2001), found that, in reforming coffee production policies, local governments replaced the regulatory structure abandoned by the federal government's neoliberal reforms. As a result, a diverse repertoire of state and society relationships was built-up at the local level–some of them retaking the clientelist structure created by the federal state. As a result, local authorities won control of social networks that had been used to promote coffee production, which were a social base for the PRI. Instead of the presumed route towards *laissez-faire* capitalism sought by the reformist state, coffee producers now have to face a wide subnational repertoire of regulations and political cooptation, which is far from a free and deregulated market.

All approaches that treat business-as-association can be subjected to a similar set of criticisms. An initial set relates to the way that interests, conflict or consensuses are understood. The emphasis on unanimity is too simplistic; social relations are often full of conflict. Two results can be imagined. The first result is that actors are unable to create unanimous policies responding to the increasingly differentiated organized interests that would become its co-governing associates. The second result is increasingly inconsistent policies. Both results create institutional blockage that will continue to exist until the state recognizes that unanimity cannot be fully achieved. Yet the literature on corporatism pays little attention to such factors, struggling instead to interpret the move to liberalization as just another event in corporatist history.

Another criticism relates to the way that such analyses treat the historical legacies of the system and the processes of change. Sclerotic associates that have vested interests in a specific conjuncture in the past but that remain powerful enough to impose a veto on reform, as it was actually the case in the failed reform of the petroleum industry, may paralyze the state. The affinities between economic actors and political institutions are shaped at a specific time; they are not necessarily appropriate for all economic and social circumstances. In transitional periods the state may be forced to appropriate enough power so as to redefine and empower its new corporate or other associates and weaken those that are out-dated.

All these market-pull approaches accept the premise that the economy follows a natural order that forces the state to adapt. The state is neither the puppet of business interests, as in the case of business-as-capital analyses of banking nationalization, nor is it a reduction to a Weberian bureaucracy that does little more than assuring a permanent environment of rules and procedures that reassures trust and continuity to business people, as in the business-as-firm perspective. When the state is directly involved with social partners, as in corporatist analyses, state interests take a back seat to those of business, labor or others such as peasants. This form of political economy puts the accent on the economic structure, and makes the state interest and strategy secondary.

2.2 State directed approaches and embedded autonomy

In order to overcome some of the limits described here, others have turned the argument on its head, and described the state as leading. State-led theoretical models are somewhat less varied. Nonetheless, there is a long *Gerschenkronian* tradition of state-led analyses that conceive industrial transformation of “backward” economies as a process that is shaped through government action and is undertaken in order to create the environment that would let the industry develop autonomously (Gerschenkron, 1966). One of Gerschenkron’s principal assumptions was that the trajectories followed by the developed countries responded to their particular institutional situation and to the confluence of conditions that facilitated the first Industrial Revolution. Therefore, for late developers the state’s objective must be to repeat those conditions until the moment in which socio-economic actors can take off.

For Hirschman (1966), who adopts and adapts Gerschekron, being a latecomer means that the country’s development requires more deliberate state action. In this sense, development is the conjugation of learning abilities that include sequences, processes, and planning that make it possible. Learning abilities are the products of envisioning elites that induce developmental projects in society. Planning, in this sense, is one of the most important ingredients in Hirschman’s thinking. Therefore, the state’s persuasive capacity is more important than imitating the prerequisites of development that industrialized nations experienced, as Gerschenkron proposed.

Hirschman argues that for state action to be effective, it must initiate growth through forward thrusts that are meant to create incentives and pressures for further action. Hence the state officials must stand ready to react to, and to alleviate, these pressures in a variety of areas. This model depends on the identification of feedback activities that deliberately impel the institutionalization of development, and with it, the use of techniques, activities, culture, and values that sustain a modern industrialized society. The state has the responsibility to induce development.

Other authors building on Hirschman have emphasized the collaborative relationship between states and private actors in order to promote development. The studies on Japanese institutions (Johnson, 1982) and Newly Industrialized Countries (Amsden, 2004; 1989) followed this line. Johnson has created an ideal typical developmental state model to study MITI as the leading state actor transforming the Japanese economic structure. As Woo-Cumings (1997: 1) posits:

> *Johnson (…) constructed a Weberian ideal type of an interventionist state that was neither socialist (described as a 'plan-irrational' state in which both ownership and management remained in the hands of the state, such as in the former USSR) nor free-market (no plan, and where private control coincided with private ownership) but something different: the plan-rational capitalist developmental state, conjoining private ownership with state guidance.*

In Johnson's model, the state performs exclusive functions. The choice of functions helps to characterize different types of states. These functions also determine the different outputs of the state/business relationship. Amsden's model continues this line of analysis, stressing the learning process followed by the Korean state. However, Amsden's puts an accent on the learning process that facilitates the use of technology developed by other countries in a much more literate society, as a peculiarity of latecomers. The state's promotional activity seeks to direct the process to a more adaptive institutional apparatus and social groups whose goal is to achieve international competitiveness. The process depends on a strategic set of economic policies that result from an optimal management of wages, subsidies and productivity. The model is based on discipline and reciprocity towards the authoritative state's decision to make industrials able to learn how to participate in market circuits developed by industrialized countries that arrived first.

In developing his model, Peter Evans builds on these approaches while criticizing them. He takes from Johnson the idea that the planning capacities–the brains behind the institutions–are important. Johnson reveals the key role of a meritocratic bureaucracy able to act autonomously. For Evans, however, Johnson remains too close to traditional analyses of development by focusing on the domestic trajectory. As Johnson (1982: 15) writes: "*Japan's growth did not depend so much on exports as it did on the development of the domestic markets.*" Therefore, when Evans redefines development, he moves away from both Johnson and any sustained attention to a domestic trajectory. As we will argue below, this swing away from attention to the domestic political economy may have been too dramatic. With this move to a new definition of development, the domestic political economy is taken as a given, or it is assumed to be automatically aligned to international forces.

Evans continues the definition of the state's role in inducing transformation from Amsden. The state intervention gives place to social organization in which private organizations are urged to act in collaboration with the state. Amsden's model rests strongly on the state's concessions, discipline and reciprocity are expected in the part of private counterparts; these are the indispensable ingredients in the process of purposive transformation. Evans, in contrast, alters the extremely disciplined environment established by Amsden in order to achieve the objectives of public planning, giving a more autonomous role to the private sector.[5]

In this sense Peter Evans' notion of *Embedded Autonomy* seeks to present a synthesis of this theoretical trajectory. His model looks for the affinities between the state bureaucracies and the industrial sectors and firms that able them to act in the most rewarding niches of the international markets. There are three points underlying this argument. First, the notion of development is reduced to a transformative function that results from a state promoting competitiveness in order to reach the international market circuits. Secondly, the state must act along with social networks in order to construct competitive advantages for some national industrial sectors. Third, the autonomous Weberian bureaucracy must pursue transformative goals through policy and institutional adaptation to the new international market conditions. [6]

---

[5] Measuring this reciprocity is, however, one of the most empirical questionable issues of this approach (Schneider, 1998).

[6] A very similar analysis–though less elaborated than Evans'–is work done by Arturo Borja (1995), which analyzed the contribution of the Mexican state to the development of the Informatics Technology in Mexico. Borja's work offers a very detailed analysis on how state institutions affected the development of this industrial sector in the country.

The theoretical approach proposed by Peter Evans in *Embedded Autonomy. States and Industrial Transformation* describes the state as an autonomous actor whose actions are embedded in social networks. Evans has created two ideal types to distinguish a state that acts as an associate of society from one that extracts as much as it can from society. The first one is characterized as a developmental state, the second as a predatory state. The main characteristics that distinguish a developmental from a predatory state are the recruitment of public officials that could result in a rational bureaucracy, as defined by Max Weber, and the type of roles played by the state institutions in promoting national development. However, Evans (1992: 148) emphasizes, "*it is when transformation is on the agenda that the contrast between predatory and developmental states comes into sharpest relief.*"

Evans (1995:12) has defined a developmental state as the equilibrium achieved between autonomy and embeddedness:

> *A state that was only autonomous would lack both sources of intelligence and the ability to rely on decentralized private implementation (...) Dense connecting networks without a robust internal structure would leave the state incapable of resolving ´collective action´ problems of transcending the individual interests of its private counterparts (...) Only when embeddedness and autonomy are joined together can a state be called developmental.*

The state officials' recruitment is fundamental in understanding institutional insulation, not isolation. State autonomy derives from the existence of a rational Weberian bureaucracy, which is formed through selective meritocratic recruitment and long-term career rewards rather than personal ties. That process allows the state officials to insulate themselves from society to define policy and to create and model social networks when necessary in order to build social support for policy. This provides what Evans (1995:59) calls *"the provision of institutionalized channels for the continual negotiation and renegotiating of goals and policies. That in fact means sources of intelligence that rely on decentralized private implementation."*

Evans' model can be illustrated in the following table:

	Transformative Capacity	**Embeddedness**	**Autonomy**
Predatory State	**No**	**No**	**Yes**
Developmental State. Form 1	**Yes**	**No**	**Yes**
Developmental State. Form 2	**Yes**	**Yes**	**No**
Developmental State Ideal Type	**Yes**	**Yes**	**Yes**

The developmental state is composed of three variable capacities: industrial transformation, state autonomy, and social embeddedness. As it is possible to achieve social transformation inside imperfect embedded or autonomous structures, Evans (1992) has named them intermediary states able to achieve social goals even if they stand on imperfect structures. The state's autonomy is defined in direct relation to the composition of civil servants recruitment. State autonomy is important in order to understand a self organizing bureaucracy acting in the name of any group, being able to pursue collective goals, and to foster social organization (Evans, 1995: 45-50). Embeddedness is the other indispensable ingredient. It is explained as dense social networks existent or formed by the state's action, defined as *"networks with a robust internal structure."* (Evans, 1995:12).[7]

Instead of asking how much state is needed to promote industrial transformation, Evans asks a clever question: What kind of state is necessary to get it? In that sense, he proposes four roles that distinguish a developmental state:

State roles

Custodial regulatory activities that can be permissive or restrictive to private participation	**Demiurge** State production through public enterprises
Midwifery state induction of private participation and further nurturing of private firms	**Husbandry** state promotion of private firms in the international arena

The most efficient state action relies on the exact combination of the state's roles in direct correspondence with particular sectoral needs related to their international structure. In reaching a liberalized economy, Embedded

[7] Evans has tested the thesis of synergetic relationships that can give the state the capacity of constituting what Robert Putnam has called social capital (Evans, 1997: 47; Putnam, 1993). Seeming to improve the embeddedness variable, the proposition considers that the state becomes diffuse, as it is part of the social networks it works with. Evans seems to consider the state as one-single issue actor, whether the state was not forced to act within a diversified agenda, or associated with a diversified set of social actors.

Autonomy relies on the midwifery and husbandry promotional activities, which would allow the effectiveness or failure of the domestic industry to be inserted in international markets.

We followed Evans' (1995: 79-82) operationalisation of variables as follows:

- The **custodial** role is defined as the state's regulative function. Performing this role, states can provide protection, prevent proscribed behavior or establish a frame that guides state/society actions. It can be either preventive, to avoid private capital (national or international) from engaging in undesirable or inappropriate activities, or stimulating so as to spur private capital to engage in transforming activities. The most usual regulating activities can be policies granting fiscal regulations, protectionist laws that would sustain the performance of midwifery activities for the establishment of greenhouses in the protection of the nascent industry, restricting foreign capital investment to benefit local producers, etc. The limitation of this role is that it is not a transformative tool. It does, however, articulate the rules of the game, and help to structure economic sectors.
- The **demiurgic** role is performed when the state takes the role of producer, and thus takes direct responsibility for delivering certain types of goods in the market and becomes an individual agent of accumulation. The classical demiurgic role is performed by the state's provision of infrastructure or the elaboration of public goods. However, the state can also create a 'conspiracy' to develop new industrial

sectors. In this case, the state becomes directly involved in productive activities to: complement private production or replace or compete with private producers. Taking this role is the only way to move industrial development forward and induce subsequent linkage effects. The creation of state owned enterprises (SOEs) is important in order to stimulate industrial growth in other sectors. The limits of this role are that SOEs tend to grow and diversify. A firm created to initiate endeavors beyond the capacity of local capital may end up competing in sectors where no such rationale applies. Finally, this role ends up creating conflicts with the private sector to defend the market share, making this role politically risky.

- The **midwifery** role is performed by the state in order to assist the emergence of new entrepreneurial groups and to induce existing entrepreneurs to take up more challenging endeavors. It is performed by the state when seeking to induce private decision-making in following specific goals. The state also seeks to reduce the risk and uncertainty entailed in initiating new ventures. The state limits the number of players acting in an industrial sector. The main policy following the performance of a midwifery role is to incubate nascent industries, practicing the protectionist regulations. The midwifery role includes: prohibiting imports, restricting foreign investment, distributing subsidies and incentives, and face-to-face exchanges with private actors to signal the importance of the state in developing a new sector. The limit of this role is that it lets the state become dependent on adequate private responses to state initiatives; it can also give rise to rent seeking.

- The **husbandry** role exists in order to assist the emergence of national champions. It involves a combination of prodding and support. The state performs this role by offering state support for firms that venture into more challenging areas of the sector. It may involve, for example, setting up enterprises to take over riskier complementary tasks (like Research and Development) without which, private enterprises cannot industrialize. The limitation of this role is the existence of a directly interested private actor, which increases the risk of capturing the state.

Most of this hypothesis have been tested and supported by Alejandro Portes et al (2008). They analysis examined most of Evans variables in the operation of institutions such as stock exchanges, post offices and airports in Mexico, Colombia, and Chile, even though they are strategic sectors for every economy, they do not represent state influence on industrial development.

Works applying the Embedded Autonomy concept to the Irish state recognize two different types of globalization pursued by the state: a first one driven by foreign investment partially embedded in the domestic market; a second one driven by the increasingly successful integration of local networks or indigenous firms into global business and technology networks. For understanding these two different levels of state action, Riain has differentiated the bureaucratic developmental state, as defined and applied by Evans, from the flexible developmental state (Riain, 2000).

This more flexible state apparatus for Riain (2000:158) "*is defined by* *its ability to nurture post-fordist networks of production and innovation, to attract international investment and to link these local and global technology and business networks together in ways that promote development.*" The main problem Riain found with the notion of Embedded Autonomy was dealing with 'local' and 'global' perspectives on industrial development. His solution is to *flexibilize* the developmental state ideal type on order to let the state embed its actions in multiple arenas going from domestic professional-led networks to international capital.

Following upon these insights of Riain, this thesis raises two different concerns with Embedded Autonomy. The first one has to do with the definition of development itself. The definition of development and the ideal typical developmental state (Korea) leads Evans to ignore, or to insufficiently understand, the on-going attention to domestic markets and to the social relations embedded in an earlier development strategy which set some constraints on state action. This perspective takes attention from understanding the shift and the state's capacity to maintain support of domestic actors while promoting change. How does the state deal with general objectives and particular policies during the transformation?

This question takes us to the literature that analyses path-dependency. The assumption is that previous actions affect present decisions. As posited by Weir (1997:192): "*Decisions at one point in time can restrict future possibilities by sending policy off onto particular tracks, along with which ideas and interests develop and institutions and strategies adapt*."

This discussion has taken at least two different, yet complementary, routes in current discussion. Firstly, Athul Kohli (2004) designed three different state's ideal type to explain different routes to development: the cohesive-capitalist state, the fragmented-multiclass state, and the neopatrimonial state. Most of these ideal types follow Evans (1995) in the integration of trained and professional bureaucracies to push forward a development and a national development ideology. However, in order to explain variations on why are some states more efficient than others, Kohli emphasizes on how state's institutions consolidated and specially those institutions created a sort of path dependency that sustained more efficiently developmental results.

Secondly, Rueschmeyer and Lange (2005) share the idea of state-building process as a key variable to stand development. Rueschmeyer (2005: 19) argues *"both the internal development of state machineries and the development of synergistic interactions between state and society takes time"*. However, the idea can be discouraging on the time taken by successful states in order to accomplish developmental success, the accent put on history and institutional building effects on development is an important departing point to think about state-structures influencing development process.

These two positions agree that statebuilding is a long-term process that could take years to consolidate. The most important contribution of this process is training capable bureaucracy able to push a rational development project. Timing on consolidations seem to be a crucial variable, and questions the idea that rapid development is possible, yet the studies show that old countries succeed on leading development over newer institutions. [8] However consensus on policy paradigm is wide ignored in these studies.

The second main problem with *Embedded Autonomy* has to do with the notion of change. Given the fact that the developmental state ideal type is Korea, the dimension of change is underplayed. In effect, moving from ISI to EOI in economies that were already organized–economically, socially, and politically–by an ISI strategy, will have to make a paradigm change, often in opposition to vested interest supporting the ISI model. The state may do this unilaterally or in partnership. In the former, the state had to manage the transition itself and ensure stability. In the second, the state must work on its relationship with social forces (especially business) in order to guide the transition to a liberalized context.

While the second (partnership) falls in part within the categories of Evans' developmental state's main focus on society-bureaucratic relations, the other dimensions of development have to be taken into account. For these reasons, it is important to acknowledge that the Mexican state faced what Peter A. Hall calls a *paradigm shift* (Hall, 1997: 91). The old economic policy stood on a different sort of paradigm. A new set of principles and policies was needed in order to allow the state to handle the crisis.

In this context, the Mexican economy has used a different repertory of policy definition and instrumentation since 1985. This new repertory has dramatically transformed the structure of the economy. It began when

[8] For a full debate on the subject see the symposium discussing the subject on State and Development see *Contemporary Sociology* 36 No 3 pp. 309-321

Mexican institutions faced a Keynesian blockage in the 1982 crisis. This collapse of the old paradigm opened the space for the monetarist group to implement a new policy agenda. While doing that, state officials undertook several actions. First, they established a very coherent government that pushed forward the exchanges with critical actors, such as the business community. Second, they created a new sort of analysis and policy answers to the crisis situation. Third, they encouraged alliances in Congress that facilitated the definition of the new custodial actions taking place, in association with opposition parties. Fourth, they continued controlling the media in order to push the new model's ideological background, letting public opinion and intellectuals get used to these new ideas. The new political economists supporting the new paradigm forced, at the same time, the democratization of the country. This is an unattended outcome that resulted from their necessity to challenge vested interests created since the 1920s.

In this sense, the connection between the state and the organized labor was an important part of the success of Mexican embedded autonomy in the post 1945 period. Also, the rigidity of the accord became one of the state's most important constraints for it to reform key sectors of the economy.

Both the literature on path dependency and that on paradigm shift teaches us the importance of analyzing the state as a flexible actor that has complicated relations with civil society, and of understanding development as a social learning process, which is not stable. Therefore, this thesis will examine the role of the developmental state, making three additions to the Evans argument: We will pay attention to domestic market rearrangements in order to reach the liberalization; we will observe the state's relationship with social forces, which include both businesses and unions; and we will consider development as a historical process.

2.3 Protective Liberalization

Without accepting a determinist version of these visions, we propose to distinguish between the general objectives of the state while pursuing development and the particular policies defined by the state apparatus in order to implement this transformation in one industrial sector. Our assumption is that the state's transition from promoting development as a local trajectory towards promoting access to International market circuits implies adjustments in the mix of state roles, and particularly in the actions of bureaucrats who are so important in the context of the developmental state. The transition from an economy organized around Import Substitution Industrialization to an open one involves a new policy paradigm, and would imply, as argued by Hall (1997), the construction of new consensus. This consensus should exist both at the general level of the state's development strategy and within key sectors.

In the case of the paradigm change that was analysed by Peter Hall, the consensus-building was triggered, carried out and consolidated by processes linked to ideology and partisan politics. This meant, among other things, a change in personnel within the government and policy-making bodies such as think tanks. In the context of a developmental state like that of Mexico the social relations embedded in state-society relations as well as the role of the state apparatus are not the same as in a situation of party competition. There are few moments of political personnel change comparable to the arrival of Thatcher's Conservatives in Britain.

Therefore, to understand the story of the petrochemical sector and the difficulties encountered in its transformation, it is necessary to ask whether a new consensus was created in the industry the Mexican state announced its commitment to the liberal paradigm. To achieve consensus it would have been necessary for actors, who had worked within same clientelistic structures and institutions for decades, to adapt their responses and their actions to the new circumstances. The rest of this thesis examines this process of transformation in the institutions of embedded autonomy and the particularly the responses of these actors facing profoundly different economic and political conditions.

Chapter 3 makes two points. The first is that state officials, just as Evans' approach predicts, formed a developmental bureaucracy. There was little turnover in the 1950s when ISI was being put into place in key developmental institutions. In the 1980s, however, the political personnel changed, to become the promoters of protective liberalization as a response to structural reform. What we mean by protective liberalization is the following. It is protective in the sense that it supports the industry and firms within it in order to achieve the consolidation of national champions. It is liberalization because the route to this consolidation involves public corporations and withdrawing the state's participation. In these actions, we see promotion of neoliberal policies such as EOI, NAFTA, privatization, and so on.

If protective liberalization is the direction of change, Evans' approach is insufficient without some adjustment. First, Evans does not consider a paradigm transition in his approach; this is reason we have turned to Riain. Second, in the situation of Mexico, Evans' model could only suggest that the Mexican bureaucracy lost coherence in pushing industrial transformation in Mexico, because a combinatory strategy such as protective liberalization is not analyzed by him. This why it is necessary to turn to Hall and the paradigm shift and path dependency in order to better understand the Mexican case.

Thus, the argument made here is that both the developmental bureaucracy and industrial actors would have to embrace the new paradigm. One way to encourage such an embrace, and the acceptance of the costly consequences of the structural change implied, would be for state officials has to protect key actors. But beyond that, actors - firms both public and private and officials - who had engaged in a set of industrial practices for years would have to learn how to perform differently. And, there would be winners and losers. Path dependency in ideas, practices and power relations might very well hinder a successful implementation of the paradigm shift in all sectors, especially one like petrochemicals that was so much emblematic of the previous nationalist paradigm.

Since the 1920s, the development of the Mexican economy has rested on protectionism. This has meant both nurturing a domestic bourgeoisie in order to foster a domestic market and sheltering it in order to assure an autonomous trajectory from international pressure. The state's main tool in the past to reach this objective was the promotion of an Import Substitution Industrialization (ISI) program. Within this main frame, the state's contribution was the engineering of the domestic market, supporting private domestic businesses, and providing access to union organizations. The combination of custodial, demiurgic, and midwife roles structured a relationship in which both the private sector and organized labor counted on a risk-reduced environment. Most importantly, the demiurgic role was mainly considered as a complement to private actions.

The Mexican state has faced the necessity of reforming development strategy since the early 1970s. Policy seeking to increase the husbandry role and to foster a more Export-Oriented industry was implemented both in 1973 and in 1979. Yet, the lack of congruence between government officials and planning institutions resulted in both moments in a market that was more protected than before liberalization was tried. The demiurgic role increased, seeking to foster state autonomy *vis-à-vis* private actors who had been empowered as result of the industrial policy. Despite the macroeconomic misbalances caused by this erratic policy, important investments were realized in order to increase the Export-Oriented infrastructure of the industry.

The 1982 crisis unveiled the paradigm competition that existed among government agencies to define an adequate policy to face the crisis. The Keynesian group offer showed to be exhausted. When they were unable to offer alternative policies to cope with the plunge of oil prices in 1985, the conditions for a paradigm shift were acknowledged. The government was reorganized between 1985 and 1986. The country joined the GATT and the decisions to open the market went even further than those demanded by international organizations. Under these conditions, embedding the liberalization of the economy on private domestic networks was a *sine qua non* condition to assure the long-term viability of the new Export-Oriented development strategy.

However, reforming the economy has not meant that the state abandoned its protectionist goals. This aim became even more important when the state was withdrawing its demiurgic role and providing freer conditions of access to foreign companies in the domestic market. Mexican big businesses were not left to their own resources to face the global economy. On the contrary, the state took advantage of its own reform to re-engineer internationally competitive big businesses. The reinforcement of domestic business groups would assure the support and viability of the reform project, and they would also facilitate the state negotiators' abilities to push forward the re-structuring of the economy.

The state created the conditions necessary to reduce the threat that an open market would have on domestic actors. The first step was the reinforcement of state embeddedness within private networks, in order to assure the long-term viability of the process and the gradual implementation of the new policy. It has been widely stated that during the crisis and the reform process, the Mexican state intentionally sought to reinforce, if not reconstruct its links with the private sector. The second step was re-engineering the domestic business groups through the privatization program. Informing business people about the conditions of privatization before announcing the public auctions of public industries facilitated that already established industrials won the auctions knowing the conditions of the companies they were bidding for. This also created *quasi* monopoly conditions for domestic business groups. Big businesses did not risk their market from a variety of newcomer firms. This decision also reinforced the concentration of the market in domestic hands. The former allowed the state to count on strategic domestic support in order to implement the reform. This way, it assured its long-term viability and reduced the foreign influence on the scope or timing that the structural change of the Mexican economy would reach. State Autonomy was assured with the support of a local bourgeoisie that was encouraged to act towards the new national goals defined by authoritarian state officials.

The third step involved the change of the collective agreements, which used to grant huge advantages to small groups of workers–almost always organized in key industrial sectors and affiliated to the PRI's corporatist structure. Unions supported wage constraint in times of crisis, which allowed the state to enjoy maneuverability while taking drastic measures to improve the economy. However, once privatization was announced to the key industries related to energy and petroleum, unions vetoed the state's plan. These sectors were strategic for the economy. This fact improved the union's leverage for contesting the plan.

Given this stance, the ideas we intend to advance are:

Hypothesis 1 - The Mexican state is a developmental state. It has a regulated and autonomous bureaucracy that is capable of defining policy and using a different blend of the four roles identified by Evans (1995). In order to conduct itself as a developmental state, it had to continue shaping domestic actors to facilitate their access to international markets in both of the paradigms that have marked different moments of Mexico's development. [9]

Hypothesis 2 – The Mexican state brought about a paradigm shift in a gradualist way, by altering the economic model while maintaining its commitment to protect a national bourgeoisie. As a result, there are sectors in which the state has been unable to define a coherent policy following the new paradigm lines, expressed on the co-habitation of two development visions for strategic industries.

2.4 Outline

In order to demonstrate these hypotheses, we have identified three different periods followed by the Mexican state to promote development starting in 1958 and finishing in 2000 when PRI lost the control of the Presidency. During each one of these periods, we identify the blend of the four roles–custodial, demiurgic, midwife and husbandry–played by the state in the promotion of the petrochemical industry.

---

[9] Etchemendy (2004) made a very similar statement while analyzing the protection granted by Spanish leftist government to the most important businesspeople during Spanish economic liberalization process in the 1980s and 1990s, granting special protection to the automobile industry and the consolidation of SEAT as a national champion.

The first period was from 1950 to 1970, when the Stabilized Development model –*Desarrollo Estabilizador*–was implemented with a strong emphasis on ISI. This period–also known as the Mexican Miracle–provided the country with significant growth and economic stability.

In the second period that goes from 1970 to 1985, the Shared Development model–*Desarrollo Compartido*–, the state increased is demiurgic participation, action that unbalanced the macro-economic variables. However, high oil prices during the period from 1976 to 1982 resulted in large public and private investment in industrial infrastructure, which improved the international competitiveness of the industry. In part, this international competitiveness resulted from the fact that the state used the opportunity presented by the extraordinary oil revenues to perform its husbandry promotional role.

The last period from 1986 to 2000, followed a paradigm shift that took place in 1986. We consider that Mexico's decision to join GATT that year was the watershed of the Mexican development strategy. During those years, state officials not only withdrew from the demiurgic role, thus increasing the concentration of the domestic market in private hands, but they also altered the definition of custodial, midwifery and husbandry, in order to push the economic transition from ISI to an EOI strategy.

The thesis is divided into two major parts. First, in chapter three, we support the hypothesis that led us to affirm that Mexico has counted on structures that are equivalent to those found in developmental state ideals since 1920s. However, those regulations applied only to a few state institutions and not to the whole state administrative apparatus. We have classified Mexico as a developmental state–form 2, according to Table 1 above.

The rest of the thesis shows the state in action. Chapter 4 provides a brief historical analysis that helps explain both the consolidation of the Mexican state and the key role played by the nationalization of oil in the definition of oil policy during XX Century. The main idea is to offer evidence on how the nationalist paradigm structured specific state actions that were performed in order to reduce foreign participation in the development of a national petrochemical industry. This way it would be possible to foster an industry owned by a national bourgeoisie instead. The promotional roles played by the state and the redefinition of the content on those roles have varied through time. Variation is explained in direct relation to the different paradigms used by the state during the 50 years included in this analysis. However, changing the state's policy paradigm has not meant altering the pattern of protecting the domestic industry and bourgeoisie in any circumstance.

The fifth chapter shows the state fostering a national petrochemical industry for the country. The first plans framed the stabilizing development period so as to consolidate a national project for the industry.

The sixth chapter depicts the state and private sector acting together in the conditions created by the oil boom in order to consolidate the country's autonomy through the construction of a self-reliant industry, the structural reform of the petroleum industry and the impressive growth of the petrochemical one. It also describes the solutions exposed by the different ministries in order to solve the conditions of the debt crisis in 1982.

The seventh and the eighth chapter concentrate on the paradigm shift and the policies deployed to alter the *status quo* in the petrochemical industry in order to update its relation to market conditions. These chapters will also emphasize the political constraints that made the state fail in the reorganization of the industry. Chapter ninth reviews the political conditions, which had facilitated the push towards the structural reform of the economy, were altered after the 1994 crisis. This crisis reinforced nationalist groups, allowing them to veto the completion of the reform in the petrochemical sector. Even if this action had caused an important crisis to the petrochemical sector, the PRI and the oil union ensured the long-term permanence of protective liberalization.

Chapter 3. Institutionalizing public/private relations: Preparing the Mexican developmental state

The authority of the Mexican state was built up by relying on two main structures: a rational bureaucracy and a corporatist-clientelistic organization. The first structure was formed in the 1920s, when the winning branch of the revolution (1910-1917) consolidated its power and continued performing the liberal state actions meant for promoting development that were used during the *ancien régime*. At this time, the state established and regulated a civil service career for the bureaucracy that would manage the state apparatus. In 1929 the economics program of the National Autonomous University of Mexico (UNAM) was created in order to educate and recruit bureaucrats.

For its part, the National Revolutionary Party (PNR) was meant to organize political factions into one single organization. When doing so, the party would still enjoy enough regional control in its structure to challenge the centralized state apparatus and the legitimate use of violence. President Cardenas annulled the regulations that had been defined for the recruitment of bureaucrats and, instead, forced these to unionize and affiliate to the newly created Popular Sector of the Mexican Revolution Party (*Partido de la Revolucion Mexicana* PRM). The reorganization of the Revolutionary Party influenced key social sectors that then settled the transition from *Partido Nacional Revolucionario* (PNR) to PRM in 1938, giving the party a corporatist structure that would integrate social, labor, and peasant organizations, as well as the army.[10] The cancellation of bureaucratic regulations was enacted for the entire bureaucracy, with the exception of two institutions: the Bank of Mexico (Central Bank) and the diplomatic service.

This chapter discusses the pattern followed by the Mexican developmental institutions that generated a situation of embedded autonomy. It follows the history of the Mexican developmental bureaucracy from its beginnings in the 1920s and 1930s until the 1986 paradigm shift. According to Peter Evans, a developmental state has to have both embeddedness and autonomy. This means a state's agenda depends on the capacity of a meritocratic civil service to insulate itself from societal demands. State officials can set out goals and plans for the industrial transformation of the country, but the state must rely on private organizations in order to ensure the implementation of its goals and plans either by or with the private sector. The flexibility of this public/private association increases the chance of success of state promotional actions and its transformative capacity. Thus, the success of state promotional actions is based on an adequate and flexible association with the society (Evans, 1995: 45-50). For Evans (1995: 47), the internal structure of the state apparatus is "the main clue" to ascertaining whether state autonomy exists or not. Autonomy depends upon a technical corps whose recruitment is regulated in order to reduce clientelism and other non-meritocratic forms of authority.

[10] A new reform, which excluded the army from its structure, was enacted in 1946 when the PRM shifted into the PRI.

This chapter makes three arguments in order to demonstrate that Mexico meets the conditions to be a developmental state and, therefore, to confirm our first hypothesis. First, Mexico has nurtured and relied on a meritocratic bureaucracy since the formation of the revolutionary state in the early 1920s. We find that Mexico has also depended upon a technical corps built in the financial branch of the government, which is centered on the central bank civil career service and its program of "personnel loan". This latter program has worked to increase the circulation of officials to other less regulated institutions such as the finance, commerce and industry ministries.

This structure of the Mexican developmental state, as we will show, stands on four main pillars: i) a recruitment relationship that links the Bank of Mexico with elite universities and institutes; ii) a system of scholarships destined to send officials abroad to study; iii) an independent rule-based recruitment; iv) circulation of officials recruited in the Bank to other branches of the government.

The second argument in this chapter relates to the influence that this specialized bureaucracy has had on policy-making. We will document that the bureaucracy's control over industrial policy has not been consistent over time. Between 1970 and 1985, the state began to experiment with different routes to promote development, which encouraged the influence of non-traditional institutions. This experience had two results. On the one hand, coherence in the definition of policies was lost, while more actors became involved via the introduction of theoretical competition with the perspective of the Bank in policy making. On the other hand, new institutions and recruitment patterns had the unattended effect of creating conditions that would bring about a paradigm shift at the end of the 1980s. These are the conditions Peter A. Hall (1997: 90-113) identified as important to account for a paradigm shift.

The third argument in this chapter is that after 1985, the effort to reconstruct the Mexican economy depended on a reorganization of the developmental bureaucracy and a new paradigm of an Export-Oriented Industrialization (EOI) strategy. We will demonstrate that despite these important changes, the state its maintained the old clientelistic-populistic alliances, and as a consequence it did not alter the relationship of embedded autonomy fundamentally. The state withdrew its economic involvement, and in doing so, state officials assured that the benefits of this withdrawl went to domestic economic actors. The privatization program meant the consolidation of a monopolist situation for private producers, in order to consolidate national champions. However, the state's dependence on old political agreements along with its economic withdrawal reached its limits when policy was defined on the new policy paradigm at the same time old political structures contested it. The cohabitation of policy paradigms made the state lose coherence in pushing petrochemical industry transformation into the new development scheme.

The final section of this chapter will briefly describe the structure of the private sector, focusing mainly on the institutional exchanges established between the developmental bureaucracy and domestic entrepreneurship. Particularly and as a consequence of the economic bureaucracy's autonomy, the establishment of a close relationship between the public and private spheres has been an important characteristic of the Mexican state. This relationship has already been documented in studies of Mexican financial elites.[11] As Kessler (1998) states, it is necessary to include these groups in any discussion of the definition of development policy, because the Mexican private sector includes strong industrial-financial groups.

These links between industrial-financial and governmental elites were first structured in the 1920s, bringing together the industries that survived the Revolution and built the new revolutionary state. While the relationship has not always been free of conflict, it remains being a key factor in understanding the Mexican political economy.

3.1 The developmental bureaucracy

A corpus of technicians has been intimately involved in setting and adjusting industrial and economic policy in Mexico. Along with its rationalized bureaucracy, the state had several different specialized institutions for the promotion of industry and the planning of different stages of industrial transformation. According to Vernon (1963: 136) "t*he most important characteristic of these technical planners was the flexibility with which the policies were adjusted to deal with the specific necessities and evolution of particular industries and sectors.*"

[11] For financial private sector exchanges see Maxfield's (1990) study of the 1982 Bank Nationalization, Hamilton's (1982) study of the autonomy of the state, Babb's (2001) study of Bank of Mexico's exchanges with universities in the definition of economics programs.

The structuring of state institutions and the training of the technocrats began in the 1920s and 1930s.[12] The most important developmental institutions in Mexico are: the Ministry of Finance, the Ministry of Industry and Commerce, and the central bank, the Bank of Mexico, created in 1925. Between 1976 and 1992, there was also a short-lived Ministry of Budget and Planning. They have always been dominated by what Sarah Babb (1998) calls “inflation-conscious developmentalists.” All of these bodies have been termed conservative institutions because of their ideas about economic policies.

These planning institutions have depended on a set of financial institutions that were also created to support both the transformation of industry and the construction of infrastructure. The most important, in addition to the Bank of Mexico, were: the Agricultural Credit Bank (created in 1926), the National Urban Mortgage and Public Works Bank (created in 1933), the industrial development bank (*Nacional Financiera or NAFINSA,* created in 1934), the *Ejidal* Credit Bank (created in 1935), and the Foreign Commerce Bank (created in 1937).

[12] The group of “seven sages” influenced this period in a major way. One of the seven was Manuel Gomez Morin, one of the last economic advisors of President Plutarco Elias Calles (1924-1928). He was Deputy Ministry of Finance at the time and he designed the structure of the Bank of Mexico, writing its first organic law in 1924. He also designed most of the promotional and financial institutions created in this period. During the 1930s he had an important influence on new generations of economists while he was rector of UNAM. However, he was almost erased from official history when he opposed the corporatist and authoritarian structures President Cardenas introduced and then founded the PAN, which became the main opposition party from 1939 to 2000 when it won the presidency (Krause, 1968; Camp, 1989; Loaeza, 1999: chapter 2-3).

At the same time, there was a re-organization of the private financial system, including private banks and the establishment of the *Asociacion Mexicana* de *Bancos* (Mexican Association of Banks). The latter became an important point of contact between the banks and the Finance Ministry.

While there has been disagreement over how to use macroeconomic tools such as inflation or budget deficits, all these financial institutions that traversed the private and public sectors shared a commitment to the development of the country. They all acted within the same developmental paradigm, albeit with differing goals in the definition of policy. They pursued: a) different frameworks of policies; b) the definition of the main development plans; c) the rational functioning of the economy (Babb, 1998; 2001: 180).

Other Mexican institutions also shaped the role of the developmental bureaucracy. The political apparatus is founded on three pillars, namely: the principle of non re-election, an inadequate career civil service, and a high level of turnover at the mid and upper levels of the bureaucracy (Cosio Villegas, 1973; Smith, 1979; Heredia, 1995).

Peter Smith (1979: 166) has documented that over an 18-year period, almost 90 percent of the bureaucracy changed jobs at least once and often much more than that.[13] In addition, his work also documented a pattern that had been in place since the 1920s, which were the years of the construction of the Mexican state. The first significant public-private connection began with

[13] However, Camp (1975) also found that there were differences among ministries in terms of recruitment and turnover.

the relations between the Finance Ministry and the financial-industrial private sector, which established patterns that persisted for decades.[14]

In the early 1930s, Mexico established a merit-based civil-service system to regulate the recruitment of public officials.[15] However, the system lasted only a few years. President Lazaro Cardenas changed the rules, when he imposed the unionization of the lower levels of bureaucracy and their affiliation with the popular sector of the Revolutionary Party (Teichman, 1996: 3).[16] This decision enhanced the president's control over the bureaucracy and gave the party political control over the employment of bureaucrats. It also marked the replacement of an autonomous and meritocratic civil service in the country with a clientelistic-corporatist structure for the lower-levels of the bureaucracy. This was a significant departure from the initial design.

These rules did not apply universally. Cardenas respected the regulations that had been established since 1925 for the recruitment of the Bank of Mexico's officials and the diplomatic service. The state then made a commitment to create universities and other advanced studies institutions in

[14] For the studies on Mexican elites see Smith, (1979); Camp, (1972, 1975); for the making of the state and its relationship with industrials see Hamilton, (1982).

[15] The Civil Service Law passed in 1931, and the Administrative Accord to regulate the Organization and Duties of the Civil Service Law passed in 1934 (Ponce, 2003: 2; Ortiz Mena, 1998: 15).

[16] The bureaucracy is unionized in the Federation of Unions of State Workers (FSTSE), which is part of the National Confederation of Popular Sectors of the PRI. "*The administration of Lazaro Cardenas forced them, through government legislation to join the popular sector. Shortly thereafter, a government decree dictated that only one organization, the FSTSE, could bring together all public sector unions (…) Legislation passed in 1963 prohibited the FSTSE from affiliating outside the PRI.*" (Teichman, 1996:3) Part B of Article 123 of the Constitution also establishes special work conditions for the bureaucracy (prohibiting collective agreements, restricting the right to strike, and permitting the state to unilaterally dictate salaries. See http://www.cddhcu.gob.mx/leyinfo/pdf/1.pdf consulted 11 November 2003)

order to train higher-level technocrats and civil servants. As Camp discovered, these students and bureaucrats enjoyed a more autonomous career and career path in the government bureaucracy (Camp, 1972). Thus, there were two parallel routes to a career in the Mexican bureaucracy: one determined by political relations and another that was quite autonomous. The institutionalization of a clientelistic-bureaucratic structure for some officials, and greater autonomy for the better trained, allowed the emergence of a developmental bureaucracy, similar in many aspects to the Japanese MITI described by Johnson (1982).

3.1.1 The institutionalization of a developmental bureaucracy

The institutionalization of the Mexican developmental bureaucracy took place both informally and formally. Informally, the *técnicos* (technicians, people having at least a university's bachelor degree, later called technocrats referring to people having post-graduate studies) achieving high positions in different ministries were recruited by their professors in the economics programs at the National University of Mexico (UNAM). This created the first contact within *camarillas* for the technicians inside the Mexican bureaucracy. According to Camp, a *camarilla* is a political network based in friendship. It was formed as the first contact created by generational access of young graduates to the government structures (Camp, 1984). This process was created according to Babb (2001: 34) *"as a point of contact between the old generation of public servants and the new generation of students aspiring to work in the government."*

The origin of the *camarilla* system has to do with the organization of the economics program at the UNAM. Its organization, as we will see, stood on what Babb (2001) calls “the taxi professor system”. A taxi professor was usually a top full-time public sector employee who taught a class in the morning or evening at the university (UNAM). From those courses, a public official was able to attract promising students to different governmental offices. Camp (1980) has posited that most generations of public servants were first socialized at the university. This fact created a network of political affinities and long-term loyalties once they became public servants. This networking practice enabled new and old recruits to pursue their political interests once they became government officials (Babb, 2001: 34).

In a study published in the early 1970s, Camp also found that during the 1960s, almost all deputy ministers in ministries such as Finance, Industry and Commerce, Hydraulic Resources, and the Presidency (that became Budget and Planning in 1976) were men with similar training who began their careers as middle-level technicians. They made their way up through the government structure as career bureaucrats thanks to their long technical experience and advanced education (Camp, 1972: 572).[17] “*Data from my study of cabinet and cabinet-level ministers in Mexico since 1935 have been included because over two-thirds of the ministers since 1952 have at one time been middle-level technicians (tecnicos)*” (Camp, 1972: 573).

[17] Camp also talks of special cases in the Foreign Relations Ministry and the Bank of Mexico, whose civil-service recruitment was not modified in the 1930s and regulated their recruitment of officials ever since 1931, making these ministries exceptions to the rule. Along with the Federal Institute of Elections created in the 1990s, they are the only 3 institutions in Mexico enjoying a regulated civil career service in order to assure their long-term autonomy.

An important issue discovered by Camp was that the more responsibilities the ministries had at the technocratic level, the more stable were the official positions in those ministries. Camp (1972: 576) found that:

> *The increasing stability in the top levels of ministries which have the main responsibility for economic policies is evidenced by the many directors and ministers who have remained for more than two administrations, and by the several sub-secretaries [deputy ministers] who have shifted horizontally to other departments. An examination of the personnel of the Bank of Mexico, the Nacional Financiera, the National Bank of Foreign Commerce, the Ministry of Finance, and the Ministry of Industry and Commerce during the last two administrations shows evidence of this trend*.

The most notorious cases Camp noted coincided with the maturity of the institutions that had been structured one or two generations before. In fact, this period also coincides with our first stage of analysis of the Mexican developmental state (1958-1970) in which men such as Antonio Ortiz Mena (Finance Minister, 1958-1970), Rodrigo Gomez (Director, Bank of Mexico, 1952-1970), Jose Hernandez Delgado (Director, Nacional Financiera, 1952-1970), and Ricardo Jose Zevada (Director, Foreign Commerce Bank, 1952-1964)[18] created the core of the Stabilizing Development Program (Camp, 1972:576-78). It is important to note that Antonio Ortiz Mena and Rodrigo Gomez were the architects of the Stabilizing Development Program, while

[18] At the sub-secretary level, Camp (1972: 576-578) underlines the careers of men like Placido Garcia Reynoso and Ernesto Fernandez Hurtado at the Bank of Mexico; Octaviano Campos Salas in the Ministry of Industry and Commerce and Alfredo Navarrete at the National Financier. All these people are part of what we call developmental institutions during the stabilizing development period. Most ministers and vice ministers in President Diaz Ordaz government (1964-1970) began their careers as middle-level *tecnicos* and are examples of technically skilled employees working their way up through the ranks.

Ortiz Mena (due to his position as Finance Minister) was the program's formal head and brain during this period.

The formal route of bureaucratic institutionalization had to do with the strictly regulated system established by the Bank of Mexico for recruiting its officials and placing them in different ministries. The taxi professorship, along with the regulated civil-career service, allowed the Bank to become the most important "centre of talent" in the Mexican bureaucracy (Babb, 2001:89). The Bank of Mexico has been counting on regulated civil-career service for the recruitment and advancement procedures of its officials since its foundation in 1925. As Babb, (2001: 88) states:

> *Its entrance examinations included both psychological and aptitude testing, and the Banco's renowned Department of Economic Studies had its own test for recruiting economists beginning in the 1960s. In contrast to the functionaries of other public bureaucracies, able Banco de Mexico employees could start in low-level positions and spend their entire careers working their way to the top*.

Babb also states that the Bank ensures that its officials who are moved to different ministries maintain their positions and benefits. The most important exchanges are done within the Presidency–which, as we mentioned earlier, became Budget and Planning in 1976–as well as the Finance, Industry and Commerce Ministries. The Personnel Loan Program grants bank officials more autonomy while acting in other ministries because as Babb (2001: 89) notes they "*are not dependent on their superiors within other bureaucracies for their positions; they could, in other words, be relied on to present objective analyses without regard for internal political considerations."*

In some cases, specific plans are later granted with special funding from the Bank's trustees. The Ministry involved and the Bank must jointly administer this funding, in order to implement specific development programs in the areas of agriculture, industry, infrastructure, etc. This program intends to reduce corruption and the clientelist use of public resources.

However, the Bank had limited autonomy,[19] given the fact that the final decision could come from the Finance Ministry, which acted as the formal head of the financial branch of the government.[20] Babb (2001: 42) states that:

> *Many authors have identified the Finance Ministry as the heart and brain of the Mexican economic policymaking bureaucracy (...) Not only did the finance minister have a say in the policies of the Banco de Mexico and Nacional Financiera; he also intervened in policies that technically fell under the purview of the Industry and Commerce Ministry, such as the Law of New and Necessary Industries*.

The interactions between the Bank of Mexico and the Finance Ministry enabled them to manage the embedded and autonomous Mexican state. They had a fundamental voice in defining the developmental role of the state when it is pursuing the industrialization of the country.[21]

3.1.2 The officials' education

---

[19] The Bank of Mexico gained full autonomy from the government in 1993.

[20] In salaries levels too, the Finance Ministry is the best-paid ministry of the Mexican bureaucracy.

[21] The government played an almost unique role in the definition of the custodial role. It is possible to state that Congress did not have a say in laws that were passed on those years. This imbalance between powers began to change at the end of the 1980s (Lomeli and Zebadua 1998).

In the 1920s, the state addressed the issue of its officials' formal education. Therefore, in 1929 it created the first economics program at the National Autonomous University of Mexico (UNAM). The objective was to educate people at a technical level to work for the government. Babb's work on the degree in economics in Mexico found a correlation between the state's involvement in the economy and the state's fostering of its own technicians. She (Babb, 2001:28) argues, *"Mexican economics was essentially "invented" by a group of post revolutionary state-builders."*

The first economics program was offered at the Law School of the National Autonomous University of Mexico in 1929. It was later transferred to the School of Economics in 1935[22] where it was designed to train the public sector officials. It was created with a *"government-centered vision (…) from the very beginning, Mexican economics was a statist profession, and it was able to thrive and expand because of the state's growing involvement in the Mexican economy" (Babb, 2001: 28)*.

During its first decades, mainly public officials who acted as taxi professors composed the professorship.[23] They created a system to attract their most talented students into public work.

> *The taxi professor phenomenon was advantageous for the consolidation of the economics profession within the public sector, for*

---

[22] The School later evolved into a Faculty when they created the first PhD program there in the middle of the 1950's.

[23] Babb defines taxi professor as those teachers by subject that actually made their living from sources other than teaching. They are usually public officials that teach a subject before or after going to their offices.

> *professors with degrees in law or engineering pulled young economists into their respective government ministries. Once economists had entered a given ministry, those who managed to move up the administrative ladder could use their position to pull in more economics students in turn* (Babb, 2001: 35).

As time passed, they established an autonomous technical corps, which enabled them to embed their actions in private industrial organizations.

In addition to this program, the Bank of Mexico introduced other programs at different universities in Mexico. In 1958, Rodrigo Gomez sent a central bank official to reorganize the program offered at the University of Nuevo Leon, with the Bank providing financial and infrastructure resources. In 1946, the Bank, which was associated with private industries, founded the economics program at the Technological Institute of Mexico, which then became the Autonomous Technological Institute of Mexico or ITAM. Since the 1980s, the state began to attract technicians from this institute (Babb, 2001: 91 and 69-73).

The Bank also organized a scholarship program to encourage people to pursue graduate studies abroad. From the 1930s to the mid 1960s, the Bank of Mexico sponsored a scholarship program to encourage its own employees to study abroad, not only in economics programs but also in different technical specialties (Camp, 1975). The Bank also initiated graduate study programs in Mexico.

> *The original idea of creating Mexico's first postgraduate program in economics at the [El] Colegio de Mexico in 1964 was conceived among a group of Banco de Mexico functionaries and ex-functionaries. The program was intended to respond to the failure of many Banco de Mexico scholarship recipients to complete their studies abroad because of deficient skills in English, mathematics and neoclassical*

> *economics; it was believed that the college program would be a cheaper alternative than studying abroad, and would compensate for deficiencies in the training received by UNAM graduates. The economics program at the Colegio was partly designed according to the recommendations report authored by the director of the Banco's department of economic studies Leopoldo Solis* (Babb, 2001: 92).

Quoting Douglas Bennet and Kenneth Sharpe, Camp (1990) concludes that "*these students* [trained by the first generations of revolutionary public officials] *were educated in an environment in which economic independence from the US, the promotion of industrialization, the development of a middle class, the pivotal role of the private sector, and the need of a vigorous state action for nurturing a strong domestic private sector*"[24] followed Mexico's developmental agenda.

As the new generation reached the top of the decision-making developmental ministries, they continued to promote the nationalism and self-determination that was supported in the 1930s. The success of the Stabilizing Development Program, which was defined by the Bank of Mexico (1958-1970), can be explained by previous state investment in educating its bureaucracy and by meritocratic recruiting. The system allowed them to act homogeneously, to share–and reproduce–the nationalist ideology, and to redefine a more rational developmental agenda for the country.

3.2 The adjustment of the state action and its technical education

[24] Douglas Bennet and Kenneth Sharp, quoted in Camp (1990: 173).

Alan Knight (2001) has noted the Stabilizing Development period as the golden years of the *PRIista* politics, measuring it in terms of the realization of state objectives. It was also a period in which any manifestation of disagreement was co-opted by the PRI structure or repressed by the government without substantially questioning the legitimacy of the system. As almost all over the world, by the end of the 1960s, student movements questioned the authoritarian nature of political systems increasingly. In Mexico, the army repressed a student manifestation in October 2, 1968. Beginning in 1970, the government tried to reduce the impact of this political crisis by expanding the economy. They changed the state's custodial and demiurgic roles, increasing regulations and participating more openly in the ownership of industries in order to push the growth of the economy. At the same time, the government tried to improve the domestic and the international competitiveness of industry by initiating some husbandry and midwifery actions. Most authors have signaled that the 1970s represented a turning point of Mexican politics, establishing a new basis for political economic reform. The reforms initiated by the state fostered what Erfani (1995: 91) calls "organizational state strength".

The new Shared Development plan (1970-1985) was based on expansion of the public sector. In the view of the new president's aides, using public enterprise for promoting private investment directly was foolish. In order to increase the demiurgic role played by the state, the strong control of the Finance Ministry and the Bank of Mexico had to be reduced, liberalizing the spending structure to allow increased growth. New spending would be financed by a tax reform. After a private sector veto, the state chose to use foreign indebtedness instead to bankroll the increased public investment. However, the financial branch of the government came into conflict with the macroeconomic strategy proposed by the president, this way, forcing institutional realignment within the government.

By the 1970s President Echeverria implemented new institutions that would manage the reforms that he had proposed. While Bailey (1980: 30) holds that Echeverria had destroyed an old order without constructing a new one. As such, we propose that with these reforms, Echeverria constructed a parallel structure inside the state: the old pattern of relationships with the private sector–organized in the Bank of Mexico and Finance Ministry–and the new institutions organized in the Presidency and Patrimony ministries. This dualist structure was constructed in order to administer and compel a faster growing economy, as we will see on chapter 6. These features resulted in both the disjunction of the coherent policies the government had been promoting since the 1950s, and the disequilibrium of state promotional roles. The growth in the number of state owned enterprises created mistrust for some private industrials. The meticulous consensus achieved during Ortiz Mena's leadership was broken when the private sector openly opposed Echeverria's government policies. The lack of consensus on which role the state must play to foster development, has been the constant until today.

3.2.1 Institutional re-arrangements

The mushrooming of state-owned enterprises[25] during the terms of the Presidents Echeverria and Lopez Portillo demanded a different approach to state action. The discussion that followed created a cleavage between the ones that privileged a more centralized state planning and those that favored market oriented actions. These different positions did not seek a paradigm shift yet. The dominant vision was still focused on improving ISI in what Babb (2001) calls the “developmentalist vision”.

However, conflict was present. As the autonomy of the Finance-Bank of Mexico branch of the government was questioned, the officials who asserted their reluctance to cooperate with the new development plan reacted by blocking information to the president’s office.[26] The incapacity of the President to keep a fluid relation with the financial bureaucracy is reflected in the constant change of Finance Ministers during Echeverria and Lopez Portillo’s terms. Babb (2001: 127) goes on to describe the conflict between the executive and the financial branch:

> *The powerful Finance Ministry, always toward the right of the political spectrum within Mexican public administration, was not in agreement with many of Echeverria’s policies, which often challenged the ministry’s autonomy and authority; Echeverria became famous for declaring that economic policy was ‘made in Los Pinos’* [27] *(…) During*

[25] Bailey (1980: 41) notes that during Echeverria tenure, the national government mushroomed from 782 agencies to 1019; the federal workforce grew about 60 percent in five years; and the public sector share of GDP was increased from 26.8 to 39.6 percent. However, administrative coherence greatly suffered. By 1982, there were approximately 1,150 public agencies.

[26] See Castaneda, 1999.

[27] Los Pinos is the colloquial name for the Mexican Presidential residency as are 24 Sussex Drive for Canada or the White House for the United States.

> *the administrations of Echeverria and Lopez Portillo,[28] there would be six different ministers of finance (compared to a single finance minister for the previous two presidential administrations), a clear sign of the unwillingness of the executive to delegate economic policymaking authority.*

As a result of the conflict, the state's solution was trying to centralize the planning of the long-term goals and the improvement of state industrial management. The government was reorganized and new institutions were created. The state had already tried to reduce Finance's power and autonomy throughout the 1960s. President Echeverria reinforced the power of the previously created Secretary of National Patrimony (SEPANAL), and the Secretary of the Presidency was created. The first Secretary centralized the administration of public owned enterprises; the second was put in charge of defining policy and of setting the budget for the state apparatus.

Officials espousing populist attitudes rather than fiscal discipline administered the SEPANAL and the Presidency. These ministries won influence on policy-making over the 1970s because they were controlled by the kind of people President Echeverria and Lopez Portillo needed, in order to push rapid growth programs. They were the kind of developmentalists that tended to think that growth and inflation would be possible, even recommendable (Babb 2001: Chapter 5). This approach clashed with the adoption of orthodox policies adopted by the Bank of Mexico and the Finance Ministry.

---

[28] During Lopez Portillo's government (1976-1982), the Bank of Mexico had three different directors (Gustavo Romero Kolbeck, Miguel Mancera, and Carlos Tello), compared to Rodrigo Gomez who was in office for 18 years (1952-1970).

President Lopez Portillo's analysis was less controversial. He thought that the state must increased its control over budgeting, planning and policy-making process. A Presidential decree creating the Ministry of Planning and Budget (SPP) was published in December 1976. The goal was not only to overcome the blockage by the financial institutions to the President's will, but also to follow a more rational control in budgeting efficiency through the establishment of clear objectives in policies. The new ministry took control of all the budgeting and planning activities that were previously responsibilities of the Finance Ministry. The last had its duties reduced to the collection of taxes. The Finance Ministry also lost all control over public spending, which in fact altered the complete scenario of growth promotion within the macroeconomic balance of the previous years.

According to John Bailey (1980), prior to 1976 public planning in Mexico was largely decentralized in secretariats and agencies. Budgeting was the dominant process for pursuing policy goals. However, policy evaluation in terms of assessing results against goals had been neglected until then. The control exerted by the Finance Ministry came partly from the institutional weakness of the Judiciary and Legislative powers. It also came from the highest rates of personnel continuity in the Finance Ministry and the Bank of Mexico. This fact gave the Finance Ministry "*broad legal powers, capable leadership, and extensive, continuous representation on the web of juntas and commissions that integrated the public sector*" (Bailey, 1980: 35).

President Lopez Portillo decreed the creation of the Planning and Budget Ministry in 1976 in order to rationalize the wider state-centered action. According to Bailey (1980: 43) the administrative reform sought the:

> *“1) reorganization of the line secretariats; 2) sectorization of the nearly nine hundred parastatals under the coordination of secretariats designated as “sector heads”; and 3) implementation of program budgeting. The working logic was to formulate a multi-year public sector plan; derived annual programs from the plan, translate the programs into operating budgets, and implement them through the restructured bureaucracy. The attempt to move away from traditional, resource-based budgeting (Treasury’s style) toward goal-based budgeting grounded in medium-range planning is clearly reflected in the logic.”*

An unattended result of this reform was that the Budget and Planning structure helped the Minister create his own political networks, which granted him with his own political basis as well as with wide and autonomous action. This autonomy increased in 1979 when the team controlling the ministry widely recruited its most important officials out of the traditional structure of the financial bureaucracy.[29]

The new ministry created a legal separation of the planning, budgeting and financing of state actions in the policymaking process. According to the decree, the Planning Ministry was able to formulate the budget of income and expenditures, supervise implementation of policy, and prepare an audit system based on agency accounts.[30] In fact this new agency demanded a close cooperation and coordination with Finance and forced the old

---

[29] For a complete analysis of the 15 years of SPP see Torres Espinosa (1999).

[30] The process of institutionalization was quite conflictive in its first 2 years as Lopez Portillo appointed 3 different ministries of Planning and budget: Carlos Tello 1977, Ricardo Garcia Sainz 1977-1979 and Miguel de la Madrid 1979-1981; once de la Madrid was nominated PRI presidential candidate in 1981, he was replaced by Ramon Aguirre.

establishment to pursue new state action, thinking and defining of state's goals. The economic cabinet scheduled regular meetings at Los Pinos to decide the main lines of policy with the President. This became a routine (Bailey, 1980; Torres Espinosa, 1999).

The creation of a more sophisticated planning agency created unintended results. The institutionalization of the new Ministry not only represented the institutionalization of a new technocratization of economic decision-making (Erfani, 1995: 140). It also had three different effects: it modified state interaction with society, it made a change on the sources and socialization of officials, and it supported the paradigm shift in state development strategies in the mid-1980s.

In terms of the increasing state interaction with society, state agencies acted with some autonomy in the administration of the budget they received in order to perform their policy actions until 1976. As a result of this administrative reform, the state agency became *"a coordinator of the plans of the various sectors instead of the mechanism of central decision-making"* (Erfani, 1995: 141). In fact, policy planning and implementing processes became centralized in specialized inter-ministerial committees that supervised the appropriate development of planning and the attainment of goals. This way, the exchanges those ministries had with society under the previous arrangement was altered.

As planning implied the coordination of regional and sector programs at different levels of the government, the new ministry managed direct relationships with governors and municipalities and at the same time, it would coordinate relationships with private industrials or any other social group. In a way, this challenged the traditional corporative scheme of mediating interest; therefore the Budget Minister was able to deal with those social networks directly, without passing through the structure of the PRI.[31]

In conclusion, during the 1970s the government attempted to create new institutions (such as SEPANAL) and to reinforce the old ones in order to weaken and eventually displace the power of the most autonomous bureaucracy in Mexico. Because of this, the continuity of the old pattern that was centered on the midwifery actions of promoting private industry, overlapped with the reinforcement of a new promotion centered in demiurgic actions. The convergence of these two different kinds of bureaucracies weakened the autonomy and the embeddedness of the state.

The demiurgic vision produced incoherent actions during the 1970s and until the present day. Even if the populist vision won influence during the 1970s, the officials defending this vision never managed to control the developmental agencies, such as the Finance Ministry, the Bank of Mexico and the Ministry of Commerce and Industry; except from Carlos Tello who spent 90 days as director of the Bank of Mexico after the bank nationalization of September 1982 (Babb, 1998).

[31] From 1980s, the state abandoned global development plans for the definition of sector plans. State action then, transformed its promotional roles to a more targeted policy-making process and, as a consequence, its relations with society changed in order to attend to specific social needs. The definition of state priorities had been altered according to this new rationality, which also led the SPP to concentrate the information related to the evolution of social needs in the public and private domains (Erfani, 1995).

The power that officials in the Finance Ministry and Bank of Mexico had, derived from the autonomy of these institutions, which was due to the recruitment practices and job security. This autonomy gave officials the capacity to insulate their activities from Presidential discretional powers and even to exert a sort of veto over some of his policies. The creation of a Budget and Planning mechanism reduced the breadth of power the Finance Ministry had exercised. But as officials coming into the new ministry were recruited from the educational establishment of the Bank of Mexico, the Planning Ministry ended up pushing the neoliberal reforms in the 1980s, instead of increasing state control of the economy. Even if the Presidents' goal was to weaken the Finance Ministry, their actions empowered the new Budget and Planning Ministry because they did not take into account the structure of this circuit of recruitment, as we will see in the next section.

3.2.2 Broadening elite recruitment

The recruitment of officials became a different sort of problem during the institutionalization of the Planning Ministry. Babb (2001) found that graduates of the National School of Economics tended to concentrate in the Ministry of Industry and Commerce in addition to the Ministry of Finance. As such, the financial branch of the government became the most important space of socialization and integration of "political teams". However, Babb (2001: 169) has found that the *camarilla* system was altered during the

1980s. The new Ministry of Budget and Planning supplanted the generational convergence of economics students who became officials.[32]

> *In light of these tendencies in Mexican political recruitment, the colonization of economic policy ministries by the ITAM and other private schools seems less surprising. During earlier decades, when political networking was carried out primarily at the UNAM and primarily through the political channels of the state bureaucracy, ITAM graduates were excluded from the highest levels of power. But in an emerging system in which the most important site of political networking was increasingly the planning and banking bureaucracies, ITAM graduates could become more influential.*

Here, it is important to dissect the evolution of the UNAM economics program and that of the ITAM. The Bank of Mexico supported both programs, yet the universities environment followed different routes after the 1970s.

As a result of the 1968 student movement, Echeverria's government let the activists take control over the National Autonomous University of Mexico (UNAM). As a result, the UNAM economics program became radicalized and ideological, as Babb (2001: 152) notes:

> *Echeverria's administration may even have deliberately used the UNAM as a safety valve for political discontent, allowing students to take over UNAM programs like that of the School of Economics was a less costly alternative to having them demonstrating in the streets or organizing guerrilla movements in the country (…). The political climate of the UNAM was the most important reason for its failure to stay in line with international methodological trends in economics.*

Along with this presidential decision, the Mexican state began the promotion of what was later called *centros de investigacion de excelencia* (or elite social research centers) financed by the recently created National Council of Science and Technology (*Consejo Nacional de Ciencia y*

[32] Also see Hernandez Rodriguez, 1987; Camp, 1980; and Centeno, 1997

Tecnología or CONACYT).[33] Among these institutions, the government created the Economic Research and Teaching Centre *(Centro de Investigacion y Docencia Económica* or CIDE) to continue the high-quality education officials for the government, along with the 1965 economics programs at the El Colegio de Mexico.

During the 1970s, the ITAM replaced the UNAM as the main source of talents in the Bank of Mexico. It followed a very similar pattern to the one established previously by the UNAM:

> *Three ITAM graduates who were able to enter the Banco de Mexico early on were Gustavo Petricioli,[34] Miguel Mancera,[35] and Francisco Gill Diaz.[36] Through teaching part-time classes at their alma mater, these ITAM graduates were able to help new generations into public-sector careers. Government officials who had graduated from the UNAM, but whose distaste for the radicalization of the UNAM program drove them to give part-time classes at more congenial institutions also helped ITAM graduates into the financial bureaucracy. A particularly important ITAM recruiter was Leopoldo Solis, an UNAM graduate who subsequently studied economics at Yale and became director of the Banco de Mexico's Department of Economic Studies. ITAM graduates mentored by Solis included Pedro Aspe[37] and Francisco Gil Diaz. As a result, during the 1970s (as UNAM was losing ground) ITAM graduates were able to acquire a firm foothold in the Mexican government* (Babb, 2001: 169).

---

[33] President Echeverria also created the *Universidad Autonoma Metropolitana* (UAM) and fostered the development of regional universities throughout the country. Lopez Portillo followed this policy. It is important to say that this was the last decade in which the state had widely invested in the promotion of infrastructure or education in Mexico.

[34] Finance Minister of President Miguel de la Madrid's government from 1986-1988.

[35] Bank of Mexico Director from 1982-1997. He renounced after Lopez Portillo decreed the Bank Nationalization of 1982 as a protest, and he was replaced by Carlos Tello for 90 days. He reassumed his position in December 1982.

[36] He was Finance Minister of President Vicente Fox' government from 2000 to 2006.

[37] He was Finance Minister of President Carlos Salinas' government from 1988 to 1994.

According to Babb (1998) the Bank of Mexico was involved in the development of the ITAM economics program. The Bank participated and funded the creation of the institute, which was created by major Mexico City's business groups that were unhappy with the governmental vision of UNAM economics. As it turned out, Bank of Mexico officials promoted essentially what Babb (1998) labels "an American-style program" to gain future generations of foreign-trained technocrats that would then direct the key developmental institutions in Mexico–including the Ministry of Budget and Planning (SPP)–in the 1980s and 1990s.

> *"The role of the Mexican central bank in the internationalization of the ITAM economics program constitutes powerful evidence of the domestic legitimacy of international standards of economic expertise in Mexico at least within the "organizational field" of central banking*" (Babb, 1998: 14).

These new officials pushed a sort of generational leap. They were all men who had arrived in senior positions in the late 1980s, particularly during the term of President Carlos Salinas (1988-1994) in their late 30 and early 40 years of age. This fact contrasted the norm of previous governments that stated that officials would reach these positions by their late 50s or early 60s. The foreign-trained technocrats displaced a complete generation of officials by the late 1980s. Although this new generation of officials having been politically socialized in the traditional developmental institutions of the government, and took power in the mid-1980s, displacing the more developmentalist, "old-fashioned" men.

3.3 About Embeddedness

One of the difficulties of the current explanations of state/business relations is that governments and government officials have constitutional terms, or at least follow some particular rules for administrative renewal. In contrast, economic elites tend to keep their positions for longer periods of time, and their renewal is regulated internally. Families usually control businesses and these follow some different patterns of change. While governments exist for short periods of time, business people may hold positions for unspecified periods. This temporal dimension is a key point of embededdness, because state and businesspeople must coincide in dealing with different time frames in the realization of common objectives.

During the 20th century, the Monterrey Group for example–one of the most important Mexican business groups–followed two different stages. The first was their inception and consolidation during the Diaz dictatorship at the beginning of the century. Their first leadership renovation in the 1930s also coincided with the transformation of the development strategy during the Cardenas government. In fact, it was a period of confrontation in the relationships between those business elites and the government (Saragoza, 1988). The second renovation took place in the 1970s. This was an extremely confrontational period of the relationship with the state (Heredia, 1992; Hernandez Rodriguez, 1988; Arriola; 1988).

Major business reorganization came about in 1973, leading to a questioning of the leadership of the Monterrey Group's as the commanding clan over the business community of that city. This was solved during the structural reform of the economy in the 1980s, when the state suggested that the number of families in the Monterrey Group be widened in order to include the ten most important businesses of the region, thus making them valid interlocutors of the state (Vila, 1994). The three different periods of deep confrontation between the Monterrey Group and the state have always been explained by the reforming policies implemented by Cardenas, Echeverria, and Miguel de la Madrid. Indeed, we identified that conflicts might have come from the rupture of institutional exchanges, which had derived from the generational turnover in the control of the Monterrey Group. This fact seems to be misperceived in the current explanations of the most conflictive periods in the relationship between this business group and the state. The state was in fact lacking embeddedness with a key economic actor in the industrial scene. At the same time this turnover was an opportunity to reestablish it.

Analyses of corporatism in Mexico emphasize that businesspeople have been banned from politics because they have not been part of the corporatist structure of the PRI.[38] However, as we have illustrated in this chapter, the Mexican state created a structure to institutionalize its exchanges with businesspeople through developmental institutions such as the Bank of Mexico, Finance and Industry Ministries.[39] Maxfield (1990) and Babb (2001) have found evidence underlining the close interaction between the financial bureaucracy and the business community. Some other authors have also

[38] Luna, 1991; Luna, Tirado and Valdes, 1987; Maxfield and Anzaldua, 1987; Kaufman, 1988; Heredia, 1992; 1994; 1995.

[39] As a result of the 1977 political reform, businesspeople have enjoyed some quotas in the PRI, which has postulated at least 5 businesspeople to Congress since 1979. Businesspeople have also participated openly in PAN since 1977.

found close links between financial and industrial families and their business groups. *"In fact, the owners of the banks and the factories were often one and the same group"* (Haber and Razo, 1998:fn35; Heredia, 1992; Pozas, 1999). We use this evidence to describe state embeddedness on private industrial actors in the definition of industrial policy, as Kessler (1998: 41) notes:

> *When banks and manufactures are linked by cross-ownership and are even run by the same families, the interest of large industrial firms cannot be neatly separated from those of financial firms. Indeed, even the traditional struggles between domestic and international producers over exchange-rate valuation can become meaningless within an industrial structure in which the firms that sell the most abroad also buy the most foreign goods. In such an economy, when interest group policy stimulates exports only at the expense of more costly imported inputs, an interest group policy preference is not obvious*.

In our explanation of the relationship between the state structure and the private sector, we found it important to ask which actors affected these changes. Our analysis demonstrates that big conglomerates have dominated the Mexican market. Most of them were created during the dictatorship years and survived the revolution. Complete industrial sectors such as steel, cement, paper, glass, textile, beer, soap and glycerin, tobacco products, as well as dynamite and explosives were and remain to be among the most important industrial groups.

> *"If we extend the analysis to the top ten firms and check their identity, we find that it was the same group of people who had been there prior to, during, and after the revolution. In other words the revolution was not very revolutionary in this respect, since ownership remained concentrated in the hands of the very elite that it meant to dissolve"* [40] (Haber and Razo, 1998: 116) [41]

[40] Even if "the revolution of 1910-1920 did not destroy the landed class, it decisively weakened this class and set in train a process of official reform and–no less important–

Both the revolutionary state and the old business families were forced to work together in the new institutional context created after the revolution. The state did not begin with a clean slate to promote industrialization; it had to embed its actions on already established industries. Some of these old groups learned to work together with new businesses that had been developed from the 1940s onward. They grew in the market niches that had not been already occupied by old businesses.[42] The growth and consolidation of these new conglomerates resulted from a state policy that pushed the rapid industrialization of the country (Heredia, 1992).

The most important organizations that the business community settled to formalize exchanges among them and with the state have been established through specialized chambers, most of them founded in 1917. In that year, the confederation of industrial chambers, the association of Mexican bankers and the confederation of commercial chambers were created and became the valid interlocutors of the state. However, the industrial, financial and commercial organizations were controlled by the

---

unofficial social change, both of which undermined landlord dominance" (Knight, 2001:1986). Is this a page number? If not, you need one.

[41] This hypothesis was advanced in Cardenas, 1984; and Womack, 1991, as well as by Heredia, (1992).

[42] Haber et al (2002: 25-74) have developed a particular idea of backward and forward political integration between the state and business. Backward political integration is defined as institutional exchanges with private sector industrials and industrial organizations. Forward political integrations links politicians who, supported by state institutions, become entrepreneurs. This process, in their opinion, took place during the reconstruction of the revolutionary Mexican state in the 1920s. In fact, the development of this process of political integration easily matches with how the new revolutionary state embedded its actions with the private sector–particularly the finance and industry groups and families.

bigger–and usually interrelated–businesses in each sector, as Heredia (1992: 286) posits:

> *"The huge economic power of large-scale businessmen, along with their privileged ties with the commanding heights of the executive branch allowed them to control the bulk of the interaction between the Mexican business community and the state directly. The vast mass of small firms whose emergence was largely made possible by a favorable investment climate depended on the arrangements worked out by big business and the government".*

Big businesses have controlled the representative structure of the private sector and the state. They won a fundamental role on the influence, definition and implementation of policy due to the high concentration of the market. They have effectively pushed small and medium industries to follow their developmental guidelines inside the frame of their own exchanges with the state. In a way, this created a pattern in which mainly the interests of big business had dominated state embeddedness. This pattern was not fundamentally affected in any of the three periods treated in our study. The most important decisions made by the state in the promotion of industry were negotiated with those sector leaders and transformed into policies for those specific sectors. Gaining the support of these groups to redirect the economy towards favorable development goals was enough for the state. Big businesses would therefore be able to pull small and medium enterprises towards a new industrialization strategy.

The dominant role enjoyed by big businesses can be explained by the autonomy these in turn enjoyed from small and medium industries. In a sense, Mexican big businesses have always been highly vertically and horizontally integrated, and they have also been inextricably related with the private financial institutions. These characteristics assured them a relatively cheap flow of capital and reduced their dependence on actors outside their businesses, affording them a very advantageous position in the domestic market (Pozas, 2002; 1999; Maxfield, 1990; Heredia, 1992). The reform of the state reinforced business autonomy, as state withdrew its participation, conceding its place to private producers, without imposing enough regulations. In the middle of a political transition, this made the government end up trapped and having a very limited capacity to act, as we will show in this thesis. The result is a pattern of interaction in which new actors–such as political parties and Congress–affect policymaking in an incoherent way.

In conclusion, the involvement of the state varied according to the policy paradigm that the state was using to foster development. While these policy-transitions took place in an authoritarian state apparatus, contestation came from different agencies of the government. When the political system began to liberalize, the government found difficulty for reaching consensus among different socio-political actors, that will be described in the next chapter. The second part of this thesis will also document the state's continual attempt to protect the domestic business groups as the source of domestic capital. The evolution of state/private sector relationships in the petroleum industry was affected by decisions and political institutions constructed in order to sustain the state's authority, splicing together two policy paradigms. In the second part of this thesis, we will offer evidence for this argument and we will reinforce the idea that the state was trapped in protecting domestic private capital above any other competing local or foreign interest, independently of the paradigm shift.

By the mid-century, the state consolidated a developmental bureaucracy, and with it, the state began the ISI in order to concentrate state efforts in the consolidation of a domestic trajectory for development. Such a trajectory would be sustained on domestic demand and producers. The policy's objective was to foster both a national bourgeoisie and a market that would sustain the sovereignty of the country. In order to embed transnational investment in the Mexican market, ISI policies offered equal protection to local and foreign capital. In the 1960s the state offered preference to Mexican capital over transnational sources. A law forcing the association of foreign and Mexican businesspeople and making the domestic control of any venture mandatory was passed in 1963. With it, the state concentrated protectionist policies from industries to local businesspeople.

However, the state recognized the need to enhance the development model, increasing competitiveness to the over-protected industry in the 1970s. The goal became searching for self-sufficiency. By reinforcing the local trajectory of development, the state plan was to perform a blending of midwifery and husbandry roles that would foster an exporting capacity. The first definition of this new policy took hold in the Industrial Development National Plan (PNDI, Spanish acronym) of 1979, thus leading industry to invest in EOI production. The new revenues coming from export would let domestic industry finance its future growth autonomously. This would have required a gradual shift in commercial policy, which did not arrive. The main policy agencies began to ping-pong from protection to liberalization. Gradual liberalization was negotiated in 1970s but it was never realized. Mainly due to two economic crises in 1976 and 1982, the market was even more protected than before the attempted policy reforms. In the meantime, the external indebtedness that served as a financial source for the construction of exporting facilities became unmanageable. By 1982, the Mexican economy was highly indebted and the state found itself unable to offer adequate answers to the problem.

The consolidation of a coherent bureaucracy that controlled key positions in the government marked the end of the blockage in 1986. Relying on a new paradigm for policy-making, the state was able to offer both a new reading of the problem and *ad-hoc* policy solutions to the crisis. The Mexican economy shifted to an EOI, which implied the reinforcement of the midwifery and husbandry roles in order to increase the international competitive advantage for the industry. Both state officials and domestic industrial groups reinforced their ties, in order to adapt to the new circumstances. However, while the state was withdrawing from the demiurgic role–pushing an aggressive privatization program–state officials gave priority to national business groups to acquire public enterprises. In doing so, the state facilitated the reorganization of the domestic market and consolidated national champions. Those business groups would enjoy conditions for quasi-monopoly control of the domestic market, which the state used for protecting them from incoming competitors. Furthermore, the consolidation of national champions would also ensure business international competitiveness.

Indeed, the state did not alter the pattern of embedding its actions in the consolidation of a national bourgeoisie. It guaranteed protection from international competition to domestic producers once again, even while it liberalized the market. The implementation of the EOI strategy was undertaken, thus emphasizing the capacity of the Mexican state in providing private industrials with the possibility of maximizing their presence in domestic and international markets. In a similar way, the state came back to the EOI policy from which it had departed decades ago.

3.4 The years of the paradigm shift

The shift of the state development strategy in the mid-1980s was a result of the convergence of different trajectories of domestic transformation. Most of them took the state as the agent of change. In fact, this has been explained as a coincidence of different processes that began at roughly the same time and that evolved along a similar route. First, the old paradigm had a lack of answers to the problems of 1982 debt crisis that had become evident in 1986. This resulted in the search for an alternative solution that was slowly consolidated as a new policy paradigm (Thorp, 1998). Second, the consolidation of the power of a new generation of policy-making officials occurred. They were recruited and socialized in government agencies but trained in different domestic and international academic backgrounds instead of the UNAM (Babb, 2001). Third and finally, as the state chose a new commercial policy oriented to export, it pushed for the formation of coalitions that would support the long-term viability of its projects (Thacker, 2000).

The developmental-rational bureaucracy took control not only of the development agencies but also of the most important positions in Mexican politics during the 1980s and 1990s. This fact created a paradox: even if the state used a different paradigm to define policy, it kept following the same pattern of interaction with the private sector. This fact would ensure big businesses both the capacity to enjoy enough competitiveness to become players in the new export-oriented strategy, and enough protection from the risks associated with existing domestic conditions.

One interesting question posed by Babb (2001: 127) is: why has the authoritarian Mexican state let such an autonomous bureaucracy–as the one of the Bank of Mexico–develop itself? Her answer deals with two possibilities: the first one follows Sylvia Maxfield (1990), who argues that the overwhelming power of the private financial sector to guide state actions explains its influence on policies of the Bank of Mexico. Another alternative Babb gives is that the lack of control that the state has to impose strong financial controls on the economy is due to the fact that Mexico shares a border of two thousand miles with the US: it is difficult to establish real control on capital flight. Babb (2001: 128) affirms that, "i*n lieu of being able to implement exchange controls (as the devaluation of 1954 had shown), it made sense for the Mexican government to do whatever it could to prevent inflation and devaluation, including granting policy autonomy to the central bank.*" However, these theses ignore that by the mid-1950s, the central bank autonomous bureaucracy was at least 25 years old.

In contrast, the questions of this work deal with how this process of embedded autonomy took place. Instead of identifying which interests the state was following in its motivations, as elaborated by Maxfield among other authors, we have found that the Mexican state has shared a good deal of affinity with the private sector in the transformation of the country. The state has counted on an autonomous bureaucracy capable of insulating itself from society, and to define a national developmental agenda. Furthermore, this autonomous bureaucracy has always developed a permanent exchange with the private sector to execute a decentralized application of this agenda. Indeed, it was a coincidence of interests that transformed Mexico. This makes any question that asks in whose interest the state action is defined or whether the state is autonomous from the private sector, redundant. The state-business exchanges have been more characterized by collaboration than by conflict, especially when the institutions that had been created between 1920 and 1940, gained maturity during the 1960s.[43]

Our question thus follows: *Does state autonomy and state embeddedness explain the paradigm shift? And how did that transformation process take place?*

As it had done in the past, the state followed a very similar pattern to push the transition from ISI to EOI. In the 1980s, its first actions were to establish new legal frames to state action. A constitutional amendment in fact

[43] When we think about the question *from whom is the Mexican state autonomous in a reforming period?* The question can be tricky because interests vested in the state in previous historical moments would be able to veto or affect future state decisions. In this case, those ‘reactionary’ interests are not always economic or related to business; they can also be political or ideological.

created a new project for the state to give new rhetorical basis to the structural reform and justifying the state's decision to change, while keeping its predominant role in the direction of the economy.[44] The second stage was the establishment of a coherent government, which ended with a shift in the recruitment of officials (Babb, 2001). In fact, De la Madrid's government established a coherent government structure predominantly dominated by officials whose backgrounds came from the Bank of Mexico-Finance Ministry career paths. This change has been widely recognized by Camp, (1972, 1975, 1990) and Robert Kaufman, (1988). This phenomenon let the state return to the old pattern of coordination and control over policy-making and to reestablish its long-term relationship with societal groups. As SPP Ministers became Presidents from 1982 to 1994, the same technocratic teams kept control of key ministries in three consecutive terms, thus consolidating their paradigm vision (Torres Espinosa 1999).

The most important changes to policy began in the mid-1980s. The first change took place at the end of 1985 when Mexico formally submitted a bid to join the GATT. The second change came in 1987 when the liberalization of commerce became the basis of a wider economic policy intended to control inflation via the *Pacto* policy. The third stage of policy changes had to do with the privatization program within which the state redefined its demiurgic role. The withdrawal of demiurgic actions implied an extended program of privatization of public enterprises. This favored two

---

[44] We have already said that the constitution in Mexico represents the political agenda of the PRI rather than a legal constraint for state action (Zapata, 1990).

things: the reinforcement of domestic integration of business groups economically, and the attainment of political support from the private sector. The reshaping of the most important domestic business groups facilitated the husbandry role when the state began to reinforce Mexican international competitiveness. In fact, the whole reform process was assured because these actions allowed the state to continue the traditional protection it had granted to domestic business groups.

How was it possible that the state was able to promote internationally competitive private industries in the middle of a crisis and in such a short period of time? The years of the oil-boom have normally been presented as a waste of resources on the part of the state. The influx of capital in the Mexican economy came from external debt, and this was widely accepted. This period was the last in which the state made important investments in infrastructure. However, along with the mushrooming of state-owned enterprises, the state wrote plans to let private industrialists build exporting facilities. These exporting facilities laid the foundation of the future export-oriented model.

Chapter 4. The petroleum industry in Mexican history and politics

One of the most important sources of conflict during the consolidation of the Mexican Revolutionary State was the public challenge from the transnational corporations (TNC) already exploiting oil production in Mexico. The TNCs did not recognize the authority of the state's institutions, and they were unwilling to accept the new definitions of national ownership of sub-soil resources in the fourth paragraph of Article 27 in the new Constitution. The conflict lasted 20 years until President Lazaro Cardenas unilaterally decided to nationalize the oil industry in 1938. Petrochemical production, as a sector of the petroleum industry, inherited this history.

In the Mexican developmental tradition, state-owned enterprises, such as Petroleos Mexicanos (PEMEX), were used to attract and promote the development of entire industrial sectors, such as the petrochemical one. In Mexico, being a latecomer to the production of petrochemicals, the state fostered an integration strategy in which it played a demiurgic role while substituting itself for the private sector in the first production stages of the petrochemical chain.[45] Within this sector, the nationalized oil industry played a pivotal role when channelling significant resources to foster expansion. As the embedded autonomy approach would predict, the state concentrated on producing the basic raw materials, encouraging private industry to become

---

[45] According to Chapman (1991: 40) first-comer petrochemical industries, as a contrast, developed the know-how and in some cases the opportunistic use of oil as a raw material to pull a forward integration of the petrochemical market.

involved in production later along the production chain. The state thereby structured a domestic petrochemical sector.

This chapter's objective is to trace the emergence of Mexico's petrochemical industry from the nationalized oil industry in ways fostered of a mixed private/public petrochemical industry marked by nationalist policies.

4.1 Petrochemicals Origin

Petrochemicals are a branch of the chemical industry. Its distinction – and hence its name – is its dependence upon petroleum-based raw materials (including natural gas). Petrochemicals are involved in the production of many final products and therefore, must be identified by the initial rather than the final product. For this reason, this is considered a strategic industry in most countries.

The petrochemical industry resulted from the development of organic chemistry in Germany, and most of its basic uses were developed during the 19^{th} century. Coal was the most common raw material rather than oil. Its massive expansion is accounted for by the switch from coal to oil and natural gas as the basic raw materials during and after World War II (Chapman, 1991: 14).

Petrochemicals often appear to be an "invisible industry", because most of them are marketed within the chemical sector itself and they belong to different industrial chains as well. As a consequence, they cannot be measured at the final household consumer level, as computers or cars. Rather, it is necessary to estimate the proportion of the output of various sectors derived from petroleum in industrial classification schemes. This is relatively easy to do in the plastic or synthetic fibres sector, but quite difficult in the automobile industry, for example (Chapman, 1991: 34; Mattar, 1994). In 1987, the US International Trade Commission estimated that approximately 14,000 different petrochemicals had achieved commercial status (Chapman, 1991: 23).

Most petrochemical products are derived from a few building blocks. Approximately 85 per cent are ultimately derived from just two groups of basic petrochemicals–the olefins and the aromatics. The olefins include ethylene, propylene, butylenes, and butadiene; the major aromatics are benzene, toluene and xylenes. The operations of the industry involve linked and sequential processes. These make it possible to distinguish among primary or basic petrochemicals, petrochemical intermediates, and final petrochemical products. The manufacture of base chemicals is the first stage in the conversion of raw materials into petrochemical products (Chapman, 1991: 23).

The commercial structure of the world petrochemical market is highly concentrated. Integration began in Germany, the United Kingdom and France, when coal was still the major raw material. The names of three of the major German firms making up the IG Farben Cartel (*Badische Anilin und Sodafabrik, Farbewerke Hoechst and Farbenfabriken Bayer*) are associated with the birth of the industry. They manufactured synthetic dyestuffs. As Hohenberg (1967: 58) states:

"While many countries were still using the various gaseous and liquid products of coke oven operations as fuel for their iron and steel industries or in street lamps, German chemists were already well along in converting coke oven by-products into chemicals of various kinds. One result was the structuring of a highly concentrated world market based not only on size, but also on the concentration of technology and know-how"

Expansion of the chemical industry relied mainly on technological developments, capital mobility and integration. The custodial role played by the state was fundamental in the development of this industry. However, all countries did not play that role in the same way and with the same success. For example, Hohenberg's (1967) comparative study of the first years of the industry shows how the custodial role played by French state affected negatively the development of its industry. Patent law and restrictions on university research led the most important industrial chemists to leave the country and head to Switzerland and Germany.

In contrast, Germany's domination of the international chemical industry until 1914 can be attributed to more state involvement with the private sector and the promotion of scientific research, at least in part. This fostered the innovation, which was so fundamental to the expansion of the sector. The talent of individual scientists, such as Justus von Liebig and Fritz Haber also played a part, but as Chapman (1991: 41) emphasises:

"the pre-eminence of the chemical industry of the newly unified German state was not a result of a fortuitous concentration of scientific talent, but rather a consequence of deliberate policies designed to foster and exploit such talent. These included state support for higher education and the creation of a social climate sympathetic to industrial and applied research. This research took place in both academic institutions and the laboratories established by the German dye companies in the 1870s and 1880s. These laboratories were the forerunners of the research and development centres, which have

> *become a standard feature of the organization of contemporary industrial research. It was in such laboratories that the next series of technical advances relevant to an understanding of the origins of the petrochemical industry"*

The petrochemical industry was among the first, perhaps the first to develop knowledge-centred firms. Indeed, the entrepreneurial factor was secondary in the development of the nascent industry, although it evolved later into a manager-corporate form of organization while the scientific leadership was displaced. However, the state played a pivotal role in fostering scientific research and connecting it with industrial development all the way through. First in Germany, and later in the Americans' war effort of the 1940s, states supported the development of basic technical capacities for producing high-level knowledge to meet the needs of the firms. It was the combination of an expansive custodial role and the support of scientific research, which explains the advantage gained by Germany (Hohenberg, 1967: 65; Chapman, 1991; Spitz, 1988).

During the first decade of the 20th century, American companies began to explore the production of chemical products derived from crude oil. The United States developed the most important petrochemical industries during the interwar period. The change from coal to oil reduced raw material prices dramatically and led to an integrated and strong American industry.[46] Counting on its own research teams–most of them educated in German

[46] This was also facilitated because once the Germans lost the Second World War; Americans led specialized groups to investigate all the scientific research used by Germans. Actually that gave them access to all technological innovations of the industry and facilitated their technical and scientific lead in the development of the American industry.

universities–the American industry's access to technology and integrated production contributed to the concentration of petrochemicals worldwide.

4.2 The Mexican oil industry

Oil exploitation in Mexico began in 1901 during the dictatorship of Porfirio Diaz (1876-1911). Transnational corporations from abroad, mainly to export oil from Mexico, developed the industry. In order to foster its development, the President allowed all kinds of duty free imports on machinery and equipment, taxing the companies only with a stamp tax of about 10 percent on exports. Further than that, during the dictatorship the mining law was transformed. After its independence in 1810, Mexico continued the colonial tradition that granted the ownership of the subsoil first to the Sovereign and later to the nation. Colonial mining regulations had given concessions to private parties to exploit the surface territory, but it never allowed a concessionary to own the subsoil. This tradition continued until President Porfirio Diaz dictated the first mineral law of independent Mexico in 1884. This legislation allowed the state to grant the ownership of the subsoil to concessionaries so as to exploit minerals and oil. Then the Petroleum Law of 1901 enabled the government to concede public lands to operators of oil fields. The 1909 mining law reaffirmed the right to the subsoil to those concessionaries (Silva Herzog, 1963; Meyer, 1972: chapter 1; Grayson, 1980: 9).

This way, the President granted a huge degree of autonomy to foreign companies in order to develop the sector. The exploitation of this natural resource took the structure of an *enclave,* and the only benefit Mexico received was the salaries and taxes. The permissive stance taken during the dictatorship resulted in the export of almost 90 per cent of oil production in 1916.

However, such favourable conditions did not last. According to Womack (1991), the pressure for political reform intensified in the first decade of the 20th century. The power invested in the person of President Diaz had sustained his government for 30 years, but he was already over 80 years old. After his re-election in 1910, an insurrection exploded in the country on November 20th. Diaz left Mexico seven months later, leaving a provisional government in place. New elections were called; Francisco I. Madero was elected.

However, neither oil companies nor some foreign governments were particularly satisfied with the result of this process even though the removal of the dictator implied opening the country's affairs sufficiently to let them gain influence in the definition of policy that worked in their favour. Madero's government did not represent an important shift of the previous conditions, nor better opportunities for new political or economic actors. In addition, the new government was unable to keep the tight political control of previous years, thus increasing competition between competing interests that were trying to influence the government in their favour. "*The most troublesome conflict was over oil, American, British, German, French, and Mexican rivals and customers lobbied almost as roughly against each other*" (Womack, 1991: 130).

After a couple of years of unstable government under Madero, the US ambassador in Mexico, Henry Lane Wilson, promoted a *coup d'État.* The new president and vice president were assassinated and Wilson signed the so-called "Pact of the Embassy" in which the US recognized (and installed) Victoriano Huerta as President. US Marines guarded both the Mexican Coast and its main ports during these years. They even landed in Veracruz and Tampico (the two most important ports in the Gulf of Mexico at the time) in order to protect American oil interests. Oil companies financed local insurrections and paramilitary organizations on their own, in order to protect their installations (Womack, 1991). Eventually in 1917, the revolution came to an end, when the fighting factions agreed the Constitution of 1917.

Of the main groups fighting among them to win control of the country (*Zapatistas, Villistas, Carrancistas, Obregoncistas, Huertistas, and Maderistas*), the north-western one known as "Sonora branch" led by Alvaro Obregon, won and took control of the state, forming a nationalist elite and promoting autonomous Mexican development. The oil industry quickly encountered problems with this new elite, whose developmental agenda was designed to reduce dependency on the foreign direct investment favoured by the *ancien régime*. This government would target domestic capital as the engine for the development of the country and would force the transnational corporations exploiting oil to recognize the nation's rights over sub-soil, overturning the permissive concessions given under the long dictatorship. The immediate result was conflict over mineral rights (Meyer, 1973: chapters 3-4; Knight 1991).

Conflict between oil firms and the state began as soon as the new elite took power, and the Constitution was passed on February 24, 1917. The 4th paragraph of the 27th article reiterated the nation's right to sub-soil property. Indeed, it subordinated the interests of private property to those of the national interest. The rejection of the Anglo-Saxon tradition of private property allowed the Mexican state to claim both the representation of the nation and the definition of the public interest. According to its own conception, the state was the only one capable of expressing the will of the community.

The regulations forced oil companies owners to accept four principles: the authority of the Mexican state to define property rights; the state's authority to proclaim policies for exploitation, commercialization, exploration and drilling of oil; the need to subordinate their private interests to those of the Mexican nation; and finally, what they had previously considered to be their property, was in fact only a concession.

In an industry dominated by foreign companies, such an emphasis on the national interest was unlikely to be accepted easily. The foreign companies deemed the retroactive application of new regulations as an issue of no consideration. At the end of 1924, the capital invested in the oil industry was estimated at 800 million pesos; 57.5 percent of it was American, 26.2 percent English, 11.4 percent Dutch, and only 3 percent Mexican (Meyer, J, 1991: 225).

These political changes certainly had consequences for the Mexican oil sector. According to Jean Meyer, in 1921 Mexico was second in world production and oil represented 76 percent of its exports. From 1921 to 1927, production and exports fell by 72 percent, which included a drop of no less than 42 percent in the last year (Meyer, J, 1991: 204-206). However, it would be a mistake to attribute this entire decline to a boycott of the new state, as the Mexican government itself did. There were several technical and economic as well as political reasons for this contraction. During the civil war, foreign companies had ruthlessly exploited the wells to the full extent of their capacity, sometimes even destroying them. The new borings were less profitable and the companies, who were also angered by state policy towards them, transferred their investments to Venezuela, which by 1927 actually surpassed Mexico in output.

The companies also refused to adapt production to the domestic market, as the Mexican government pushed them to do. A major structural change was underway: nearly 35 percent of the 1937 production was domestically consumed, contrasting the 10 percent that this aspect represented only 20 years before. Of course, oil exploitation and use figured in the government development strategy.

> "*The six year plan, [elaborated for the presidential campaign in 1934] envisaged the creation of a state oil company, PEMEX and the exploitation of new fields, which the oil companies seemed reluctant to undertake. Such moderately dirigiste intentions were entirely consonant with post-revolutionary policy, which had generated successive confrontations–and compromises–between the government and the oil companies*" (Knight 1991: 279).

After two decades of conflict, a labour problem gave the state an excuse to nationalize the industry. Oil workers had begun organizing unions at the beginning of the 20th century. In 1935, workers – with the support of the government – moved to create a unified, industry-wide union and to negotiate a single collective agreement that would give Mexican workers the same rights and advantages which foreign workers in the oil industry already enjoyed. This mobilization created an *in crescendo* conflict that finished with a Supreme Court intervention.

Faced with the Court's judgment in favour of equal treatment of Mexican workers, the oil companies called on their own governments to intervene militarily. Such actions forced President Lazaro Cardenas to issue an ultimatum. The companies must respect the Court's decision. When the companies rejected this ultimatum, Cardenas decreed oil nationalization on 18 March 1938, proclaiming that: "*We would burn the oil-fields to the ground rather than sacrifice our honour (…) the ambition of the foreigner is at an end*" (Knight: 1991: 282).

Indeed, Cardenas decision involved not only the nation's right to its natural resources, but also to defend Mexican institutions and workers' organizations confronted by any reactionary interest. This struggle marking the birth and subsequent establishment of the public company made the oil industry an icon of Mexican nationalism and sovereignty. The oil union gained a special status, not only because it represents a strategic sector but also because it became a special associate to the state in the management of the industry, as we will see later.

4.3 The American factor and the reinforcement of nationalism in the oil industry

In the 1930s, the domestic chemical industry in Mexico was almost non-existent. Mexico has had some foreign and domestic chemical industries since the beginning of the 20th century. Firms such as *La Luz, La Corona, Beick-Felix-Stein, and Química Michoacana* along with *Colgate Palmolive, IG Farber, Bayer,* and *Celanese* have been involved in the production of soap, paper, artificial resins, textile fibers, pharmaceuticals, pesticides, and explosives (Bucay, 2003: 29). Most of these products were marketed by foreign corporations and were mainly imported from the United States, Germany, and Britain involving little domestic manufacturing before being sold in Mexico.

While American and British interests dominated in the oil industry, Germans controlled the pharmaceutical, textile, and fertilizer production. During the first decades of the 20th century, German companies controlled the chemical and pharmaceutical markets of Latin America.[47] Bayer and Schering were established in Mexico in 1914 for the distribution of a wide range of products. Since 1926, *IG Faberindustrie*–the world leader of the chemical market at the time–integrated Bayer into its conglomerate, and established cartel rules with local producers, thus controlling markets and affiliates on the American continent. IG Farben alone held over 50 percent of the prewar chemical and pharmaceutical market (Taylor, 1984: 148). They had an interest, of course, in reducing the United States' pressure on Latin

[47] By 1913, Germany accounted for 88 percent of the world production of dyestuff and was far ahead of its rivals in synthetic drugs, flavors, and fine chemicals: a situation that was not very different once the Second World War began in 1939 (Chapman, 1991: 40).

American states to nationalize their industries as much as possible. The Second World War changed this situation.

According to Taylor (1984) and Schuler (1989), as soon as the Second World War erupted, the United States began to put pressure on Mexico and Latin America's governments in order to gain control of the chemical industry in the region. It was an overt aim of the United States to reduce the power of Axis interests in the hemisphere. The United States influenced industries and companies in Latin America to include them in the *Proclaimed Lists,* and to force their nationalization.

The Proclaimed Lists began as a United States initiative to force the nationalization of German interests acting in the American market. However, the United States also called upon Latin American governments to do the same in order to acquire German interests throughout the hemisphere. After the nationalization of German industries, the United States wanted Latin Americans either to destroy or auction them in the public market–along with their patents and technology–ensuring that American corporations could appropriate them. Americans gained both access to highly demanded raw materials in time of war, and the technological know-how developed by Germany, which had been the world leader in the production of chemicals to that point.

As a reaction to American actions, Germany pushed Mexico to protect its factories and distribution assets. Germany was the only country that did not join the boycott initiated by Great Britain and the United States, providing the technological support in developing the Mexican oil industry.[48] For these reasons, the first action Mexican authorities took was to accept the transfer of assets to German entrepreneurs already naturalized as Mexican citizens such as Felix Stein, who acted as the *de jure* owner of the main German enterprises. For example, according to Schuler (1989), IG Farben used this strategy to avoid nationalization as Farben was recognized as a Mexican business.

The second action Mexico took was the nationalization of the rest of the chemical industry in 1941. Schuler (1989) assured that if the Mexican state had acted according to the American plan, Mexico would have had to opt for either destroying the physical installations or auctioning them in the public market along with the German patents and technology already registered for German use. Instead, Mexican officials decided to keep them as part of the nationalized chemical facilities, giving Mexico full control of the companies and their technology.

> *"By an accident and avoiding an unnecessary conflict with the German government, the Mexican state got control of a vital industrial sector. Indeed, when the Mexican government continued the operation of the IG Farben subsidiaries under Mexican direction, it assured itself the control of that sector keeping the United States out of the business"* (Schuler, 1989: 59).

With the exception of Mexico and as a result of the American's Axis Replacement Program, American companies took control of almost all the

[48] The Mexican government increased its sales to Germany, Italy and Japan substantially in 1938 and 1939. A year after Mexico's oil nationalization, the Axis countries purchased 65 percent of all Mexican oil exports. Silva Herzog (1941, quoted in Barbosa, 1992: 192 and FN 8) contributes that transactions established with Germany, Italy and Japan "*did not consist merely of exchange but also included deals for boat building, and, within a few months hard currency*."

chemical and petrochemical markets in Latin America after the Second World War (Taylor, 1984; Schuler, 1989).

The Mexican government gave a big push to develop a national chemical industry counting on German technology and patents; PEMEX managed the nationalized part of these industries, as established in the first chemical law in Mexico. However, as a consequence of both conflicts – one that was derived from an American boycott of Mexico during the oil nationalization of 1938, and the other that resulted of the Axis Replacement Program in Mexico – Mexico and the United States have forged good reasons to mistrust each other in issues related to the petroleum industry.

As a corollary of these two conflicts, the Mexican state has performed a restrictive custodial role in the petroleum industry, extending it to the chemical and petrochemical sectors. Accordingly, the 1941 Chemical Law constrained private actors from participation in the industry. As the technological shift from carbon to oil gave rise to the petrochemical industry all over the western hemisphere, which had appropriated German technology, the Mexican state had no choice but to increase demiurgic actions in order to encourage a national petrochemical industry. PEMEX played a double role: a state-owned strategic industry and an agency that was meant to support the growth of the petrochemical sector. PEMEX double function reduced foreign private influence, especially coming from the United States, in petrochemicals, in a moment when the government's goal in Mexico was to increase the ISI and to reinforce a domestic trajectory of development.

4.4 The petrochemical sector before 1958 – rising out nationalism and corporatism

The oil industry became one of the most important of the nationalist icons. For the same reasons, the state had to grant a great deal of influence to the *Sindicato de Trabajadores Petroleros de la Republica Mexicana* (STPRM, or the Oil-Workers Union of the Mexican Republic) in the administration of the sector. The union leadership has enjoyed this influence on any state policy related to oil production or manufacturing, even if the union position was subordinated to the state's decision. Private actors needed time to gain negotiation capacity.

According to Alan Knight (1992: 106-114) the expropriation of oil was more an emotional matter than a purely economic one. First, it guaranteed–both internally and externally–that Mexico and its institutions were independent from any external power. Second, it granted the presidency, the charismatic leadership that it needed in order to defend the Mexican nation and its sovereignty. Third, it gave the state a new capacity to mobilize massive support against any form of "imperialist" influence in Mexican affairs. Finally, it represented a political doctrine of national unity that went beyond the politics of local factionalism, which was a dominant characteristic of the political landscape at the time. For many years, the legitimacy of the state has relied on this symbolism. Part of the oil union's power comes from this imagery;[49] the other part is the control over workers in a strategic industry.

---

[49] Even today, positions *vis a vis* any reform possibility in the petroleum industry stresses nationalist sentiments over the economic reasons that would justify a more rational

Concurrently, the union also enjoys practical and material sources of influence that allow it to affect the state decisions over the definition of petroleum policy. PEMEX has been the most important taxpayer in the country since the end of the Second World War,[50] the provider of highly subsidized energy throughout the country, and a corporate contributor to both human and financial resources for the PRI. Since its beginning, the union has also been a nation-wide industrial entity that assembles the exclusive affiliation of the totality of PEMEX's labor force, basing its political power on the number of members and on the geographical areas it represents.[51]

The union has also been a member of the Council of Administration of PEMEX since the company's creation in 1939. Situated at the origin of the conflict that led to the oil nationalization in 1938, the union's influence on the administration of PEMEX has been profound. As Adler (1992: 129-153) has studied, the local councils of the union administered the 17 different companies that had been nationalized, until the government decided to establish a central administration for the industry and to consolidate one

---

exploitation of the sector. On the side of those who oppose to changing the status quo, the emotional part of the story–related to nationalism, sovereignty and anti-imperialism–is stressed, while reformists stress mainly the rationality of this measure..

[50] Morales (1992: 218) notes that, "taxes and transfers to the government also represented a significant percentage of company expenditure, and PEMEX thus became the country's leading taxpayer. Between 1947 and 1957, PEMEX paid 5.2 billion pesos in taxes and other payments, which amounts to roughly a fourth of the total government income for that period. The transfer of "petropesos" to the state became a strategic item in the financing of public expenditure."

[51] From 1938 to 1971, the oil union represented the rank and file personnel of PEMEX. During the Echeverria government (1970-1976), the President agreed that most professionals, technicians, and other white-collar employees should join the STPRM. The influence of the union in the running of the oil industry grew even stronger as these individuals advanced to important managerial positions (Grayson, 1980: 51).

single company. After the decision to create PEMEX in July 1939, the state granted the union with four out of nine places in the administrative council of the new company.[52]

The autonomy enjoyed by the union began to fade in 1940. Adler (1992: 147) posits that in the difficult negotiation of a collective agreement in 1940.

> *"…the federal commission for Conciliation and Arbitration suit against the union, marking a fundamental change in the relations between the government and the union, and signified the end of any real worker participation in the administration of the nationalized oil properties (…) The union emerged from the conflict without a collective contract and without the possibility of modifying the existing administrative or legal structure of the industry (…) By the end of 1940, the workers had no further possibility of increasing the union's participation or creating a labor administration in the petroleum industry".*

Morales (1992: 226) adds that the year 1946 marked the end of the union's autonomy (along with the consolidation of an authoritarian state and almost autocratic presidency).

> *"The biannual revision of the collective labor contract became a barometer of the relative strength of company and union, a question that was more clearly defined at the beginning of the administration of Miguel Aleman in 1946. In view of the tough negotiations–which were postponed because of the presidential changeover–over the collective contract in the summer of 1946, the union called a strike in December, to put pressure on the newly established government. The response of the new president was blunt: military intervention in oil installations, and the dismissal and replacement of union leaders. The blow to the*

---

[52] From 1938 to 1971, the six governmental appointees would be made as follows: two would come from the Finance and Public Credit Ministry; three from the National Economy Ministry; and one from the National Petroleum Board. Under the reform of the PEMEX's organic law in 1971, naming of the members of the board of directors was the President's discretional decision (Morales, 1992: 231 and fn 49). The four union appointees would be chosen form each of the three main petroleum zones, while the leader of the union, which had rotated among the zones, would represent the fourth. The union counselors would hold a three-year term and would be elected from delegates accredited to ordinary conventions (Grayson, 1980: 87)

> *union was indicative of labor policy throughout the administration of President Aleman.[53] For the oil workers, these drastic measures were the culmination of a policy that had begun in the Cardenas' government, and that aimed at counteracting the power and militancy of the union".*

In spite of the state's intervention in union affairs, a collective contract between PEMEX and its workers was finally established in 1946, thus increasing the managerial capabilities of PEMEX. The administration gained the right to reduce personnel, transfer workers more freely, and sign contracts with private firms for projects unsuitable for union labor. In exchange, the union kept the right to organize cooperatives that would serve as contractors for pipelines, refineries, offshore drilling, roads, schools, or any other project which PEMEX itself elected to avoid. Additionally, under this agreement, any private company working for PEMEX was forced to hire unionized members. (Grayson, 1980: 25). Morales (1992: 226) adds that,

> *"The powers conferred to the union proved to be functional to the objectives set by the state: to control and discipline the labor force, to contain their wage claims, and to turn the union into a vehicle for advancing, rather than obstructing the integration and development of the industry".*

Morales (1992) goes further as to assert that the managerial capability of the general director of PEMEX draws from his relationship with the President. However, it also derives from the skills of each individual, his

[53] During Aleman's presidency, the state won control of unions through the imposition of sympathetic leaderships in the most important union organizations. The most authoritarian state structure took hold by the end of the 1940s. It does not mean that the union lost influence on the future definition of energy policy, but the influence of the state became more important inside the organization itself (Knight, 1991).

contacts and support, within and outside the company. The exchanges established with the STPRM (the oil union) are vital.

After the 1950s, PEMEX held a low profile in political terms. According to Philip (1999: 38),

> *"Directors-General were given significant autonomy in managing the agency but kept out of other political roles. Between 1946 and 1976 not one Director General failed to complete his full term, and only one (Reyes Heroles who was not significantly eligible to be president of Mexico due to his foreign parentage) moved on from the Directorship of PEMEX to top political appointments elsewhere. Even then, his promotion to cabinet was not immediate. The technical and economic record of PEMEX was mixed. The company was efficient enough to avoid disaster or major scandal, but it operated as a largely closed community with self-imposed limitations".*

In conclusion, during President Aleman's government (1946-1952), the state was in full control of PEMEX, consolidating PEMEX as an industrial actor. Even if the oil union is a very powerful political actor until today, most of the leadership controls on workers–from clerical to professional levels–were dependent on the PRI and the President. PEMEX's directorate was not used as a political career self-promotion either. By the mid-1950s, PEMEX was ready to play a role as a state agency in order to support the industrialization plan of the government.

4.5 State organization of the oil industry

Beyond the political institutions of corporatism, to understand the role of the Mexican state, and particularly the ways in which it has ensured its relative autonomy *vis à vis* internal as well as external social forces, it is necessary to understand the importance of the nationalization of the oil industry. This nationalization is much more than a simple question of ownership; it is also a source of national identity and therefore a key state resource.

As we have seen, the nationalization of oil set up a new company, which changed the direction of the pipelines, redirecting them away from the coast to the main cities and permitting an aggressive promotion of private industry. Nationalization also aroused nationalist sentiments and ideologies against any form of foreign intervention in the management of Mexican natural resources, institutions and social organizations.[54] Perhaps, the most important result was that it patterned the consolidation of the nationalist paradigm, whose main goal was to create an autonomous and prosperous economy, and it situated the state as the instrument to do so.

It took 20 years to gather the 17 private companies that were nationalized into PEMEX. During that time, the nationalized oil sector was used to solve short-term problems. As PEMEX had to outline the new management of the company, the demand of educated professionals and technicians that were able to manage petroleum technology increased. The first years after the nationalization were full of desperation because there was inexperience in managing the industry, joined with the scarcity created by the American-British boycott, the international war environment and the challenge to integrate different companies into one single conglomerate. Most importantly, the public oil industry had to be at the center of the state

---

[54] For the implications on oil nationalization see: Knight and Brown (1992); Morales, (1988); Grayson, (1984); Meyer (1973).

promotional policy in order to support the government's industrial transformation plans. PEMEX played a mayor role in Mexican industrialization and in the creation of specialized research centers to manage the company.[55]

The goal was to guarantee access to cheap energy supplies, and *Petroleos Mexicanos* (PEMEX) became the cornerstone of industrial development. The state's commitment was to build a single company that would follow social objectives rather than speculative ends, and in doing so, an unwieldy labour-management structure was created.[56]

---

[55] The world chemical industry consolidated with a unified vision gained with the creation of chemical engineering schools, a fact that was also influencing for the Mexican Industry. According to Bucay (2003: 28), in 1913 Juan Salvador Agraz asked President Francisco Madero for support to establish the first National School of Chemical Industry. As the revolution exploded, the school was finally established on September, 1916 with the support of President Carranza. It offered careers such as industrial chemistry, and industrial practices with specialities like textile dyeing, essential oils, plastic resins, food and sugar. The new technicians found it difficult to find jobs in the small Mexican market, which was used to engage technicians, formed "empirically" from their practical work in Europe. In 1926, the school had specialized laboratories and produced ether and soap. The school was consolidated in 1927, when Etanislao Ramirez joined the directive board, restructured the career plans to offer industrial chemistry, chemical engineering, pharmacy-biologist chemistry and metallurgic chemistry, and engaged professors as Alberto Urbina, Antonio Guerrero, Jorge Martinez, Pascual Larraza, and Alfonso Graff, creating research areas lead by Ernesto Rios, Fernando Orozco, Manuel Lombera, Rafael Illezcas and Ricardo Caturegli in the field of synthetic hormones letting Mexico to lead the world's market until 1970. This educational structure took 25 years to be consolidated, and coincided with the rapid industrialization of the late 1940s and 50s. Bucay (2003: 29) goes on as to assure that "the crucial element of fostering process [chemical] industries was the oil expropriation. Yet petrochemical industry would not begin until 1960s. The necessity to operate the refineries abandoned by foreign technicians and the need of raw materials for the industry, Mexico could no longer get due to the international boycott, which forced young Mexican new-trained technicians to make a great effort to dominate the productive process and reduce Mexican dependence from foreigners". The period in which the chemical school reached its consolidation coincided with the push the state gave to ISI policies.

[56] Instead of making PEMEX a worker-run company, President Cardenas granted the union four of nine seats on the board of directors. A collective agreement to resolve labor conflicts in the 1950's assured the union 2 percent of the revenue of all oil sales; 2.5 percent of the value of any contract private companies received from PEMEX to construct oil infrastructure; and 40 percent of exploration, exploitation or drilling contracts. Such rights became established and were renegotiated in subsequent collective agreements, reaching their peak during the oil boom years (1978-1981). While the union sometimes used this money to finance illegal activities, it also used it to develop its own companies. PEMEX also granted contracts to private companies, sometimes in a shady fashion. In both cases, however, the

The state's aim in fostering the production of petrochemicals – from 1930 to 1950 – was meant to sustain labour-intensive industries such as agriculture and textiles. As part of the ISI strategy, the state needed to increase the domestic production of chemicals in order to replace the growing imports of dyes and fertilisers with national production.

In the period going from 1930 to 1940, the Mexican government tried to establish a joint venture with German producers in order to advance in the development of domestic production. During the government of President Cardenas, the production of fertilizers and dyes were a state's priority, so the state sought to promote a technological association with German producers. In 1937, a few months before nationalizing the oil industry, Cardenas invited *IG Farben* to establish a venture to develop a fertilizer plant in Mexico. The project was interrupted a few months later, because Cardenas nationalized the oil companies in March 1938. With this action, Mexico gained control of the industries, including the contracts, projects, patents, and technology already used in the sector; before moving on to other activities, Mexico's government had to learn how to manage the petroleum industry: a fact that demanded a great deal of human and financial resources, negotiation and skills from the Mexican officials.

After all these nationalizations, PEMEX faced the lack of confidence of international investors and a financial boycott imposed by the U.S. and Great Britain in the international market. This made acquiring technology, marketing

---

final result was a linked network that developed oil technology in Mexico (Brown and Knight, 1992; Morales, 1988; Grayson, 1980).

oil or accessing fresh financial resources, difficult. An analysis from the American government (GAO/US 1991a: 8) asserted that from 1938 to 1955

> "*the world petroleum industry reacted to the expropriation by boycotting Mexico's oil industry. Mexico was limited in its ability to sell its oil to foreign customers and buy energy equipment and technology from foreign suppliers.*[57] *Consequently, Mexico's new national industry was forced to rely on its own resources.*"

This created an atmosphere of heroism for an industry on which the autonomous development of the country has relied since then. However, this nationalist dimension of the oil industry is a mixed blessing. Each time PEMEX tried to establish joint ventures with foreign companies, persistent contestation from various nationalist groups (PEMEX technicians, labour that was already affiliated to a single union, the party, and some sectors of the government) undermined such efforts. The fear that private actors, especially foreign ones, would threaten the nation's sovereignty and exploit its natural wealth to their own benefit constantly appeared.

These nationalist feelings delayed the development of petrochemicals. Mexico acquired know-how and physical installations for the industry from Germans, would have facilitated to continue the development of a petroleum sector on its own. Mexico was in a position to develop a national industry and change its position in the world's economy, from a net exporter of raw materials to a source of domestically produced industrialized products.

[57] One of the dark chapters of this story is that President Cardenas decided to sell oil in exchange of technology to the Nazi government in order to get rid of the international boycott. This fact is ignored from history books but remembered in *Los años con Laura Díaz* a novel by Carlos Fuentes (1999).

However, nationalist voices reduced Mexico's potential push as pressures to increase petrochemical production rose during the 1950s, when the decision to enlarge ISI was taking hold.

During the mandates of Presidents Miguel Aleman (1946-1952) and Adolfo Ruiz Cortines (1952-1958), the Mexican state sought to attract foreign investment into the domestic market. Policies to facilitate foreign companies installing themselves and developing whole industrial sectors were in place. The car industry was one example. In other cases, the state promoted joint ventures to attract technology. In the oil industry, President Aleman signed contracts for exploration and drilling with some foreign companies in exchange for a percentage of the oil produced. [58]

Therefore, it was not surprising that a similar experiment was put to the test for the petrochemical industry. Responding to a growing domestic demand for petrochemicals, PEMEX tried to develop a first project with DuPont[59] in the second half of the 1950s, but it only resulted in conflict and opposition from within Mexico. This plant was never established because of the pressures exerted by the nationalist sector of the government. The only

[58] Details on Meyer, (1973: 459) and Morales, (1988: 25).

[59] Morales (1988: 29) states that PEMEX's Director-General Gutiérrez Roldan negotiated a joint venture with Dow Chemicals Co. to develop a petrochemical plant. The accord was that Dow would keep 35 percent of the capital and would invest 150 million US dollars, giving PEMEX the control of the plant, the administration and the technology. Phillip (1982) assures that the accord was initiated with DuPont. The project was aborted for the same reasons than the previous agreements to associate with international corporations.

investment made in the sector was done in 1951, involving sulphur production (Morales, 1988: 29).[60]

Nationalists denounced the agreement with Dupont as reactionary. PEMEX was accused of falling back on promotional actions that would reinforce dependency on foreign investors and would return to the policies implemented during the dictatorship years before the Revolution. Such an agreement contradicted the nationalist project of some branches of the revolutionary elite. Since then, that portion related mainly to the nationalist and most traditionalist sector (Morales, 1988: 29). But it would also have threatened the vested interest that the oil union might have had in the new industrial sector. The uncertain boundary between the oil and the petrochemical industry allowed the union and nationalists to join forces and press for the development of the last one, as part of the publicly controlled oil conglomerate. Conflict over *how* to develop the petrochemical branch resulted in a delay of almost 20 years, from the 1940s until 1958.

As a result of pressures exerted by nationalist groups, the state was forced to adopt a restrictive custodial role in petrochemicals, in which development was restricted to the state sector. A second amendment related to oil to Article 27 of the Constitution was enacted in 1958. It granted the nation not only exclusive right to produce and market oil, but also to explore,

[60] Sulfur is a basic ingredient in fertilizer, and the government was trying to promote agricultural development at the time.

drill, transport, *and* transform it.[61] This amendment significantly reduced any role that the private sector had and ensured a prominent pace to the development of state-led companies. This decision paved the way to the energy policy defined during the Stabilizing Development program in 1958 which is the material for the next chapter.

4.6 Conclusion

The 1938 amendment to the oil section of Article 27 of the Constitution declaring nationalization, granted the state only the right to produce and market oil. As it was established, this article left the possibility that the state might play a permissive custodial role open, allowing state officials the option of establishing joint-ventures with foreigners and domestic investors to drill, explore, transform, transport, acquire, and produce technology.

As said before, the world's petrochemical industry was undergoing consolidation at the same time that the oil industry was nationalized in Mexico. The American industry was consolidating a development pole in the Gulf of Mexico by the mid-1940s. The most important Mexican oil deposits are also situated in the Gulf of Mexico, and this geographical proximity might have brought about integration and technology transfer from one country to the other. However, the political conditions for doing so have proven that it is unreachable mainly for historical reasons reinforcing Mexican nationalism and American mistrust.

---

[61] This decision also implied that Mexico would halt its efforts to become an important exporter of oil.

Before the Second World War, Mexico counted on a small chemical market driven mainly by transnational companies and small domestic producers. An as a response of American Pressure to force the Mexican state to accept the Axis Replacement Program, the first Mexican chemical law (1941) resulting from this conflict restricted the chemical production to the state and included it in the newly acquired petroleum interests along with the German chemical assets and technology. The nationalization of the *IG Farben* facilities represented the reduction of the influence of American, British, and Dutch multinational corporations on the Mexican state, and its capacity to recuperate control over its national resources (Schuler 1989: 45).

Despite such conflicts, by 1958 the company had become one of the most important sources of autonomous financial and energy resources, supporting the promotion of midwifery activities. Conceived as a public-service enterprise rather than a rent-seeking one, PEMEX's demiurgic activities let the state supply the market with subsidized energy and gas. PEMEX also supported the creation of new industrial sectors granting strategic raw materials in order to link manufacture chains. PEMEX has been an important source of taxes, and an autonomous source of foreign currency. Besides being a public owned industry, PEMEX acted also as a development agency, until 1987, providing the base for the development of another sector: petrochemicals.

Chapter 5. The Mexican petrochemical industry – emergence and institutionalization

The birth of the Mexican petrochemical industry was marked by the state's demiurgic role in an era of strong economic nationalism. The overwhelming participation of the state made PEMEX take the role of an industrial actor, as a promotional agency and as the symbolic flagship of Mexican nationalism. As an industrial developer, PEMEX grew after nationalization to be one of the foremost public-owned industries in the world. This assured the Mexican government control over a strategic sector and one of the most important industrial developers in the country. PEMEX, as a promotional agency, helped to funnel private investment into new projects and to persuade private investors follow PEMEX's product-supply programs. Being the symbol of national unity, PEMEX made the state come to contemplate petroleum development as a central component of a sovereign industrial strategy. The petrochemical industry was one of the few industrial sectors, which remained strictly under the control of Mexican interests, although foreign corporations provided the technology and the knowledge.

As with most industries in Mexico, the oil and chemical sectors began to develop at the end of the XIXst century. British, American and Dutch companies were dominant in the oil industry, while Germans controlled chemicals and petrochemicals. Oil was pumped and exported to refining plants abroad; foreign corporations acting in Mexico imported chemicals in bulk, and packaged them to be sold domestically. However, the consolidation of the revolutionary state made the Mexican government desire to alter this picture by trying to reduce external influence on the industry of the country, since the 1920s. The goal was to promote ISI, attracting both foreign and domestic capital to embed it in the Mexican market. This policy goal changed in the 1960s, when industrial policy changed from protecting the industries settled in Mexico to shielding Mexican businesspeople, as a strategy to reinforce autonomy of Mexican development (Cárdenas, 1998).

This chapter deals primarily with the first phase of Embedded Autonomy in the petrochemical industry that from 1958 to 1973. After offering a short history of the petrochemical sector prior to 1958 and the assignment of basic petrochemical production to PEMEX, this chapter describes the main state efforts and policy to attract domestic investors into this industrial sector. The state offered to protect them in order to consolidate a Mexican-led petrochemical market. In this period the major role was played by state through two different organizations: PEMEX, the agent of the state's petroleum policy, and the petrochemical commission, the state agency to exert state's planning, leadership and control over the nascent sector.

5.1 Setting the developmental policy pieces in place

The debate over when and how PEMEX should have begun producing petrochemicals came at the end of the 1950s. This happened when PEMEX finally gained access to international loans, and Antonio Ortiz Mena, Finance Minister, decided the government would assume PEMEX's accumulated debt in order to let the company with a clean slate to support the new stage of industrialization (Ortiz Mena, 1998: 43). Ortiz Mena transformed PEMEX debt into bonds and forced PEMEX to ask the Finance Ministry for authorization before engaging in any credit with the international financial system (Ortiz Mena, 1998: 43).

The availability of fresh resources would finish with the financial astringency PEMEX has lived for almost two decades. PEMEX decided to embark on the domestic production of petrochemicals in 1959. Before that, the 1958 and 1959 petrochemical legislation established restrictions on the private transformation of oil. Philip, (1982: 344) assures that "*this decision (…) marks the end of a long and angry struggle behind the scenes. Private enterprise in a number of countries, particularly Italy was hopeful that PEMEX would leave that facet of the industry to private capital.*"

After a two-decade long dispute, the main decisions that created the legal basis of the petrochemical production were taken in November of 1958. A day before leaving office, President Ruiz Cortines took the politically difficult step of increasing oil prices and amending article 27 of the constitution, enabling PEMEX to expand its participation from oil to petrochemicals. These actions let the incoming government[62] define the main lines for the future transformation of the petroleum industry: one, they paved the way for fresh financial resources for the creation of new productive sectors; two, the custodial role clearly established the limits and commitments of a demiurgic role and therefore, structured the vertical integration of the oil industry; three,

[62] The Stabilizing Development Period began with Adolfo Lopez Mateos administration (1958-1964), lasting two governments.

the state counted on the conditions to midwife the private development of the petrochemical chains, attracting private investors in the sector.

5.2 The main policy lines

After rescuing PEMEX finances, Lopez Mateos' government outlined the first national development plan, which assumed the promotion of an ordered industrial growth, accompanied of increased job creation, investment (public and private), productivity and export activities. The plan launched steel, construction of transport equipment, machinery, chemicals, paper and its sub-products, non-metallic minerals, and wood production as strategic sectors of the industrialization program. The strategy was to organize development policies establishing goals, ordering investment and encouraging the participation of private groups to advance economic growth (PEMEX, 1988: 308).

In relation to the petroleum industry, the plan included a major internal organization and the development of petrochemicals, which *"represents (….) the superior stage of integration of the nationalized oil industry"* (PEMEX, 1988: 319). Antonio Ortiz Mena, Finance Minister and head of the developmental bureaucracy mentioned on chapter 3, settled three objectives for the petroleum industry[63] in the Stabilizing Development Program (Ortiz Mena, 1998: chapter II):

---

[63] Ortiz Mena had also established a program to save PEMEX from bankruptcy and converted its debt into long-term bonds. This measure gave PEMEX financial capacity to continue operations. They also adjusted prices in order to reduce public subsidies along with an increased supervision of Finance Ministry over PEMEX administration. Gutierrez Roldan's

1. Promote the financial stability of the industry, increasing the prices of some products;
2. Verify the organizational structure of PEMEX in order to rationalize its administration;
3. Widen the ratio of processes from oil extraction to manufacturing, implying the development of PEMEX's basic petrochemical industry and the conditions for the private participation on production of secondary and tertiary petrochemicals.

As result, PEMEX was forced to be not only a development agency, but also a profitable industrial actor. The government named Pascual Gutierrez Roldan as PEMEX director-general.[64] As part of the developmental group, Gutierrez Roldan had pursued a career in developmental institutions and parastatal enterprises and he was seen as a technocrat with an entrepreneurial vision. He acted as General Director of Credit in the Finance Ministry, General Director of the public steel producer AHMSA, and the *Banco Nacional de Crédito Ejidal*. Because of his experience as financer and manager, he had the responsibility of making PEMEX a profitable company through: the reorganization of its internal organization, the implementation of

---

main goal was to pay much more attention to the financial balance of the company and less to the long-term planning of the oil industry (Philip, 1982: 344; Ortiz Mena, 1998: 43ss).

[64] In the second part of the Stabilizing Development Period (1964-1970) PEMEX General Director was Jesus Reyes Heroles and he was responsible for the long-term planning of the industry extending activities of exploration leading to the oil boom in 1974. He was also recognized for accepting traditional sectors pressures and finishing with all the risk contracts Gutierrez Roldan signed with foreign companies to realize exploring activities. Reyes Heroles had no previous experience in the oil industry and he was more a PRI-party bureaucrat and ideologue of revolutionary nationalism than a technocrat.

new strategies for exploring oil, the operation of a system of pipeline transportation of gas and oil, and the development petrochemical production (PEMEX, 1988: 319-322).

The nomination of an “entrepreneur” to take charge of PEMEX consolidated the government’s developmental group in the company’s administration. PEMEX’s Administration Counsel was formed with Antonio Ortiz Mena, Finance Minister; Rodrigo Gomez, Bank of Mexico’s General Director; and José Hernandez Delgado, General Director of *Nacional Financiera* (the industrial development bank). As we have presented on chapter 4, the three of them defined the industrialization agenda and controlled the core of the developmental bureaucracy and institutions.

Gutierrez Roldan defined the petroleum policy goals: assuring the future energy needs for the country, intensifying the exploration of new fields, drilling new wells, enhancing the pipeline structure, refining, and transforming oil into new products: petrochemicals. The aim was to establish settling PEMEX as a self-sufficient enterprise and replaced governmental subsidies with PEMEX’s own revenues, implementing a real-priced marketing policy and assuring PEMEX new long-term investments. Even if the general strategy included exports, marketing oil abroad was never a priority, because exporting oil would only take place after domestic demand satisfaction. Finally, PEMEX continued substituting imports in any branch related to the industry’s activities, such as nationally produced materials or the promotion of a national-buy strategy (PEMEX, 1988: 319-322). This way it would reinforce the national-led network of suppliers supported in the creation of new Mexican companies. [65]

5.3 Defining the players: custodial and demiurgic roles

Some government officials defined the production of petrochemicals as a *"superior phase of oil nationalization"* (PEMEX, 1988: 319). In fact, promoting the vertical integration of the industry as a result of the commitments of PEMEX' responsibilities as industrial actor and agent of industrial transformation implied the definition of the custodial and demiurgic roles.

The government defined the scope of the custodial role on November 21, 1958, when President Ruiz Cortines asked the Congress to approve a Law proposal regulating Article 27 of the Constitution related to oil. As it was a period in which Congress had no political power, the amendment was approved on November 29, and published in the official gazette the day after. Once in office, Lopez Mateos published an administrative decree based on those reforms on March 1959, known as 'The Petrochemical Law.'

[65] After the harsh negotiation of the collective contract in the mid-1940s described in the previous chapter, and in order to gain support from the oil union, in the 1950s Director-General Antonio Bermudez (who run the company in three consecutive governments from 1946 to 1958) granted the power to negotiate contracts associated with private Mexican individuals or to form cooperatives that performed the drilling and exploring activities themselves to the union's leadership. At a time in which the technological know-how and financial capacities were in the hands of foreigners (Morales, 1992: 210-211), this action was important to link local industries for the provision of industrial support. The decision to foster private and union-based industries at the local level would create a Mexican-led network of providers for the company's technical and service demands–which until then were too dependent on foreign technology.

The Presidential decree entrusted the government to manufacture petroleum products and to foster the vertical integration of the public-owned oil industry. The amendment reinforced PEMEX as a public state industrial actor *and* as an agent of development who was responsible for the support and attraction of private investment into petroleum industry. The decree assumed that "*the Mexican state must plan and guide the economy; reinforcing the social meaning and perspectives that oil and its derivatives should reach in the new horizons represented by the petrochemical industry*" (PEMEX, 1988: 314).

The petrochemical law divided the petrochemical industry in two domains[66]:

1. A basic one, including the conversion from oil, natural hydrocarbons, and natural gas to intermediate or semi-elaborate products, and

2. A secondary one, including the further transformation from intermediate and semi-elaborate products into final manufactures and consumers.

The new law restricted the secondary transformation to private producers, while the first chemical transformation of oil–to prepare basic petrochemicals–was PEMEX' exclusive domain. PEMEX defined a first list of products to be manufactured in the following years: ammoniac, base to fertilizers production; Polyethylene and Polystyrene, base to plastic production; Dodecylbencene, base for detergents; Butadiene and Styrene,

[66] One should remember that international standards define basic 8 building blocks derived from aromatic and olefins chapter 4. Secondary and tertiary petrochemicals derive from them.

used in the production of rubber; Sulphur, used in the production of sulphuric acid (fertilizers); Acetic acid and acetic anhydride, ciclohexane and xylem, used in the fabrication of synthetic fibres; Acetone, used as solvent; and Phenol, used in the production of plastic, ethyl chloride and ethylene chloride. PEMEX first list included 16 products and was publicized in April 1960 in order to attract private producers in these areas; by 1967, the basic petrochemical list included 45 products (PEMEX, 1988: 314; Snoeck, 1986: 20-21). The list disseminated PEMEX' planned production in order to guide private investment in the widening and integration of the chemical industry.

Defining basic petrochemical products by law as the first 'important' physical or chemical transformation of oil, and the secondary petrochemicals as 'subsequent transformations' had, at least, three results: first, the industry was artificially structured on a private/public division of the petrochemical market; second, it determined the vertical integration of the public petroleum production from the wells to the first step of manufacturing; and third, it misstructured the industrial chains in public and private steps of production altogether. Even if the state defined the law discretionally, the state's goals were to consolidate the private investment in the industry and to assure an industry owned by Mexican nationals.[67] Although this regulation was widely

[67] The petrochemical industry that was already established in Mexico was under foreign control, and could operate because applying the new petrochemical law retrospectively was unconstitutional. However, in the moment that a company tried to grow or diversify its production, the company was automatically forced to sell part of its assets to a Mexican producer, to fulfill law's requirements about Mexican ownership. The restrictions were very efficient when applied to new industries and created serious limits to already established ones. These limitations were extended to the whole industry by the Law of New Industries that had promoted industrialization and private investment for the whole industry during the 1960s (Bucay, 2005).

criticized,[68] it implied a step forward in relation with the 1941 law–formulated during the World War II–which established that the state must keep control of chemical production controlling at least 51 percent of the capital of any company acting in the market (PEMEX, 1988: 344).

The 1959 administrative decree related to petrochemicals was finished with any further discussion about private and public domains. In 1963 the regulations structured institutional changes inside PEMEX's management when Cesar Bautista–PEMEX's Refinery Manager–received an instruction to create a petrochemical division, specialized in basic petrochemical production, different from the refinery area that it had been manufacturing. The creation of a specialized area in PEMEX' structure gave a practical effect to the demiurgic role, while producers *"used to consider as basic any product manufactured by PEMEX, and non basic all the rest"* (Rodriguez, 2005).

Endorsing the nationalism that was guiding the petroleum policy, President Lopez Mateos assured that the best consequence of the Petrochemical decree emitted by his government was that

> *"foreign enterprises acting in the industry were forced to sell the majority of its assets to Mexican investors, a fact assuring the country that mineral production would never be in the hands of the speculative interest of companies dominated by foreign interests"* (quoted in PEMEX, 1988: 344).

---

[68] The main critics censured the state centralization of the production of basic petrochemicals because state substituted private initiative to acquire technology for petrochemical development through debt, granting a hidden subsidy to Mexican industrials. Other critics emphasized the fact that the regulations limited PEMEX to make the first transformation of oil, giving private producers the opportunity to benefit from the commercialization of future developments (PEMEX, 1988: 344).

Policy defined on a nationalist, rather than on a technical basis created an artificial division in the petrochemical market. The petrochemical chains were structured under the *proviso* that the basic raw materials were an attribution of the state, and secondary transformation were an attribution of private actors. Contrary to the tendency on the world's industry integration, the state pushed backwards the integration of the different industrial chains derived from basic oil derivatives in Mexico.[69]

PEMEX became the guiding agent of private investment. For, as Pani (2005) remembered,

> *"every time PEMEX announced new investments for the production of specific raw materials, it was automatically exercising a planning role and guided private investment to the products PEMEX was privileging to produce. It was extremely difficult–if not impossible–for the private sector producing supplies without counting on the assurance PEMEX would provided with raw materials."*

5.4 The Petrochemical Commission

A couple of weeks after taking office, President Lopez Mateos decreed the reorganization of the government, and created the National Patrimony Secretariat in December, 1958. The new ministry was responsible for crafting an administrative structure leading to the effective exercise of the nation faculties conferred by article 27 in relation to the use, exploitation, and

---

[69] In developed economies producers of petrochemicals impelled the technological innovations derived from oil transformation, and a forward integration of the petroleum industry. In this process, private producers absorbed the important investment demanded during the first stages of oil transformation (basic petrochemicals), granting profits from the forward production of high-priced petrochemical derivates; this structure of integration allowed producers to ensure competitiveness, profits, creation of new technology, and market positions in the world market assuming responsibility from the complete process of oil and natural gas transformation (Chapter 3).

management of natural resources. The ministry would supervise the operation and finance of all decentralized organizations and parastatal enterprises responsible for supervising national resources such as national water, mining and oil, among others (PEMEX, 1988: 318).

Horacio Flores de la Peña worked in this new ministry.[70] As Director of Administration and Inspection of Decentralized Enterprises and Organizations –middle rank bureaucrat– he was a technical member of the Petrochemical Commission, and he was responsible for the supervision of PEMEX' activities. Flores was a chief advocate of the nationalist vision endorsing the development of the Petrochemical Industry, when the petrochemical production was seen as *"[an industry] that promised to create what nature has forgotten to create"* (Rodriguez, 2005). People in universities, government and private sector perceived the petrochemical industry as *"a horn of abundance"* (Rodriguez, 2005) from which the development of the whole national industry would stand.

Flores endorsed the idea that oil would run out of importance in the long-term, and should be replaced by oil sub-products in the short-term. Therefore, in Flores' logic, the oil nationalization needed to be extended to the petrochemical industry, and as consequence, oil transformation into

---

[70] Flores had worked in the Ministry of Hacienda, development banks as *Banco Nacional de Credito Ejidal* and *Banco Nacional de Credito Agrícola*; he had a specialization in development economy and he was a taxi professor at UNAM (see chapter 4). He acted as National Patrimony Minister during Echeverria's Government in 1970-1976, marking the break from the developmentalist bureaucracy group. As part of the most radical branch of nationalist bureaucrats, Flores defended vehemently the vision of a state-led development, closed markets, protectionism, and no foreign participation in the industrialization of Mexico.

petrochemicals should be seen as the superior phase of oil nationalization. Some private producers such as Benito Bucay (2005) assured that

> *"[Flores] felt that the nationalist achievement reached with oil nationalization 20 years before, will be lost letting the industry follow its natural evolution [without state intervention]. Oil would lose importance and therefore, it should be replaced by petrochemicals. As petrochemicals were not subject to nationalization, the best policy should be to assure petrochemical development and growth nurturing 100 percent national ownership in any company acting in the sector. They considered petrochemicals as an extremely important industry as to leave it open to foreign investors."*

To lead the transformation from oil to petrochemicals, the Patrimony Ministry created an inter-ministerial commission formed by PEMEX, the National Patrimony Ministry, as well as the Industry and Commerce Ministry. Its responsibility was to midwife the production and demand of petrochemicals. Also, it was responsible for granting Petrochemical Permits to private companies interested in having access to the industry. Any player in the industry must prove they contributed market knowledge, investment capacity, business plans, production skills, and a justified necessity of basic petrochemicals. Every three to five years a producer needed to get a new permit or to renew an old one (Bucay, 2005).

The Commission studied all cases and granted or denied a permit discretionally. Pani (2005) remembers cases in which a producer demanded a permit to produce 30,000 tons of a product, and the commission decided the company could produce 60,000 tons; or the contrary, the commission assumed that a business could only have capacity to produce 15,000 tons, so it emitted, at discretion, the permit for smaller or bigger amounts than requested. The commission, however, only assured permits to companies with at least 60 percent Mexican ownership, a viable business plan, and technological partners–national, foreigner, or PEMEX (Bucay, 2005).

Midwifery activities began once an entrepreneur obtained a permit.

> *"A petrochemical permit granted the exclusive market niche for the production of a 'so-called' secondary product for a certain number of years, the possibility to renew the permit, access to raw materials with a reduction of 20% of the international price (…). Newborn industries also got protection from international and domestic competition, the possibility of growing and consolidate without worrying for competitiveness in their production. New industries got automatically cheap credits [from development banks] and fiscal subventions"* (Pani, 2005).

In brief, a petrochemical permit assured business with access to subsidized products from PEMEX and the full protection of the state.

The commission stipulated some conditions to approve the entrance of private companies. The most important were: the project would have at least 60 percent Mexican ownership; it would use the most advanced technology available; it would be settled in the most effective locality to marketing; and it would be able to export eventually. The state's control on permit emission facilitated planning on the demand PEMEX would be facing.[71] The state also had power over the definition of the number of players in every chemical productive branch, over the reduction of internal competition, and over the

---

[71] The national-ownership would be reinforced in 1974 when the Foreign Investment Law passed and it limited to a maximum of 40 percent foreign investment in petrochemical companies. The legislation previewed indeed the establishment of joint ventures in order to gain up-to-date technology to the sector. A foreign TNC could become embedded to the domestic market with those associations or through the Mexicanization Law. This last one established a grandparent clause that recognized some foreign companies already acting in the market, but limited any expansion unless it became associated with a Mexican counterpart holding a majority (for details, Bucay, 1992).

construction of protective barriers for newborn industries. The goal was to settle domestic production, ignoring how competitive the industry would be.

In this period, the commission was essentially under state direction, and it did not smooth the progress of negotiation between public and private actors. State officials regulated, planned, controlled, protected, and authorized which private actors would participate (Bucay, 2005, Pani, 2005, and Rodríguez, 2005). Even if the commission performed a midwifery role by promoting the birth of a national industry, it cannot be considered an embedded autonomy agency during this period. The Commission's role was to set out the direction and details of the industry. These policy positions did not result from private and public actors acting together, but instead came out to be a state agency creating the conditions for private existence. According to the producers interviewed for this thesis, the Commission's role evolved from a regulatory to a planning organism and the strategic actors passed from a passive to an active position. They even resorted to contestation when necessary.

The Commission did not define a particular policy or mechanism to lure private investors into the sector, nor was it "… *walking in the street or ringing doors inviting people to initiate them into the petrochemical business"* (Pani, 2005).[72] The Law of New and Necessary Industries of 1955 framed the promotion of new investment, but even if the Commission's goal was the promotion of the industry, its activities were more passively than actively performed.

[72] Ing. Carlos Pani, personal interview with the author, 23 November, 2005.

The Commission was, in Pani's opinion, reactive to private manifestation of interest to start a petrochemical business; it was only after some lobbying performed by private actors, that the commission emitted a permit. Permits were assured in a case-by-case basis, resolving the conditions to protect new industries afterwards. It is important to underline that the blending of promotional roles played by the state in this period granted private businesspeople free access to the most capital-intensive part of the petrochemical chain. Private petrochemical producers were established precisely in those parts of the chains where production was more affordable and better rewarded.

In 1959, PEMEX defined a plan to build ten plants, three of them to manufacture ammonia. The other seven would produce benzene, toluene, xylems (octoxylems, metaxylems, and paraxylem), ethyl-benzene, acetylene, styrene, butadiene, ethylene, polyethylene, ethyl clorure, and dodecilbencene. PEMEX's program gave priority to the state's aim to support agriculture, hence the production of fertilizers and synthetic plastic were on the top of the agenda. A second place was granted to import substituting industries; and finally, the program defined a particular interest in the private production of detergents, aromatics, alcohols, plastic and products derived from paper (PEMEX, 1988: 344-345).[73] From there, new private industries were established in association with PEMEX, financed by development banks such as *Nacional Financiera (NAFINSA)*, or by private banks. Even if it is too

[73] For a complete list of all the companies established by PEMEX, by itself or in ventures with private and foreign companies see (PEMEX, 1988: 345-350).

difficult to get particular detail of the negotiations, ventures, or conditions established with the nascent industries at the time, we found that through NAFINSA, the state associated with the private conglomerates to initiate companies such as Celulosa y Derivados (CYDSA) with the Monterrey Group, Viscosa de Chihuahua, and Montrose Mexicana (PEMEX, 1988: 344-345) consolidating petrochemical production into biggest business groups in Mexico, from 1959 until now.

The time passed by and conflicts erupted as the commission interfered into the final parts of petrochemical chains. As a joke, some businesspeople interviewed for this thesis illustrated this interference saying that after a few years the Commission tried to release permits to produce clothes, machinery, plastics products or even car parts only because, in their industrial origins, they were derivatives of oil, when the commission's only responsibility was to regulate access to the first and second stages of the chemical transformation of oil. State regulators tried to force producers in the final parts of the petrochemical chains to initiate the whole legal process to establish the company following the restrictions established in the petrochemical law as if

> *"by default, the commission had the responsibility to regulate and plan any issue related to the petrochemical and chemical development. Inside the Commission, and specially because of the personalities of the officials participating in it, [the Commission] began to evaluate the plans, lead the participants, or approve the goals for the whole industry, as if the private businesspeople were also part of the state"* (Bucay, 2005).

Pani (2005) remembers that the commission *"finished acting as the ethos of the whole industry, and established specialized areas for studying,* *revising, and analysing the international market, and along with PEMEX, [both agencies] conducted investment into the sector"* (Pani, 2005). These made the results of the petrochemical policy ambivalent. On one hand, the government succeeded in defining a policy which let to the creation of a national petrochemical industry by guiding, reforming, and/or creating institutions to support it, assuring public and private investments, planning the production of the sector, protecting infant industries, etc. The Petrochemical Commission, in this first period, was a space for planning, regulating, controlling, and facilitating the establishment of private producers. With the guiding force of the Petrochemical Commission, private actors began to be involved in the plans and goals that were defined by state officials in order to produce petrochemicals domestically. The seeds of embedded autonomy were being planted.

5.5 The Results

The blend of promotional roles performed by the state in order to initiate a backward-linkages state-led petrochemical industry shaped a political inertia of overprotection to both the union and private sector. Control of the industry is since then vested on the interest of all actors involved. Their main protective shield is nationalism. As Philips (1982:345) explains,

> *PEMEX's development of petrochemicals tied the company in, even more closely with the private sector, which was allowed to invest in secondary petrochemicals (with foreign interest allowed a maximum of 40 percent). It is likely that this connection provided a further reason for PEMEX to invest heavily in petrochemicals since the secondary sector, which had been defined as a national priority, also grew rapidly during*

this period (…). Moreover, PEMEX's own investment further stimulated investment in the private sector despite occasional recriminations from both sides to the effect that the other was holding it back through non-fulfillment of particular plans.

The importance gained by the petrochemical branch of PEMEX forced the company to make some institutional adjustments, by creating a specialized division in the organizational structure to produce basic petrochemicals, in 1965 (Philips, 1982:345).

The self-sufficiency target for Mexico stimulated investment rather than holding it back. Already by 1963, Mexican petrochemicals growth was described as spectacular, and between 1965 and 1970, 28 percent of PEMEX's total investment was in petrochemicals, which in 1970 provided 10 percent of total PEMEX income. There was no market constraint on PEMEX's expansion; the government simply prohibited imports of those products, which PEMEX produced. However, in order to avoid conflict with the private sector, PEMEX adopted a policy of pricing its output at international prices.[74]

The state also launched a technological research center to support PEMEX when it created the Mexican Institute of Petroleum (*Instituto Mexicano del Petróleo*, IMP) in 1965. This was an institution, dedicated exclusively to the research, teaching and development activities for innovating technology for the petroleum industry. IMP was conceived as the technological branch of PEMEX (Aboites, et al 2004: 14).[75]

[74] PEMEX was until 1990's unable to define local prices for its petrochemical products and has always defined them by international standards instead of by local production costs

[75] "Since its foundation in 1965, the IMP was conceived as the institution that would reduce technological dependence and, as a consequence, support to the development of the petroleum industry. The decree that created the IMP had multiple purposes: a) Doing basic and applied research; b) Developing disciplines related to basic and applied research; c) Educate professional researchers and technicians; d) Disseminating scientific research to its application in exploration, exploiting, refining and petrochemical technologies; e) Training

Domestically produced petrochemicals obviated the need for 60 million US dollars worth of imports during the first five years of private production, and over 350 million between 1965 and 1970 (Snoeck, 1986). The petrochemical commission approved the establishment of 365 projects in secondary petrochemicals from 1959 to 1976 (Mercado de Valores, 1978: 112). In 1965, imports represented 54 percent of the domestic production; by 1971 they had been reduced to 21 percent (Estrategia, 1976: 28).

Mexican production covering domestic consumption passed from 68.9 percent in 1964 to 89.6 percent in 1970 (Mercado de Valores, 1978: 261). From 1960 to 1970, the production of basic petrochemicals grew from 66 thousand to 1.26 million tons a year (in 1977 state production had reached 4.2 million tons) (Comercio Exterior, 1978: 545). While the private secondary petrochemical sector represented 26 percent of the production in 1960, it represented 43.5 percent in 1971 (Estrategia, 1976: 25).

On the other hand, the policy had at least six unexpected results:

First, the combination of custodial and demiurgic roles structured an artificial division between public and private actors in the petrochemical market. This division resulted in an overwhelming, yet legally sustained, demiurgic role of the state that was determined primarily by nationalism, and by the political will to create a domestic-led petrochemical industry that would reduce foreign influence in one of Mexico's key industries. In the long-term, this decision would inhibit the integration of the industry, reducing

---

clerical, labour and technical workers to manage petroleum and chemical industries (Aboites, et al 2004: 18) competitiveness in world markets, as we will see in the final chapters of this thesis.

Along with this, the nationalist principle guiding the petrochemical policy gave PEMEX an extraordinary responsibility. In centralized economies, the petrochemical industry–being part of state apparatus–created different specialized industries to provide the market with basic petrochemicals. For its part, the US market was developed on private ownership of specialized producers. In Mexico, it had been PEMEX, a single state industry, that had major responsibility for manufacturing a wide range of basic products necessary for the further production of chemical products (Bucay, 2005).

Second, the Commission assumed the regulation of FDI in the petrochemical industry, even if it was not part of its specific competence. Nationalism behind this policy did not imply a Mexican know-how or a real Mexican management of the industry. Even if the commission tried to assure the creation of companies of domestic ownership, most of the time, Mexican ownership was on the paper, not in the management. Mexican ownership in papers often let Mexicans with no knowledge of the industry as the exclusive producer of certain products, while the foreign technological associate managed the company.

Third, as a result of almost all the ISI policies, the state's demiurgic role guided private access in production, the midwifery role–expressed in Petrochemical permits that granted exclusive production and wide protection to industries–created a high concentration of private petrochemical companies.[76] By 1969, only six from 32 companies installed in the production of synthetic resins controlled about 60 percent of the production. From the eight companies elaborating celluloid and non-celluloid fibres, only one (Celanese Mexicana) absorbed 66 percent of the total revenues in the sector. In pesticides–without taking into account state-owned *Guanos y Fertilizantes*– only three companies controlled more than 40 percent of the national production (Snoeck, 1986: 27). The state's interest in promoting an autonomous agricultural sector titled the petrochemical production towards fertilizers and insecticides. The demiurgic activities, as a consequence, negatively affected the production of other basic petrochemicals that the market demanded.

Fourth, the functioning of the Inter-Ministerial Commission became a major concern for its lack of flexibility, involving three ministries and even the presidency. Not only was the bureaucratic procedure to get petrochemical permits slow, but also the discretional definition of basic petrochemicals became so heavy due to legal incertitude that it resulted in a disincentive for investment and technological innovation. This situation created a source of conflict between private producers and PEMEX any time a new product or technology was requested, because it eventually led to state participation in private domains, a fact that was highly contested. The contrary also occurred once private producers developed new technologies, reducing steps in

[76] According to Evans, this is not a bad result in itself, for the goal of the state would evolve to let the consolidation of national champions compete internationally and integrate small and medium producers as well in the process.

production and eventually producing basic petrochemicals for which PEMEX was meant to have a monopoly.

The functioning of the permits created corruption in the part of private producers the Commission could not control. The permits granted exclusivity and reserved specific production to a private manufacturer. The process began to divert its original goal when a person endowed with a permit went to the Industry Ministry to get the import permit of the product he was suppose to produce, arguing he needed to import it until the local production would take place. So, through different bureaucratic routes, she reaches both the exclusive production and the exclusive import of the same product, assuring profits without making any investment (Pani, 2005). The second problem was permitting black market, when a fictive industry existing only in papers but granted with a permit, would go to the market to offer the assets, selling all the rights to other producers (Bucay, 2005).

Third problem related to permits was that the Commission was releasing permits to products technically no needing one. As some producers took advantage of the permits, others began to fear to ask for one and opening the Commission space to hinder in the industry by granting permits to products even if they were not the second transformation of petrochemicals. As Bucay (2005) experienced in his own business: following the regulations in place, he established an industry to produce phenol, a sub-product of cumeno (both products to produce resins and varnish). He got the permission to get cumeno, a basic petrochemical produced exclusively by PEMEX. If the petrochemical law had been applied correctly, the commission participation would have finished there. However, when a client of his, a producer of phenol resins to produce varnishes asked for a permit to produce phenol resins, he got it. Bucay (1998, 2003, 2005) criticized the commission for acting discretionally and releasing permits interfering with the functioning of the industry going beyond its attributions, thus making the basic petrochemical list grow *ad infinitum* adding products needing no regulation.

Fourh, nationalist policies did indeed reinforce an industry owned by Mexicans, whether public or private entrepreneurs. Along with the influence granted to the union, nationalism has been an excuse to structure an untouchable set of interest and rent-seeking attitudes from all actors involved in petroleum production, which we will be describing in the following chapters.

Chapter 6. The Demiurgic State in Danger

During the years 1973 to 1986, the petrochemical industry in Mexico confronted three major events: the increased world oil prices as result of the 1973 oil embargo imposed by OPEC, the short-lived Mexican oil boom (1977-1981), and the 1982 debt crisis. Most analysts considered the fast development of petrochemical production during the 1960s as one of the finest achievements of the Mexican developmental bureaucracy, but shortly afterwards the 1973 world oil crisis altered the general landscape of the world's petroleum industry. The crisis generated scarcity of petrochemical products in the world market. The shortage of petroleum derivatives compelled Mexican petrochemical producers towards rationalized use, increasing collaboration between private and public manufacturers. As close collaboration turned into trust, embedded autonomy–which means that public and private producers are working together–smoothed the process in order to share initiatives to advance investment and rapid development for the sector.

The definition of shared goals in petrochemical production changed the quality of exchanges between private and public manufacturers, opening space for embedded autonomy to institutionalize. The state's main agencies, PEMEX, the Petrochemical Commission and the planning and banking institutions, settled goals, investments, and objectives with private industrials organized in the *Asociacion Nacional de la Industria Quimica* (ANIQ, Chemical Industry Association). The state and industrials' first aim was assuring Mexico's self-sufficiency by reducing the negative effects the international petroleum market instability had in the Mexican petrochemical industry, in a moment when Mexico had become a net importer of oil.

The picture for the petrochemical sector changed when the magnitude of the reserves that had been found in the Chiapas basin in the early 1970s became known. Mexico experienced an oil boom in the middle of the decade. Based on an expectation of growing revenues, the state encouraged a structural reform in the industry, orienting oil and derivatives to export markets. The state decided to re-orient PEMEX's growth as an export oriented industry and the new orientation spilled over to the rest of the industry late in the 1970s. The plan was to orient a new industrial capacity to export markets, and reach a self-reliant economy. Growing oil revenues would finance exports with the aim of consolidating the Import Substitution Industrialization (ISI) strategy. The policy fostering the fast growth for the petroleum industry stood on specific goals that were defined with major private players who felt ready to consolidate their position as national champions and become world players. The Planning Ministry and PEMEX gained a short-lived central position, displacing the more cautious Finance and Central Bank development program.

During this period, two structural changes took place within the petrochemical sector: the entire Mexican oil industry was reoriented towards export markets and the relationship between public and private actors in the sector moved closer to a form of embedded autonomy, as collaboration and trust increased. Public and private producers' goal was to reduce the vulnerabilities exposed by two very different crisis periods. Embedded autonomy was institutionalized via a new institution: the ANIQ set up an informal commission (known as *Comision* ANIQ-PEMEX) that included representatives of PEMEX and the private sector. It was meant to facilitate the exchange of information so as to address the scarcity problem. As the oil boom let the orientation of the industry to change, private producers associated with the state settled the goal to reorient the petroleum industry into exports. Then as the debt crisis appeared into the scene, the state and businesspeople were ready to survive through export activities. Then, part of the government strongly supported the structural reform of the economy luring the private sector into a development paradigm shift.

The end of the period included in this chapter *circa* 1985 shows a state in conflict. The 1982 crisis found a policy-shift plan midway, and clearly exposed the different visions key officials held for the development of the country. While some of them defined the crisis as a cash flow problem, temporal export programs took place to reinforce ISI development plans. Another group defined the crisis as the exhaustion of a development model, thus forcing a paradigm shift and the liberalization of the market, which in the petroleum industry would have implied the withdrawal of demiurge activities to give place to midwife private national champions and to husband international players. During 1982 and 1985, ministries' defending both positions made their offices design dissimilar plans to conceptualize the future development of the petrochemical industry according to their paradigm vision.

The goal of this chapter is to assess the changes lived between private producers and public officials, marked by greater trust and collaboration in the face of the three main moments marking these years: the international oil crisis, the oil boom and the domestic crisis. The different contexts transformed the state-producers' relationship, leading to petroleum and petrochemical industries structural reform, preparing them to exports. However the state's leading role was untouched even the paradigm shift scenario. The state guiding role has persisted as the guiding force of the petrochemical sector.

6.1 A sector in trouble

During the 1970s, many OPEC members nationalized their oil reserves and altered the existing conventions with oil companies, gaining a major say in the definition of crude oil prices in the world market. Prices increased ten-fold from 1973 to 1980, ending the availability of cheap oil characteristic of the 1960s, creating a major world crisis (PEMEX, 1988: 339).

As oil became scarce so too did petrochemical products. Petrochemical industries had grown rapidly around the world. High investment rates in the 1960s meant capacity surpassed demand. The industry's reaction was to reduce investment so as to create an artificial shortage. The problem became compounded in 1973, when the oil shock followed on two years of low investment. The combination of factors crafted a problem when world producers could not find new raw materials, translating demand into price increases and, at the same time, giving a boost to new investment. These external events obviously had consequences in Mexico as well.

Until the mid 1960s, PEMEX focussed on pumping already exploited fields. Indeed, PEMEX had developed the petrochemical industry by diverting resources from exploration. The impressive growth of the petrochemical industry had put pressure on PEMEX to increase oil production. In 1964, PEMEX was investing almost 25 percent of its annual budget into exploration.

Arguing that Mexico's autonomy was in peril, PEMEX Director-General, Jesus Reyes Heroles, strongly defended the large investment he had destined for exploration activities during the 1960s, a time when access to cheap imported oil was seen as an easier solution. The budget's increase in exploration was contested by some sectors in the government, who argued that Mexico should further take advantage of the cheap oil available in the world market. Reyes Heroles, reinforcing the nationalist position inside PEMEX administration, considered Mexico could jeopardize the basis of its sovereign development if the country began to rely on foreign resources to promote development. This decision would imply abandoning the nationalist attitude of self-determination, equating a sudden transition from import-substitution to import promotion.[77] Reyes Heroles was one of the masterminds behind *nacionalismo revolucionario (revolutionary nationalism),* the official ideology dominating the period going from 1970 to 1986.

As Morales (1992: 234-235) states,

> *"Nationalist principles continued to guide Mexican oil policy. Under Reyes Heroles, the principle that stated that the industry's autonomy*

[77] Another important decision Reyes Heroles made was to cancel all the risk contracts signed during the 1950s (PEMEX, 1988: Chapter VI) leaving out private investments on oil extraction.

> *was safeguarded by the control of resources gained new momentum. A nationalist emphasis became evident in two areas: first, with the cancellation of risk contracts signed during the first Bermudez administration [and] service contracts that proliferated during the administration of Gutierrez Roldan; and, second, in the development of the petrochemical industry (…). While it is true that with the cancellation of private contracts the government was laying down the boundaries for competition between private and public investment, the Directorate of PEMEX was also pointing out that the control of the oil industry remained in its hands in order to ensure the economic autonomy of the country. The demarcation of such boundaries in the petrochemical industry provides a further example of this".*

The intention to establish a self-sufficient oil industry became a policy goal during President Echeverria's administration beginning in 1970. However, it was the President's decision to continue the low-priced energy provision to the domestic industry until 1974, when the situation became unsustainable. That year Mexico had begun importing oil aggressively causing difficult economic conditions for both PEMEX and the state's finances.[78] With frozen domestic oil prices, the state through PEMEX increased the transfer of resources to the private sector, in order to keep the industry functioning in an over-protected context. The government aimed to avoid the economic and political pressures coming from a radical change in energy prices that would automatically provoke general price increases.[79]

---

[78] From 1971 to 1973, oil imports grew from 672 thousand barrels (tb) a year in 1971, to 10,776 tb in 1972, and 23,613 tb in 1973. In 1973, PEMEX only supplied 87.6 percent of the national demand. Mexico had become a net-oil importer (Morales, 1988: 35).

[79] The state was facing a major legitimacy problem by this time. The bloody solution to the student movement in October 1968 made the state decide to keep subsidizing the economy in order to reduce political challenges. The state tried to deal with the lost legitimacy through the increase in public spending, the widening of state agencies, and the co-optation of new social organizations to the state apparatus. Radical social movements – in the far right and far left – began to organize urban guerrillas, which the state violently repressed also. The so-called, *dirty war* in Mexico finished with about 300 disappeared persons. In 1977, the state decided to promote the first political reform that allowed mainly left-wing movements to

In order to restore rapid growth of the economy, President Echeverria's government proposed a shared development program that stood on public investment and expansion of state-owned companies. The state altered the blending of the promotional roles played until then and initiated a feverish custodial role increasing regulations in almost every sector in the economy, and settled increased demiurgic activities. Along with this, the state began to perform some midwifery actions that would facilitate the organization of business into holdings, the access to finance through stock markets, the concentration of the market in domestic players, and the obstruction of international investment in the economy with the approval of new FDI regulations in 1974.

Two of the most important–and failed–reforms that the government intended to create were those related to fiscal reform and commercial policy. The fiscal reform implied a gradual increase of state's revenues through taxes, which the private sector vetoed; the state opted to finance its activities through inflation and external debt. The second reform implied a gradual shift in commercial policy. Commercial authorities and business organizations agreed to a gradual opening of the market that would increase the international competitiveness of the industry. By the end of the 1970s, the Mexican market was expected to be open. The state's goals were both to support the consolidation of international competitive business groups–which

---

organize political parties and gain access to the Chamber of Deputies. Since then, the state promoted a gradual liberalization of the party system that has not resulted in the PRI relinquishing control of the country (Molinar, 1991; Loaeza, 1989, among others).

would be dominant actors in the domestic market–and at the same time, to increase public participation in production. In turn, this had two goals: to complement private investment in order to faster growth and to reduce the private sector growing influence that had been a result of midwifery and husbandry policies. Both goals would reinforce state's autonomy. However, Echeverria accepted the veto of key actors on the commercial policy shift as well (Cardenas, 1998).

Mexican economy finished in crisis by 1976, and the government signed agreements with the IMF. As all reforms that were intended, altered the state's relationship with the private sector, the key-actors refusal to alter *status quo* made the Mexican market become more protected than before the reforms were intended. One of the consequences of the failed reforms was that the state's developmental agencies lost coherence and the developmental consensus tore up. Therefore, President Echeverria decided to define macro-economic policy at will through investment in public sector production (Luna, Tirado, Valdes, 1987; Valdes, 1997; Cardenas, 1998).

Nevertheless, the most important private groups and organizations reorganized their structure, altering the industrialist leadership and the institutional affinity between public and private actors. The business community also promoted the creation of new umbrella organizations to prevent the growing influence that the aggressive demiurgic role was giving the state in the economy through the creation of parastatal industries. Industries and businesspeople mistrusted most of the policies entailing expansionist demiurgic and custodial actions, even if they were benefited from them (Luna, Tirado, Valdés, 1987; Valdes, 1997).

6.2 Facing scarcity: a new understanding in the petrochemical industry

While Mexico had become a net oil-importer from 1968 to 1974, the government concentrated its actions on increasing regulations and altering the institutional framework in which oil and petrochemical production had performed. A few weeks after taking office, President Echeverria pressed Congress to endorse a new law altering the organization of PEMEX. Despite this attempt to improve the company's administration, PEMEX's autonomy was still tightened when Echeverria transferred policy-decision for the petroleum sector from Finance to the National Patrimony Ministry (SEPANAL, Spanish acronym). The new Ministry became responsible for the future development of the industry, altering the control exerted by the Finance Ministry in supervising not only the oil policy and programming of future development, but also the company's finances.

As for petrochemical production, PEMEX continued the engagement of supplying the market with any product demanded. In some cases, private producers have gotten import permits for raw materials without considering whether PEMEX produced them or not (Rodriguez, 2005). Beginning the second half of the 1960s, those permits were restricted, and abrogated by 1968. As time came by, the petrochemical legislation hardened, and the most important control mechanism established in the law was voiding indirect access to raw materials, thus making PEMEX the sole provider, a decision persisting until 1986 (Rodriguez, 2005).

6.2.1 Custodial role and the Petrochemical Commission

In 1971, the state defined the production of petrochemicals as a priority for the first time in its history. The government promoted new regulations for the petrochemical sector in order to reach a *rational* control of the future growth of the industry. The new law tried to enhance the performance of the Petrochemical Commission reducing the procedures to issue petrochemical permits, and the ministries involved to issue permits, which needed the approval of three ministries and the President's office. In 1971, SEPANAL became the only institution responsible for issuing petrochemical permits and it was in charge of the definition of petrochemical policy.

The rules restricting foreign investment in the petroleum industry kept the same limits. However, in 1974 the government issued a new Law that meant to Regulate Foreign Investment, which according to businesspeople launched the most restrictive control over foreign investment in the petrochemical industry.

> *"The petrochemical [1959] Law was the first [regulation in the country] setting restrictions for foreign participation in the national industry [FDI was limited to a 40 percent of the stock]. The 1974 Foreign Investment Law restrained FDI for the whole economy, and reinforced the limits established for Petrochemical production in the first place. If the 1959 law restricted the expansion of already established foreign industries, the 1974 law restricted foreign access into the [national] industry absolutely"* (Rodriguez, 2005).

The new regulation sought to clarify the definition of basic petrochemicals and to establish a clear division between the private and public producing domains. However, private producers contested officials' decision any time a new product was listed as a basic petrochemical and restricted to PEMEX's production. SEPANAL reinforced the pattern that was established since the origin of the industry–even if PEMEX was facing a troubled financial situation–to ensure subsidized raw materials to the petrochemical market. From 1970 to 1976, the basic petrochemical list grew from 49 to 70 products (Snoeck, 1986: 53).

These regulations not only failed to solve the problems associated with the definition of basic and secondary domains, but also created new grey zones in technological innovations. As result of the 1973 oil crisis, the petrochemical industry was facing major technological changes. The main international producers sought to improve technology in order to compress production steps into cost-reducing and energy-saving methods. New Mexican regulations reinforced disagreements when either public or private producers tried to acquire advanced technology. Bucay (1991:25) argues that private industry was forced to depend on obsolete technology as long as it fitted the requirements of the law. By its side, PEMEX also had a limited use of the newest technology if it infringed on the private domain. Both situations were strongly contested.[80]

[80] The argument offered by the private sector can be ambiguous. The 1971 law granted the SEPANAL enough discretional authority in the definition of basic products. However, when the structural reform was initiated in 1986 to deregulate the whole industry, the state justified its actions in the same 'rigid law' defined in 1971. As a result of the deregulation, between

In spite of these troubles, the petrochemical industry kept its position as the most dynamic sector of the economy from 1960 to 1975. Since its birth, petrochemical production grew three times faster than the GDP reaching a rhythm of 17 percent a year. PEMEX's basic production grew 42 percent per year during the 1970s only. The petrochemical market also kept the concentration and specialization characteristic since its origin: 68 percent of PEMEX's production was concentrated in only four products: ammonia, anhydride carbonic, ethylene, and ethane (Comercio Exterior, 1978: 546).

6.2.2 New collaborative pattern: The ANIQ - PEMEX Commission

Two issues marked the petrochemical industry in the first half of 1970s: scarcity and collaboration. The canon was that any time PEMEX initiated the production of a basic product the secondary market would expand its production to the derivatives of that product. It was usual that the demand of raw materials surpassed PEMEX's supply capacity, and this demand was usually complemented by imports. The scheme became a problem as the world's petrochemical market collapsed as a consequence of the world oil crisis. PEMEX had its provision capacity jeopardized, as gaining access to imported raw materials happened to be complicated and unaffordable. The solution envisaged was settling a quota system that forced collaboration of private producers.

The idea of establishing a quota system resulted from a working group

---

1986 and 1991, basic petrochemicals were reduced from 70 to only 8 products without altering the petrochemical regulations.

formed by the National Association of the Chemical Industry (ANIQ, Spanish acronym) during the organization’s annual summit in the summer of 1973. The group, lead by Leopoldo Rodríguez, analyzed the situation and found that some chains counted with less than 15 per cent of its requirements to continue manufacturing. The group found it urgent to establish some criteria to define which chains should take preference for reaching PEMEX consumers and filling their demand. Rodriguez faced a huge fight with phonographic discs producers, for example, whose demand on resins was defined at a lower level than the demand coming from other industries using poly-chloride-vinyl resins; even the most benefited chains could not satisfy more than 75 percent of their raw material needs (Rodríguez, 2005).

With the aim of reaching the fairest accord possible to allocate the available raw materials amid private consumers, ANIQ and PEMEX agreed to establish a special commission to face the crisis. In October 1973, the ANIQ-PEMEX Commission began working on negotiating the distribution of raw materials within PEMEX and private producers together. ANIQ ‘helped’ PEMEX to find and negotiate imports of some basic products in the international markets, and if expected demand could not be reached even with imports, the Commission accorded the quotas that each manufacturer would get. The concentration of the market in very few producers facilitated the settlement of the agreement.

The commission worked until the mid-1980s. In Rodriguez[81] (2005) words

> *"Since 1966, PEMEX had performed its regulatory role of the industry by supplying raw materials. The [ANIQ-PEMEX] Commission played such and important role because for the first time we shared the responsibility with PEMEX to decide how to allocate raw materials within private producers. We accorded together how to supply not only PEMEX's production, but also PEMEX's imports, and this was a critical issue [to keep the industry working]"*

During this period, the Mexican market faced shortages even of toothpaste. The country became conscious of the vulnerability faced by the Mexican industry as a consequence of the international scarcity, feeding the nationalist feelings that have seen export-led development as particularly risky for the country's future. The problem was defined as Mexico have been affected not only as a result of the world crisis itself, but also because PEMEX investment had historically been unable to supply domestic demand of basic petrochemicals, ignoring the fact PEMEX was the sole provider since its creation in the 1930s.

ANIQ proposed Mexico should achieve autonomy from abroad, and self-sufficiency became a key word for the private petrochemical producers (Rodriguez, 2005). PEMEX also welcomed the idea to push for self-sufficiency, paving the road to the increased protection the whole industry gained during this period.

---

[81] Leopoldo Rodríguez was Vice-President of Desc, a major domestic petrochemical group. He was member of several commissions organized by ANIQ to analyze the market situation and became president of ANIQ's in the mid-1980s. He participated in the negotiation of NAFTA's chapter related to Oil and Petrochemical Industry as private sector organization's representative as we will described further.

Rodriguez (2005) remembers that

> *"I was the first person to be surprised when PEMEX showed such enthusiasm for our proposition to pursue self-sufficiency as the only way to reduce the negative effects of the international crisis in the industry. Until then, our relationship with PEMEX has been only a 'political one', especially in the operative field. We, in the private sector, and PEMEX's administration have sustained an antagonist relationship based in suppositions until then. We, in the private industry, have wrongly considered PEMEX's administration as an incompetent and technically limited bureaucracy. In their side, PEMEX administrations have thought of us as an antinationalist bunch of rent-seeking industrials. When scarcity forced us to work together to face the crisis, we discovered we were wrong about the stereotype we have made of each other. We were mistaken…"*

Indeed, the commission opened a new space for exchange and collaboration between private and public producers. The distrust gave place to assurance and reliance. PEMEX's officials found an important support to obtain additional funds to initiate new projects in ANIQ's proposition. PEMEX found a new capacity to negotiate private integration since the projects were accorded in advance with private producers, in the hope to attend a balanced supply-demand in petrochemicals, basic and secondary. The commission that was originally settled to negotiate quotas in order to face a critical year worked until 1976, seeking mechanisms to balance the market and keep an adequate level of manufacturing production.

6.3 The Policy Shift: the creation of an Export-Oriented industry (1977-1982)

By the end of 1974, Echeverria's government tried to shift the conservative oil policy in order to increase exports once the level of oil reserves was confirmed early that year. This decision would have increased the government revenues and also it would have saved the viability of its troubled economic program.[82] The technical branch of PEMEX vetoed the government and reduced the flow of information that was related to the magnitude of the reserves, to the President's office. They assumed that the President would waste the resources by selling them faster and irresponsibly in the world's market, instead of making rational choices in benefit of the Mexican industrial development.[83] Even if PEMEX rejected the expansionist policy of Echeverria, oil production began to grow at a rate of 20 percent yearly since 1974 without having promoted a policy shift (Morales, 1986: 64) to finance public spending.

The fast growth policies that began in the second half of the decade stood on the blend of promotional roles the government defined in the early 1970's. The regulations approved during Echeverria's administration in 1971 granted the state enough discretion to promote the sector at will, restrained

---

[82] The private sector reduced its investments at the same time that the state was pushing ahead its expansionist plans to increase its demiurgic role. Mexican foreign debt increased from 6 billion in 1970, reaching a historical high of 22 billion of US dollars in 1976. At the end of Echeverria's government, there was widespread distrust and very high rates of capital flown out of the country. As a consequence, when President Lopez Portillo took office in December 1976, he found the economy in crisis and constrained by an accord signed with the IMF a few months previously. The private sector decided not to invest in any sector of the economy in response to a growing presence of the state. However, once the high level of oil reserves was confirmed, the state thought it could count on oil revenues to alleviate the grave economic situation. The state opted to play the oil card (Centeno, 1997, Loaeza, 1999, and Luna, Tirado and Valdes, 1987).

[83] For this discussion see Morales, (1988: 60-70).

FDI, and widened protectionist policies to private domestic producers. All the same, the old pattern of the state's demiurgic role increased along with the promotion of ventures led by PEMEX in order to attract private investors or technology in sectors that the state considered essential. As in the past, the success of the petrochemical industry relied on the performance of the demiurgic state. Public investment and the new productive capacity were essential to plan, equilibrate, and stimulate the petrochemical industry in general.

Unlike Echeverria, the incoming government of Lopez Portillo (1976-1982) saw the oil discoveries as a bonanza, and the President decided to implement an Export-Oriented oil policy in 1977, which would sustain the new fast-industrialization policies and public spending. Mexico would become a major exporter, beginning with oil. In order to accomplish this objective, the petroleum industry went through a major structural reform and became the first Export-Oriented sector in the country. In only five years, the productive capacity of oil and petrochemicals tripled, as Mexico became the seventh world oil producer, altering the political and economic influence of PEMEX inside the government (Snoeck, 1986: 41).

PEMEX was officially under the umbrella of Patrimony and Industry Promotion Ministry (*Secretaria de Patrimonio y Fomento Industrial*). However, PEMEX's Director-General, Jorge Diaz Serrano won an important deal of institutional autonomy to define the new oil policy. Diaz Serrano was a private entrepreneur related to oil production and was associated with former US President George Bush during the 1970s. As a close friend of President

Lopez Portillo, he was authorized to define PEMEX's expenditure, to negotiate indebtedness abroad and defined the petroleum policy directly with the President without consulting other members of the government. Diaz Serrano's appointment consolidated the breakdown of the developmental bureaucracy in power from 1958 to 1970 when President Echeverria decided to define economic policy in his office.

Diaz Serrano began to lament that

> *"PEMEX was the only oil company in the world operating in red numbers, and which sells 80 percent of its production to the domestic market at half of the international prices. That policy must change*" (Excelsior, 29 de April de 1978).

The official discourse stated once again that reinforcing PEMEX automatically strengthened Mexican autonomy. By shifting PEMEX towards exports, the petroleum industry would provide the country with the resources needed to define an autonomous development strategy without any foreign intervention or constraints. The goals of the new oil policy were firstly to satisfy the internal demand for oil, and secondly, to add value to oil in order to increase exports of manufactured products in addition to raw materials. The state would implement a husbandry role that would let the industry reach international standards and increase competitiveness in the economy (Mercado de Valores, 1979: 797).

In close consultation with private producers, PEMEX's future administration defined a new policy during the transition period going from July to December 1976. This policy was build upon the following lines:

- Increase exploring activities in order to cope with the domestic demand for sustaining rapid growth in the industry derived from the national policy proposed;
- Reach a peak of 2.2 million barrels per day in 1982 (a goal reached in 1980, two years before planned);
- Double the refining capacity; and,
- Triple the production of basic petrochemicals in order to cover the demand coming from private secondary and tertiary production.[84]

The policy considered oil revenues as a multiplying factor for the growth of the country. The revenues from oil exports–one million barrels per day–would finance the public expenditure in the fostering of the structural transformation of the petroleum industry. As a consequence, all the investment was based in foreign debt, used to acquire equipment and to erect new oil facilities. It was programmed to pay back at the beginning of the 1980s. The government justified its decision to finance the implementation of the new policy through debt; the external debt of PEMEX alone represented 25 percent of Mexico's GDP in 1982 (Vanneph: 1982: 8).

[84] The general objectives of the oil industry were later included in a very ambitious industrialization plan defined by the Ministry of Patrimony in 1979. The Patrimony's plan–the National Plan for Industrial Development (PNDI, Spanish acronym)–began to be negotiated with the private sector in a case-by-case basis in continuation of the alliance for production offered by the Lopez Portillo government in 1977. The PNDI granted investors many subsidies and benefits in exchange for creating an export capacity in the industry. Benefits would be granted to any industry exporting 25 percent of its capacity (without affecting the supply of the domestic markets) for at least three consecutive years. The investment during these years let the industry rely on exports during the crisis period between 1982 and 1985, and was the basis of sustaining the EOI model that had been implemented since 1986.

Most of this policy stood on the new relationship forged between private producers and public officials during the crisis years. The scenario to embedded autonomy state action in the petroleum industry had begun.

6.3.1 Embedded Autonomy and the “boom” of the petrochemical industry

When Jose Lopez Portillo (1976-1982) took office and announced the newly discovered oil and natural gas reserves, producers in the petroleum industry had already built a special relationship. The petrochemical sector’s main actors had already done their homework during the crisis years: learnt to work together and identified their needs, their priorities in future investment, etc. For this reason public and private producers made the petrochemical industry the first sector in the country that was ready to settle an agenda to faster the structural transformation of the industry. This evolution would be supported by the discovery of Cantarell, one of the biggest oil and natural gas reserves in the world.

Private and public producers in the petroleum industry had joined efforts during the crisis years. As a result, they had gained trust in their technical and administrative capacities, identified their weaknesses and agreed on how to correct the petroleum industry. For the first time, PEMEX would not decide by itself how, where, and when to initiate new investments. Coincidentally, the research institutions in university chemistry departments created 20 years before that were meant to sustain the development of the industry and the *Instituto Mexicano del Petróleo* (Mexican Petroleum Institute) were already consolidated. All this carried on the idea Mexico counted with a virtuous condition that would facilitate to foster the structural reform of the industry. This was based on easy external credit, internal consensus, consolidated research and development institutions, and technical capacities (Bucay, 2005; Rodriguez, 2005; PEMEX, 1988).

During the first half of the 1970s, PEMEX started the construction of a petrochemical complex at *La Cangrejera*, in the Gulf Coast state of Veracruz. Its 19 plants and its expected 2.8 million-ton-per day capacity gave Mexico an undisputed leadership in petrochemical production in Latin America (Snoeck 1986: 42-52). Private investment went together with PEMEX's launching of the new petrochemical complexes. Petrochemical producers working together fostered a very rapid growth in the industry. PEMEX kept the leading role and the performance of husbandry actions assured private producers the existence of basic materials in order to follow the petrochemical transformational chains downwards. World producers reacted with alarm to both the reduction of Mexican imports and to the projected growth. The participation of private and public producers in international conventions and congresses focused on explaining the actual accomplishment that the Mexican plans would have (Pani, 2005).[85]

It all became public during the annual convention of ANIQ, in October 1976. PEMEX finally confirmed the size of the oil reserves found in the

[85] By the end of 1976, market analysts predicted that Mexico would eliminate imports of ammonia, methanol, acetaldehyde, ethylene oxide, polyethylene, vinyl chloride, and acrylonitrile. The construction of new plants during Echeverria's administration drove up the installed capacity by 70 percent (Snoeck 1986: 42-52).

Chiapas basin. At the time, Mexico had one of the biggest oil reserves in the world. For this reason the new government team, who had established close contact with key private producers and ANIQ during the transition period, invited private producers to change the idea of balancing domestic market and reaching self-sufficient petrochemical chains, into realizing a strategy of growth based on international commercialization. PEMEX’s public invitation came a few weeks before Lopez Portillo’s government took office. Officials settled the plan’s main lines in close consultation with private producers during the transition period from Echeverria to Lopez Portillo (Rodriguez, 2005).

The goals stipulated on the petroleum plan–later expanded to the whole industry in the Industrial National Development Plan–will be described in the next part of the chapter.

6.3.2 The 1979 Petrochemical program: Midwifery and husbandry roles

At the beginning of his government, President Lopez Portillo announced his determination to promote a structural reform in the petroleum industry. While this transformation reflected the decision to transform Mexico into a net oil exporter, as we have mentioned before, the plan also intended to transform the petrochemical industry into a world player. The state’s goal was to add value to oil taking advantage of the even larger source of raw materials and financial resources coming from oil exports. The incoming resources–on an autonomous basis–would play a crucial role in financing the future growth of the whole economy. The state’s investment in refining, exploration, and production grew nearly eight times, while the production of petrochemicals increased just over six fold (Philip, 1982: 353).

The Minister of Patrimony, Andres de Oteyza announced that the state's decision to include the petrochemical industry in the nine prioritized sectors in which the state would allow crucial investment and special subventions to promote new private ventures in March 1977.[86] As such, the state would seek to rationally integrate the petroleum industry, and in addition, to take full advantage of the existing infrastructure. By increasing the provision of basic petrochemicals, the state attempted to push the private production of secondary and tertiary products as well.

Improving the structural conditions of the industry would have a direct effect in the performance of the demiurgic role. PEMEX continued acting as the principal engine behind the secondary petrochemical sector. However, no new product was listed as a basic petrochemical during the boom years. The state centred its efforts on increasing the vertical integration of PEMEX, and limited its objectives to enlarging production of the basic products, which the company was already committed to provide.

As national and international economic restrictions relaxed, the government announced a plan that was meant to extend the midwifery and husbandry roles already used for petroleum production for the whole industry. In order to regain the private sector's trust, Lopez Portillo's government

---

[86] From the beginning of the industry in 1959 until 1982, the state had defined the development of *basic* petrochemicals as priority. By reforming the economic chapter of the constitution in December 1982–which was the basis to begin the structural reform of the economy–the state included the production of basic petrochemicals as a strategic activity in article 28 and declared that its production had to be exclusive to the nation.

proposed to form an *Alianza para la Produccion* (Alliance for Production) in 1977 in which the state negotiated on a case-by-case basis. The alliance was a political pact among the state and the representatives of industrial chambers in which the former offered a series of advantages and subventions in exchange for important increases in private investment that had been paralysed during the last year of Echeverria's government. Once the economic restrictions that had been negotiated in 1976 with the IMF ended in 1978, the state was able to announce a general plan for pushing the rapid growth of the economy through the National Plan of Industrial Development (PNDI) published in early 1979.[87]

As part of this strategy, PEMEX announced a new program that entailed the creation of four petrochemical poles in the country. PEMEX-ANIQ's commission had already realized that in order to increase competitiveness, the physical integration of the industry between public and private producers must be fostered.[88] PEMEX also offered special incentives to companies that moved their plants to the new regions. In doing so, they would enjoy access to cheap energy and the advantage of reducing the high costs of transporting big volumes of raw materials. In any case, the plan

---

[87] As we have already said, the PNDI established a variety of resources to consolidate industrial exporting facilities. Capital was provided to industries that could export at least 25 percent of its production over three consecutive years. The plan dictated that this new capacity ought to carry out exporting activities in order to avoid harming domestic markets.

[88] Until then, PEMEX policy had been to supply producers by demand. PEMEX transported basic products to private producers that were close to final markets. The new plan offered subventions for producers to move their plants into the new petrochemical poles in order to increase integration and reduce costs.

sought to force Mexican petrochemical producers to follow the same integration pattern used by the international producers.

The four petrochemical poles would assure private investors a preferential price programs for ten years, as well as reductions of up to 30 percent in energy prices (oil, electricity or natural gas). The agreement with private producers was to share investment in order to create the new infrastructure needed. In exchange, a presidential decree would grant the preferential price program for ten years after the new plants began functioning. Due to the extremely ambitious plan that resulted, the state decided to divide the strategy and to concentrate on the creation of two petrochemical poles.[89] A timid husbandry policy was included in the plan mainly to increase competitiveness. Additional price-reductions were offered in basic petrochemicals to any producer that installed new plants with exporting capacities.[90] The goal that targeted the improvement of the industrial efficiency and competitive advantage of the sector relied solely upon the low-price policy of raw materials.

According to Philip (1982: 353) the new situation offered the state…

---

[89] Analysts in the petrochemical industry began to fear that the Mexican plan would make the country an international leader. However, as soon as it was cut in half, they realized that Mexico would not represent a threat, for the domestic market would end up absorbing the new petrochemical production due to the growing Mexican population (Spitz, 1988: 488).

[90] As part of the husbandry role, the state planned to remove protections that the industry historically enjoyed. For the second time, the commercial authorities and the private sector began to negotiate a gradual liberalization of the market. By 1979, they reached an accord to join GATT. However, due to the lack of national support, President Lopez Portillo announced in the oil nationalization ceremony of 1980, that Mexico would continue to follow a sovereign development agenda instead. For a study of the first GATT negotiation, see Dale Story, 1987; or for an analysis of the evolution of commercial policy from the 1970s to the 1990s, see Lopez Quiroga, 1998.

> *the opportunity of taking full advantage of scale economies–notably in the petrochemicals sector–to lower domestic costs (…) [and] provide a further stimulus to Mexican technical capacity (…) when world market conditions were difficult, the Mexican refining and petrochemicals industry would be able to be certain of a steady supply of crude oil at a predictable price. The same could not necessarily be said of industries where the feedstock had to be imported (…) access to almost limitless supplies of low-cost crude oil would give PEMEX a considerable competitive advantage in an oligopolistic international market (…). The government responded to the major oil discoveries by making a bold and probably successful effort to turn Mexico into a major international refiner of oil and producer of petrochemicals.*

The plan sought to increase basic and secondary production to reach 27 million tons yearly, from the 12 million tons attained already. With a mean growth of 17 percent yearly, the contribution of petrochemicals to GDP would pass from 1.7 to 3.8 percent in 1982 (Mercado de Valores, April 1977). The plan targeted an ambitious growth of 125 percent in capacity. Of total public and private investment demanded to reach this growth rate, the state–through PEMEX–assumed two thirds, and the private sector assumed the rest.

According to the plan, private and public investment would be complementary. PEMEX concentrated the investment in the construction of complete refineries while private producers will have connected their brand-new plants to them. The entire new infrastructure in routes, rails or ports, would be financed by private investment in exchange of special ten-year subvention that assured differentiated prices in raw materials, electricity, fiscal reductions, etc. The warrant for this exchange was a presidential decree assuring them for 10 years once the new investment began functioning.

The most important innovation of the new plan was that there were conditions for the creation of a new export capacity in the industry. Most of the subventions required that companies exported at least 25 percent of their productive capacity for three consecutive years–without affecting the provision of the domestic market.[91] This policy fostered private investment to increase export capacity.[92] Exporting plans included direct and indirect export activities aiming to integrate export activities downward not only of raw materials but also derivatives such as fibers, plastic, artificial fabrics, etc. ANIQ proposition was to push the articulation of productive chains until the last link aiming the increment of transformed products instead of raw materials (Rodriguez, 2005).

Snoeck (1986: 36) says that as a consequence of ISI policies and the petrochemical regulations, the range of the exporting capacities attributed to the domestic market was limited; exports of basic petrochemicals would always constitute a secondary goal–even the new export strategy of basic petrochemicals became a secondary goal. The enlargement of the productive capacity was oriented to satisfy the most demanded products in the domestic market.

Attention to competitiveness was not at the top of the agenda. Indeed, the Patrimony Minister assured that

---

[91] This husbandry role was later offered to the overall economy and actually served to create an exporting capacity, which supported the temporary exporting program implemented during the emergency situation of 1982 and 1985, and the shift to an EOI since 1986.

[92] The completion of the complex in Cangrejera Veracurz, for example, illustrate the shift in the governments mentality from the self-relying attitude to make the new installations would reach international standards and export capacity. When it was finished in 1980, the state became capable to produce 48 (from the 33 it already produced) basic petrochemical products. Still imported the 22 of the products included in the official lists. The publicly owned industrial plants grew from 63 to 133 that reduced in a half the import of raw materials (from 21 percent of the total of national consumption in 1977 to 10 percent in 1982) (Comercio Exterior, 1978: 547).

> *"For the state, the promotion of the [basic] petrochemical industry offers the most profitable and rational use of the oil, for this reason it is state's goal to accelerate and increase the flow of investment in the oil sector and basic petrochemical in order to benefit the economy as a whole"* (Mercado de Valores, April 1977).

For private sector, Rodriguez (2005) argues, the special flavor of the meal was that the new policy kept the extreme protection already existent. Along with the new subventions, the new policy maintained high tariffs and non-tariffs barriers, the first was in the range of 60-80% in the most basic part of the chain, official prices that were still over real prices, increasing tariffs, and almost impossible to get import permits. The protection made even companies using obsolete technology profitable. Keeping all the previous conditions, state and industrials were discussing about world-scale plants, making the new stimuli, impossible to ignore.

6.3.3 The results

During the boom years, Mexico opened a new petrochemical plant every 45 days (Snoeck, 1986: 63). Even if the results and investments were impressive, the state had not reached the development of a self-reliant petrochemical industry. By 1982, Mexico was still importing about 20 products out of the 70 listed as basic petrochemicals, which represented 13.5 percent of national consumption. As a result, only two products were exported instead of the 21 in the original plan, and the trade balance of the sector reached a deficit of 12 billion pesos (Snoeck, 1986: 55).

Despite this trade imbalance, the demiurgic role seemed to reinforce the PEMEX position. As a result of the boom years, PEMEX was able to install even more productive capacities, increasing petrochemical production from 2.4 million tons yearly in 1970, to 13 million tons yearly in 1982. PEMEX also increased the number of industrial plants from 37 to 92, and diversified total production from 26 products to 40 products in 12 years. The real growth rate per year was 15.2 percent. Furthermore, employment in the petrochemical area of PEMEX went from 1,500 to 18,213 (Snoeck, 1986: 113). Székely (1983: 109) says that the participation of the oil sector in the GDP passed from 4.3 percent in 1970, to 7.4 percent in 1981.

Between 1975 and 1985,[93] the productive capacity of the entire industry (public and private) went from 6.6 to 18.9 million tons (mt), following a yearly growth of 11 percent. Basic petrochemicals grew from 2.4 mt in 1975 to 7.5 mt in 1985; while secondary production went from 2.7 mt to 6.9 mt yearly. The number of products increased from 165 to 422. These were manufactured by about 220 industries. In economic terms, the petrochemical industry's proportion of the GDP went from 1.1 percent in 1961, to 2.1 percent in 1984 (SEMIP, 1986; Bucay, 1991).

The biggest and best-organized companies were the ones that took better advantage of the grants and benefits derived from the PNDI. Big business dominated the market and had access to national and international resources in order to move into the new poles and take advantage of the PEMEX subventions. Analysis of the industry done in 1976 (Estrategia, 1976:

---

[93] The government disguises the official figures about the real results of the boom policy since they do not indicate the industrial collapse in 1982. As shown in the text, Snoeck (1986: 113) assures that petrochemical production by PEMEX reached a peak of 13 million tons in 1982 while the official figure was only 7.5 mt by 1985 (SEMIP, 1986). That implied that the capacity for production reached only half of the capacity reached 3 years earlier.

27) probed that from the 500 biggest business groups in Mexico, 22 of them were petrochemical companies. Of the 100 biggest, ten were petrochemical companies. In fact, these ten companies kept controlling over 80 percent of national production and their dominant role was reinforced during this period. Those national champions were: Guanos y Fertilizantes, Industrias polifil, Univex, Celanese Mexicana, Nylon de Mexico, Union Carbide, Celulosa y Derivados, Petrocel, Tereftalatos Mexicanos, and Fertimex.

6.4 The 1982 debt-crisis: *Banco de Mexico* and the Private external debt

The most important industrial groups went bankrupt between 1981 and 1982. Private entrepreneurs borrowed about 15-20 billion (20 percent of the national external debt) to be repaid in the short-term. In only one year, the cost of the private debt increased six times, as a result of the devaluation of the peso and the rise of international interest rates in 1982.[94] Even in extremely favorable conditions of a public current account, it would be difficult to repay that debt based on the lending conditions. In addition, the central bank recognized its incapacity to supply the amount of US dollars that the market required during this period. [95]

The state promoted a rescue plan to cover the exchange risk of the private debt incurred before the 20th of December 1982, when the President

---

[94] "Bankers Question Mexico's Plan to Help Private firms repay their Foreign Debt", *The Wall Street Journal*, Tuesday May 24, 1983, p. 40

[95] "Mexico Offering Firms New Rate to Pay Suppliers", the Wall Street Journal, Tuesday March 1/1983, p. 38.

decreed exchange controls. A trust was created by the central bank (FICORCA)[96] to ensure the repayment of the business people's debt, rescheduling the repayment plan from one year to a 6-8 year term. FICORCA relieved the debt burden of the most important businesspeople in Mexico, enabling them to acquire the subventions offered by the PNDI.[97] After transferring the debt to FICORCA, the private business group listed in the Mexican Stock Market reduced the overall debt by 69.9 percent in 1983, and by 32.6 percent at the end of 1984. Along with this rescue plan, the state's husbandry activities allowed big business to be in a privileged situation by acquiring access to foreign currency, due to export activities.

According to Eugenio Clariond[98] the state action did not only give already broken businesses viability, but it also assisted the long term planning of those industries.

---

[96] The Trust to cover the exchange risk (*Fideicomiso para la Cobertura de Riesgos Cambiarios*) was established in order to warrant the payment of the private external debt by the Bank of Mexico in 1983. The director was Ernesto Zedillo, who would be president in the period 1994-2000. As a public enterprise, FICORCA gained access to the controlled-prized dollar (46 pesos and a free-floating dollar of 146 during 1983) in order to pay the foreign banks the renegotiated debts. Once each industrialist got a rescheduled debt between 6-8 years, FICORCA lent the equivalent debt in pesos to that businessperson. Mexican entrepreneurs paid a peso-debt valued at the 1982 currency level while a US dollar trust was paid to the foreign creditor. This action reduced the debt-value the companies incurred and guaranteed the repayment of loans to foreign banks.

[97] Secretaría de Hacienda y Crédito Público, Programa de Refinanciamiento a Cargo del FICORCA. AGN, Unidad de la Crónica Presidencial, Gobierno de Miguel de la Madrid, SHCP/06-10-01-85/Caja 3 Exp. 10/1988 y Ruis Durán, Clemente ed., "Empresas en la Bolsa ¿Reestructuración Financiera?, Informe Financiero Trimestral, El Financiero, Año 1 No. 1, 18 de julio de 1984, p. 17. Steve Frazier, "Mexican Companies Enthusiastic About Central Bank Plan to Settle Foreign Debt", in The Wall Street Journal, Friday, Nov. 11,1983, p. 31. "Mexico: A manana Plan Serves Companies on the Brink", in Businessweek, November 7, 1983.

[98] President of Grupo IMSA, Eugenio Clariond, controls about 40 percent of the national production of galvanized steel. He was former President of the Mexican Council of

> *"They were, in fact, industries technically broken. The program implemented by Ernesto Zedillo gave new air to unviable businesses, which had contracted a US dollar-debt when the dollar was worth 20 pesos, and by the end of the year, its value was 200 pesos."*[99]

On the other hand, another businessperson assured that the success of FICORCA was due to the adaptability of the Bank's officials in its relationship with particular business needs.[100]

According to the industrial sectors, the most important businesses registered in FICORCA were mainly those that were defined as strategic for the state, i.e.

- Chemistry and petro-chemistry renegotiated 71.3 percent of their foreign liabilities (about 158 billion pesos). 88.3 percent of this money was directed to only four businesses groups (Celanese, Union Carbide, CyDSA and IRSA), which made up four of the seven dominant petrochemical groups in the Mexican market.
- About 50 percent of the program's total resources (about 7.5 billion US dollars) were given to five conglomerates (Alfa, Visa, Vitro, Desc and CYDSA). Alfa, Desc and CYDSA have important investments in the petrochemical industry.
- The other rescued sectors were metallurgy, automobiles, machinery and construction.

Businessmen: an umbrella organization, which includes the 35 richest businesspeople in Mexico.

[99] Interview with Eugenio Clariond Reyes Retana, 10 de agosto de 1993, in (Vila, 1994)

[100] Interview with Alberto Santos de Hoyos, 12 de noviembre de 1993, in (Vila, 1994).

The petrochemical and chemical industry were the most active recipients of FICORCA. Again, the Central Bank designed the plan assuring a long-term disposition to pay to the foreign bankers, alleviation on external debt to the private sector, and a relief in assuring foreign exchange that was not assured at the time to the government. Private industrials negotiated on a case-by-case basis once again. Most of petrochemical indebtedness is explained by the expansion lived during the oil boom and the close participation on the dream of becoming world players.

6.5 Last breath of the demiurgic state

As a consequence of the crisis in 1982, PEMEX was forced to raise prices.[101] PEMEX agreed with the private sector to a trimester price-increasing policy and kept the pattern that prices would not exceed 20 percent more than the international price reference. The goal was to assist the long-term planning of the private sector in the definition of their export-policy, which would support the survival of the whole sector in difficult times (Snoeck, 1986: 57).

The new price policy did not represent a break with the past because the state objective shifted away from the old midwifery role consisting of

[101] When the economic conditions changed because of the 1982 crisis, one of the most important problems for the private industry was the impossibility PEMEX had had in establishing real prices for raw materials. Historically, PEMEX has defined prices by lowering them from international references. Before 1982 there was no pattern in establishing a real-priced base for basic products. In fact, the subsidized pricing scheme has still been the most important source of competitiveness for the private industry–rather than productivity. Historically, PEMEX has increased prices on raw materials responding to increases in international markets, avoidance of speculative actions, and in order to support PEMEX's financial situation.

attracting private investment by capitalizing the secondary sector through low-price basic products (raw materials). When the state decided to implement a husbandry role–pushing businesspeople into international markets–not only would raw material prices have had to approach the level of international standards, but also, private producers would have had to reduce their profits in order to reach international standards (Mattar, 1994).

Even if some authors posit the difficulty in correlating the effects of publicly subsidized prices on the level of private investment in the accelerated growth of the sector, it is clear that most of the benefits went to only a few players that became national champions of the petrochemical industry. At the end of the oil boom, only four groups (Celanese, CYDSA, Alfa, and Desc) controlled the production of 22 (out of 150) petrochemical secondary goods in the country, which equated to 75 percent of the market revenues (Snoeck, 1986: 58). As Philip (1999: 39) summarizes:

> *PEMEX' financial position was actually deteriorated during the oil boom period. The most important reason for this is the low income received from domestic sales. During 1980-1981, approximately half of Mexican oil output was consumed at home–the same was true for PEMEX petrochemicals output. The cost of sales will be higher than that of crude oil exports because locally sold oil has to be refined and marketed. However, PEMEX earned over three times more from its exports than from its domestic sales in 1981. As we can see, there was an enormous subsidy to the domestic consumer.*

Bucay (1991), a leading chemical businessman, says that the image of building world-class, fully competitive facilities proved irresistible for the private producers. Private investors took full advantage of all the midwifery and husbandry stimuli offered by the state during the boom years. These stimuli helped developing the private petrochemical sector intensively. The new plants reached the objective of increasing public/private integration in the same production complexes. However, some of those plants were barely halfway completed in 1981, year in which the oil prices dropped and debt piled up very fast, thus contributing to the Mexican debt crisis in the summer of 1982. Private industry had no choice but to complete its half-built facilities or go bankrupt. In this crisis situation, the government simply cut public investment– including PEMEX–to the bone. Private sector ended up investing in infrastructure to the point where the amount of fixed investment was 40 to 50 percent higher than what was planned originally.

According to Bucay, (1991: 126)

> *a cause of the long building period, the incentives that were never paid, amounted to more than one-quarter of what they would have been, and certainly they never compensated for the extra investment (…). There is however a positive side to this story. The facilities built during this phase [like Cydsa's new pvc plant, Temex TPA installations, Negromex rubber, and Celanese plants at the Cangrejera complex] were among the most modern and efficient in the world, and they assured selected niches of competitiveness, which will serve Mexico well for many years.*

In effect, the new facilities were the main reason for both the marked improvement in the competitive position of the sector and the rapid switching to exports made by businesspeople soon afterwards. The new facilities eased the industrial shift to export production when the government created the temporary export programs between 1982 and 1985. Secondary petrochemicals represented 88 percent of all the petrochemical exports in 1986. This was the reason for a positive trade balance of 360 million dollars, which compared favourably with the negative balance of 590 million dollars reached in 1982. The competitive position of these plants was also explained by their newness and by the fact that they had reached environmental standards, which were already important at the time. The average age of Mexican petrochemical plants in operation was 6.5 years versus more than 13 for those in the United States and more than 16 for European plants. This made the Mexican petrochemical sector more modern and competitive, and better adapted to environmental and health needs, than competitive plants in other parts of the world (Bucay, 1991: 126).

6.6 Different visions to face the crisis

As we have seen in some detail in Chapter 3, President Miguel de la Madrid proposed the amendment of the economic chapter of the constitution just a few weeks after taking office. His goal was to clearly establish and to define the command the state would keep over the economy. It was also to reinstate the eight sectors that would continue to be exclusive attributes of the state.[102] For the first time, the state assumed the engagement of basic petrochemical production constitutionally. This decision formalized the artificial structure in which the industry had existed.

A complete agenda of structural reform took place in two different moments of the government: one was the correction of macroeconomic

---

[102] Echeverria and Lopez Portillo created public owned enterprises in almost every sector of the economy. Before initiating a major withdrawal of those companies, de la Madrid established eight sectors (oil, emission of coin and bank notes, postal service, telegraphic and radiotelegraphic services, railways, basic petrochemicals, satellite communications, oil and hydrocarbons, radioactive minerals and generation of nuclear energy and electricity), which would continue as exclusive attributes of the state. All the rest would be managed by the private sector. Presidents Salinas and Zedillo implemented further reforms in the 1990s.

variables; the other was the radical opening of the market that implied, among other things, the retraction of the state's demiurgic role.

Since 1986, the state had liberalized trade and foreign investment policies, deregulated the economy and privatized some of the principal sectors of the economy. As the country had become extremely dependent on the export of one single commodity (oil), the most important task the state initiated was the diversification of the exporting capacity of the country. From 1986 onwards, the paradigm shift took hold, integrating the economy to the global circuits. By taking this route, the idea that the economy would gradually deviate towards self-sufficiency was abandoned. Export-Oriented industries became the engine of the economy.

However the two visions of development–ISI and EOI–co-existed in key government agencies during the first part of President De la Madrid's term in office. The first view sought continuity with previous state endeavors and it was the position of the Finance Minister who assured that the economy was facing a major cash-flow problem. He also claimed that once expenditures were reduced, an acceptable level of growth would be reached. According to this framing, petrochemical investment had to face temporary restrictions, while exports were promoted so as to keep the industry afloat through these difficult times. A secondary result was the saving of jobs that would otherwise disappear due to the collapse of the industry.

The second position inside the government proposed a radical reform of the economy that was recommended by the Budget and Planning Minister. For them, the emphasis should be on the integration of chemical chains, the consolidation of national champions and the raising of both investment and international competitiveness for the sector.

6.6.1 Continuity: Petrochemical policy for the period of 1983-1985

The energy policy was definitely influenced by the competing paradigms used by the government to treat Mexico's economic troubles. For those who blamed inadequate cash flow as the source of the crisis, the policies directed towards PEMEX sought:

- To increase tax revenue on oil exports.
- To take advantage of the high level of demand for goods and services in the petroleum industry. The company was forced to initiate an ISI practice setup that would protect the local supply-network and reduce as many imports as possible.
- To assume the PEMEX debt, because it had contracted 39 percent of the public external debt by itself. PEMEX's transformation into EOI activities ensured that it would be the only autonomous source of foreign currency to finance the state's apparatus.

However, PEMEX's role changed. In the past, the company subsidized the development of the country through major subsidies in energy and from 1982 onwards PEMEX guaranteed enough resources for public spending. PEMEX paid a VAT of 58 cents out of every dollar it received as exploitation tax. According to Morales (1988) and Székely (1989) PEMEX represented a mean of 30 percent of the government revenues at the time. The charge over

PEMEX's finances was so high that in 1999, 86 percent of total PEMEX's revenues went to finance day-to-day governmental expenses.

The public company also supported the survival of the industry in the middle of the crisis. PEMEX granted support to the domestic industry through the establishment of an ISI program that consisted on using Mexican goods and services in ever-larger proportions.[103] PEMEX's General Director Mario Ramon Beteta (1987:77) assured that while two-thirds of PEMEX acquisitions were imported in 1981, in 1985 imports represented less than one-sixth of the company purchases; national producers provided all the rest. However, the state was not in a position to continue investing. Therefore, it minimized its actions in order to provide raw materials that would let the market function. The petrochemical projects would be finished only if the government classified them as a priority to substitute imports, and if more than 70 percent of the plants were constructed by 1983. However, financial astringency made the government stop every other project since 1983, without further consideration (Snoeck, 1986: 118).

The government announced a new petrochemical plan two years after the government took office, in 1984. This plan continued the idea of reaching self-sufficiency, yet economic conditions forced the state to establish a modest goal in future growth. Compared with an 86 percent in 1982, the government targeted a provision of 92 percent of the domestic demand for 1988. The vision of keeping an autonomous domestic trajectory and

---

[103] Between 1982 and 1988, PEMEX placed more than 2 million orders covering purchases of more than 1 billion pesos.

eventually reaching developed countries in the international market remained central. In relation to this objective, PEMEX would also try to export basic petrochemicals. This was done even when the company was already facing troubles in supplying the domestic market and in having no money to continue the construction of new plants that were oriented to exporting activities. The goal was so absurd that any petrochemical engineer or investor would have disapproved of this plan due to the low return on investment.[104]

The world was facing an overproduction of petrochemicals and increases in world competition–in addition to the limited resources of the state–, which weakened the export potential of petrochemicals and the support needed by secondary producers. Favouring the exports of products derived from the basic goods would continue to drain the sector finances and to reduce the integration of private and public domains (Snoeck, 1986: 118). During the period of 1982-1985, a new problem arose. As exports increased, the lack of resources to initiate new investments increased the obstacles for industrial integration. This problem was reinforced once the market was liberalized and the private sector was allowed to import directly from abroad (Unger, 1994: 49).

6.6.2 Preparing the paradigm shift: the rational route

[104] Even if PEMEX had tried exporting basic petrochemicals, the decision would be a waste of time. The most lucrative part of the chain–nationally and internationally–is the production of derivatives from secondary petrochemicals to final products.

The National Development Plan (NDP) of 1983-1988 (published in 1983 by the Budget and Planning Ministry) gave priority to the petrochemical industry in order to meet the growing domestic demand and to generate foreign currency reserves by shifting from imports to exports. The petrochemical industry was important for supporting the development of a national capital-goods industry and for its direct and indirect ability to create jobs. Among the guidelines established by the NDP in the petrochemical sector, the following stood out as essential aims:

1. To secure an ample, assured and diversified supply of primary petrochemicals for the production of basic goods. In order to accomplish this, the traditional supply shortage of PEMEX had to be overcome.
2. To promote the integration of production chains for the rational use of natural resources and to promote a greater national integration in production and facilities.
3. To promote the generation of foreign exchange from exporting intermediate and finished products. To accomplish this, it was necessary to participate actively in international markets.
4. To promote the installation of an efficient and internationally competitive industrial complex, encouraging technological assimilation and development activities as well as improving plant productivity.
5. To contribute to the decentralization of the federal structure.

6. To minimize environmental pollution. This was the only new component after the last PNDI. (Barnes and Christianson 1986:112).

Three basic strategies have been delineated in order to guide the development of the Mexican petrochemical industry, namely: the integration of production chains; the creation of regional development strategies; and the selective promotion of export, based on comparative advantage. The policy then would focus on the integration of the petrochemical chains in order to detect specific needs of each industry and to target the improvement of the comparative advantages. These targeted policies for specific industrial needs contrasted widely with the vision of the self-reliant development paradigm of previous governments. As we will see in the next chapter, the state defined a policy that abandoned the universal vision of development, which had guided the state action until then. The policy implemented in 1986 sharply contrasted the traditional vision of appropriate state action.

The Budget and Planning Ministry (SPP for its acronym in Spanish) began to focus on the promotion of the comparative advantages of the petrochemical sector as early as 1981. The ministry accredited the importance of attending the particular industrial needs on a case-by-case basis, when it analyzed the industry from the level of the manufacturing chain. This approach would help the state identify the most internationally competitive groups and it would push them toward Export-Oriented growth, before encouraging the less competitive producers. This was the prevalent vision after 1986 and it has lasted until the present strategy.

The plan recognized that for a long period of time, PEMEX would be unable to invest in new installations. After the duration of this inaction, the inability to invest became the basis of a vision that considered a complete withdrawal of state's demiurgic role in producing secondary petrochemicals, thus giving rise to a privatization plan that was defined in 1986, initiated in 1987, and then implemented (failing twice) in 1993 and 1996. The primary objectives of this plan shifted from those of achieving a self-sufficient market, to giving an emphasis to productivity and efficiency, instead. It also pursued an increase on the integration and competitiveness for the sector.

During this period, the government did not make new investments in petrochemicals. In spite of the impressive results in the production of basic petrochemicals, the new PEMEX's facilities proved to be insufficient when trying to reach the growing demand of basic goods required for export production. While PEMEX was able to build 46 processing plants in eight large complexes in only four years (1978-1981), the company has been unable to invest in new projects in the petroleum industry since 1982. In many cases, the big swing to exporting derivatives that was consolidated in 1987 (after Mexico joined GATT) created extraordinary deficits in national primary production, which grew rapidly to represent about one third of total needs by 1988, representing a value of about 5.5 US billion dollars (GAO/US Congress 1991: 2)

In 1987, the performance of PEMEX became an important issue with private producers.[105] PEMEX was not reaching the capacity needed to supply private producers promptly enough, neither as to reach export demands. Since the economy depended on oil exports, the state was in no condition to invest in basic petrochemicals at all. As a result, the inefficient and corrupt administration of PEMEX became a major national concern for the first time. Private producers began to complain that PEMEX was never able to satisfy the needs of the growing secondary industry. Therefore, the country was forced to import a significant proportion of its primary product needs. This structural trouble was emphasized during the deregulation period. Mexico began to increase imports of basic petrochemicals reaching a peak of 15 billion dollars in 1995. We will discuss this issue in further detail in chapters 7 and 8.

[105] Mexico joined GATT in 1986, orienting its industrialization to exports.

Chapter 7. The paradigm shift

The year 1986 marked the beginning of change. The first week of that year, the oil-union leader, José Sosa, threatened President De la Madrid during the New Year's celebration ceremony.[106] Sosa warned him, saying that the unions mistrusted the new economic agenda, which the President had proposed a few months earlier. He also stated oil workers would not accept any reform in the petroleum industry. Sosa was concerned that foreign capital would gain influence in the petroleum monopoly at the expense of domestic interests.

> "*Pretending to change the nationalist vision, within which the state had managed PEMEX since the oil nationalization, would imply a risk for the company. If PEMEX sinks, you [the President] will sink, and the whole country will sink with both of us*" (Proceso 480, 13-January-1986).

A few weeks before the New Year's celebration, on November 25th, 1985, Mexico had officially submitted a bid to join the GATT. This decision marked a watershed because the state became committed to a development model that was oriented to export. The state's new attitude towards trade was thus set in place, in order to deal with the deepening of the economic crisis that had been exacerbated by the massive earthquake in September 1985. The government was reorganized and conditions were established in order to

---

[106] Over the 71 years in which PRI controlled the government, the President held a 'New Year's celebration' at the beginning of each year with the official unions, and various peasant and social organizations affiliated to the party, as well as with influential entrepreneurs in order to show the unanimous support for what Krauze (1997) has called "The Imperial Presidency."

push forward a coherent policy in the structural transformation of the economy. In response to these reforms, the most traditional supporters of Mexican nationalism organized a quiet resistance.

As discussed in the previous chapter the state had set up special programs to save big business from bankruptcy, and direct them towards growth through temporary export activities. From then on, the state began to redesign the Mexican industrial landscape, adapting it to a new Export-Oriented Industrialization (EOI) model. The state also redefined its promotional roles so as to adapt itself and the domestic market to the international circuits of production.

The goal of this chapter is to offer additional evidence to sustain the hypothesis that during the paradigm shift the state continued to prioritize protection of domestic producers and consolidation of national champions. Even if the state was acting under a new policy paradigm, it remained dependent upon the same path as previous governments, consolidating a national bourgeoisie. By doing so, the state would secure the long-term viability of the national transformation.

The chapter begins with a brief description of the conditions specific to the international petrochemical industry, which had gone through important changes as a consequence of the oil crises of 1973 and 1979. The state had to consider the international context in order to redefine the national petrochemical industry. The hope was that succeeding in this objective would counterbalance the negative effects of the crisis years. Following this account, we will then describe the main pillars of the new petrochemical policy, the first stages of privatization effected in 1988 and the impact that this had on making Group Alfa one of the world's biggest producers of special textiles and spandex in 1988. The chapter ends by analyzing the general reorganization of PEMEX, which pushed the attraction of private investment and the integration of the petrochemical industry forward. Since the integration in 1986, competitiveness and investment were the key words of petrochemical plans, thus composing the new blend of state promotional roles resulting from the reform.

7.1 The new world context.

By the 1970s, the petrochemical industry of developed countries reduced its leadership role in the concentration of technology that had led to high profits and growth rates. It had also given place to the normalization of consuming diverse products (fertilizers, nylon stockings and plastic bottles) that were part of the original industrial expansion. The novelty of the first products was lost, making a sort of mature and embattled industry. According to Spitz (1988: 462-507) conflicts arose from three different sources.

First, important pressures were rising from the consolidation of new social movements. On the one hand, the industry was attacked for its devastating effects on the environment. As well, pacifist movements contested the contribution of petrochemicals to the military industrial complex (particularly in response to the use of napalm by United States' forces in

Vietnam).[107] Both issues in fact, altered the general frame of traditional business activity in the United States and in Western Europe.

Secondly, the arrival of new petrochemical producers in the international arena also disrupted the cartel in which the market had functioned. Oil rich countries such as Mexico, Canada and Saudi Arabia began to add value to their oil and consolidated an internationally competitive petrochemical industry.

The third and most important issue was related to the fluctuations of oil prices. Accordingly, traditional producers of petrochemicals were forced to increase investment in cleaner technology and infrastructure, paying more for raw materials, which made traditional producers–United States, Europe and Japan–less competitive. These producers began to focus on the solution of domestic constraints and therefore, they reduced investments abroad in order to improve local competitiveness and the integration of chains.

The development of the American petrochemical industry (Spitz, 1988: 506) turned inward during the 1970s and 1980s in order to resolve domestic impediments rather than follow the expansionism characterized by the post-WWII period. American producers lost competitiveness for a number of salient reasons:

- Producers faced higher outlays on equipment so as to meet the standards of various environmental control programs.

[107] The production of weaponry and other military goods was fundamental in the development of the petrochemical industry during the World War II.

- Similarly, new standards required the discontinuation of chemical products deemed harmful (e.g. insecticides, detergent builders).
- The United States' Congress proscribed the fees previously paid to foreign producers in order to secure export contracts.

According to the same author (Spitz, 1988: 525), Europe and Japan had succeeded in building up their own petrochemical industries. These new installations left American firms little residual advantage in terms of technology, plant size, or even raw material costs in many industries. By the late 1960s, the Western European chemical industry had grown more rapidly than its American counterpart. In addition, the consumption of primary petrochemicals began to approach American levels.

The rapid growth of European demand for petrochemicals spurred the construction of new capacities, surpassing the earlier surge in the United States' market twenty years before. The high European expansion rate was explained by the combination of different factors, such as: relatively high economic growth; the use of different synthetics in the market, and a decrease in petrochemical prices relative to the rising prices of many other materials. As a result of this surge in demand for plastics, synthetic fibres, solvents, coatings, and other petrochemical products, European producers started to think of petrochemical growth rates in terms of GDP percentages rather than in real numbers. As a result of the multiplying effect, European producers became disappointed as petrochemical growth rates dropped sharply in the 1970s, which resulted in excessive productive capacities (Spitz, 1988: 525-539).

The licensing of petrochemical technology had been liberated throughout the world since the 1970s. As a consequence, almost any country or private producer with enough money and courage to build large and modern petrochemical complexes employing the most modern capacities could do so with relative ease. In general, this meant the introduction of small European countries onto the world stage as they began to build their own plants instead of engaging in ventures with bigger producers already installed in the same trading area. Even countries such as Norway, Sweden, Finland and Portugal–all with populations far too small as to justify major investment in petrochemical projects for domestic consumption–eventually decided to build large installations, and to orient them towards major export trade (Spitz, 1988: 467-468).

The creation of new petrochemical installations started to increase in the 1960s and it was in full swing by the mid-1970s. This happened not only in small European countries, but also in non-traditional oil producer countries such as Canada, Mexico, Saudi Arabia and some East Asian countries. As a result of this additional build-up in capacity, both American and West European producers began to reduce their market scope, and faced a new problem: access to raw materials (Spitz, 1988: 467-468).

The increased provision of petrochemical products in world markets exacerbated a major concern for developed economies, mainly because they were unable to assure access to feed-stock supplies. During the 1970s, the most important access to oil was consolidated in the hands of oil rich nations, including not only OPEC countries, but also Canada, Mexico, and other countries with abundant oil and natural gas reserves. American and European petrochemical producers could not continue acting with the cartel attitude that dominated their actions a decade before (Spitz, 1988: 521-526).

The abrupt changes in world energy resources occurred at the same time that the demand began a sharp decline. This happened after developed nations had already been affected by the oil shocks of 1973 and 1979. Therefore, the 1980s was a decade in which vertical integration and inward consolidation became the key to maintaining commercial positions in the world scene of petrochemicals. The goal became to increase competitiveness through the consolidation of economies of scale, thereby reducing production and transportation costs. This was a protective measure from the new countries that arrived to the industry. In addition, developed countries sought to focus on products with high added value and in which technology was still protected by proprietary rights (Spitz, 1988: 12).

The world's industry started building up their capacities based in very optimistic previsions of the future demand. However, its growth plans failed to predict the slow-down of the world economy in the 1980s, thus forcing the withdrawal and closure of large petrochemical installations in Japan, Western Europe and the United States. Spitz (1988: 539) explains that excessive capacity created a major structural problem for the industry because it became widely dependent on the major economic cycles in the world economy. As a consequence, the petrochemical industry had to face a major structural constraint and its development was determined by cycles of over-production and under-production.

As world demand rose, the petrochemical industry began to increase production, investment and prices. This situation led producers to increase petrochemical productive capacity. This was accelerated by the demand and it led to over-production. Market saturation began to affect prices. Once prices began to fall, in turn affecting the demand, the low part of the cycle began; producers were forced to reduce both production and investment, and along with these, they saw their profits and prices reduced. This problem surfaced every 3-5 years (Spitz, 1988: 468; Rodriguez, 2005).

7.2 From economic stringency to dismantling the demiurge apparatus

The new energy minister, Alfredo del Mazo, took office in April 1986. A few months later, a new general strategy was established in order to convert petrochemicals into an export orientated industry. The 1986 plan–elaborated in collaboration with the Commerce and Industrial Fostering Ministry–, included a changed vision of the state's promotional activities. As the goal passed from the production of raw materials to the promotion of competitiveness, the first premise of state action was to focus on the level of petrochemical chains. Integration of every chain–from basic building blocks to secondary and speciality products–let the state identify the particular necessities of every sector. The state was able to point out the sectors that would most easily convert to the new EOI strategy and to support them before aiding less competitive sectors (SEMIP-SECOFI, 1986 #227).

The new plan offered a completely different picture of state action. This view considered the Commerce Ministry, Hector Hernandez, as a key supporter. The Commerce Ministry assumed the attribution on defining commercial and industrial policies, role the Finance Ministry performed during the 1960s. Instead of locating the main problem of the industry in the lack of self-sufficiency, the new plan focused on the lack of articulation and integration among the industry, which was meant to foster competitiveness. Instead of forcing PEMEX to target the production of specific products defined as basic petrochemicals and to provide them to the consumer centers, the state continued consolidating the complexes in order to enhance public and private integration. The state did this in conjunction with the construction of large oil refineries. Instead of producing domestic surpluses to be sold in international markets, the industry would strive to integrate with international circuits, thereby gaining access to technology, market niches and new sources for financing investment. Instead of targeting global growth without considering the actual structure of the market, officials began to emphasize the petrochemical chains, one by one in order to make sharp definitions not only of the objectives, but also of the obstacles of future planning. Previous plans only emphasized the improvement or rationalization of state actions (SEMIP-SECOFI, 1986).

However, the state did not consider the actual circumstances of PEMEX engagements, nor the strategic participation PEMEX had had in the petrochemical industry. As a result of the debt crisis, PEMEX did not invest in new capacities as much as it responded to current demand. In addition, financial stringency and the correction of macroeconomic figures were still the only goals of the state. Therefore, PEMEX was falling far behind the private sector as illustrated by Philip (1990: 44)

> *"The cutbacks in PEMEX investment were not based on any careful study of the costs and benefits of particular investments (…) there can be little doubt that PEMEX did face profitable opportunities which it could neither take itself nor divest to the private sector (…). Oil refining, petrochemicals and natural gas production (including the export of natural gas to the United States) were all covered by the state monopoly so that any deficiencies in state funding could not be made up from the private sectors".*

As said in the previous chapter, from the four petrochemical poles outlined in the 1978 petrochemical plan, PEMEX began the construction of two in 1978: the Cangrejera and Morelos complexes. It abandoned the other two. PEMEX committed to finish the construction of the new plants before 1985. This engagement, along with privately supported construction, would make Mexico a significant petrochemical power. But financial stringency affected not only the integration of petrochemical chains but also the construction of the Cangrejera and Morelos complexes, which suffered important delays.

The complementarities reached by private and public actors working together got important results such as: new infrastructure, physical integration of plants and brand-new installations that were ready to compete in the world markets. Private investors accepted to co-invest with different public agencies in order to create new infrastructure such as: railroads to attend business transport needs; new ports such as Altamira, whose petrochemical corridor was mainly financed by private petrochemical producers; Coatzacoalcos port whose construction was jointly financed between PEMEX and private producers; and the Pajaritos port terminal, whose construction was financed by PEMEX (Rodríguez, 2005).

> *"Much of the subsidies that had been agreed with the government would take place after the realization of private investments, and the new capacities were on place. Private and Public investment created much of the new petrochemical infrastructure together, and records of those inversions were filled by ANIQ. PEMEX disordered investment was widely criticized and some blamed PEMEX dispenses of public money for the crisis. [In petrochemical infrastructure] is hardly said that we wasted the resources, we invest all the resources received, maybe our plans were wrong, but money was used on implementing them*" (Rodríguez, 2005).

Rodriguez (2005) assured that while some chains reached the goal of integration, others never did.

> *"Before the crisis, we reached the goal of providing the market and even getting surpluses to export derivatives, the products manufactured by the private sector. We reached the objective of exporting by producing entirely through domestic production" (Rodríguez, 2005).*

When the year 1982 arrived, all the projects were half way to completion. The Cangrejera complex was completed as originally planned, while the Morelos complex called off the construction of some plants. The construction of both complexes was delayed long enough as to affect the production of derivative petrochemicals. In the private sector, plants that were half-constructed or in detailed planning stopped for two years, to be restarted in 1984. From 1982 to 1986, PEMEX continued to assume the responsibility of fulfilling all petrochemical demand in the country whether its production allowed so or not. PEMEX also tried to encourage exports in order to finance industry production (Rodríguez, 2005).

If in the period from 1982 to 1984 the petrochemical growth policy adjusted to economic stringency, the paradigm shift initiated in 1986 created a schizophrenic role for PEMEX. On one hand, the state continued assuming the provision of petrochemical raw materials and excluded private investment from production of petrochemicals in the constitution amendment of 1983. On the other hand, the new paradigm dictated the reduction of PEMEX's demiurgic role. The 1982 crisis first and the paradigm shift that later took place made PEMEX reduce investment to the minimum in order to keep the secondary petrochemical industry functioning.

The paradigm shift consolidated the embrace of an ideology of state withdrawal that implied transferring the state's place to the market. As a consequence, the state abandoned the demiurgic role, and with it, the strategic place PEMEX had played in the support of domestic petrochemical production. This new policy approach made it difficult for officials to envision a solution for the shortage of petrochemical raw materials that the market faced. The logical solution was importing them. Officials lost sight of the strategic role PEMEX's investment had played. The new principles guiding petroleum policy hinged on different values. As a result, Mexico reinforced its dependency on imported basic petrochemicals in order to supply its industry. Between 1983 and 1988, Mexico spent about 5.5 billion US dollars on importing these commodities (GAO-US, 1991a: 2, GAO-US, 1991b: 5). Imports on primary petrochemicals constituted 22 percent of the total needs of the industry, or 35 percent if fertilizer ammonia is excluded (Bucay, 1991: 125).

In addition, the mixed vision on petrochemical policy after 1986 had unattended consequences: Mexico consolidated international dependency instead of the hoped-for self-sufficiency. According to reports from the United States' Congress in 1991 (GAO-US, 1991; GAO-US, 1991) the plants that the Mexican government began to build in the early 1980s were still incomplete at the beginning of the 1990s due to insufficient investment. PEMEX annulled the idea to complete 21 investment projects planned in 1978 in order to meet Mexico's demand for petrochemicals (GAO, 1991: 2; GAO, 1991: 5). The problem became complex because

> *"Mexican law prohibits private and foreign investment in basic petrochemicals; the petrochemical industry had no other source of investment (…). The reduction of government investment in basic petrochemicals was followed by a corresponding investment reduction of secondary petrochemical producers"* (GAO, 1991: 2).

Mexican trade deficit in basic petrochemicals began to increase as a result of the insufficient investment in this sector's production capacity. "*The Mexican Petrochemical Commission believes that without sufficient investment, the need for dollars to pay for petrochemical imports could grow even greater, reaching as much as $8.6 billion by 1996*" (GAO, 1991: 2).

By 1986, the state abandoned the policy of subsidizing raw materials that had been established since 1959. Basic petrochemical prices reached international levels, after a period in which (Unger, 1994: 50) the prices of petrochemical products sold by PEMEX in 1981 were from 40 to 63 percent lower than international levels and far from the original 15 percent the state had decreed in 1959. Private producers received the decision that PEMEX would sell only products produced in Mexico at the end of the third quarter of 1986. For the first time in 20 years they were forced to buy raw materials abroad. In a short period of time, they had to gain both credits and international experience. PEMEX offered some of its expertise, but companies had to learn on the fly (Rodríguez, 2005).

Private producers were forced to create a supply network and to negotiate the prices for raw materials on their own. They were, however, assisted by state officials in order to learn how to do business in PEMEX's international circuits. However, the reduced volume of individual acquisitions implied price increments as well (Pani, 2005). PEMEX, following the constitutional requirement, continued to supply the market with basic petrochemicals. However, in October 1986, President De la Madrid published a first decree reclassifying basic products from 70 to 34,[108] and liberalizing product permits for the private production of 500 additional products.[109] Nonetheless, even with this change, PEMEX was still the only producer of most of these products.

---

[108] From 70 products classified as basic petrochemicals in 1986, PEMEX produced only 44 and imported the rest for its distribution in domestic market (Morales, 1997: 58).

[109] Under the same deregulation, secondary products that had been restricted to Mexican producers until then (companies that had at least 60 percent Mexicans ownership) were reduced from 605 to 66 with the goal of injecting foreign investment in the sector. (Turner, 1989)

A central point of the deregulation initiative was that the state did not need to change the petrochemical law of 1971 in order to create a new definition of PEMEX's participation in the market. Paradoxically, the rules defined by President Echeverria in order to justify an increasingly demiurgic role in the sector were the same regulations guiding the state's withdrawal and shift to the new policy. The 1971 law was so ambiguous that it granted the Energy Ministry enough discretional power to enable the definition of policies within contrasting objectives–such as state pre-eminence after 1971 or market dominance from 1986 on. Nevertheless, PEMEX, the petrochemical commission and SEMIP continued the definition of PEMEX's exclusive manufactures. There was no up-to-date public list of basic petrochemical or justifications of new products of exclusive PEMEX production until 1986. Decisions were taken on a case-by-case basis (Rodíguez, 2005).

In these years the neoliberal approach co-existed with the old control pattern. For example, the petrochemical commission maintained its role of granting petrochemical permits until 1991, but at the same time the commission began acting as an consultative organization responsible for developing research, until its disappearance. In this phase plants with new permits also started operating. In 1989, the permits granted in 1987-1988 alone, added 25 percent in additional demand for basic petrochemicals (Bucay, 1991: 125).

The accords signed in the *Pacto de Solidaridad Económica* in December 1987 were meant in part to contain inflation growth and the prices of basic petrochemicals and natural gas. These increased gradually until they reached international standards. In contrast, private prices were kept constant; this was done to sustain what was previously established in the economic accord. In about one year, private producers of petrochemicals saw a considerable reduction in the huge profits that had been made thanks to PEMEX subsidies over the three previous decades. Profit levels–which had been significantly higher than those of international producers–reached international levels as well (Mattar, 1994).

At the end of 1986, PEMEX announced the cancellation of the 30 percent reduction in energy and raw material prices agreed to with companies prior to of the 1979 presidential decree. The industry contested this decision promptly. The decree had promised reduced prices for a ten-year period once plants began working, in exchange for investment in petrochemical infrastructure undertaken [?]jointly by PEMEX and private industrials from 1978 to 1981. The government and ANIQ engaged in a heated fight, with private producers asking the Supreme Court to evaluate the legality of the action. Once the Supreme Court's first decision favoured private industrials, De la Madrid's government intensified pressures and finally the decree was "arbitrarily" (Rodriguez, 2005) annulled at the end of 1987. The agreement made with Lopez Portillo in 1978 had promised 10 years of special prices by decree, once the investments were done and the enterprise had credited its 'gained-right' access to the program. So, in 1987 some companies were found with no more than a year of subventions, having in already exercised their investment in their own restructuration and infrastructure.

For the first time, actors began to talk about a special relationship between chemical producers and the state. *“As we are basically a Mexican owned industry, the government had major margins and negotiation skills as to impose arbitrary decisions”* (Rodríguez, 2005). In the mid-eighties, the government was not ready to accept a challenge like the one presented by the organization of chemical producers. Using the power of different Ministries, and the strong personalities of some Ministers, it struck back with all the means it had in hand, until ANIQ and the few corporations that continued the legal battle opted for abandoning the process.

Companies were forced to make their own financial predictions in a new context and in a hard way. In a period of two years, PEMEX’s engagement of full provision ended, thus they had to learn the import process for raw materials directly.[110] After Mexican’s adhesion to GATT, protectionist tariff and non-tariff barriers fell, special prices were annulled, and competitiveness became the flavour of the day (Pani, 2005). Most importantly, the state’s new ideology decreed no new investment in the sector or policies directed to create an adequate environment to foster investment. *“The state just took back the patterns guiding the development of the industry for 25 years”* (Pani, 2005). For example, when the GATT agreements took effect in the summer of 1986, the cancellation of import permits liberalized imports of 87 percent of the national production–transforming them into tariffs.

[110] Pani (2005) adds that direct provision from international markets created a new problem for the transport infrastructure. As PEMEX owned by law all transport capacity to receive and sell raw materials, private producers had no physical space to acquire products abroad. PEMEX let private producers use its own physical infrastructure or otherwise charged fees for receiving, storing, and handling provisions.

In turn, import tariffs were established at a mean of 5-10 percent. In the two years from 1986 to 1987, the official price lists, applied to 21 percent of the production, were eliminated (Mattar, 1994: 162). The last blow to the industry was related to competitiveness. As a result of the commercial liberalization, final producers such as the toy makers and some textile or rubber (for bike and car tires) makers disappeared in a couple of years.

The chained effects on derivatives producers were important. As some industries planned on future consumption of companies that were fated to disappear, they also faced severe effects. The only options faced were restructuration towards exports or perishing (Pani, 2005).

Since 1985 and along with the challenge represented by structural reform, new industrial capacities began to work.

> *"We have a complete new world. When Lopez Portillo consulted to join GATT in 1978, we had a petrochemical operation based on small, inefficient plants, using obsolete technology; of course we answered no [to the GATT adhesion] (…). By 1987, 80 percent of petrochemical and chemical production was manufactured in brand-new world-class plants that were efficient and competitive, which could easily take the risk of international competition*" (Rodríguez, 2005).

As President of ANIQ in 1987, Leopoldo Rodríguez (2005) proudly remembers saying to president De la Madrid *"we [as a sector] are ready to go with Mexico into the world economy".*

7.3 State promotional roles: two models living together?

As mentioned in chapter three, the 1982 internal negotiation inside the PRI-government resulted in the amendment of the so-called economic chapter of the constitution. From there, the nationalist wing of PRI accepted to liberate most of the industrial branches in which the state was participating. The sole exception was basic petrochemicals, whose production was restricted to the state in the constitution. However, the list of basic products could be arbitrarily defined by the state, without following any technical definition. When the custodial role passed from restricting to empowering private investment, it was done without even changing the basic regulations in the sector. The Energy Minister had enough discretionary authority to define in a precise way the products that the state considered as basic, secondary, and tertiary.

The declassification process sought to reduce the pressure on PEMEX to meet the demand of the private sector. The state would reach international definition of what basic products are once the third decree was announced in 1991. Since 1991, the state has only defined the eight building blocks at the origin of the petrochemical chains: the olefins (ethylene, propylene, butylenes, and butadiene) and the aromatics (benzene, toluene, and xylenes), plus carbon black. All the rest would be considered as secondary, and by definition, could be privately produced.

The petrochemical plans defined during the oil boom recognized the important effect that integration has on competitiveness. The state began to emphasize this issue as the key for future development. Integration, in the official documents, is considered as a determining factor in the competitiveness of the industry. According to the Energy Ministry (Secretaria de Energia, 1997: 38), integration can be as important as controlling scale economies or technical innovation in some chains. Since the industry has been affected by low and high cycles since the 1980s, the competitiveness of the petrochemical chains relied on integration. Integrated chains allow the definition of strategic decision-making for producers: as profits come from upstream production, commercial positioning in the world market comes from downstream production. Transport costs became irrelevant when a producer could increase and manipulate prices along every petrochemical chain to increase both positioning and profits (Secretaria de Energia, 1997: 38).

The attraction of private investment is an essential factor in reaching the objective of integrating production chains. Therefore, investment and integration became attached to privatization schemes. It is important to mention that even during the oil boom – when integration was an important objective of the state in order to increase the competitiveness of the industry – President Lopez Portillo did not consider changing the artificial structure in which the industry was born. In contrast, President De la Madrid's reforms began by legalizing this industrial disarrangement through a constitutional amendment and granting to the state the production of basic petrochemicals. He reduced the list to its minimally technical expression later. Even if further state actions reduced the demiurgic role to its minimally technical expression, as we have shown, these decisions were done more on an ideological basis than on technical studies.

The result was that the quasi-annulation of the demiurgic role affected the implementation of the reform negatively, as the old paradigm continued to coexist with the new one, thus complicating the achievement of the goal that pursued the creation of competitive advantages. It did not matter how far the state would withdraw; in the end private producers still had to depend on PEMEX for getting hold of raw materials. For its part, PEMEX transformative capacities needed private capital and open private-sector participation, yet regulations still made it impossible for foreign firms to enter the Mexican market.

The pursuit of the main goals–integration and private investment–became problematic when the major deregulation policy was announced in 1991. The more the midwifery and husbandry roles would succeed, the more PEMEX would have to increase investment and production of basic products.[111] So, public investment continued to be as important as it was in the past, even if the list of basic petrochemicals had been dramatically reduced. If their midwifery and husbandry plan to increase private participation were to succeed, the state would have to reinforce its demiurgic role.[112]

The technocrats that aimed to provoke a paradigm shift sought new schemes, and they always implied increasing demiurgic participation as in the past. Midwifery and husbandry actions looking to increase international competitiveness reinforce this contradiction. During interviews,

---

[111] According to Bucay (1991) the petrochemical commission kept granting permits for production in order to induce private investment. However, the permits granted in 1988 alone increased by 25 percent of private demand on PEMEX's basic products in 1989.

[112] As introduced in Chapter 3, the petrochemical and chemical industries are considered to be close because of the fact that industrial transactions occurring inside the different petrochemical chains develop from the same eight basic products. The different links of the chains give rise to about 74 different industries (Mattar, 1994; Chapman, 1991).

businesspeople keep saying that technocrats became "*more Catholic than the_Pope"* when defending the orthodoxy of their policy and rejecting new investments in PEMEX transformative capacity. PEMEX indeed lost its role as a promotional agency, to become a public-sector industry.

Moreover, there was no place in the context of the new paradigm for supporting the link between private and public domains because there was no place for the further expansion of demiurgic roles in the new paradigm. This comes in addition to the fact that the power of oil union–whose margin of manoeuvre was derived from its dual participation in the administrative council of PEMEX and the PRI political council–menat PEMEX's management would be driven by political influences. Along with it, government dependence on oil revenues increased, representing 50 percent of total tax revenue (Gonzalez-Pedrero, 1982). The company financed PRI's activities and the union's 'social' activities.

7.4 Integration as the key for the future

The declassification of basic petrochemicals saved PEMEX resources, but it hardly solved the disintegration of the industry. International producers that began to aggressively export to Mexico then occupied the place that PEMEX had abandoned. This fact only increased the obstacles for the state's primary objective of promoting the integration of chains in domestic hands. Unger (1994: 52 points out that the reclassification of October 1986 allowed PEMEX to save 500 million US dollars yearly. However, transferring PEMEX's import costs to private producers only accentuated the structural disintegration of the Mexican industry in the context of an open economy. Private actors reacted by increasing imports on a temporary basis instead of investing in production themselves. Neither PEMEX nor the private sector would initiate new investment while waiting for the privatization process.

Since the liberalization of the market, transnational corporations increased intra-firm commerce from 24 percent in 1980 to 57 percent in 1990. These exchanges were executed mainly with foreign enterprises acting in Mexico. In terms of exports, domestic firms tried to keep a diversified international strategy as a goal for trade and to avoid dependence on the American market. However, the most important exchange was from American imports in 75 percent and exports in 40 percent (Mattar, 1994: 182; Unger, 1994). [113]

As part of the trade liberalization policies, PEMEX began to assist private producers in dealing with international circuits, at the time PEMEX kept as the sole supplier to medium and small producers. The first goal was to teach them how to create international producer networks and to acquire products and technology, as well as to invest and setup ventures through associations. (Mattar, 1994). However, to foster integration and implement an aggressive policy of privatizations was part of the plan.[114] Both PEMEX and private producers stopped new investment before for the privatization process that was later planned and initiated in 1988. The result of the first stage of the

[113] European imports stood at 15 percent while Latin American exports represented 30 percent.

[114] The complete privatization plans of 1993 and 1996 will be explained in chapter 8.

reform was that the competitiveness through integration, gained by the petrochemical industry during the oil boom, began to lose momentum as a result of the partial abandonment of demiurge. State place, as said, began to be filled through imports and integration began to be lost.

The state considered the growth in exports as a key part of its strategy to maximize the added value of hydrocarbons. This focus reinforced the competitive advantages in the best integrated chains in sectors such as synthetic fibres to benefit the textile industry, chemical specialties related to auto parts, electronic domestic products, communications and electronics, synthetic resins to improve the production of plastic products and elastomers, a basic material to produce rubber products (SEMIP-SECOFI, 1986).

As a result of the husbandry activities, the exports began to grow. As such, the participation of petrochemicals in total exports raised from 1.2 percent in 1980 to 3.3 percent in 1990. The secondary products grew from 0.3 percent to 1 percent in the decade. Final products, and particularly fibres, resins, and fertilisers, grew from 0.2 to 1.7 percent. Exports in proportion to production doubled to reach a peak of 22.1 percent in 1990. The most important growth in exports naturally came from final products (Unger, 1994: 72).

De la Madrid's government marked the first period in which no growth was registered since the inception of the petrochemical industry. Official figures reveal that between 1979 and 1985, the industry doubled its productive capacity. These numbers however, reflect the impressive results of the investment during the oil boom and reduce the impact of the crisis years.[115] The survival of the domestic producers is explained by the two temporary export plans initiated in 1982 and 1985. However, a study made by the Energy Commission in the Chambers of Deputies assures that the reforms made in 1986 let the petrochemical industry grow at a mean of 8 percent in the second half of the 1980s–a growth led by exports and Export-Oriented industries that took advantage of the export facilities constructed during the oil-boom (Arceo Castro, 1996: 19; Comision de Energéticos, 1995: 11).

The state's increasingly demiurgic role of the 1970s was rhetorically justified in order to reduce the concentration of the market in private hands. The new policy was looking to reinforce the consolidation of national champions; therefore concentration became an inevitable consequence for increasing competitiveness. In fact, the concentration of petrochemical production in Mexico was not dissimilar to that occurring in world markets. As in the past, the conditions of a quasi-monopoly that resulted from the initial privatizations would only reinforce the domestic market. This would not affect domestic consumers through market liberalization because consumers would have access to international supply if domestic conditions were not convenient to them. Even if the conditions of international competitiveness were established, the plan sought to privilege the domestic ownership of the main industrial petrochemical groups, privileging Mexican integration and Mexican leadership in the domestic market (SEMIP-SECOFI, 1986: 29).

[115] Look for footnote 18 on chapter 6.

As the state kept a fixed attitude towards privileging and protecting domestic private investors, the law for attracting foreign direct investment simultaneously maintained the restriction of foreign producers. This clause still limits foreign participation to a maximum of 40 percent in any venture. Subsequently, the state created a similar stipulation in the privatization policy, in an attempt to reduce the concentrated market. Policy-makers were not aware that this concentration was no longer a problem in the promotion of national champions (Teichman, 1995: 23-25).

7.5 The first privatizations

Grupo Industrial Alfa was one of the four groups in which the Monterrey Group was divided after the assassination of its President, Eugenio Garza Sada, in 1973. This firm was also the main beneficiary of the first stage of privatization, receiving control of the Mexico’s largest petrochemical plant in 1988. Alfa had begun its incursion into the chemical and petrochemical industries in 1956, when it bought Nylon de Mexico and Polioles. In 1976, they participated in the Mexicanization of Fibras Quimicas and two years later, it bought Petrocel – all these were industries related to the production of polyethylene fibres. Alfa’s chemical and petrochemical facilities represented 17 percent of the synthetic fibres in the Mexican market concentrating on raw materials such as polyester, nylon, and spandex (Vila, 1994: 218-237).

Alfa was a key ally of Lopez Portillo, and the government granted all the benefits that it could to support the Group’s aggressive business diversification. However, Alfa’s expansionist attitude was disordered and it took control of many companies participating in almost every sector in the economy without having an industrial plan that would justify these actions. In order to fuel Alfa’s growth, the state granted the company special prices in electricity, gas, oil, and transport, in addition to fiscal credits and tax reductions.

By 1978, only three years after Alfa began to participate in the petrochemical sector, its assets in petrochemical production represented 31 percent of the total revenues of the national industry. All this incursion into petrochemicals was done through join-ventures with world leaders in different areas: Nylmex for the production of Nylon with Dupont of the United States; Figusa for the production of polyester fibres with Akzo of Holland; Polioles for the production of chemical products with BASF of Germany; and Petrocel for chemicals products with Hercofina of the United States (Vila, 1994: Chapter 7).

During Lopez Portillo’s government, Alfa initiated seven joint-ventures in which it kept control of the companies while acquiring technology from the foreign partners. At the beginning of the export plan, exports were centered on HYLSA steel (99 percent), only to be replaced by the export of paper, artificial fibres and televisions, which in few years represented 87 percent of Alfa’s total exports. Petrocel, an important exporter of DMT (a product used in the manufacturing of fibres and polyester) became among the most important exporters of the group since 1985.

Alfa's finances began to show its weakness in 1980, indicating the firm's impending crisis that would last seven years. The conglomerate experienced such grave economic troubles and losses between 1980 and 1981 that Lopez Portillo's government granted special loans through Banobras (a municipal development bank) in order to assume the exchange risk of its external debt that reached about 2.3 billion US dollars.

Alfa was forced to give up control of its assets by foreign bankers and its administration council was relieved of stewardship duties.[116] The firm was also forced to implement a rationalization plan in which the entire company was reorganized around business lines. Only three big sectors would continue to operate through subsidiaries after the restructuring process: first, petrochemicals that were managed through Alpek; food that was controlled through Sigma; and steel that was controlled by HYLSA. Furthermore, the company divested the other sectors it had participated in and sold them.

Tereftalatos Mexicanos (TEMEX) was one of the first joint ventures in the production of petrochemicals initiated by the state in 1978. The construction of this initiative was announced in April and it represented the first venture in which PEMEX, Celanese (a national private producer owning 28 percent of the assets) and Amoco (Standard Oil-Indiana and technological world leader with 8 percent) agreed to produce the basic materials for the production of Pure Terephthalic Acid (PTA). Production was concentrated in

[116] Alfa was the most benefited business group from the FICORCA a few years later (CIEN A7/E45, quoted in Vila 1994: Chapter 7).

Cosoleacaque, Veracruz where PTA[117] was manufactured from paraxilene. This plant would seek to make Mexico a self-reliant country in the production of this basic material and was the only national producer of it (Mercado de Valores, august 14, 1978: 1).

TEMEX was one of the first companies whose production was reclassified as a secondary petrochemical in 1986, and was sold in November 1988–only four days before the end of Miguel de la Madrid's government. The sale was unsurprisingly disputed by the most important producers of synthetic fibres in Mexico: Alfa, Cydsa, Gentor[118], Celanese[119] and even Amoco of the United States. When TEMEX went on the selling-block, the company supplied PTA exclusively to three national champions in polyester production: Celanese (who already owned 28 percent of the assets), CYDSA, and Alfa. These three conglomerates combined to form 70 percent of the national polyester market.

The result of the public auction was announced in November 26, 1988. Alfa won the bid with an offer totalling one and one half the value of the company. Under this new company, Alfa became the only national supplier of TMT and DMT (basic raw materials for the productions of fibres and plastics). TEMEX was one of the biggest companies to be privatized in the De la Madrid's government, and it was worth 200 million US dollars in 1988. The

---

[117] PTA is a basic raw material in the production of polyester and synthetic fibers, of which Alfa had 30 percent of national production.

[118] These three groups are mostly controlled by Mexicans and managed to attract technology mainly by associations with world leaders in their specific sectors. All three are located in Monterrey.

[119] Mexican association with Hoechst owns 40 percent of Celanese.

privatization of TEMEX was announced by Nafinsa that sold 58 percent (out of the 68 the bank owned) of the company's assets. It would eventually force Alfa to stay associated with Celanese. On the other hand, Celanese would also consolidate its position in synthetic fibres. Since TEMEX was the main supplier of raw materials to Celanese, the integration of the two main players would also be sustained.[120]

With the attainment of TEMEX, Alfa became one of the world's top five producers of polyester and the only one in Mexico that produced raw materials for the textile sector. The acquisition of TEMEX resulted in Alfa gaining monopoly control of its main raw materials market. It also resulted in the complete integration of the chains that produced fibres and textiles, which were already controlled by Alfa. This fact would significantly reduce the competition Alfa had to face in the liberalization of the market. The acquisition also represented Alfa's inception into international markets and it meant that Mexico would become a competitor of Korea and Taiwan, which were world leaders in the production of polyester.

Petrocel–the Alfa subsidiary that officially bid for the company–was the first to market Dimetil Tereftalato (DMT) in the world, and Tereftalatos Mexicanos was the ninth top producer of Tereftalic Acid (PTA) in the world at the moment of its privatization, according to official reports. This high level of production greatly influenced the state's decision to grant the company's

---

[120] For details on this privatization see Marco A. Torres 'Grupos locales disputan paraestatal' El norte 26-10-1988 and Marco A Torres 'Tereftalatos otorga a Alfa liderazgo en petroquimica.' El norte, 26-11-88 This belongs in the Bibliography

assets to Alfa. Thus, Alfa became associated with Celanese and PEMEX. Alfa became the first national producer of petrochemicals. However, Celanese gave up its participation in 1990.[121]

Only one year after the privatization of TEMEX, Petrocel became the first exporting company in the country. Its exports grew by 27 percent in only one year. The newly acquired plant enabled Petrocel to expand the elaboration of polyester plastic and photographic film. In the moment of its privatization the plant was only 10 years old, which provided Alfa state of the art technology, propelling it to become the leading producer of fibres and primary materials for fibres in months.

The goods produced in the domestic market by Alfa, allowed it to follow what Pozas (1999: 185) calls a 'nationally centered strategy of internationalization' in which Alfa maintained a central position in the international relationship. This made it capable of inviting foreign partners to enter joint ventures in Mexico. Alfa continued to maintain control of the Mexican market in which the strategic alliances were carried out – whether they were technological alliances, long-term supply contracts, the joint creation of a new subsidiary, or a combination of the three. In this model, the local firm always maintained the control over its company and its subsidiaries by keeping the majority of shares. Meanwhile, foreign firms used Alfa's

[121] Press reports argued that the state choose Alfa mainly for the expansion plan Alfa outlined with the acquisition, and because of the important level of investment during the next five years worth more than 200 million US dollars.

knowledge of the Mexican market to coordinate foreign investment without directly competing with Alfa itself.

7.6 Privatization as state policy

The first plan to privatize petrochemicals was implemented during the De la Madrid's government on a plant by plant basis. This plan sought to deal with the two most important problems in the industry simultaneously: integration and lack of investment. Private sector actors acquiring specific plants that would be conducive to their specialization would achieve integration.

The state maintained an active role in inducing and supervising private investment and avoiding rent seeking on the part of the buyer. In doing so, the state required potential buyers to compose a detailed investment plan in order to qualify for the bids. The technical feasibility of the long-term investment plan became one of the most important criteria in assigning the plants. Finally, the state did not immediately relinquish entire participation in the process in order to supervise the transition and to ensure the integrity of the private sector.

Integration was facilitated by the fact that buyers were already clients of basic petrochemicals produced by PEMEX. These often operated in the same the petrochemical complexes.[122] Therefore, the process of passing

[122] It is worth remembering that PEMEX planned to integrate production in the same physical spaces in which it produced basic petrochemicals. The original plan was to build 4 petrochemical poles in 1979, which were later reduced to 2.

control from PEMEX to private producers was relatively smooth. Private producers bought up-to-date installations that allowed a faster integration with domestic chains and increased international competitiveness. There was also the notion of privatizing on a plant-by-plant basis. This way, capital would be relatively accessible to almost any medium to large company–depending on the product–and the company would be gaining access to raw materials and integrating backwards through the chain.[123]

Privatization became a sort of midwifery action that allowed the state to integrate national champions. Blending this approach with some state husbandry would consolidate international competitiveness for the petrochemical groups. It is important to remember that, according to the plan, large domestic producers would increase their quasi-monopoly influence over the domestic market, which would in turn reduce foreign competition in the Mexican market. As Pozas (1992; 1994; and, 1999) studied in greater detail during the 1990s, the internationalization strategies followed by business groups were dependent on the nature of the industrial sectors in which they participated. However, even in cases like the internationalization of the cement industry, which–by the nature of the product–demanded the expansion of production abroad, the state assured that national groups reinforced their dominant position in the Mexican market before its internationalization.

[123] The plan even considered the possibility that medium-sized companies might associate among themselves in order to bid on public assets, assisting the integration of different specialities that would have otherwise been excluded from the transition.

Nevertheless, the petrochemical privatization plan would also affect the interests of the union-owned industries that were related to servicing PEMEX. Privatization would also affect the union's role of representing workers and it would result in the reduction of administrative personnel that this privatization would have implied. Moreover, the union's capacity in maintaining monopoly control over service companies and the representation of workers would be threatened by the privatization of petrochemical national champions.[124]

Conflicts with the Planning and Budget Minister at that time, Carlos Salinas, were indicative of the decline in economic interests of the union. Salinas began to establish the most stringent norms in assigning public works–especially in relation to PEMEX. Since January 1984, the flux of contracts to union service companies and sub-contractors were cut. Only in the petrochemical industry, the union had been assured 50 percent of the construction, development and dismantling of the plants. In addition, the union's management of social benefits from PEMEX to workers (housing, hospitals, supermarkets, etc.) would be threatened as well.[125] As the union controlled just about every position in PEMEX's management, the company employed about 3,000 persons under the label of *personal de confianza* (trustees) in order to ensure strategic functions and the reform of PEMEX.

Behind the scenes, the problems between Salinas and the oil union increased as soon as Salinas became the PRI candidate for President.

[124] The union exercised a closed shop, exclusively representing workers from the rank-and-file to the technical expert. In addition, clause 36 of the collective contract signed by PEMEX and the union in 1946, guaranteed that the union would receive at least 40 percent of the service contracts.

[125] See Corro in Proceso (14 marzo 1988;)

Salinas' main objectives were to improve the management of PEMEX and the continuation of structural adjustment that we will detail in the next chapter.

Chapter 8. Institutionalizing the paradigm shift: deadlock and failure

Carlos Salinas's government (1988-1994) focused mainly in gaining national and international trust by attracting new investment. His government implemented a radical reform agenda that concentrated its efforts on reducing external debt and on diversifying commercial destinations. Once the debt agreement was reached, the goal was to connect economic growth with international markets, to diversify commercial destinations, and to attract new investment. In the first quarter of 1990 though, Salinas's government decided to negotiate a Free Trade Agreement with the United States, which was extended to NAFTA when Canada was included. This period, characterized by government and private producers working together, reinforced a new collaboration trend that was based in a protective liberalization of the national industries while going through the process of internationalizing the economy. Nevertheless, Salinas was unable to change the core of the nationalist revolutionary policy, specifically at the base of the petroleum policy. All reform process showed its limits.

Salinas's determination to consolidate credibility in the shift of the development paradigm was the key of his period. Most of Salinas's legitimacy problem derived from questioned elections, PRI fracture and internal resistance to advancing structural reform of the economy. One of the most resilient opposition against the new development agenda was the oil union, whose leaders not only funded Cuauhtemoc Cardenas's opposition movement, but they also resisted openly any reform in the petroleum industry and any possibility to change the conditions of the collective agreement. For this reason, after a few weeks in office, Salinas imprisoned oil union leaders, changed the rules of FDI in order to attract investment into the sector, reformed PEMEX’s structure and created the conditions for privatization.

This chapter will focus on the collaboration and deepening of structural reform in the petroleum industry. It is characterized by the definition of new rules that were meant to attract private investment, by the institutional reorganization of PEMEX and by the leading role played by chemical businesspeople inside business organizations during the negotiation of NAFTA. Yet the story is one in which the government failed to pass the petrochemical privatization or to attract new private investment into the sector, in spite of the important reforms that had been accomplished. The petroleum sector seemed destined to continue to live with the nationalist revolutionary institutions for a long time.

8.1 Salinas strikes back

If the year 1986 began with a manifestation of the oil union leadership power that threatened President Miguel de la Madrid, 1989 surprised the country with the incarceration of the whole oil union leadership. The imprisonment of Joaquin Hernandez Galicia and Salvador Barragan Camacho along with 34 other oil union members was motivated not only by the union’s opposition to the reform-wing of the PRI, but also to the privatization of PEMEX’ secondary petrochemical industry.

Since the beginning of Salinas' government, the President announced his intention of restructuring PEMEX, which implied the withdrawal of the significant demiurgic role that the state had played in the industry (García Reyes, 2005: 371-376). Even with the leadership imprisoned, the government had to deal with ample resistance in order to initiate the reforms. Since 1987, the oil union leadership had funded an internal opposition movement led by Cuauhtemoc Cardenas (son of the oil-nationalizer ex-President Lazaro Cardenas, 1934-1940) in order to save the nationalist strategy for the country's development and especially for the management of the petroleum industry. This resistance resulted in the division of the party when Cardenas opted to abandon PRI and created a movement to campaign for the presidency in 1988.[126]

Another source of conflict was the renegotiation of the collective agreement between PEMEX and the union in relation to austerity plans of the state. The renegotiation began just a few months after the imprisonment of the union leaders[127] and it reduced union benefits drastically. Among the

[126] In 1987, Cuauhtemoc Cardenas and Porfirio Munoz Ledo began to form the Democratic Current inside the PRI. The main goal was to attack the traditional way in which the President selected the successor. The process resulted in the fissure of the PRI, and the formation of a larger coalition named the Democratic National Front that was meant to support Cardenas as a presidential candidate. After the contested election in the summer of 1988, the DNF became the Partido de la Revolucion Democratica (PRD). The PRD challenged the PRI, arguing that they were the real inheritors of the Revolutionary project the PRI had relinquished with neoliberal reforms. For a couple of years, Salinas and the PRI had faced an ideological issue, as the PRD's platform was the failure of the reform process initiated a couple of years before. "In the Cardenas–Munoz Ledo view, as the official party pursues its monetarist policies to the detriment of sectors that have supported it, the pacts will rupture completely, benefiting the PRD which will attract groups alienated from the PRI even as the PRD strengthens its own network for the 1994 presidential campaign" (Wilkie, 1990 p. 43)

[127] Sebastian Guzman Cabrera –the union leader installed by a convention manipulated by Salinas' government after the imprisonment of the former leadership– lost the leadership in

privileges lost in the 1989 agreement were: PEMEX's obligation to subsidize union stores; the union's exclusive right to perform contract work for dry-land drilling, plant maintenance, industrial installations and infrastructure development; the requirement that PEMEX must pay 2 percent of the value of all outside contracts to the union's social works fund; and the obligation of contracting companies to employ union personnel. The 1991 agreement brought even further revisions undermining union participation in the allocation of jobs. Promotions were also eliminated and union interference in the organization of the enterprises was terminated. As a result PEMEX's labor force was reduced from 212,000 to 110,000 persons between 1989 and 1993 (Teichman, 1996: 6; Loyola-Diaz, 1990). Even if most analysts agreed that the imprisonment of the oil union leadership opened the way to push for PEMEX's reform, the reorganization of PEMEX waited until 1992.

8.2 The reorganization of PEMEX

The sewer line explosions in downtown Guadalajara in April 1992[128] gave the government the opportunity to reform the organization of PEMEX. The government presented the issue as an infringement upon public security, thus pushing PEMEX's administrative reform. In 1990, the Energy, Mines and Parastatal Industries Ministry's (Secretaría de Energía, Minas e Industria Paraestatal, SEMIP Spanish acronym) National Program for Energy

---

1993 after a five-year term to Carlos Romero Deschamps. With the change in leadership, the reforms were jeopardized because the new union leader was not as complacent as Guzman had been.

[128] For the Guadalajara explosions see Galarza, Corro & Correa in *Proceso.* April 27, 1992, and May 4, 1992.

Modernization announced the government's intention to rationalize PEMEX's organization in order to push decentralization–limiting management responsibilities in business lines–and to create new scales and scopes to enhance efficiency (García Reyes, 2005: 371).

In July 1992, Congress passed the new regulation on PEMEX's administration, which established PEMEX as an organization comprising a corporate staff and four operational units (Rousseau, 2006: 391).[129] PEMEX based its reorganization upon a proposal elaborated by McKinsey and Co. in which the guiding idea was letting PEMEX set specific agreements with investors according to the company business lines. For doing that, PEMEX was reorganized by creating a corporate control holding and four subsidiaries (García Reyes, 2005: 370-375; Rousseau, 2006: 390-391).

In January 1993, the new subsidiaries began functioning independently. They were: PEMEX - Exploration and Production, PEMEX - Refining, PEMEX - Gas and Basic Petrochemicals, PEMEX - Petrochemicals, and, additionally, an autonomous organism named PEMEX International in order to deal with PEMEX investments abroad. The new units enjoyed autonomy to define organization, planning, finances, investments, business plans, and administration. Along with it, every unit received control over facilities, plants, and for the first time, the government defined a price for each unit (García Reyes, 2005: 371-375).

---

[129] The administration Council of PEMEX increased its seats from 9 to 11, leaving 5 to the oil union, and keeping the six others who were appointed by the President in order to ensure the government retained control of the company. Even with these reforms, the oil union kept a strong position in the definition of PEMEX's policy.

The reorganization of PEMEX –along with the reclassification of basic products– created a clear physical division in the complexes, determining what and where the state would continue producing and what and where was to be privatized in the years to come. For the first time, the government made it clear that PEMEX - petrochemicals owned 60 units that produced secondary petrochemicals and 10 petrochemical complexes (Garcia Reyes, 2005: 373). Along with the new interpretation of the previous custodial definitions, this restructuring would facilitate the eventual sale of the petrochemical plants and complexes.

In mid-1992, PEMEX has announced the disincorporation of secondary petrochemicals and the disinvestment from obsolete plants counting on 20 years or more. PEMEX closed the ammoniac and acrylonitrile plants in Cosoleacaque, and the methanol plant in San Martin Texmelucan. Along with this policy, the company decided to halt the production of non-biodegradable detergents.

Some aspects of the policy that were subsequently followed by PEMEX altered the general frame in which PEMEX had been playing. The management of PEMEX by business streams, and the evaluation of its performance according priority to profitability altered the subsidizing attitude PEMEX had played in Mexico historically. However, as the privatization sequence did not follow as planned, management costs increased, as services offered inside PEMEX subsidiaries were established in real market prices, and administration apparatuses were duplicated or triplicate in every unit (Pani, 2005).

As we will explain in the next section, the basic rules regulating FDI, the Petrochemical Commission and the attraction of investments also changed. The Petrochemical Commission was dismantled in 1993, and it was reduced to the maintenance of official figures and institutional statistics of public and private producers.

8.3 Different pieces of a new custodial role

After a decade of recession, the attraction of investment into the petrochemical sector became ineluctable. Along with the creation of a specialized subsidiary that was in charge of producing and marketing petrochemicals, the attraction of new investment forced further reforms in related issues: changing the rules to attract investment in a very restricted sector, reclassifying petrochemicals in order to expand the scope of private participation, and creating financial strategies to widen physical infrastructure.

8.3.1 New rules for FDI

On May 16, 1989 the government published new rules for the application of the Law to Regulate and Attract Foreign Direct Investment in the official gazette. As Salinas had no control in Congress, the new regulations passed as a presidential decree that would define the application of the Law. The government opened a new debate on the legality of decreeing a regulation that contradicted both the Law and the constitutional mandate (Medina-Mora, n.d). Acting by decree Salinas tried to avoid failure in a conflictive, and almost certainly unsuccessful, negotiation in Congress to pass a new Law to regulate FDI. The government sought to overcome the restrictive regulations related to the oil and petrochemicals (among others), constrained by the constitution.

The new rules opened a side door to FDI in petrochemicals. In combination with the reclassification of petrochemicals, the Mexican government gave foreign investors the possibility to acquire 100 percent ownership of a secondary petrochemical plant if they established a special trust with a Mexican credit institution (GAO-US, 1991). The trust would give the foreign investor the governance of the company and the profits from the venture, while direct control of the company would remain with the Mexican trustee during 20 years (Medina-Mora, n.d.: 174).

The second way in which the state planned to attract investment was through the construction of utilities by national or international companies under the auspices of PEMEX, who would also manage the operation of the plant, providing return to the investor, and ensuring the long-term provision of raw materials at stable prices (GAO-US, 1991, Davila-Sanchez, 1994).

Embedding foreign investment in the domestic market was difficult due to the fact that foreign investors sought to control the industry from the oil well to the final product. Still, new regulations allowing foreign investment into the sector tried to overcome the general restriction established in 1973, a limitation prevailing until today, limiting the ownership of a petrochemical plant to 40 percent. As said before, on 1990, foreign investors were allowed to create a trust that would control new enterprises and leave all profits to the investors. Since 1996, foreign investors were allowed to control 100 percent of any new plant producing secondary petrochemicals, as we will see in next chapter.

8.3.2 Reducing basic petrochemicals to its minimal expression

The second main piece of policy shift was the reclassification of petrochemicals. In close consultation with private producers, De la Madrid's government reduced the list in 1986, and then Salinas' government adjusted the list from 34 to 20 petrochemicals classified as basic in 1989, to finally reach 8 basic petrochemicals during NAFTA negotiations in 1993 (Rodríguez, 2005). The government also decreased the number of petrochemicals classified as secondary from over 700 to 66, and for the first time provided a definitive list of these products. All the petrochemicals that were not included in these two categories were unregulated and therefore opened to complete private and foreign ownership (GAO-US, 1991).

Even if the Petrochemical Commission disappeared in 1993, Salinas' government deregulation affected its work. First, the government restricted rules to issue petrochemical permits, adding the limit of 90 days to release permits after which applications would be automatically accepted. Second, the reclassification of basic and secondary petrochemicals ended the commission's discretion to define the products. Third, as the commission ceased its regulatory role, the government transformed it to a consultant body to kept statistics from national producers.

The space for embedded autonomy had suffered an institutional alignment during the oil boom. Even though during the 1980s the commission still kept the regulatory role and was responsible to releasing permits to producers it has played since the 1960s. With the reclassification of basic petrochemicals by the government the commission became redundant. The location of exchanges shifted to the Commerce and Industry Ministry, the institution responsible for the negotiation of NAFTA. The adjustment of the basics list to NAFTA requirements will be discussed on the following pages.

However, even if petrochemical production was opened to private participation, PEMEX has still been the only producer of those goods until 2000. The only manufacturer of ethylene, vinyl, and butadiene in Mexico is PEMEX until now. According to Pani (2005), PEMEX's participation on those markets stayed untouched because their main consumers were small and medium manufacturers.

8.3.3 New financial architecture

PEMEX created a program to obtain private or foreign investment in its petrochemical plants. In exchange for capital funds to construct the plant, PEMEX promised to repay companies with petrochemical products elaborated from those new plants. Under PEMEX supervision, the companies built the plants leaving PEMEX as the operator (Davila-Sanchez, 1994; GAO-US, 1991).

As Davila-Sanchez (1994) has studied in detail, to attract investments without losing property, PEMEX instated two major policies:

- In 1989, PEMEX initiated programs in order to foster private domestic investment in the construction of new plants in exchange for raw materials for the investors.

- In order to augment the integration and productivity capacity of intermediary products, an association between private producers and PEMEX was framed. Taking into account that the supply of basic petrochemicals was in their interest, the private sector was invited to finance the construction of plants that were in process of building during the 1990s. These programs assured that PEMEX would receive the investment allowing the company to increase production.

Following the same author (Davila-Sánchez, 1994), the programs took two different forms:

a. *The advanced payment plan:* This plan was applied to the construction projects that were held up due to inadequate state resources. The investor groups paid PEMEX in advance for the products that the new plants would soon produce. PEMEX used that money to let the plants prepare for production. Furthermore, the clients would receive an annual pre-accorded volume of basic petrochemicals until the amount invested was returned, including the interest.

b. *The Build-Lease-Transfer Plan:* This program was conceived to foster new projects. The private corporations built, leased and transferred the petrochemical plants to PEMEX, while PEMEX reserved the right to choose the technology and engineering standards in addition to supervising the plant's construction. PEMEX also kept the operation of the factory, renting it with the buy-out option from the original constructor. PEMEX paid the rent with a long-term supply of basic petrochemicals until the original investor got back the investment.

As said in previous chapters, the competitiveness of an Export-Oriented petrochemical industry mainly stands on the degree of chain integration because integration guarantees constant prices in raw materials (SEMIP-SECOFI, 1986). In spite of all the reforms described, PEMEX kept the role of acting as the most important supplier in the industry (García Reyes, 2005: 371-376). PEMEX still assumed the responsibility for the competitiveness of the sector, continuing its supply of traditional low-prices through making long terms contracts with its clients and keeping stable prices, supply, and conditions.

Not surprisingly, American corporations were still reluctant to invest in Mexico's petrochemical industry by 1991. Their argument that the Mexican state kept a government monopoly over oil production blocking the full integration of the industry into private hands was constant throughout the 20th century. The other argument was that the state monopoly that produced basic petrochemicals was incapable of providing all the raw materials necessary for producing secondary goods. Last, but not least, and maybe as a more realistic argument for the discouragement of American investment, most of the reforms granting security on foreign investment on the sector rested on presidential decrees and discretional measures of Mexican institutions. As we have argued before, and Susana Chacón (2006: 229-255) has documented, American petroleum producers mistrusted the lack of institutionalization on the Mexican energy policy. Mexican government has tried to attract foreign investment without assuring long-term warrants to investors in different periods of history, a fact that American producers reject. Market liberalization created for American producers a better scenario, for since the market opening in 1986 Mexico has been importing from American producers (GAO-US, 1991).

8.4 NAFTA's 6th chapter

Considered as a watershed for Mexican traditional politics, the "making of NAFTA" is another example of embedded autonomy (Cameron et al., 2000 quoted on Ortiz Mena NL, 2005). State and private actors worked together during the negotiation with the United States and Canada.[130] The Mexican government negotiated based on the information produced by private sector organizations and defended every sector's positions in order to establish the Mexican goals and limits in every chapter of NAFTA. Private owners and organization's leaders were present on defending their own interests on what

[130] In an extremely quick chronology, in 1989, a few weeks after taking office, Salinas met President George Bush in Houston where the American President invited Salinas to form a free-trade region, an idea Mexico's president rejected. After Salinas's participation in Davos in February 1990, the Mexican president decided to accept the invitation, leaking the decision in March 1990 in the United States' press. During spring 1990, at Salinas' demand, the Mexican Senate organized a national forum to study the future possibilities for Mexican regional future from which, not surprisingly, the Senate endorsed the idea of negotiating a free-trade zone with the United States, thereby creating the image of national support for the government. Negotiations started in June 1990. In February 1991 Canada joined the process and the official signature of the document was in December 1992. After a complex legislative approval process on the US Congress, NAFTA began on January 1994 (Puga, 2004, Ortiz Mena LN, 2005a, 2005b).

was colloquially known as “the next door room”. They advised the Mexican negotiation team on issues related to their industries/sectors.

ANIQ established contact with the American and the Canadian counterparts since 1988 in order to evaluate regional integration in chemicals. In that year, Mexico began studying the possibility of joining a five-sectors integration agreement that had been discussed on a tripartite basis earlier in 1988, recognizing the American political intention to push for integration (Rodriguez, 2005). In 1991, ANIQ suggested that integration with the American market would be advantageous for Mexico. Their argument in favor of integration was that Mexico could benefit from petrochemical production in the United States, and it could join the provision networks settled in the Mexican Gulf (Puga, 2004: 101; Bucay, 1991: 119-157).

By September 1990, some industrials were ready to push the five-sector-negotiation initiated two years before, when ANIQ’s president, Leopoldo Rodríguez, played a fundamental role in persuading the membership of *Consejo Coordinador Empresarial* (Business Coordinating Council CCE) to support NAFTA. After meeting CCE’s leaders to talk about the process reached by chemical and petrochemical negotiations, Rodriguez suggested the government’s negotiation team to establish two different agendas in order to avoid contaminating the negotiations with domestic topics worrying entrepreneurs. Businesspeople were preoccupied because “not-defined issues” related to infrastructure, consumables prices, energy, logistic and labor among others, were not in the agenda. As suggested by Rodriguez (2005) being Mexican nuisances, those issues integrated a domestic agenda created in order to avoid contaminating the negotiation with the United States and Canada.

In addition to this, ANIQ's furnished the methodology to integrate the external agenda. As it is well known, the government's negotiation team asked every industrial, agricultural, and service chamber for a monograph that included the state of the sector, which aspects were ready for negotiation, which were not negotiable, and the timing they needed to open the sector to free trade. The goal was to identify the weaknesses and strengths in order to define goals and limits of the negotiation (Rodríguez, 2005; Puga, 2004: 131-157). In the 1970s, ANIQ developed a methodology to analyze the petrochemical and chemical sector's real situation. This method was extended to the rest of the industries in order to attend the government's request of producing the sectors monograph that would support the negotiation process (Puga 2004: 131-157).

Private participation was organized through the Coordinator for Foreign Trade Business Organizations (*Coordinadora de Organismos de Entidades de Comercio Exterior*, COECE), which was an *ad hoc* organization created and funded by private sector organizations. CCE's final decision was taken by Presidents of CCE, CONCAMIN (*Confederacion de Camaras Industriales*, Industrial Chambers Confederation), CMHN (*Consejo Mexicano de Hombres de Negocios*, Mexican Council of Businessmen), and CEMAI (*Consejo Empresarial Mexicano de Asuntos Internacionales*, Mexican Entrepreneurs Council for International Affairs): Rolando Vega, Luis German Carcoba, Antonio Madero Bracho, and Juan Morales Doria. These four men decided to create a new, very inclusive organization that would monopolize the negotiation. Every chamber (industrial, commerce, services, and agriculture) would choose its representative (Puga 2004: 131-157).

Even if there are debates on the government's influence on the COECE's definition and further organization (Alba y Vega 2000, Cameron y Tuin (2000) y Jacek (2000) quoted on Puga, 2004: 131-149), Juan Gallardo Thurllow acted as President following CCE's decision. For the selection of COECE's General Director, the second position on board, it has been documented that the General Director of Banamex (National Bank of Mexico), Antonio Ortiz Mena (Finance Minister during the Stabilizing Development period as seen previously) selected a very close collaborator of his, Guillermo Güemez (Puga, 2004: 131-149).[131]

COECE had two different internal organizations. The first one was following the productive sector structure. The second was in charge of NAFTA chapters' negotiation. For the first one, ANIQ coordinated the chemical sector in what Rodriguez (2005) considered "a wide sense of the term": including basic and intermediary chemicals, using

> *"Almost the same definition used in the United States, which included paints, detergents, perfumes, and all kind of products manufactured from chemicals. Each sector had a coordinator who acted as a government advisor"* (Rodríguez, 2005).

---

[131] Banamex is one of the biggest banks in Mexico, controlling 25 percent of the market. After 1982 bank nationalization, the president named every bank's general director. Salinas named old finance minister mastermind of the stabilizing development period discussed on chapter 5, Antonio Ortiz Mena as Banamex's General Director. Puga (2004:131-149) documented that Guillermo Güemez was named COECE's General Director on Ortiz Mena's influence and recommendation. Ortiz Mena is related to Salinas family as well.

The second COECE's internal organization followed the negotiations: chapter by chapter. *"Each chapter was negotiated by a different group, and inside the group there was a private advisor group leaded by theme coordinators."* Rodriguez also played that role during the making of NAFTA's sixth chapter related to energy and petrochemicals, and advised the government in relation to monopolies and public enterprises during the negotiation of the chapter. *"Mexico was required to make a Law to regulate economic competition [Ley de competencia economica], thus creating the entire infrastructure to regulate on this subject"* (Rodríguez, 2005).

In the context of these negotiations, the government accorded the reclassification of basic petrochemicals. For the first time since 1959, private and public actors defined together the 8 products considered as basic petrochemicals since then. From this reclassification, the government made clear which products were reserved to the state, liberating all the rest from legal restrictions in order to attract foreign and private investment (Kessel et al, 1994: 129-151). By extension, the discretion enjoyed by the petrochemical commission to define which were basic and secondary petrochemicals ceased with the suppression of the petrochemical permits in 1992. The commission was dissolved at the end of Salinas' government.

The negotiation of NAFTA's sixth chapter opened space for three things: the liberalization of secondary petrochemicals, the harmonized definition of basic petrochemicals, and the disappearance of the centralized administration of the petrochemical industry. *"In a few words, we did an* *extraordinary work for the negotiation of the external agenda, although we ignored the internal agenda"* (Rodríguez, 2005).

8.5 Failed privatization

Along with deregulation in different aspects that affected petrochemical policy, Salinas's government tried to continue the disinvestment program for the petrochemical industry as it was originally planned in 1986. In spite of the measures his government took to deactivate the union's blockage to the project, the efforts did not succeed: to reorganize PEMEX in order to create the conditions necessary for pushing the privatization plan, to deregulate FDI in order to create gaps accepting foreign investment, to diminish the petrochemical list to its minimal expression, and to deregulate the whole secondary sector. The government took four years to create the conditions necessary to privatize PEMEX's secondary petrochemical sector. After announcing privatization, the government decided to postpone the privatization bid in order to avoid public resistance from the private sector.

When the reorganization of PEMEX finished in July 1992, PEMEX announced the intention to sell 19 of the 61 petrochemical plants in October. Convinced that privatization would pass as easy as all other projects that announced during Salinas' government had, the privatization plan revealed three surprises: first, it accepted foreigners to bid as a signal of good will and the permanence of the project for external investors; second, as the privatization was defined on a plant-by-plant basis, it gave place to small and medium producers associations to participate for specific plants; third, the plan focused on chain integration.

The privatization announcement differed from other processes. Taking its distance from previous operations, petrochemical privatization did not begin with an amendment of the constitution (MacLeod, 2005). However, this was not the only distinctive point of the petrochemical plan. The deregulation was accorded with private producers during NAFTA negotiations, thus creating expectations of domestic producers' exclusive participation. Along with it, FDI participation stood on a presidential decree instead of standing on the reform of particular reforms on specific laws, making foreign participation vulnerable.

For all this reasons, the contestation over the privatization process soon aroused. Taking advantage of the strategic position gained for being the only sector led almost exclusively by Mexicans, domestic producers opposed the opening of the public bid to foreign investors. As the negotiation of NAFTA developed at the same time, chapter 6 granted the first important privatization in the petrochemical sector to Mexicans exclusively and let foreign participation open to future sales (Ortiz Mena NL, 2005a and 2005b).

The privatization project was abandoned in May 1994,[132] when Francisco Rojas, PEMEX's General Director, announced that the privatization plan would stand for about 20 months. As international prices were depressed, the low cycle made the cost of the 61 plants about 6 billion US

---

[132] At the end of 1993, the trade deficit in petrochemicals increased 4.7 percent–about 390 thousand tons–because the state stopped investing in the sector (Comision de Energéticos, Camara de Diputados, 1995: 6).

dollars. Due to the low cycle, no private bid would reach half of the official cost (García Reyes, 2005; ftnt. 10 chap 6 p. 375) with the government arguing that international market conditions were not favorable.

Along with the low cycle in the industry, an approaching presidential election in the summer of 1994 made president Salinas avoid risking further internal opposition from the PRI, from the private sector, or from the oil union. These were all important support-base actors in the transition of power. The decision to postpone the privatization of secondary petrochemicals produced by PEMEX began to affect the competitiveness of the petrochemical industry. Private petrochemical producers did not only lose the low-priced materials, but they also lost important price differentials that a better integration as result of privatization would have provided.

The challenge of improving the basis of PEMEX's association with the private sector began in 1994. PEMEX was looking to reactivate an aggressive investment policy agreement with the private sector. Since 1981, PEMEX had been unable to make any important investment in the petroleum sector. By 1994 the level of production was 25 million tons, which did not drastically diverge from the 19.5 million tons reached by the whole industry in 1985. Waiting for the privatization to occur, both PEMEX and the private sector conducted no investment during the six years of Salinas' government. The reform process was retarded enough that production abandoned by PEMEX began to be filled by imports. The disintegration of the industry was aggravated, thus urging the state to create a new investment policy and an import substitution practice in order to foster the competitiveness and integration of the secondary industry. Private producers found a solution to the problem by importing secondary goods from abroad. Imports had been growing steadily since 1985, reaching 14 billion US dollars in 1995.

8.6 Facing the Achilles heel of petroleum policy

As we have mentioned earlier, the paradigm shift that took place regarding the definition of the petrochemical policy, is not flawless. Petrochemical sector provides raw materials for more than 78 industries. Therefore, it is a strategic sector of the economy.[133] Moreover, the consolidation of the Mexican petroleum sector goes hand in hand with three things: the consolidation of the revolutionary state, the developmental state's foundation and the entire propaganda that sustained more than 70 years of PRI's domination over Mexican politics.

Salinas' privatization plan rested on the president's authority in order to push the program ahead. Most of the deregulation policies did not change the fact that PEMEX controls production of basic petrochemicals, and that every investor depends on PEMEX's production capacity in order to transform oil. This made it difficult to attract the inversion required in this sector. There is no technical justification for PEMEX's control of the petroleum market, and there are no political conditions in order to change this framework for a long time. Being the only institution allowed to market oil and oil derivatives in the

---

[133] The petroleum industry is classified as strategic in the United States and Canada as well. Both countries have special regulations and limitations for the development of the sector. United States forbid oil exports to American producers and Canada's crown owns the mineral conceding private producers participation on state's supervision.

country, there is no justification for the reduction of the demiurgic role in this sector either. The Mexican state is trapped by all the public, private, cultural and social interests created in the petroleum industry.

Along with it, new FDI regulations depended on Salinas' authority. The presidential decree created a sort of legal maze in order to attract investment without assuring investors an open and accountable environment. Besides, private investors enjoyed enough veto capacity to avoid foreign investment in the sector. In a time of authoritarian rule, not even a high profile president would gain enough confidence to receive investment in the petrochemical sector.

Most importantly, the neoliberal paradigm in the base of the reforms made since 1986 collided with the revolutionary nationalism in the most nationalist sector of Mexican economy. Both policy frames co-existed, with the unintended consequence that they were paralyzing a strategic sector in the economy. The reforms did not eliminate the demiurgic role of the sector, yet they reduced it to its minimal expression. Along with it, the state was unable to push a husbandry role forward, given the fact that Salinas showed no interest in risking a constitutional amendment on this subject. The nation maintained control of the petroleum sector. The failure to find a functioning combination of promotional roles put the petrochemical industry on the road to a dead end.

The result was the policy blockage of the petrochemical industry, and along with it, the complete waste of a decade-long investment to create a world-scale petrochemical industry. Most of the blockage responded to ideological reasons rather than technical ones that created political inertia. The demiurgic role was abandoned only because it had no place in the new policy paradigm. The husbandry role was not implemented because it had no place in the former policy paradigm. The old path was still legitimate. The new path was implemented even though it did not produce the expected results. There is no clarity on defining the regulation of the sector, even though all actors recognized the strategic role played by petrochemicals in the economy. State withdrawal –for ideological reasons- undermined decade-long efforts to foster the industry but the state was unable to provide a successful alternative policy frames to that of nationalism. The result was a deadlock for the industry.

Chapter 9. Consolidating the new policy: Losing the industry

Petrochemical production was declining in the early 1990s. Production capacity grew from 19.5 million tons in 1985 to 25 million tons in 1994. This growth was not very impressive. Furthermore, petrochemical production was reduced by 6 percent in the 1991-1993 period. By 1994, the problems that PEMEX was facing were not resolved yet. Then the economy collapsed once again in 1995. This situation provoked the reinforcement of political groups contesting the reform and defending the need to return to the previous nationalist policy position.

In March 1995, Ernesto Zedillo's government (1994-2000) announced its intention to continue the petrochemical privatization plan as it was originally defined in 1986. The state would continue trying to overcome the main constraints for reaching international competitiveness, namely the integration of petrochemical chains. However, reaching this objective through the privatization of PEMEX's plants resulted in a major political obstacle. Groups resisting privatization as a part of the neoliberal program, were more organized and legitimated due to the 1994 "December's mistake" and the following economic collapse.

In particular, the oil union acted mainly in two fronts (the PRI and the Congress) and succeeded in stopping the privatization that was intended for 69 plants. The union forced Zedillo's administration to completely change the original plan in 1996. The government was forced to ask for new congressional regulations that actually ended up restricting even the domestic producers' participation. This new measures also changed the original idea of privatizing on a plant-by-plant basis, to opt instead for selling the entire 10 petrochemical complexes owned by PEMEX. This sale implied that private sector investment would increase dramatically without removing the union's control over these 10 production centers. The result was paralysis of the state's petrochemical policy in 1998.

The intention in this chapter is to show that the state's decision to continue the two goals of midwifery in the petrochemical program (increasing private investment and integrating the industry) became extremely expensive for the state due to its incapacity to manage the real problem of the plan: political control over the petroleum industry.

9.1 Zedillo's privatization plan [134]

The incoming government of Ernesto Zedillo was able to launch a program that was meant to sell PEMEX's petrochemical units. The government tried to face the disintegration of the petrochemical industry that was caused by the growing trade deficits that the industry had produced for a decade.[135] It was becoming urgent, as NAFTA demanded the complete

---

[134] I am grateful to the Energy Ministry's Petrochemical Director, who kindly provided two documents elaborated by his office making a chronology of the basic petrochemical disincorporation process including press summaries. Most quotations herein came from those documents unless indicated otherwise. They are Secretaría de Energía (1997a) *La desincorporación de la Industria Petroquímica No Básica. Cronología*, y Secretaría de Energía (1997b*) Nueva Estrategia para la Industria Petroquímica y la Constitución de Empresas Filiales de PEMEX-Petroquímica* as appear in the bibliography.

[135] While exports of petrochemical derivatives have been growing steadily, reaching a peak of 17 percent of national production in 1995, Mexico also became a net importer of petrochemical products, bringing in roughly 30 percent of the national petrochemical

liberalization and deregulation of the sector by 2004.[136] Therefore, the government began to push for privatization and for the improvement of competitiveness, for it to be achieved in only 10 years.

As usual, the state's intention to privatize secondary petrochemicals was announced during the ceremony marking oil nationalization on March 18, 1995. President Zedillo and his principal cabinet ministers were present at the annual expropriation day ceremonies, PEMEX General Director, Adrian Lajous, set forth a frame of reference for the privatization of PEMEX's petrochemical plants. His plan called for the privatization of 61 of PEMEX's chemical plants located in 10 petrochemical complexes. The idea would be for PEMEX to take a minority position in each plant for several years, at least until labor conditions and contractual terms had been stabilized to the satisfaction of the new investors, the government, and the union. Lajous said that the main goal of the privatization process was the integration of chains and the consolidation of big private businesses that would be able to reach competitiveness in the international market (Lajous, 1995).

However, the leader of the oil union, Carlos Romero, who followed Lajous' speech at the March 18th ceremony, immediately questioned the privatization initiative. Romero stridently argued that the moment had come not to privatize PEMEX petrochemical plants but instead to reinitiate the

---

consumption from abroad. Moreover, the value of Mexican imports in this sector began to grow from 1985 onwards, representing 14 billion US dollars in 1995 alone.

[136] By the time the privatization program began, PEMEX provided 60 percent of total petrochemical production and 80 percent of secondary products demanded by the petrochemical chains in the sector. PEMEX bought 50 percent of the petrochemical imports and sold 14 percent of its production in the international market (Alvarez, 1997: 11).

aggressive state investment that had developed the petrochemical industry since its beginnings. It was the moment, he said, for PEMEX to use the loyalty of its workforce to upgrade the technology, and to operate plants' efficiencies and profits once again. The underlined argument was that the new crisis had shown the inefficacy of the economic reform and the need to return to the promotional actions of previous years. In the succeeding months, the union's opposition to privatization grew to include full-page ads in the Mexico City press, as well as rallies in a number of towns of Mexico's petrochemical corridor in the states of Veracruz and Tabasco. Support for this opposition from PRI leadership, opposition parties and movements also rose.

Along with the open opposition from the PRI sectors (whose government was proposing the reform), the wave of groups contesting the reform grew strengthening the most important opponents of the project.[137] A good part of the opposition to the project came not only from the PRI and the oil union, but also from small and medium enterprises that were not even considered in this first stage of the reform (Morales, 1997). This was the case of almost the entire structural reform project. The new reforms only sought to increase the competition and integration of big businesses. Contrary to the historical passive attitude of Congress in facing Executive decisions during the years of PRI control of the country, this time Congress quickly organized a

---

[137] In the 1997 mid-term election, the PRI lost its majority position in the Congress, and PRD leader, Cuauhtémoc Cardenas became the mayor of Mexico City. In addition, PAN won the most important states governorships that summer. These encroachments forced the government to share the custodial role with the Congress. No new regulations could pass through Congress without a coalition, forcing the PRI to cohabitate with opposition parties.

specialized commission that was meant to analyse the process of *desincorporacion*[138] and oversee the government on this specific affair.

Ignoring much of the formal and informal opposition, the government decided to continue its plan. The main formal part of the process took place when the Administrative Council of PEMEX asked the Inter-Ministerial Commission on *Desincorporation* lead by the Finance Ministry[139] to define the rules for auctioning the first 19 (of 61) secondary petrochemical plants. Not surprisingly, the five union members in the council abstained in the vote. To reduce the effects of opposition propaganda, PEMEX and Energy officials began to emphasize that the privatization of secondary petrochemical did not spell the privatization of PEMEX. Officials argued that, *"the difference between oil and petrochemical industries is crystal clear*". Therefore, the privatization process did not imply, as it was widely admonished by the union, the transgression of constitutional prescriptions, the abandonment of nationalism, or the submission of sovereignty to the United States. While the first plan considered no restrictions for foreign capital in buying the plants, foreign participation aroused negative public opinion in the plan of 1995.

The general guidelines for privatizing the assets of PEMEX - petrochemicals and the specific guidelines for the sale of the *Cosoleacaque* petrochemical plants were issued in October 1995. The document argued,

---

[138] As privatization became associated with policies going against national interests and imposed by international organizations, the government instead used *desincorporacion* in policy texts.

[139] On the privatization process followed during the Zedillo administration see MacLeod (2004).

once again, that the privatization of these facilities aimed to develop a globally competitive petrochemical industry, thus promoting investment in Mexico and raising the overall competitiveness of the country's industrial plants. Private investors would provide the technology and the capital necessary to guarantee and sustain the growth of the industry. The Minister of Energy published the first open calling to offer the installations on November 14th, 1995 (five producers of ammoniac, one of hydrogen, one of xylenes, and other related plants). [140]

The oil union began a press campaign against the *desincorporation.* Regional mobilisations increased in the oil regions of the southeast. It is important to note that the leader of CTM[141] (who had been ambivalent in facing the privatization plans in other moments) openly positioned himself and the unions under his control against the privatization. The consensus against privatization spread fast. The response came immediately from the revolutionary parties (the PRI and PRD) and from the small and medium chemical producers organized in Canacintra.[142] Cuauhtémoc Cárdenas spoke widely about the antipatriotic policy followed by the government, and the submission of sovereignty due to foreign pressures. As expected, he warned

---

[140] With the exception of polystyrene that was privatized in 1988, the reform gave full control of the polyester chain to Alfa (a private producer). This made Mexico self-reliant in producing synthetic fibres and consolidating international competitiveness. However, due to the lack of privatization in chains such as specialized products, this sector became the biggest importer of colors, explosives, pharmaceuticals, pesticides, plasticizers, and refrigerants (Morales, 1997: 66).

[141] The labor sector of the PRI.

[142] Camara Nacional de la Industria de la Transformacion (National chamber of manufacturers).

the people of the risk that existed in giving the industry back to foreigners.[143] Cárdenas only continued to shore up support for his populist defense of the industry on March 18th, 1996, when he announced the creation of a national collection to buy the industry and keep it under national control.[144]

The PRI acted on two fronts. First, Carlos Romero –union leader and distinguished member of the political council of the PRI– made the party assume the defense of the nationalized industry, arguing the risk of a complete privatization of the oil industry. The second front was in Congress where Senators representing oil regions demanded the publication of the figures, names, and companies participating in the sell-off, to assure that Mexico would retain control of the industry. The Deputies who were members of the oil union[145] asked for a public consultation in order to delay the decision to privatize. As will be shown, the public consultation ended up questioning the constitutionality of privatization and actually discovered the Executive made some administrative mistakes, which would indeed invalidate the

---

[143] The PRD sponsored the creation of a democratic studies center in order to provide research to support the party's position against the current public policy. The center published a series of studies that countered the technical arguments of the petrochemical reform. The main thesis sustained was that there were no technical justifications to privatize the industry, and that the government was proposing this move under international pressure. Indeed, the main 'technical' references of those studies were to Cardenas discourses, quoting the studies as the evidence that Mexico was giving up its sovereignty. For example 'No a la venta de la petroquimica', 'una politica petrolera patriotica', among others.

[144] This was a cynical manipulation of the use of national imagery. Generations and generations of Mexicans grew up seeing pictures of extremely poor people giving their belongings to President Cardenas and his wife (Cuauhtémoc Cardenas parents) in order to pay for the nationalization of oil in 1938. This has become part of the Mexican identity mainly due to PRI propaganda on the issue.

[145] The PRI has always granted five seats in Congress to the oil union, between 11 and 15 municipal positions in the oil-producing corridor, and either one seat in Senate or one state governorship in the definition of its candidate list.

legality of the process. Six weeks after the decision to privatize was announced, the government was forced to renege and a new minister, Jesus Reyes Heroles, was named in the Energy Ministry.[146]

9.2 The Congress regained its power

On October 19th, 1995 (Lazaro Cardenas' birthday), the Chamber of Deputies approved the formation of a petrochemical sub-commission, which would be represented by the three main parties in Congress.[147] The commission's first duty was to create a forum in order to analyse the various concerns about the privatization, before letting the Congress define its position. As such, the commission organized public and private hearings, visits to petrochemical complexes, and demanded public input about the situation of the industry.

During the public hearings, the government's position was that privatization would increase the global competitiveness of the industry, reactivate the sector by increasing investment, open access to the newest technologies, and assure a more rational management of PEMEX. As was expected, the private sector representatives supported privatization with the argument that this decision would ensure the integration of the industry,

---

[146] As the son of the extremely nationalist PEMEX Director-General between 1964 and 1970, Reyes Heroles Jr. was perpetually called up to save the legacy of his father.

[147] This sub-commission was formed by the PRI: Jaime Arceo and Jorge Cortes, oil leaders and PRI members: Jorge Wade and Jesus Olvera; PRD: Amado Cruz; and PAN: Carlos Nuno. The commission was formed on October 26th and was presided over by Jaime Arceo.

increase operations, and eliminate production deficits, thereby reducing dependence upon imports.

The oil union claimed that by selling the fertilizer plants, the state was putting national agricultural output in jeopardy. The union also reiterated the fact that foreigners would gain greater access and eventually control of the petroleum sector. To avoid the threat to national sovereignty that this issue would entail, the union demanded the complete abandonment of the privatization plan, because it violated the Constitution and the revision of the petrochemical policy established in 1986.

In addition, the union accused the government of reclassifying secondary petrochemicals for political rather than for technical reasons, in order to benefit private producers. Paradoxically this argument was built upon the same premises that the private sector had already used in 1971.[148] The union assured that PEMEX would be able to maintain its traditional and legitimate pre-eminence in organizing the entire petroleum industry. According to the union, if the government stopped charging inordinate taxes

[148] The similarity of the private sector and the union's logic (arguing for and against privatization respectively) may be the result of the ambiguous law defined in 1971, which effectively justified both state dominance and privatization. One must recall that at the beginning of the industry, the state's goal was to induce private integration back through the industrial chain by assuring the offer of petrochemicals at any point. The 1959 law defined basic petrochemicals by "social and economic interest", in which the demiurgic role complementing private production was justified. However, the distinction between basic and secondary products mis-structured the industry as we have explained in chapter 5. As the state considered the abandonment of its historical role politically risky, it asserted that the production of basic petrochemicals would be reserved by the state via the constitution. Therefore, the state promoted the reclassification of basic petrochemicals between 1986 and 1991 in order to induce *some* private investment. In doing so, PEMEX adopted the technical standards of defining the eight basic petrochemicals rather than pushing state production into secondary goods.

on PEMEX revenue, the public producer would be able to reinstate investment in financing its development.

The reappearance of former PEMEX General Director, Jorge Diaz Serrano (1976-1981), who lent support to privatization, was highly unexpected for two reasons. First, Diaz had defined the policy that structurally transformed PEMEX into an Export-Oriented industry during the oil boom, without questioning the overwhelming demiurgic role of the state in producing petrochemicals. Second, he had just been released from prison after serving ten years for corruption charges. Upon his return to the political scene in 1995, his new position was that the state should abandon the division between basic and secondary petrochemicals. Contrary to his previous contentions, he argued that this division prevented the private integration of the petrochemical industry, thus disallowing Mexican competitive advantages in the sector.

The final report of this congressional commission[149] treated the issue of privatization ambiguously, and by making it public on March 4, 1996 (PRI's Anniversary), gave the government two weeks in order to prepare a response for the upcoming annual oil nationalization ceremony. Even if the congressional document recognized all the advantages offered by the petrochemical policy defined in 1986, which emphasized integration, investment and competitiveness for the sector, Congress also blocked

---

[149] See Comision de Energeticos, Camara de Diputados, 1995.

privatization–going so far as to define the way the state would guide petrochemical policy in pursuing these goals.

On one hand, the document assumed that even if basic raw materials for petrochemical production were derived from oil, oil and petrochemicals ought to be treated as separate industries, thereby debunking the nationalist attachment to petrochemicals. In making this argument, Congress discredited the nationalists' foundational tenet that privatization of secondary petrochemical plants violated the constitution.

The document also reminded that privatization had already improved the integration and competitiveness, and raised the level of investment in the sector. These objectives were reached with the sale of the most important producers of fertilizers (*Tereftalatos Mexicanos*, *Fibras Nacionales de Acrilico*, *Poliestireno* y *Derivados*, *Cloro de Tehuantepec*) that went almost unnoticed in 1988. The commission recognized the benefits of the resulting companies in their integration processes, higher investments, international competitiveness, and the creation of new jobs in the sector.[150] Congress further highlighted the critical situation that the industry was facing in minimal investment and integration, in addition to the inability of the state to face its obligations in rectifying the problem.

Therefore, the Deputies recognized that coordination between public and private investors was essential. In a sector demanding large capital investment yet representing only one percent of PEMEX's revenue, the

---

[150] The state was unable to emphasize this point, acknowledging the potential political pressures to renationalize these companies.

funding of secondary production by private actors would be an opportunity to reduce state expenditures while maintaining the production of basic petrochemicals. The commission also expressed concern over the growing deficit in the petrochemical trade, the obsolescence of technology and the encroachment of private monopolies and/or foreign interests on the sector.

On the other hand, the congressional commission blocked privatization by questioning the legal foundations of the process.[151] The major qualm of Congress was to ensure that the entire process of privatization would be conducted in an open and accountable manner. However, by assuming wrongdoing before it happened, Congress effectively stalled the process. Congress recommended the supervision of the *Secretaria de la Contraloria y Procesos Adminisrativos* (SECODAM, official auditor) of the process, based on article 134 of the constitution.[152]

As mentioned, the Congress was given the responsibility of being the official auditor and therefore, it had to supervise the privatization process. Previously SECODAM had no participation in the process at all.[153] According to Congress, this detail would have created a potential argument for

---

[151] Since 1982, the state appealed for its right to regulate the functioning of the Mexican economy and justify the privatization of public owned enterprises on the basis of articles 25-28 of the constitution. These articles granted the state its right to define basic petrochemicals and disband public participation in the newly defined secondary products.

[152] Article 134 of the constitution ensured the proper administrative responsibilities of the state.

[153] The participation of the auditor would be justified in case of improper conduct during the process. Since 1989, and in order to avoid corruption, the Ministry responsible of the sector had announced every privatization and the responsibility of following the process transferred to an ad-hoc inter-ministerial commission led by the Finance Minister, which supervised all the different stages of the privatization until the assignation of the company to a winner. Refer to section 9.1 for an overview of the process followed by PEMEX.

constitutional controversy that would likely jeopardize the clarity of petrochemical privatization. If the government rejected the congressional recommendation, that action would be used as evidence of foul-play. The concurrence on this proposition actually delayed the privatization another year.

The Congress went even further as to dictate the basis of privatization, turning the government's plan in its head. Congress established that the government ought to keep a majority of assets in any company that would be privatized, and that PEMEX would participate in the companies formed with private investors. As we have seen, the Energy Ministry had proposed a five-year period of minimal public participation in the privatized companies in order to smooth the transition of private integration. Congress held that PEMEX should hold onto a permanent majority (51 percent) of the assets in order to ensure the long-term participation of the state in fostering growth in this sector, which in practice meant keeping the status quo almost untouched. This practice would make the private sector perform the midwifery and husbandry roles for publicly owned companies, as well as finance them.

Keeping the pattern of petrochemical development constant, Congress recommended: a majority of Mexican control over the new companies, the obligation of private investors to present long-term strategies for expansion and technological innovation, and finally, the guarantee of closed-shop representation and the protection of workers' rights and prerogatives by the oil union.[154] The only new issue they demanded was that the government offered special regional development plans for oil-producing corridors (Arceo Castro, 1996: 59; Comision de Energeticos, Camara de Diputados, 1995: 36-38).

By June 1996, the government cancelled the entire privatization process and opted to follow the recommendations advanced by Congress. That meant the inclusion of new ministries to overcome possible administrative wrongdoings.

9.3 New alliances against privatization

By March 1996 –one year after the announcement to privatize 19 petrochemical plants– electricians, teachers, telecom workers, social security officers, and university staff unions supported the movement against this agenda. Unions representing the teachers and the electricians, along with the oil union and the CTM, were the biggest and strongest unions in the country. Together, they were the core of the labour branch of PRI. Most of the dissident unions in these sectors, such as the CNTE for teachers and SME for electricians, were mobilized against the reform by the PRD.

The leader of the oil union used the Political Council of the PRI to demand support from the party, Deputies, Senators, other PRI sectors, and the entire executive committee in order to support the opposition against privatizing the plants. In the development of the XVII Convention of the PRI in

[154] The first two issues were part of the Petrochemical Commission regulatory duties since its organization in 1959.

1997, all attention was placed on the definition of rules for selecting the next Presidential candidate.[155] Nevertheless, the convention finished by approving a new set of principles declaring unlimited support for the oil industry, keeping article 27 of the constitution intact, and maintaining the nationalist policy that had historically guided the PRI. The PRI convention announced its opposition to the privatization of the petrochemical industry as well. The PRI considered its defense a matter of national pride. The party also defined its electoral platform, establishing no further privatization, especially in the petroleum industry (SE, Chronology, 1997).

As result of this mobilization against privatization, the state was forced to play an even more restrictive custodial role than it had done previously in 1958. This time however, the decision was imposed by the PRI and Congress over the President and his government, instead of authoritarian presidential decisions with no dissent allowed, which existed 40 years before.

The immediate result of the oil union's defence of the industry through Congress increased the problems of the industry and paralyzed the state, reducing its ability to define an adequate blending of promotional roles. Congressional recommendations supported the widening of demiurgic roles financed by private producers, yet the state was ideologically unable to do this even with its own resources. The industry also needed wider protection

[155] The convention also altered the rules for choosing the presidential candidate, closing the door to the technocracy that they felt had controlled the party since 1987. Since 1970, the government became the first source of political socialization of presidential candidates who were nominated without having a career in party politics or previous electoral experience. They decided that henceforth, the presidential candidate must have had a career in the party and have been elected at least once for a position in any level of government.

barriers to enhance integration, which implied a policy defined on ISI basis. Instead of doing this, the state insisted on the creation of midwifery and husbandry roles, only seeking to increase private investment and privatization in the sector, these being the only possible means to increase the integration and competitiveness of the petrochemical industry.

9.4 The shared custodial role: domestic constrains

During the summer of 1996, the government announced it would abandon this attempt at privatization, and in line with the congressional recommendations, President Zedillo ordered a complete review of the legal procedures in order to avoid new disagreements over privatization. The government maintained the decision to privatize PEMEX's secondary petrochemical sector in order to integrate petrochemical chains in the hands of private producers and increase competitiveness. The most important fact was that PEMEX had nothing to do with this second stage. It was the new Energy Minister, Reyes Heroles, who would take control of the situation. Though Reyes Heroles left the government in 1997, and then his successor Luis Tellez tried to define different models in order to attract investment and privatize the sector even harder.

The first stage of defining the new policy was a complete supervision initiated by the SECODAM (the official auditor) as recommended by the Congress. The SECODAM recommended a complete revision of the juridical status of the regulations. The auditor argued that he found problems in the first appeal that the government announced in 1995. The legality of the administrative procedure that reduced the long-term security for the potential investors was particularly problematic, for there were no specific legal definitions in which products could be categorized as basic petrochemicals. Finally, SECODAM recommended a complete revision of the legal structures, which in fact meant the clarification of the custodial role of the state.

As a result of this policy move, the state initiated a further revision of the strategy to privatize the sector in October 1996. Generally speaking, the President asked Congress to approve a new Law regulating production of oil and its by-products.[156] These amendments clearly outlined the role that the state would play in producing eight petrochemicals (plus black carbon) deemed ‘basic’ by international standards.[157] PEMEX received a clear and legally binding mandate to produce basic petrochemicals, defined by international standards for the first time. [158]

During the process of validating the Presidential initiative to redefine petrochemicals, Congress introduced new restrictions that affected the

---

[156] The new *Ley Reglamentaria del Articulo 27 Constitutional en el ramo del Petroleo* was published in the Diario Oficial on November 13th, 1996. That day, the Executive also published the abrogation of the previous regulations, eliminating the petrochemical permits that would allow the private sector access to the production of petrochemicals, and defined clearly the nine products that would be considered basic petrochemicals exclusive production of the state in order to reach the constraints established by article 28 of the constitution.

[157] Arsenio Farell, SECODAM minister at the time, asked Leopoldo Rodriguez, to write a memo explaining all technicalities to justify why those 8 products are deemed as basic petrochemicals by international standards, and according to the last list published in 1991 during NAFTA negotiations between private sector and government as seen in the last chapter (Rodríguez, 2005).

[158] It is worth remembering that the same regulations in which Echeverria had increased the number of products considered as basic petrochemicals in the 1970s were used by De la Madrid and Salinas for reducing the list from 77 to 8 products 15 years later. The oil union and its allies inside the PRI and PRD passionately opposed the discretion of this decision, arguing there were no technical reasons for doing this. On the other hand, the private sector argued that the current regulations offered no long-term assurance to investors.

domestic private sector.[159] The Deputies accepted the definition of the nine products as proposed by the Executive, but they modified the final document before voting on it, adding that basic petrochemicals products were those derived both from oil and natural gas. Rather than being defined as *'any product with a social-economic interest,'* the legal definition of basic petrochemicals became, *'goods produced in big quantities by PEMEX resulting from the first chemical transformation of oil, which are the basic building blocks for all petrochemical chains. For these three reasons, they are considered as strategic raw materials for the state.'*[160] No private producer would be allowed to produce the nine products. If they developed them during normal operation, they were forced to sell them back to PEMEX.

Deputies also ruled that PEMEX would have to keep 51 percent of all existing petrochemical plants, and that domestic private investors would be able to acquire up to 49 percent of the companies. The Deputies also established that Mexican or foreign private investors would be allowed to maintain 100 percent property only in the construction of new plants, but would remain dependent upon PEMEX for basic petrochemicals and raw materials required for producing more advanced products. In the new law,

---

[159] For a more detailed discussion, refer to Camara de Diputados, 'Diario de los Debates, session del 23 de octubre, 1996,' 'Camara de Senadores,' version estenografica de la sesion del 29 de octubre de 1996.

[160] For the untranslated definition, see Reyes Heroles (1996), 'Version estenografica del discurso presentado en la inauguracion del XXVIII foro de la Asociacion Nacional de la Industria Quimica,' 24 de octubre. For a Comparative analysis between the presidential initiative and that approved by Congress, see PEMEX Lex, 1996, or refer to the original version from the Congressional Energy Commission and documents sent to Congress by the President.

Congress also obliged PEMEX to maintain control of the ducts inside the complexes. The idea was that PEMEX should associate with the private sector in order to attract private capital to the public-owned monopoly.[161]

The content of the debate in the Senate was also tumultuous with the PRD continually questioning the technical validity of the new law and the PRI reluctant to give up sovereignty in the oil industry. A staunch supporter of oil nationalization, Senator Heberto Castillo,[162] argued that the division of basic and secondary petrochemicals was still based on political, rather than technical foundations. Castillo also alerted the nation that the government was also opening the door to foreign and private capital, by granting the opportunity to own 100 percent of new ventures (Senado de la Republica, October, 1996).

As a result of the restrictions imposed by Congress, the Energy Ministry abandoned the decision to sell the secondary petrochemicals on a plant-by-plant basis and the new Energy Ministry, Luis Tellez, decided that the new plan should offer the sale of complete petrochemical complexes. In this second plan, the Ministry was following Congressional restrictions that

---

[161] In 1997, the Energy Ministry offered warrants WARNINGS? to possible bidders that private petrochemical companies would enjoy a majority position in the administrative council in order to appropriate its management–even if they owned 49 percent of the company assets. This was a way to attract investment in the second privatization attempt.

[162] Senator Heberto Castillo was an eternal defendant of the conservative policy in managing the oil industry. He vehemently contested Lopez Portillo's Export-Oriented oil policy during the 1970s, accusing the government of risking sovereignty and being antipatriotic. He was also a member of the Liberation National Front organized by Lazaro Cardenas in the 1960s; a member of the 1968 student uprising (and for this reason was taken prisoner until an amnesty law was passed in the mid 1976); organized several leftist parties, which let him won seats in Congress in 1979; in 1988 he allied with Cuauhtemoc Cardenas; and in 1989, he participated in the foundation of PRD. For the complete collection of articles written against the oil policies, see *Heberto y el Petroleo*, (Proceso, 1998).

would allow private Mexican companies the acquisition of no more than 49 percent of PEMEX's secondary petrochemical complexes, assuring that the state would hold majority control.[163] The decision to sell complete complexes broke consensus with the private sector because it became impossible not only for small and medium firms to purchase complete complexes,[164] but also difficult for larger corporate entities. However, both the domestic and the foreign private sector would be allowed to own 100 percent of the equity in any new plant constructed for the production of secondary petrochemicals.

The permission for complete private ownership in any new plant prompted critics to question the real intentions of the private sector. As it could own 100 percent of the new ventures, the anti-privatization movement argued that the private sector was not investing in new plants. Instead, the critics lamented, the private sector intended to take advantage of the circumstances to acquire productive capabilities without assuming any risks. In response, the private sector argued that there were inadequate conditions for a competitive environment so as to justify new investment. Since the state was unable to provide the raw materials that this new investment would require, both Congress and PEMEX would have to allow them to produce the basic materials as well.

---

[163] Even if the complexes produced basic and secondary petrochemicals, the state was already planning the privatization of specialized streams (abandoning the idea of integrating the chains) that would result in an even greater monopoly of the few dominant producers in ten sectors. (See Secretaria de Energia, Nueva estrategia para la indutria petroquimia y la constitutición de empresas filiales de PEMEX-petroquimica, enero de 1997).

[164] One may recall that in the old scheme, producers were permitted to associate amongst themselves and acquire assets formerly held by PEMEX.

The congressional autonomy in defining the law restricting President Zedillo's plans for privatization was a novelty. By 1995, the custodial role was no longer limited to the Executive–as it had been in the past–and was now shared with Congress, who freely began to determine the policy frames. The open opposition of PRI members in Congress implied that Congress had finally recuperated its political capacity to restrain the President, and in doing so, they acted in defense of the patrimony of the nation.[165] As an expression of the lack of consensus between the PRI and the government, the reform was paralyzed because the lost legitimacy caused by the 1995 crisis reinforced the opposition. The custodial role–that used to restrain foreign participation in the petrochemical industry–was now even restrictive for domestic producers.

The oil union happily received the new regulations. For instance the oil union leader, Carlos Romero said that President Zedillo's decision to continue ensuring the nation's control of PEMEX was the finest expression of his nationalism. For Romero, with this decision only Mexico won. However, the private sector was not content with the new law. As such, they held that the government would not succeed in attracting private investment of the magnitude required without assuring private control of the companies. A

---

[165] Another important issue in 1997 was the mid-term election in which the Deputies Chamber had to be totally renewed as the PRI lost majority control of Congress. With its majority in Congress, the PRI withheld information about commissions that had been setup to supervise and validate bills and laws made by the executive. The demise of the PRI in Congress prompted critics to question the accountability of this validation process. The so called 'opposition block' passed an accord in November 3rd, 1998 requiring all commission debates to be open to public scrutiny. However, it is impossible to monitor the work of commissions before 1997 because no records exist.

manager of Cydsa–one of the most important national chemical groups–claimed that *“being allowed to own only 49 percent of the plants, we will have to think of it twice”* (SE, Chronology, 1997). Foreign investors also considered the investment in enterprises with mixed ownership to be unviable. As specifically defined by the law, private investors would only be allowed to buy PEMEX assets, but would not be able to acquire the facilities nor to gain management capacities.[166] Despite this obstruction to private participation, Grupo Alfa–the most important national chemical producer–assured that they were still interested in the option.

The new law effectively cancelled any possibility in which the state performed a midwifery role. The aim of the state was to allow the spaces that they abandoned to be gained by the private sector in order to midwife the consolidation of national champions. In contrast, the law assured that the association between PEMEX and the private sector would finance the demiurgic role. Difficulties in applying the husbandry role also arose because PEMEX had to increase the production of basic petrochemicals in order to assure the functioning of the industry. Otherwise, private producers would be unable to increase their competitive participation in international circuits. Without the necessary legal faculties, Congress was unable to replace the government in articulating the new policy. Nevertheless, congressional participation in the custodial role, which assured the continuity of the demiurgic role, created a maze for future policy planning for the

[166] For a complete analysis of any actor possible, see Secretaria de Energia 1997, La Desicorporacion de la Petroquimica No Basica, Cronologia, México, 1997.

petrochemical industry. The government was unable to impose its will on Congress–as it had done in the past–and neither could avoid the congressional constraints.

9.5 The shared custodial role and supranational restrictions

The inability of the government to monopolize the state's regulatory capacity–custodial role–was due to the fact that the government was forced to share the content of regulations with Congress. This fact opened different spaces for interest groups to limit state's capacity, and to block the reach of its influence. In order to protect the national petrochemical industry while ensuring the complete consolidation of national champions under these circumstances, Salinas' government negotiated a period of 10 years before completely opening the petrochemical sector to North American competition in NAFTA. However, time passed by, and no reform succeeded to update the industry into the new context.

In order to protect its national interests, Mexico imposed limits on foreign involvement in specific oil and petrochemical sectors. In chapter 6 of NAFTA, Mexicans reserved for themselves: the exploration, exploitation, refining, and processing of crude oil and natural gas; the production of artificial gas, basic petrochemicals and pipes. The agreement also protected all the activities related to export such as the transportation, storage and distribution of crude oil, natural and artificial gas, and raw materials obtained by refining or processing oil, natural gas, and basic petrochemicals (Ortiz Mena LN, 2005a; 2005b).

To reassure domestic producers' support, as seen in the previous chapter, Mexico also negotiated a *proviso* allowing it to restrict the first privatization of secondary petrochemical enterprises and assets on state property since January 1992[167] in favour of Mexican enterprises. The *proviso* granted Canadians and Americans equal treatment and priority with domestic producers in subsequent sales of PEMEX secondary petrochemical plants.

In 1997, the first privatization under the new law was initiated. In order to ensure that at least one Mexican producer would retain at least one petrochemical complex, Mexican officials offered to sell the Morelos Complex–the newest, biggest and best integrated PEMEX facility. Once again, Mexican officials were trying to protect national over foreigner producers in the privatization process by offering the jewel of the crown to reinforce a national champion. Energy officials were not sure they could continue protecting Mexican interests in the future for they were restrained by the NAFTA *proviso* ensuring equal participation to other North American producers.

However, as the state was forced to cancel the first privatization experiment (for diverse reasons that will be discussed in the next section), the interpretation of whether this was the first or second privatization could create conflicts with Americans and Canadians in the eventual attempt to privatize public assets once again. Mexicans argue that since no privatization had occurred yet, they still have the right to apply the *proviso*. Americans and

---

[167] One may remember that the reclassification of petrochemical products ended in October 1991 during NAFTA negotiations.

Canadians may equally argue that because the first privatization had already been essayed–even if it failed–they had the right to apply the *proviso* in future privatizations, in their favour. The reality is that plants got old and obsolete, because the lack of new investment since 1980s, and private producers may not express interest on bid for future privatizations (Bucay, 2005).

Another state engagement was the total liberalization of Mexican petrochemical commerce by 2004. Without succeeding in implementing the integration of the industry as it had been planned since 1986, this engagement would dramatically affect national producers. Furthermore, it is not clear whether the private producers would join the nationalist position in order to protect their interests.

As the regulations resulting from the 1996 petrochemical legal reform seemed to assure that the private sector would be nurturing PEMEX–by the establishment of public/private mixed-ownership–, the possibility of attracting Canadian or American investment in the sector would be jeopardized. If this was absurd for domestic private producers, the reaction of Canadians or Americans might have been similar.

Since the new reform, the custodial role has been was so restricted that it can hardly be called promotional anymore. Under the conditions established by the new law, the private sector would: finance majority-owned public companies without having associated control; maintain the extremely high social advantages granted in conventions to oil workers; and deal with the union that is powerful not only in managing the industry, but also influential of Congress and PRI structures. So the idea of attracting fresh investment in petroleum facilities became less and less effective.

The obvious predicament became: how midwifery and husbandry would be reached and by whom. The state lost its ability to regulate and was stubbornly looking for solutions to continue withdrawing its demiurgic actions, while custodial still justify it. As we will see in the next section, the government changed its strategy without recognizing these constraints.

9.6 The new plan for the petrochemical sector in 1997

The Executive power was forced to make a new plan for the petrochemical sector that was published in 1997 and was valid for the rest of the administration (Secretaría de Energía, 1997). The new program continued to announce the state's main aim to nurture the expansion, integration, modernization and competitiveness of the petrochemical industry with both public and private investment through the gradual withdrawal of its demiurgic role. In the 1970s Mexico was focusing on the creation of two petrochemical poles on the Gulf of Mexico. By 1997, taking into account the new commercial opportunities derived from NAFTA, Mexico announced its intention to integrate supranational petrochemical chains and join the American petrochemical poles also installed on the Gulf.

The domestic market was divided in specialities controlled by six national chemical groups (Alpek–Alfa's subsidiary, Celanese Mexicana, Grupo Desc, Grupo Cydsa, Grupo Primex, and Grupo IDESA). Even if the 8 complexes owned by PEMEX produced almost all the basic petrochemicals, the state was already planning their integration through the six national champions in order to shift PEMEX's production towards the specialization of the private actors, reinforcing the groups' positions instead of improving the petrochemical chains.

The new midwife role would then focus on specializing complete complexes to the stream in which the private associate was already dominant. The state was forced to establish ventures in conjunction with the private sector. These sought to reinforce the private interests.[168] This new context reinforced the initial hypothesis of this thesis, which stated that during the restructuring of the state, the state itself was still looking to protect large domestic companies in order to transform them into national champions and competitive players in the international arena. Once again, the state reinterpreted the regulations achieved in the newly shared custodial role to reach its goal.

The new petrochemical policy promoted a cooperative attitude on the part of the state. Unlike in the past, when the policy forced the complete withdrawal of PEMEX, the new plan made a balance of both private and public industries in order to continue the integration of the sector. The plan assumed that the principal business groups, which were the best clients of PEMEX-petrochemical, would be the most interested in associating with PEMEX. The plan also considered the integration from oil or gas production to the final stage of the private sector niche (Anonymous interview, 2000).

---

[168] Secretaria de Energia, 1997 Nueva estrategia para la indutria petroquimia y la constitucion de empresas filiales de PEMEX-petroquimica, enero de 1997.

The plan's major objective was to focus on specialization and to capitalize on Mexico's petrochemical structural advantage, transforming it into a competitive advantage. For example, the high content of ethane in natural gas could let Mexico double the production of ethylene and all the related chains of production from: fibres, plastics, resins, textiles, polyester and bottles, thereby maximizing return. Promoting the specialization of the Mexican petrochemicals on the ethane content in natural gas would also avoid that most of it continued to be burnt as combustible.

Instead of privatizing plant-by-plant and midwifing private integration, the state was forced to foster specialization and to define the competitive advantages of each complex–and in accordance with the private sector–in order to encourage the national champions. Under the assumption that private and public interests could be one and the same. The new plan identified the long-term possibilities of specializing the association between new public companies and the private counterparts. The definition of future production streams for public conglomerates became a way of increasing the integration of the sector. This decision validated the most feared possibility of medium and small businesses: that the state was not considering them at all (Morales, 1997). Being these companies PEMEX's main clients, the new plan assured opposition as soon as it was advanced to private producers, making CANACINTRA join the opposing coalition.

A second important problem to overcome was inadequate investment and technology. The most important investment in the sector was made in 1981 and the mean life of a petrochemical plant was between 20 to 25 years.

Public investment was kept to a minimum in order to keep the market running while private investment continued to grow. The problem was exacerbated by the arrested investment of both private and public sectors that were anticipating the privatization plan at the beginning of the 1990s.

Despite the fact that the situation was becoming critical by the end of the decade, this did not mean that public petrochemicals were obsolete or uncompetitive in general. Rather, they were facing some bottlenecks related to lacking investment and required the renovation of some technologies. The plants belonging to the state had reduced the acceleration of their growth since 1992. At the same time, the North American petrochemical industry had grown at a mean rate of 2.2 percent yearly, while Mexican production grew by 1.2 percent. This information is related only to the production of PEMEX, even though the private sector kept growing at the expense of increasing Mexican imports.

A third problem was that the crises biased the industry to the production of generic products, abandoning the production of specialties. The lack of production affected the integration of the chains in the secondary level. As the demand for final products grew, the industry increased imports (in the 1980s were only secondary products), which since the 1990s has reached final products. This situation continues to affect the production of resins for plastics, colorants, rubbers, pesticides, lubricants, additives, and pharmaceuticals, all in which the industry is lacking the active ingredients or precursors of the final products. This situation caused Mexico to import final products in almost all the petrochemical chains, increasing the dependency of the industry on imports. The exception to this pattern is the production of chemical fibres, polymers and fertilizers–the production plants of these products were privatized in the first stages of the process in 1988.

As imports of petrochemicals have been completely liberated since the 1980s, the situation was becoming dangerous to the industry. Only a few products were subject to import tariffs, i.e. ethylene, propylene, polypropylene and ethyleneglycole (at 10 percent of value); as well as benzene and ammoniac anhydride (at 5 percent). These products will loose all trade protections by 2004 in accordance with NAFTA's rules. For example, there are products such as propylene, of which 25 percent of the installed capacity for producing it is not used, while the imports represent almost 30 percent of that capacity. This inefficiency is due to the lack of profitability of domestic production (Secretaria de Energia, 1997: 140-141).

Taking these problems into account, the new plan defined different goals for petrochemical policy in the years to come. The most important objective for Mexico since the 1990s has been to take advantage of its geographical location and commercial agreements in order to create a petrochemical pole in the Gulf of Mexico integrating it with the North-American market and increasing exchanges with the European Union. For this, it became fundamental to attract new investment (public, private, domestic and international) in the sector, and to foster the integration of the chains as fast as possible.

As in the past, the new Energy Minister[169] was looking to reactivate the petrochemical industry in order to make it grow at higher rates than the rest of the economy. The difference between this and previous state actions was that it would not only create a domestic market but it would also reach international circuits. This implied the consolidation of domestic chains and conditions like substituting imports, in as much as it implied becoming a reliable supplier of international chains located in the Gulf of Mexico as well.

How then, was this combination of midwifery and husbandry role applied? Ministerial officials intensified contact with private producers in order to identify the most important problems. As the levels of investment had been particularly low since 1992, they began to foster capital growth. As in the past, they began to negotiate lines of credit in order to foster the investment of the industry with domestic and international development banks. They exchanged information and supported particular programs seeking to increase the integration of chains. They also recommended the formalization and presentation of those projects to national and international financing institutions. The Energy Ministry also explored the options in associating private and international companies in order to attract investment and gain access to new technologies.

The Energy Ministry decided to initiate the privatization of the secondary petrochemicals, at the level of complexes in 1997. They began this

[169] The third Energy minister of Zedillo's Government, Luis Tellez, was appointed at the end of 1997.

endeavour by transforming the ten complexes into subsidiaries in order to privatize part of their stock. They integrated assets with two different kinds of stocks, namely: series A–representing 51 percent of capital, owned exclusively by the state; and series B–representing 49 percent of capital with the possibility of having free subscription with private investors. The free-subscription stock would be sold among private investors in order to attract fresh resources (Secretaria de Energia, 1997: 175). During the reorganization of PEMEX - petrochemicals,[170] future streams were identified by the Energy Ministry (Secretaría de Energía, 1997: 175ss):

- **La Cangrejera** is one of the world's biggest petrochemical complexes and it is specialized in the production of the basic petrochemical building blocks derived from aromatics (benzene, toluene and xylenes), olefins, and polymer compounds. It is possible to identify at least 3 lines of business (ventures with private groups) from the secondary petrochemical products manufactured in this complex.

- **Morelos** Complex, as big and as important as La Cangrejera. It produced derivatives of olefins and it would be extremely competitive in the production of ethylene (a source of many organic compounds, in welding and cutting metals, to color citrus fruits, fibre

[170] It worth noting that this new context does not consider small and medium producers at all as Canacintra had also denounced (Morales 1997). In the plant-by-plant privatization scheme, the possibility for a collective of medium producers to buy one plant was a possibility. The privatization of complete complexes automatically left out the possibility of small players acting this way. This is another unattended consequence of the role played by Congress during the transformation of the chemical regulations.

production, and anaesthetics) and its derivatives, in addition to propylene and its derivatives.

- **The Pajaritos Complex** is specialized in the production of vinyl chloride. Relative to its size, it adequately provides raw materials for the production of synthetic resins and plastics to the national market only.
- **The Cosoloacaque complex** is specialized in the production of ammoniac. It concentrates 83 percent of national production of this good used to manufacture fertilizers and a wide variety of nitrogen-containing organic and inorganic chemicals.
- **Salamanca** is a small producer of ammoniac situated in Guanajuato that supplies only urea (synthesized from ammonia and carbon dioxide and used as fertilizer and in animal feed and in plastics) producing client in the region.
- **Camargo** is a single plant that produces ammonia. It is also situated in the Northeast, and like Salamanca, it has only one client in the region.
- **Tula** is the single plant that produces acrylonitrile used in the manufacture of rubber and fibres.
- **Independencia** produces acrylonitrile, dodecylbenzene (used in or to manufacture a wide variety of chemical products, including DDT, detergents, insecticides, and motor fuels), methanol (used as an

antifreeze, a general solvent, a fuel, and a denaturant for ethyl alcohol), and specialized goods that are produced in the central region of the country.

- **Escolin** produces derivates of ethane, ethylene and polystyrene (thermoplastic polymer that can be moulded into objects or made into a foam that is used to insulate refrigerators). Its main characteristic is the already localized integration of private and public producers.
- **Reynosa** is the oldest complex in the country and it produces ethylene and polystyrene of low density. Reynosa is located in the Northeast of the country.[171]

The second stage of the plan was to integrate production streams and to associate them with their principal private clients. The legislation allowed the Energy Ministry to sell 49 percent of the stocks to domestic or international private investors. However, the government chose to first sell the biggest complexes to domestic investors and identified the nine private groups to which these complexes provided raw materials. As the price of privatizing complex-by-complex increased, part of the strategy was to foster joint ventures between the biggest private domestic producers. The first stage

[171] The complexes changed their legal status transiting from the public property regime into independent enterprises with public participation by Presidential Decrees which were published in *el Diario Oficial de la Federacion* (the official gazette)–Cosoleacaque, Escolin, Tula and Camargo on 31 January; 28 February, 1997 for Cangrejera and Morelos; 25 june 1997 for Pajaritos. The Independencia and Salamanca Complexes were integrated to PEMEX-Refinacion and Reynosa was fused with Escolin.

of privatization was devoted to find a way to reach only domestic business groups.[172]

It took almost a year to reorganize the property of the complexes in order to call for capitalization bids on the new petrochemical enterprises formed during the first semester of 1997. The Ministry of Energy announced in April 1997 that the first call for privatizing the new enterprises would be held in August. However, the Ministry created a committee in June 1998 that would be responsible for stipulating the rules that would facilitate the sale of 49 percent of the new enterprises' stock. The committee was integrated by the Energy Minister, PEMEX's General Director, the PEMEX-petrochemical General Director, the Deputy Ministers of Energy, representatives of the Finance Minister, and the SECODAM (official auditor). Rather than acting as participants, the last two only supervised the process. The committee was managed by an Executive Director named José Merino (Secretaria de Energia, 1998, 108/98 BIS; and B-062-98).

Merino's first activity was to meet with members of Congress in July. The intention of this meeting was to explain the conditions in which they would attract private capital for the secondary enterprises created a year ago. This concern was important because the PRI lost its majority control of the Chamber of Deputies in the mid-term election of 1997, thus placing the most important commissions in the Congress into the hands of the opposition. This

[172] An advisor of the process said that the state considered reserving this stage of privatization for domestic groups. The intention was to favor domestic integration and the consolidation of the largest business groups of the country. The advisor added: "We represent the Mexican state, and of course, we look forward to protecting domestic interests first. We govern for Mexicans" (Anonymous interviews with the author March, 2000).

included the Energy Commission, which was conducted by a PRD deputy, Sergio Osorio. The most important statement made by Merino was that the government had every intention to continue the privatization program without delay (Secretaria de Energia, 1998 B-077-98).

The second privatization process began in September 1997. The rules for the public bid in acquiring 49 percent of Morelos Complex were published on September 14th. The rules limited access to postulants holding assets above 2.7 billion US dollars and those specialized in the production of fibres and polymers, excepting the association of a capitalist partner. Of the three qualified companies, only Grupo Desc and Grupo Alfa[173] expressed an interest in participating with PEMEX. However, Desc failed to find an associate that would let it reach the asset value required and was thus disqualified from the process, leaving the position to Alfa. Beyond specifying the publicized rules, the state tailored the privatization to favour one principal player beforehand, as Alfa was the only producer of fibres and polymers that met the requirements of holding value. Effectively, this strategy would result in the consolidation of a national champion. This fact lend credence to our second hypothesis that the state was sustaining the historical pattern of protecting entrenched national interests while advancing on the economic liberalization. This was done by granting monopoly control of the market to

[173] It is worth remembering that Leopoldo Rodríguez, Grupo Desc's vice-president, acting as ANIQ's president had been an important actor in the definition of the petroleum policy with the state since the 1973 world crisis. Grupo Alfa, on their side, had been an important allied of Lopez Portillo government and Salinas' Coalition before he arrived to the presidency in 1988.

big business and reduce international competition in the Mexican petrochemical industry.[174]

By law, PEMEX was to keep 51 percent of the stock of the complexes. However, in order to facilitate the control of the new conglomerates in private hands, the Energy Minister ruled that the company resulting from this association would be controlled and managed by the private participant. The *Convenio de Desempeno* (Performance Accord)[175] granted autonomy and flexibility to the management of Morelos Complex operations. In the accord, the Energy Ministry changed the 'control through process' for a 'control through results'. The ministry also granted managing faculties in the definition of goals, productivity, competitively and profitability to any possible buyer–even if the buyer held a minority position.

As it was mentioned before, only three companies in the market would be technically able to participate in the bid: Grupo Alfa (through its subsidiary Alpek), Grupo Desc, and Grupo Idesa. However, only Alfa enjoyed the capital composition able to bid for the company, once Idesa failed in forming a collective that would let them participate in the bid. In a last minute manoeuvre, Grupo Idesa appealed for the intervention of the Federal

[174] The other Mexican group specialized in fibers and polymers–Grupo Idesa–was unable to participate due to its difficulty in reaching the size requirement. The rules considered the possibility that 'medium'-sized groups would be able to venture with other national or international producers (only if Mexicans controlled more than 50 percent of the capital). In fact, even if the public call for bids was open, privatization was directed to consolidate the Alfa subsidiary *Alpek* in making it the national champion in the production of fibers–one of the only areas, in which the American petrochemical market is not completely integrated domestically.

[175] The Performance Accord involved the participation of three ministries: PEMEX, PEMEX-petroquimica and PEMEX-Petroquimica Morelos that were published in the Diario Oficial de la Federacion on February 16, 1999.

Commission Regulating the Economic Competitiveness, arguing that even if both Idesa and Alfa had established a long-term contract with PEMEX[176] to buy raw materials at special prices, the fact that Alfa would also own the Morelos Complex, which was producing the raw materials, would give Alfa an unfair advantage over other producers.[177]

The Regulatory Commission asked for a renegotiation of those contracts a day before the Alfa's attribution of the company. The commission found that Alfa would enjoy a privileged situation as both owner and client of the same company. Alfa rejected the ruling because it would affect their revenues, announcing no economic offer in the public bidding ceremony. It argued that the 51/49-percentile division of ownership did not give enough grants to spur a world-class company due to the privileged position that the Morelos Complex would continue to enjoy as a parastatal company. If Alfa had bought the Morelos Complex, it would have been able to consolidate its positions in the North American Markets of fibres and chemical textiles as well as packing materials. In addition, Alfa would have created new markets for bottles, electro-domestic appliances and construction goods in which they produce.

---

[176] These contracts were established during the 1980s in order to guarantee the private sector raw materials on a long-term basis at stable prices in order to let them make strategic plans for the future.

[177] Those contracts were established in 1983, when PEMEX began to increase prices to reach international standards. PEMEX established those contracts to assure private producers the long-term price and provision of raw materials to them. Those contracts were negotiated on a case-by-case basis and would be untouched during the privatization process–even if the possible buyers enjoyed advantages from them.

9.7 Privatization is dead: long live protective liberalization

During the 1982 crisis, the state maintained its protectionism in order to protect private producers through a reform that would improve petrochemical competitiveness. However, the state failed to consolidate the reform after 15 years of trying to implement what was in essence protective liberalization. Once the government cancelled the first bid due to unsuitable offers, it kept going about business as usual, granting low-prized and long-term contracts to private producers. In the 1986 privatization plan, businesses would gain integration on a plant-by-plant basis without risking important amounts of investment. However, the complex-by-complex plan of 1997 implied the investment of an excessive sum of money without reducing the risks of losing control of the plants as PEMEX ceded the management of the complexes to the private sector. As it was a discretionary decision of the state, the risk became too high for the private sector.[178]

In 1999, annual imports of petrochemicals reached 14 billion US dollars–about 30 percent of the national revenue of crude oil exports the same year. In 2000, the PRI lost the presidential election for the first time in 70 years. The new government documented that PEMEX deviated 150 million US dollars illegally to finance the PRI campaign through the oil union. While the PRI received 60 million US dollars, it was forced to pay 100 million in fines in 2002. The union put its share of corrupt money in American bank accounts

---

[178] As the privatization implied the constitution of new companies, it was established in a very confused clause of the privatization rules, that the oil union would receive an important amount of money (almost 50 million US dollars) after a new privatization.

valued at 90 million dollars, arguing that they were external expenses. As the union eventually accepted culpability on the affair, it was required to pay PEMEX the entire 150 million dollars unpaid loan by relinquishing union fees until the amount was reached, and by doing so, effectively avoided the prosecution of union leaders responsible for the wrongdoing (Granados Chapa, 04-02-23 Reforma editorial pages “PEMEX satisfecho”).

Chapter 10. Conclusions

When field research for this work was conducted in the summer 2000, Mexico was in the middle of an electoral process that concluded with the end of 71 years of the PRI in power. Officials in the Energy Ministry were extremely disappointed. They had to spent the previous five years developing that would allow the troubled petrochemical industry to regain the impressive growth rates of the previous years, albeit in a new economic context. The Energy Ministry was very cooperative when officials explained the problems of the industry and the evolution of the petrochemical policies made by three different Ministers during Zedillo's government to me. Every time the state tried took the step of implementing a structural reform in the sector, it was unable to continue fostering integration and competitiveness. Most importantly, it failed to create the conditions needed in order to induce private investment in a sector that had been reducing its production for 15 years.

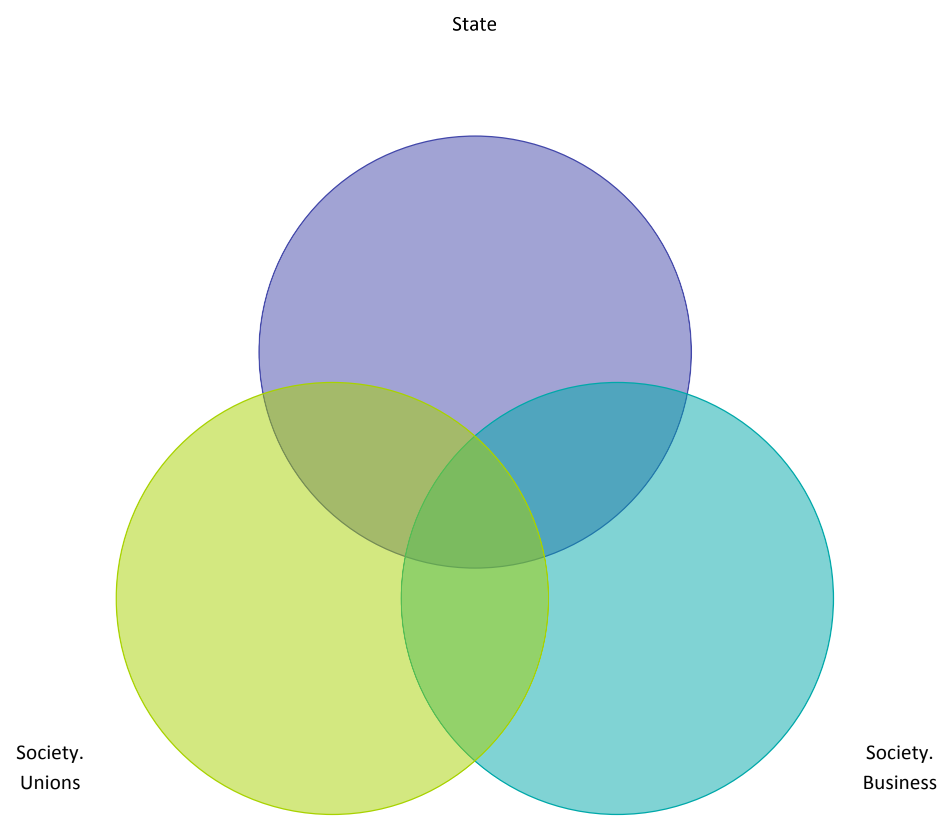
Why was the state failing to improve the conditions of the petrochemical industry? What happened to the strong state structures that almost always set up the initiative to transform Mexico's industrial landscape?

This thesis has documented the existing Mexican developmental structure, which connected the state with business and union actors efficiently in order to pursue collective ends effectively. At the same time, we have described the lack of capacity that the structure faced in managing the new necessities created by its own success in withdrawing state participation and in transforming Mexican petrochemical mainly into a private managed sector.

In addition, we have offered ample evidence to show that the patterns of exchange between the state and the society were successful in a context of a closed-market economy and in an authoritarian political climate. However, the more the state succeeded in promoting developmental goals, the more it became incapable of dealing with the domestic and international pressures for economic liberalization and political reform.[179] As in other developmental states, the Mexican state was *"calling forth its own gravedigger"* (Evans, 1995: 228). The formulae that had been proven to be efficient for decades were actually creating paralysis instead of development.

While this work is based on a single case analysis, leaving little space for generalizations, the evolution of the Mexican petrochemical industry shows that the strategy of embedded autonomy works well when it includes a tripartite connection among the state, businesses and labour organizations; this association pursues a transformative agenda. In a more or less autonomous context, the Mexican developmental structure was able to define policy goals that would consolidate an industry led mainly by domestic producers, without too much labour contestation. This tripartite exchange will be illustrated as follows:

[179] Here, it is worth remembering that authoritarianism is familiar to developmental states: authoritarian governments have ruled South Korea, and the same party has ruled Japan for more than 50 years.



According to this image, each sphere represents one sector. This diagram lets us describe how labour, businesses and the state enjoy a good deal of autonomy. However, the connection capacity to pursue collective goals empowers each actor. More importantly, this synergy is necessary for managing–if not actually for creating–the affinities that the state and civil society share, when it comes to transform the country.

However, just as Evans (1995: 228-234) predicted, the embedded autonomous state would become unable to deal with its own success. Evans has posed this challenge to illustrate the Korean case; the state was unable to deal with growing labour discontentment, and it used repression as a solution. In Mexico, the state opted for a gradual liberalization of politics and economics, which eventually led the country into paralysis. The first expression of the paralysis was economic; it happened when the decision of structural reform was taken in 1986. President Miguel de la Madrid succeeded in implementing the fist stages of the reform in the petrochemical industry, by increasing integration, competitiveness and new investment in particular chains. Presidents Salinas and Zedillo's governments were less fortunate.

The second face of the paralysis was political. The Mexican embedded autonomous state had serious difficulties dealing with pluralism. The more the Mexican state was forced to recognize social diversity and to promote political liberalization, the less efficient it seemed to be in keeping policy definition coherent and flexible in its application. The growing plurality of Mexican society affects the definition and application of the state promotional roles, especially since the paradigm shift of the 1980s, for several reasons:

- The custodial role is now shared nationally with Congress and internationally with commercial agreements. The state lost its ability to continue inducing the gradual backward integration of the private petrochemical industry–even if it was done for historical and nationalist reasons, and even if the petrochemical law of 1971 settled the basis for an extremely discretionary state action. Being unable to form a majority in Congress since 1997, political parties are more preoccupied of passing regulations that have major impact on public opinion than of engaging in a national consensus that would facilitate the solution of the major reforms needed in order to increase national competitiveness.

- There is not a convincing justification either for a significant demiurgic role or a minimalist one level. Therefore, the state lost its ability to induce competitiveness in the petrochemical production efficiently. This loss was caused by old-fashioned nationalism or by too optimistic assumptions of the neo-liberal policies.
- As a consequence, midwifery and husbandry roles by themselves cannot sustain an adequately defined policy if the bases for these roles do not exist.

The problem in Mexico today is that the main lines of the paradigm shift took hold and that structural reform triggered party competition mainly because displaced old officials with clientelistic-corportist bases reorganized to contest the reform (first inside PRI, then pushing democratization). Since the mid-1990s state capacity to finish it was blocked because, among other reasons, no party has formed a majority government since 1997 and neoliberal policies have become an evil words. So no one has the capacity to risk pushing a new reform agenda or to adjust old ones even if they know Mexico needs such. This is it, because even if since the mid 1980's and particularly since Salinas government (1988-1994) the political personnel changed, or at least Mexico's top bureaucracy lived a generational shift when younger people educated at Ivy League universities arrived in the government. The result was something of a mismatch between the PRI apparatus and the government apparatus. For the first time the PRI and the government were following different visions for the country and no national project took hold to appeal the future.

All this became exacerbated with democratization. Contrary to what Kohli, Evans and Hall observed in the cases they studied, Mexican party politics has in fact blocked reform in the petroleum industry. This was first because old officials organized on the left considered oil as an icon of nationalism and used it to mobilize their clienteles. Second, even if state officials were able to imagine policy scenarios appropriate to the new paradigm, they had to do so without altering the old legal structure sustaining the petroleum industry and the petrochemical sector. None has been able to push a constitutional reform that would sustain neoliberal policies in petrochemicals, allowing private investment to replace public investment or increasing public investment to relaunch a petrochemicals push.

Finally, Evans assumed that embedded autonomy was useful to explain state and business' exchanges meant to pursue collective goals. However, this thesis has shown that it is also possible to include labour organizations in the analysis. The unions of the most strategic sectors of the economy have always been present in the developmental institutions and in the networks that connect the state and society. However, this was sort of a mixed blessing.

From the end of World War II until 1970, the state was able to surpass the expectations of both labour and business groups. The Mexican state was able to offer profits and good salaries to both social groups. However, problems with the model began to unravel when major reforms were implemented. The private sector was unable to deal with the higher regulations and the increased demiurgic role; and on the other hand, labour was unable to accept the liberalization of the industry and the withdrawal of the state. The first situation mentioned above began in 1971; the private sector envisioned a problem: encouraging state production was turning into unfair competition. In the second situation, which began in 1986, it is clear that the unions would lose the political and economic advantages of controlling the monopoly of labour representation and that the union's interests would be weakened.

However, the most important reason for the failed reforms is the lack of state's capacities to induce social transformation and development in an efficient way. In the 1970s, the state exaggerated its presence in the economy, thus jeopardizing both the project and the relationship with the private sector. Since 1986, the state reduced its demiurgic action and redefined the role that the promotional bureaucracies of both the Bank of Mexico and the Finance Ministry would play in the future.[180] This made the

---

[180] The Bank of Mexico gained autonomy to define monetarist policies concentrating its efforts to reduce inflation, control indebting, etc. in 1994, while the Finance ministry was in

state unable to play any promotional role or to blend midwifery, husbandry and custodial roles adequately.

With the reform that was initiated in 1986, the society–now confined to private producers–would increase competitiveness by replacing the state. During the gradual implementation of this policy reform in the petrochemical industry, businesspeople–big groups at first, but also medium sized producers–would be able to enjoy the consolidation of domestically controlled productive chains. This way, the state continued to protect the domestic trajectory of transformation. Businesses would reduce risks by integrating themselves domestically through the privatization on a plant-by-plant basis. They would also increase international competitiveness in order to act in the newly liberalized context. When the project was first delayed, the space abandoned by the state began to be filled through imports. This fact increased disintegration in the sector.

With the final privatization attempt in 1996, the plan changes in order to privatize complete petrochemical complexes. Prices increased tenfold and the possible participation of medium producers was automatically excluded. As smaller private producers were unable to participate, only big business tried to continue with the agenda. This continued happening until 1999, when *Grupo Alfa* opted to protect the special prices it was receiving by long-term contracts it had already signed with PEMEX, instead of assuming the political and economical risks of integrating the sector with a public monopoly. Both

---

charge of increasing tax revenues and regulatory policies, since the early 1990s. Both institutions abandoned the promotional role they have played since the 1960s.

businesses and unions then opted for staying in the comfortable situation that the reform had created for both groups. The state then lost its capacity to push the reform. Every time a new stage was initiated, the best organized opposition contested it.

Then, embedded autonomy is useful to explain the affinities between the state conspiracies in attracting related social actors in order to pursue the development of the petroleum industry in Mexico. Embedded autonomy is also functional to explain why the state ended up trapped by its own success. The society had developed such entrenched interests in the petrochemical industry, that even if tripartite relations were useful for pursuing collective goals in the past, they ended up digging the grave of the Revolutionary-state's authority, thus blocking the reform. As a more serious or preoccupying conclusion, some state actors have lost sight of the importance that this strategic sector has on the Mexican economy. They have also failed in creating the conditions to work together with the private sector in order to define collective goals.

Even if the state pursued a major transformation from Import Substitution Industrialization (ISI) to Export-Oriented Industrialization (EOI), it is also possible to identify that the state was interested in keeping its traditional protective attitude towards private domestic business groups in a liberalizing context. The state was also overly dependent on the patterns of exchange with society in order to succeed in pushing this transformation. Mexican business groups reinforced their monopolies in the market, but only very few sectors became internationally competitive players. In hindsight, we can uncover the fact that while there were important changes in the Mexican political economy; the patterns of the relationship between the state and the society did not change as much as it seemed at the beginning of the 1990s.

EPILOGUE

In 2000, PAN's presidential candidate Vicente Fox won the election. President Fox first decided to appoint the five most important businessmen into the government seats of the PEMEX's Administration Council. Since the decision was taken with rapid opposition, Fox retired its proposition and renamed the traditional (Finance, Economy, Energy, Commerce and Bank of Mexico) government institutions to those seats.

During 2001, Fox also reformed the organizational structure of PEMEX. With this measure, the division of a holding and subsidiaries was abandoned, thus rationalizing PEMEX resources. PEMEX administrative structure went back to the integration scheme that the company had before 1992, in order to reduce the administrative costs of managing a divided company. This action erased the possibility of any future privatization as it has been planned before. To induce new investment in the sector, President Fox tried to make Congress pass new regulations that would allow private investment in the whole petroleum and energy sectors for five years without success.

In August 2003 a new Energy Minister, Felipe Calderon, was appointed. Calderon has been leader of the PAN and of the party's congressional *caucus*. His duty was to build consensus in order to reform the energy sector in Mexico. Therefore, in October 2003, President Fox announced his intentions to associate PEMEX with private producers in order to construct petrochemical mega-complexes that worked under the existing rules. Calderon left the government and the project fail because the Finance Ministry denied authorization to any long-term contract that would warrant private investors with flat-subsidized prices for 20 years.

Since the beginning of his government, President Fox succeeded in re-establishing a career civil-service that would reinforce the autonomy of the bureaucracy. Even if the implementation of this measure will undermine the basis of the Popular Sector of the PRI, which has controlled the bureaucratic unions since 1938, it is not clear whether the state has been paying enough attention to connecting this new bureaucracy with social networks–other than corporatist ones–to embed its new structures with society. This is so, because since 1986 and as result of neo-liberal reforms, the state's bureaucracy in key agencies has lost autonomy and along with it, it has lost the promotional role it used to play.

Bibliography

Aboites, J. e. a. (2004). *La tríada innovadora. Investigación y Desarrollo en el Instituto Mexicano del petróleo*. México DF: Siglo XXI.

Alvarez-Bejar, A. (1997). Pemex: de la reestructuración a la privatización, *Congreso de la Asociación de Estudios Latinoamericanos (LASA*. Guadajalara, México.

Amsden, A. (1985). 'The state and Taiwan's Ecomic Development' in D. R. Peter Evans, and Theda Skocpol (ed), *Bringing the State Back In*. 1985: Cambridge University Press.

Amsden, A. (1989). *Asia's Next Giant: South Korea and Late Industrialization*. New York: Oxford University Press.

Amsden, A. (2004 (2001)). *The Rise of "the rest". Challenges to the west from late-industrializing economies*. New York, NY: Oxford University Press.

Arceo Castro, J. (1996). *Privatización de la Petroquímica. Notas y Comentarios*. México DF: Cámara de Diputados, LVI Legislatura.

Arriola, C. (1988). *Los empresarios y el Estado (1970-1982)*. México D.F.: Universidad Nacional Autónoma de México/ Editorial Porrua.

Aspe, P. (1993). *El camino mexicano de la transformación económica*. Mexico, D.F.: Fondo de Cultura Económica.

Babb, S. L. (1998). Neoliberalism and the Rise of the New Money Doctors: The Globalization of Economics Experitse in Mexico, *Latin American Studies Association*. Chicago, IL.

Babb, S. L. (2001). *Managing Mexico : economists from nationalism to neoliberalism*. Princeton: Princeton University Press.

Bailey, J. (1980). 'Presidency, Bureaucracy, and Administrative Reform in Mexico: The Secretriat of Programming and Budget', *Inter-American Economic Affairs, 34*(Summer), 27-59.

Bankers Question Mexico's Plan to Help Private Firms Repay their Foreign Debt. (1983). *The Wall Street Journal,* (pp. 40). New York.

Bazdrech, C., Bucay, B., Loaeza, S., & Lustig, N. (eds.) (1992). *México: Auge, Crisis y Ajuste*. México, D.F.: Fondo de Cultura Económica.

Bazdresch, C. a. S. L. (1991). 'Populism and Economic Policy in Mexico, 1970-1982' in D. a. Edwards (ed), *The Macroeconomics of Populism in Latin America*.

Bennett, D. C., & Sharpe, K. (1980). 'The state as a Banker and Entrepreneur: The Last Resort character of the Mexican state's intervention, 1919-1976', *Comparative Politics, 12*.

Bennett, D. C., & Sharpe, K. (1985). *Transnational Corporations Versus the State*. Princeton: Princeton University Press.

Berman, P. (1996). *A tale of two utopias : the political journey of the generation of 1968*. New York: W.W. Norton & Co.

Bethell, L. (1991). *Mexico since Independence*. Cambridge England ; New York: Cambridge University Press.

Borja, A. (1995). *El estado y el desarrollo industrial : la politica mexicana de computo en una perspectiva comparada*. Mexico: Centro de Investigacion y Docencia Economicas : Miguel Angel Porrua Grupo Editorial.

Brown, J. C., & Knight, A. (eds.) (1992). *The Mexican petroleum industry in the twentieth century*. Austin: University of Texas Press.

Bucay, B. (2001). 'Apuntes de la Historia de la Química Industrial en México', *Journal of the Mexican Chemical Society, 45*(3), 136-142.

Bucay, B. F. (1991). 'Petrochemicals: Mexican Perspective' in S. Weintraub, L. Rubio & A. D. Jones (eds), *US-Mexican Industrial Integration*. Boulder: Westview Press.

Camara, d. D. (1996). Informe sore el proceso de Desincorporación de activos de la Petroquímica Secundaria de PEMEX, *Subcomision de Petroquímica* (pp. 38). México D.F.: Cámara de Diputados.

Camp, R. A. (1972). 'The middle level technocrat in Mexico', *The Journal of Developing Areas 6*(July), 571-582.

Camp, R. A. (1975). 'The National School o Economics and Public Life in Mexico', *Latin American Research Review, X*(3), 137-163.

Camp, R. A. (1980). *Mexico's Leaders: Their Education and Recruitment*. Tucson: The University of Arizona Press.

Camp, R. A. (1984). *The Making of a Government: Political Leaders in Modern Mexico* Tucson: University of Arizona Press.

Camp, R. A. (1990). *Empresarios y Politica en México*. México D.F.: Fondo de Cultura Económica.

Cardenas, E. (1995). *La industrializacion Mexicana durante la Gran Depresion*. Mexico, D.F.: El Colegio de Mexico.

Cardenas, E. (1997). *La Politica Economica de Mexico, 1950-1994*. Mexico, D.F.: Fondo de Cultura Economica, El Colegio de Mexico.

Cárdenas, E. (1987). *La industrialización mexicana durante la Gran Depresión*. México, D.F.: Colegio de México, Centro de Estudios Económicos.

Cárdenas, E. (1996). *La política económica en México, 1950-1994*. México: Colegio de México : Fideicomiso Historia de las Américas : Fondo de Cultura Económica.

Cárdenas, E. (2004). *La hacienda pública y la política económica, 1929-1958*. México: Colegio de México Fondo de Cultura Económica.

Cárdenas, E., Ocampo, J. A., & Thorp, R. (2000). *An economic history of twentieth-century Latin America*. Houdsmills, Basingstoke, Hampshire ; New York Oxford: Palgrave ; iin association with St. Antony's College.

Cardoso, F. H., and Enzo Faletto. (1979). *Dependency and Development in Latin America*. Berkeley and Los Angeles: University of California Press.

Carpizo, J. (1974). *El presidencialismo mexicano*. México: Siglo Veintiuno Editores.

Casar, M. A. (1992). 'Empresarios y Estado en el gobierno de Miguel de la Madrid: en busca de un nuevo acuerdo' in C. Basdresch, B. Bucay, S. Loaeza & N. Lustig (eds), *México: Auge, Crisis y Ajuste*. México, D.F.: Fondo de Cultura Económica.

Castaneda, J. (1999). *La herencia: arqueología de la sucesión presidencial en México*. Mexico DF: Alfaguara Eds.

Centeno, M. A. (1997). *Democracy within reason : technocratic revolution in Mexico*. University Park, Pa.: Pennsylvania State University Press.

Centeno, M. A., & López-Alves, F. (eds.) (2001). *The other mirror : grand theory through the lens of Latin America*. Princeton, N.J. ; Oxford: Princeton University Press.

Chacón, S. (2006). 'La relación petrolera México-Estados Unidos (1946-1952): Estudio de caso como fundamento para la integración energética', pp. 229-256 in I. Rousseau (ed), *¿Hacia la integración de los mercados petroleros en américa?* México D.F.: El Colegio de México.

Chalmers, D. A., Souza, M. d. C. C. C. d., Borâon, A., & Columbia University. Institute of Latin American and Iberian Studies. (1992). *The Right and democracy in Latin America*. New York: Praeger.

Chandler, A. (1990). *Scale and Scope. The Dynamics of Industrial Capitalism*. Cambridge, Mass: Harvard University Press.

Chandler, A., et al (ed.) (1997). *Buig Business and the Wealth of Nations*. Cambridge: Cambridge University Press.

Chapman, K. (1991). *The international petrochemical industry : evolution and location*. Oxford, UK ; Cambridge, Mass., USA: B. Blackwell.

CIEN. (1981). El Grupo Alfa. México, D.F.: Centro de Información y Estudios Nacionales.

CIEN. (1988). La Economía Mexicana. Análisis Anual, . México D.F: Centro de Información y Estudios Nacionales.

Collier, D. (1995). 'Trajectory of a Concept: 'Corporatism' in the Study of Latin American Politics' in P. H. Smith (ed), *Latin America in Comparative Perspective. New Approaches to Methods and Analysis*. Colorado: Westview Press.

Cordera, R., & Tello, C. (1989). *México, la disputa por la nación : perspectivas y opciones del desarrollo*. México: Siglo Veintiuno Editores.

Cordero, S., Santin, R., Tirado R., (ed.) (1983). *El poder empresarial en México*. México D.F.: Ed. Terra Nova.

Cosío Villegas, D. (1972). *El sistema político mexicano : las posibilidades de cambio*. México: Editorial J. Mortiz.

Dale, S. (1986). *Industria, Estado y Política en México*. México, D.F.: Grijalbo y Consejo Nacional para la Cultura y las Artes.

Dale, S. (1987). 'The PAN and the private sector' in J. Gentleman (ed), *Mexican Politics in Transition*: Westview.

Davila-Sanchez, M. A. (1994). Industrie petrochimique internationalization de la production et investisssement direct étrangère dans le marché mexicain, *Science Politique* (Vol. Doctorat, pp. 408). Quebec: Université Laval.

De la Vega Navarro, A. (2007). 'Energy reform: redesignig the Mexican model', *International Journal of Energy Sector Management, 1*(1), 7-12.

Derossi, F. (1971). *L'entrepreneur mexicain*. Paris: Centre de Developpement de l'Organisation de Coopération et de Developpement Economiques.

Diputados, C. d. (1996). Reunión de Trabajo con el Secretario de Energía Dr. Jesus Reyes Heroles, *Comision de Energéticos*. Mexico DF: Camara de Diputados.

Dornbusch, R., & Edwards, S. (1991). *The Macroeconomics of populism in Latin America*. Chicago: University of Chicago Press.

Durand, F., & Silva, E. (eds.) (1998). *Organized business, economic change, and democracy in Latin America*. Coral Gables, Fl.: North-South Center Press.

El futuro de la petroquímica, en manos del próximo gobierno. (1994). *El Financiero, Secc. Negocios* (pp. 14). México D.F.

Erfani, J. A. (1995). *The paradox of the Mexican state : rereading sovereignty from independence to NAFTA*. Boulder: Lynne Rienner.

Escobar, S. (1987). 'Rifts in the Mexican Power Elite' in S. Maxfield & A. Ricardo (eds), *Government and Private Sector in Contemporary Mexico*. San Diego: Center for US- Mexican Studies, University of California.

Etchemendy, S. (2004). 'Revamping the Weak, Protecting the Strong and Managing Privatization: Governing Globalization in the Spanish Take Off"', *Comparative Politics Studies, 37*(Agosto), 623-651.

Evans, P. (1992). 'The State as Problem and Solution: Predation, Embedded Autonomy and Adjustment' in S. a. K. Haggard, Robert (ed), *The Politics of Economic Adjustment: International Constraints, Distributive Politics, and the State*. Princeton: Princeton University Press.

Evans, P. (1995). *Embedded Autonomy. States and Industrial Transformation*. Princeton, New Jersey.

Evans, P. (1996a). 'Government Action, Social Capital and Development: Reviewing the Evidence on Synergy', *World Development, 24*(26).

Evans, P. (1996b). 'Reconstructing Agency in a Global Economy: Reflections on Embedded Autonomy', *Political Power and Social Theory, 10*.

Evans, P. (1997). 'State structures, Government-Business Relations and Economic Transformation' in S. Maxfield, and Ben Ross Schneider (ed), *Business and State in Developing Countries*. Ithaca, N.Y.: Cornell University Press.

Evans, P., Reuschemeyer, D., & Skocpol, T. (eds.) (1985). *Bringing the State Back In*. New York: Cambridge University Press.

Evans, P. a. J. S. (1988). 'Studying Development since the Sixties: The Emergence of a New Comparative Political Economy', *Theory and Society, 17*, 713-745.

Fairbrother, M. (2007). 'Making Neoliberalism Possible: The State's Organization of Business Support for NAFTA in Mexico', *Politics and Society, 35*(2), 265-300.

Flores Quiroga, A. R. (1998). *Proteccionismo versus librecambio : la economía política de la protección comercial en México, 1970-1994*. México: Fondo de Cultura Económica.

Fourcade-Gourinchas, M. a. S. L. B. (2002). 'The Rebirth of the Liberal Creed: Paths to Neoliberalism in Four Countries', *American Journal of Sociology, 108*(3), 533-579.

Fourt, G. (1985). Devéloppement et Crise du Groupe Monterrey. Paris: Centre de Recherche et Documentation sur l'Amérique Latine, Institute des Hautes Etudes de l'Amérique Latine.

Frazier, S. (1983a). Mexican Companies Enthusiastic AboutCentral BankPlan to Settle Foreign Debt, *The Wall Street Journal* (pp. 31). New York.

Frazier, S. (1983b). Mexican Firms Resist New Loan Terms. Bankers see Monterrey Debtor's Cartel, *The Wall Street Journal* (pp. 1). New York.

Frazier, S. (1984). Mexico's Grupo Alfa wins easier terms from foreign bankers on part of its debt, *The Wall Street Journal* (pp. 38). New York.

Fuentes, C. (1999). *Los anos con Laura Diaz*. Mexico, D.F.: Alfaguara.

GAO-US. (1991a). Reforms in the Mexican Petrochemical Industry Have Not Increased U.S. Investment. Statement of Allan I. Mendelowitz, Director. International Trade, Energy, and Finance Issues (pp. 12). Washington, D.C.: United States General Accounting Office.

GAO-US. (1991b). U.S.-MEXICO ENERGY. The U.S. Reaction to Recent Reforms in Mexico's Petrochemical Industry. Report to the Chairman, *Subcomitee on International Economic Policy and Trade* (pp. 22). Washington, DC: Committee on Foreign Affairs, House of Representatives. US.

Garcia Alba, P., & Serra Puche, J. (1984). *Causas y Efectos de la crisis económica en México*. México D.F.: El Colegio de México.

García Reyes, M. G., Ronquillo Jarillo. (2005). *Estados Unidos, Petróleo y Política. Las estrategias petroleras como un instrumento de reconfiguración geopolítica*. México D.F.: Editorial Plaza y Valdés.

Garrido, C. y. Q., Enrique. (1987). 'Financial Relations and Economic Power in Mexico' in S. Maxfield, Anzaldua Ricardo (ed), *Government and Private Sector in Contemporary Mexico*. San Diego: Center for US-Mexican Studies, University of California.

Garrido, L. J. (1986). *El partido de la revoluciâon institucionalizada : medio siglo de poder polâitico en Mâexico : la formaciâon del nuevo estado, 1928-1945*. Mâexico, D.F.: Secretarâia de Educaciâon Pâublica Siglo Veintiuno Editores.

Garrido, L. J. (1993). *La ruptura. La Corriente Democrâtica del PRI*. México D.F.: Editorial Grijalbo.

Gereffi, G., & Asian Development Bank. Economics and Research Dept. (2002). *International competitiveness of Asian economies in the apparel commodity chain*. Manila: Asian Development Bank.

Gereffi, G., & Korzeniewicz, M. (1994). *Commodity chains and global capitalism*. Westport, Conn.: Greenwood Press.

Gereffi, G., & Wyman, D. L. (1990). *Manufacturing miracles : paths of industrialization in Latin America and East Asia*. Princeton, N.J.: Princeton University Press.

Gerschenkron, A. (1966). *Economic Backwardness in Historical Perspective*. Cambridge, Mass.: Belknap.

Gilpin, R. (1987). *The Political Economy of Interntional Relations*. Princeton: Princeton Univesity Press.

Glentleman, J. (ed.) (1987). *Mexican Politics in Transition*: Westview.

Gonzalez Casanova, P. (1983). *La Democracia en Mexico*. Mexico D.F.: Editorial Era.

Gonzalez-Pedrero, E. (1982). *Energéticos y desarrollo regional. Recursos para el desarrollo de la Industria Petroquímica*. México D.F: Instituto de Estudios Políticos, Económicos y Sociales. Partido Revolucionario Institucional.

Gourevitch, P. (1986). *Politics in Hard Times*. Ithaca, N.Y.: Cornell University Press.

Granovetter, M. (1985). 'Economic Action and Social Structure: The Problem of Embeddedness', *American Journal of Sociology, 91*(3), 481-510.

Grayson, G. W. (1980). *The politics of Mexican oil*. Pittsburgh, Pa.: University of Pittsburgh Press.

Haber, S. (1989). *Industry and Underdevelopment: The Industrialization of Mexico, 1890-1940*. Stanford: Stanford University Press.

Haber, S., & Razo, A. (1998). 'Political Instability and Economic Performance: Evidence from Revolutionary Mexico', *World Politics, 51*, 99-143.

Haber, S., Razo, A., & Maurer, N. (2003). 'When the Laws Does Not Matter: The Rise and Decline of the Mexican Oil Industry', *The Journal of Economic History, 63*(1), 1-31.

Haber, S. H., Razo, A., & Maurer, N. (2003). *The politics of property rights : political instability, credible commitments, and economic growth in Mexico, 1876-1929*. Cambridge, U.K. ; New York: Cambridge University Press.

Hacienda y Crédito Público, S. d. (1988). Programa de Refinanciamiento a Cargo del FICORCA. Mexico D.F.: AGN. Unidad de la Crónica Presidencial. Gobierno de Miguel de la Madrid,.

Haggard, S. (1990). *Pathways from the Peripehry: The politics of Growth in Newly Industrializing Countries*. Ithaca, N.Y.: Cornell University Press.

Haggard, S. a. K., Robert. (1992). 'Institutions and Economic Adjustment' in S. a. K. Haggard, Robert (ed), *The Politics of Economic Adjustment: International Constraints, Distributive Politics, and the State*. Princeton: Princeton University Press.

Hall, P. A. (1992). 'The movement from Keynesianism to monetarism: Institutional analysis and British Economic Policy in the 1970s', pp. 90-113 in S. Steinmo, K. Thelen & F. Longstreth (eds), *Structuring Politics: Historical Institutionalism in Comparative Analysis*. Cambridge: Cambridge University Press.

Hall, P. A. (1993). 'Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain', *Comparative Politics, 25*(3 (April)), 275-296.

Hamilton, N. (1982). *The Limits of State Autonomy: Post-Revolutionary Mexico*. Princeton: Princeton University Press.

Hansen, R. D. (1984 (1971)). *La política del desarrollo mexicano*. Mexico: Siglo Veintiuno Editores.

Heredia, B. (1992). 'Profits, Politics, and Size: The Political Transformation of Mexican Business' in D. Chalmers, et al (ed), *The Right and Democracy in Latin America*. New York: Preager.

Heredia, B. (1993). 'Making Economic Reform Politically Viable: The Mexican Experience' in W. Smith, C. Acuna & E. Gamarra (eds), *Democracy, Markets, and Structural Reform in Latin America*. New Brunswick, NJ: Transaction Publishers.

Heredia, B. (1994). 'Estructura politica y reforma economica: el caso de Mexico', *Politica y Gobierno, 43*(2).

Heredia, B. (1995a). Las dimesiones políticas de la reforma económica en México. Chile: CEPAL.

Heredia, B. (1995b). 'Mexican Business and the State: The political Economy of a Muddled Transition' in E. Bertell & L. Payne (eds), *Business and Democracy in Latin America*. Pittsburgh: Pittsburg University Press.

Hernandez Rodriguez, R. (1988). *Empresarios, Banca y Estado. El conflicto durante el gobierno de José Lopez Portillo, 1976-1982*. Mexico, D.F.: FLACSO/Porrua.

Hirschman, A. (1966). *The Strategy of Economic Developmenet*. New Haven: Yale University Press.

Hirschman, A. (1973). *Journeys Toward Progress: Studies of Economic Policy Making in Latin America*. New York: W.W. Norton.

Hirschman, A. (1981). *Essays in Trespassing: Economic to Politics and Beyond*. Cambridge: Cambridge University Press.

Hohenberg, P. M. (1967). *Chemicals in Western Europe : 1850-1914 : an economic study of technical change*. Chicago: Rand Mc Nally.

ITESM/CAINTRA. (1992). Nuevo Leon ante el Reto del Futuro. Version Preliminar. Monterrey.

Jacobs, E. (1982). 'La evolucion reciente dela economia mexicana', *Economia Mexicana, 4*.

Jacobs, E. y. P., W. (1982). 'Las Grandes Empresas y el Crecimiento Acelerado', *Economia Mexicana, 4*.

Johnson, C. (1982). *MITI and the Japanese Miracle: The growth of Industrial Policy, 1925-1975*. Stanford: Stanford University Press.

Johnson, C. (1999). 'The Developmental State: Odyssey of a Concept', pp. 32-60 in M. Woo-Cumings (ed), *The Developmenetal State*. Ithaca, N.Y.: Cornell University Press.

Karl, T. (1997). *The Paradox of Plenty: Oil Booms and Petrostates*. Berkeley and Los Angeles: University of California Press.

Katzenstein, P. J. (1984). *Corporatism and Change: Austria, Switzerland, and the politics of Industry.* Ithaca, N.Y.: Cornell University Press.

Kaufman, R. R. (1988). *The politics of debt in Argentina, Brazil, and Mexico : economic stabilization in the 1980s*. Berkeley: Institute of International Studies University of California Berkeley.

Kessel, G. y. C.-S. K. (1994). 'El Sector Petroquímico en el Tratado Trilateral de Libre Comercio', pp. 129-151 in C. Georgina Kessel (ed), *Lo negociado del TLC. Un análisis económico sobre el impacto sectorial del Tratado Trilateral de Libre Comercio*. México City: McGraw Hill.

Kessler, T. P. (1999). *Global capital and national politics : reforming Mexico's financial system*. Westport, Conn.: Praeger.

Knight, A. (1991). 'The rise and fall of Cardenismo c. 1930- c. 1946', pp. 241-321 in {Bethell (ed).

Knight, A. (2001). 'The Modern Mexican State: Theory and Practice', pp. 177-218 in {Centeno (ed).

Knight, A. a. J. C. B. (1992). *The Mexican Petroleum Industry in the Twentieth Century*. Austin, TX: The University of Texas Press.

Kohli, A. (1999). 'Where Do High-Growht Political Economies Come From? The Japanese Lineage of Korea's "Developmental State"', pp. 93-136 in M. Woo-Cumings (ed), *The Developmental State*. Ithaca, N.Y.: Cornell University Press.

Kohli, A. (2004). *State-Directed Development. Political power and industrialization in the global periphery*. Cambridge UK: Cambridge University Press.

Korzeniewicz, R. P. (1996). 'Challenging World Inequalities: Beyond Uneven Development', *Political Power and Social Theory, 10*.

Krauze, E. (1968 (1976)). *Caudillos culturales en la Revoluciâon Mexicana*. Mexico: Siglo Veintiuno Editores.

Krauze, E. (1997). *La Presidencia Imperial. Ascenso y caída del sistema político mexicano 1940-1996*. México D.F.: Tusquets Eds.

Lange, M. a. D. R. E. (2005). *States and Development. Historical Antecedents of Stagnation and Advance*. New York: Palgrave MacMillan.

Levy, D. C., & Székely, G. (1983). *Mexico, paradoxes of stability and change*. Boulder, Colo.: Westview Press.

Loaeza, S. (1989). *El llamado de las Urnas*. México D.F.: Cal y Arena.

Loaeza, S. (1992). 'Delamadridismo: La segunda modernizacion mexicana' in C. Basdresch, B. Bucay, S. Loaeza & N. Lustig (eds), *Mexico: Auge, Crisis y Ajuste*. México, D.F.: Fondo de Cultura Economica.

Lomelí, L., & Zebadúa, E. (1998). *La política económica de México en el Congreso de la Unión, 1970-1982*. México, D.F.: Colegio de México : Instituto de Investigaciones Legislativas de la Cámara de Diputados : Instituto Politécnico Nacional : Fondo de Cultura Económica.

Loyola-Díaz, R. (1990). 'La liquidacion del feudo petrolero en la politica moderna, Mexico 1989', *Mexican Studies/Estudios Mexicanos, 6*(2), 263-297.

Luna, M. (1992). *Los empresarios y el cambio politico*. Mexico D.F.: Editorial Era.

Luna, M., & Pozas-Horcasitas, R. (eds.) (1992). *Las Relaciones Corporativas en un Período de Transición*. México D.F.: Instituto de Investigaciones Sociales, Universidad Nacional Autónoma de México.

Luna, M., Tirado, R., & Valdés-Ugalde, F. (1987). 'Businessmen and Politics in Mexico 1982-1986' in S. Maxfield & R. Anzaldua (eds), *Government and Private Sector in Contemporary Mexico*. San Diego: Center for US Mexican Relations, University of California.

Lustig, N. (1998). *Mexico the remaking of an economy*. Washington, D.C.: Brookings Institution Press.

MacLeod, D. (2004). *Dowsizing the State. Privatization and the Limits of Neoliberal Reform in Mexico*. University Park, PA: The Pennsylvania State University Press.

Martínez-Laguna, N. (2001). 'Evolución y Expresión Territorial de la Industria Petroquímica en México', *Investigaciones Geográficas,, Diciembre*(46), 98-116.

Mattar, J. (1994). 'La competitividad de la industria química' in F. Clavijo & C. José (eds), *La Industria Mexicana en el Mercado Mundial. Elementos para una política industrial*. México DF: Fondo de Cultura Económica.

Maxfield, S. (1990). *Governing capital : international finance and Mexican politics*. Ithaca: Cornell University Press.

Maxfield, S. (1997). *Gatekeepers of growth : the international political economy of central banking in developing countries*. Princeton, N.J.: Princeton University Press.

Maxfield, S., & Anzaldâua Montoya, R. (1987). *Government and private sector in contemporary Mexico*. [La Jolla, Calif.]: Center for U.S.-Mexican Studies, University of California, San Diego.

Maxfield, S., & Schneider, B. R. (1997). *Business and the state in developing countries*. Ithaca: Cornell University Press.

Medina-Mora, R. (n.d). 'El Reglamento de la Ley para promover la inversión mexicana y regular la inversión extranjera', *Biblioteca virtual del Instituto de Investigaciones Jurídicas - UNAM.* http://www.juridicas.unam.mx, 157-180.

Mexico Offering Firms New Rate to Pay Suppliers. (1983). *The Wall Street Journal* (pp. 38). New York.

Mexico: A manana Plan serves Companies on the Brink. (1983). *Businessweek*.

Meyer, J. (1991). 'Revolution and reconstruction in the 1920s', pp. 201-241 in {Bethell (ed).

Meyer, L. (1972). *México y los Estados Unidos en el conflicto petrolero, 1917-1942*. México: Colegio de México.

Meyer, L. (1977). 'Historical Roots of the Authoritarian State' in J. L. Reyna & R. Weinert (eds), *Authoritarianism in Mexico*. Philadelphia: Institute for the Study of Human Issues.

Meyer, L. (1993). 'El Presidencialismo. Del populismo al neoliberlismo', *Revista Mexicana de Sciología*(abril-junio).

Migdal, J. (1988). *Strong Societies and Weak States: State-Society Relations and State Capabilities in the Third World*. Princeton: Princeton University Press.

Migdal, J. (1994). 'The State in Society: An approach to Struggles for Domination' in J. Migdal, A. Kohli & V. Shue (eds), *State Power and Social Forces: Domination and Transformation*. Cambridge: Cambridge University Press.

Migdal, J., Atul Kohli, and Viviene Shue (ed.) (1994). *State Power and Social Forces: Domination and Transformation*. Cambridge: Cambridge University Press.

Milner, H. (1987). 'Resisting the Protectinism temptation: Industry and the making of trade Policy in France and the United States during the 1970s', *International Organization, 41*(4).

Milner, H. (1988). *Resisting Protectionism*. Princeton: Princeton University Press.

Milner, H. a. K. k. (2005). 'Why the Move to Free Trade? Democracy and Trade Policy in Developing Countries', *IO International Organization, 59*(Winter 2005), 157-193.

Molinar Horcasitas, J. (1991). *El tiempo de la legitimidad. Elecciones, Autoritarismo y Democracia en México*. México, D.F.: Cal y Arena.

Morales, I. (1992a). 'PEMEX during the 1960s and the Crisis in Self-Sufficiency' in A. Knight & J. Brown (eds), *The Mexican Petroleum Industry in the Twentieth Century*. Austin: University of Texas Press.

Morales, I. (1992b). 'The Consolidation and Expansion of PEMEX, 1947-1958' in A. Knight & J. Brown (eds), *The Mexican Petroleum Industry in the Twentieth Century*. Austin: University of Texas Press.

Morales, I. (1997a). 'Mexico's Post-NAFTA Privatisation Policies: The Case of the Petrochemical Sector', *New Political Economy, 2*(3).

Morales, I. (1997b). 'Reestructuración de la petroquímica mexicana. Hay lugar para las empresas medianas?', *Comercio Exterior, 47*(1).

Morales, I., Lezama Escalante, C., & Vargas, R. (1988). *La formación de la política petrolera en México, 1970-1986*. México, D.F.: Colegio de México, Programa de Energéticos.

North, D. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

Olson, M. (1965). *The Logic of Collective Action*. Cambridge USA: Harvard University Press.

Olson, M. (1982). *The Rise and Decline of Nations*. New Haven,: Yale University Press.

Ortiz Mena, A. (1998). *El desarrollo estabilizador : reflexiones sobre una época*. México: El Colegio de México : Fideicomiso Historia de las Américas : Fondo de Cultura Económica.

Ortiz Mena-L.N., A. (2005a). 'Getting to "No": Defending Against Demands in NAFTA Energy Negotiations', *CIDE Working Papers No. 126*.

Ortiz Mena-L.N., A. (2005b). 'La creación de las políticas comerciales en América: Lo que se puede aprender de la experiencia mexicana', *Aldea Mundo, 10*(019), 7-16.

Ortiz Rivera, A. (1998). Consejo Mexicano de Hombres de Negocios: Poder tras la silla presidencial? Caracterización del CMHN como órgano de acción política de la élite empresarial, *Departamento de Sociología Política* (pp. 217). Mexico, DF: Instituo de Investigacines Sociales Dr. José María Luis Mora.

PEMEX, P. M. (1988). *La Industria Petrolera en México. Una Crónica*. México D.F.: Petroleos Mexicanos.

Péres, W. (2006). 'El lento retorno de las políticas industriales en América Latina y el Caribe', *Revista de la Cepal*(88), 71-88.

Péres, W., & Garrido N, C. (eds.) (1998). *Grandes empresas y grupos industriales Latinoamericanos : expansión y desafíos en la era de la apertura y la globalización*. México, D.F.: Siglo vientiuno editores.

Philip, G. D. E. (1982). *Oil and politics in Latin America : nationalist movements and state companies*. Cambridge ; New York: Cambridge University Press.

Philip, G. D. E. (1999). 'The Political Constraints on Economic Policymaking in post-1982 Mexico: the case of Pemex', *Bulletin of Latin American Research 18*(2).

Pierson, P. (1994). *Dismantling the welfare state? : Reagan, Thatcher, and the politics of retrenchment*. Cambridge, England ; New York: Cambridge University Press.

Pierson, P. (2004). *Politics in Time. History, Institutions, and Social Analysis*. Princeton, N.J: Princeton University Press.

Polanyi, K. (1957 (1944)). *The Great Transformation*. Boston: Beacon Press.

Ponce, N. K. (2003). 'La réforme invisible: La consolidation de la démocratie au Mexique et la professionnalisation de la fonction publique', *Observatoire des Amériques 03-22*, Volume(22), URL (consulted.

Portes, A. a. L. D. S. (2008). 'Institutions and Development in Latin América: a Comparative Analysis', *Studies in Comparative International Development, 43*(2), 101-128.

Pozas, M. A. (1992). Reestructuracion Industrial en Monterrey. Monterrey: Fundacion Friedrich Ebert.

Pozas, M. A. (1994). *Industrial Reestructuring in Mexico: Corporate Adaptation, Technological Innovation and Changing Patterns of Industrial Relations in Monterrey*. San Diego: Center for US-Mexican Studies, University of California and Colegio de la Frontera.

Pozas, M. A. (1999). Mexican Firms in the New Global Economy, *Ph D Dissertation, Sociology Department* (Vol. Ph D). Baltimore: The Johns Hopkins University.

Pozas, M. A. (2002). *La Estrategia Inetrnacional de la Gran empresa mexicana*. México D.F.: El Colegio de Mexico.

Programación y Presupuesto, S. (1985a). *Antología de la Planeación en México 1917-1985*. Mexico DF: Fondo de Cultura Económica y SPP.

Programación y Presupuesto, S. (1985b). 'Plan Nacional de Desarrollo Industrial 1979-1982' in S. Programación y Presupuesto (ed), *Antología de la Planeación en México*. México, D.F.: Fondo de Cultura Económica.

Puga, C. (2004). *Los empresarios organizados y el Tratado de Libre Comercio de América del Norte*. México D.F.: Facultad de Ciencias Políticas y Sociales, UNAM y Miguel Angel Porrúa.

Putnam, R. (1993). *Making Democracy Work. Civic Traditions in Modern Italy*. Princeton: Princeton University Press.

Quintana, E. (1992). 'Las negociaciones corporativas y la politica neoliberal' in M. Luna & R. Pozas-Horcasitas (eds), *Relaciones Coorporativas en un Periodo de Transicion*. México D.F.: Instituto de Investigaciones Sociales, Universidad Nacional Autonoma de Mexico.

Reuschemeyer, D., & Evans, P. (1985). 'The State and Economic Transformation: Toward an Analysis of theConditions Underlying

Effective Intervention' in P. Evans, D. Reuschemeyer & T. Skocpol (eds), *Bringing the State Back In*. Cambridge: Cambridge University Press.

Reyes Heroles, J. (1996). Versión Estenográfica del Discurso Presentado en la Inauguración del XXVIII Foro de la Asociación Nacional de la Industria Petroquímica, *XXVIII Foro de la Asociación de la Industria Petroquímica*. México D.F.

Reyna, J. L. (1977). 'Redefining the Authoritarian Regime' in J. L. Reyna & R. Weinert (eds), *Authoritarianism in Mexico*. Philadelphia: Institute for the Study of Human Issues.

Riain, S. O. (2000). 'The Flexible Developmental State: Globalization, Information Technology and the "Celtic Tiger"', *Politics and Society, 28*(2), 157-193.

Rogozinski, J. (1997). *La privatización en México : razones e impactos*. México, D.F.: Editorial Trillas.

Rousseau, I. (2006). 'Mercado, seguridad y soberanía nacional: las dinámicas contradictorias de la política energética mexicana (hidrocarburos) en el maraco de la integración del norte de América', pp. 377-420 in I. Rousseau (ed), *¿Hacia la integración de los mercados petroleros en América?* México D.F.: El Colegio de México.

Rubio, L. (1990). 'El cambiante papel del sector privado' in L. Angeles (ed), *Interpretaicones sobre el sistema politico mexicano*. Mexico D.F.: Partido Revolucionario Institucional.

Rubio, L., & Newell, R. (1987). *Consensus and stability. The origins of 1982 Crisis*.

Ruis Duran, C. (1984). Empresas en la Bolsa Reestructuraicon Financiera?, *El Financiero* (pp. 17). Mexico D.F.

Salas-Porras, A. (2005). 'Changing the bases of political support in Mexico: pro-business networks and the market reform agenda', *Review of International Political Economy, 12*(1), 129-154.

Santin, R., & Cordero, R. (1977). *Los Grupos Industriales, una nueva organizacion en Mexico*. Mexico D.F.: El Colegio de Mexico.

Saragoza, A. (1988). *The Monterrey Elite and the Mexican State, 1880-1940*. Austin: University of Texas, Press.

Schamis, H. (1998). Distributional Coalitions and the Politics of Economic Reform in Latin America, *Latin American Studies Association*. Chigago.

Schamis, H. (2002). *Re-Forming the State: The Politics of Privatization in Latin America and Europe*. Ann Arbor: University of Michigan Press.

Schmitter, P. (1973). 'Stil the Century of Corporativism?', *Review of Politics, 36*.

Schmitter, P. (1985). 'Neocorporatism and the State' in W. Grant (ed), *The Political Economy of Corporatism*. New York: St. Martin's Press.

Schneider, B. R. (1997). 'Big Business and the Politics of Economic Reform. Confidence and Concertation in Brazil and Mexico' in S. Maxfield & B. R. Schneider (eds), *Buisiness and State in Developping Countries*. Ithaca, N.Y.: Cornell University Press.

Schneider, B. R. (1998). 'Elusive Synergy: Business-Government Relations and Development', *Comparative Politics, 31*(1).

Schneider, B. R. (2004). *Business Politics and the State in Twentieth-Century Latin America*. Cambridge: Cambridge University Press.

Schuler, F. E. (1989). 'De la Multinacionalización a la Expropiación de la Empresa Alemana I.G. Farben y la Creación de una Industria Química Mexicana', *Secuencia, 13*, 44-59.

Schuster, L. (1983). Alfa's loss grew sharply wider in latest year, *The Wall Street Journal* (pp. 24). New York.

Schwartz, H. (1996). 'Antinomies of Autonomy: Global Markets, Governance Structures and Policy Options in [Peter Evans] Embedded Autonomy', *Political Power and Social Theory, 10*, 283-293.

SE, S. d. E. (1997). La Desincorporación de la Petroquímica No Básica. Cronología. In O. Mayor (Ed.) (pp. 101). México DF: Secretaría de Energía.

SE, S. d. E. (1997). Nueva Estrategia para la Industria Petroquímica y la Constitución de Empresas Filiales de PEMEX-Petroquímica. México D.F.: Secretaría de Energía.

SE-SECOFI. (1997). *Programa de Desarrollo de la Industria Petroquímica Mexicana 1997-2000. Diagnóstico y lineamientos*. México DF: Secretaría de Energía, Secretaría de Comercio y Fomento Industrial.

SEMIP-SECOFI. (1986). *Programa Integral de Fomento a la Industria Petroquímica*. México, D.F.: Secretaría de Comercio y Fomento Industrial Dirección de Comunicación Social.

Senado, d. l. R. (1996). Sesión Pública Ordinaria del 29 de Octubre de 1996. México DF: Senado de la República.

Senado, d. l. R. (1998). Desicorporación de PEMEX-Petroquímica. In I. d. i. Legislativas (Ed.). Mexico DF: Senado dela República LVII Legislatura.

Shafer, D. M. (1994). *Winners and Losers: How Sectors Shape the Developmental Prospects of States*. Ithaca, N.Y.: Cornell University Press.

Shapiro, H. (1988). State Intervention and Industrialization: The Origins of the Brazilian Automotive Industry, *Department of Economics*. New Haven: Yale University.

Shapiro, H. (1994). *Engines of Growth: The State and Transnational Auto Companies in Brazil*. New York: Cambridge University Press.

Silva, E. (1997). 'Business Elites, the State, and Economic Change in Chile' in S. Maxfield & B. R. Schneider (eds), *Business and Statein Developing Countries*. Ithaca, N.Y.: Cornell University Press.

Silva, E. (1998). 'Organized Business, Neoliberal Economic Restructuring, and Redemocratization in Chile', pp. 217-252 in F. Durand & E. Silva (eds), *Organized Business, Economic Change, and Democracy in Latin America*. Miami, Fla: North-South Center Press aat the University of Miami.

Silva Herzog, J. (1963 (1941)). *Petróleo Mexicano. Historia de un Problema*. México D. F.: Fondo de Cultura Económica.

Skkink, K. (1991). *Ideas and Institutions: Developmentalism in Brazil and Argentina*. Ithaca, NY: Cornell University Press.

Skocpol, T. (1985). 'Bringing the State Back In: Strategies of Analysis in Current Research' in P. Evans, D. Reuschemeyer & T. Skocpol (eds), *Bringing the State Back In*. Cambridge: Cambridge University Press.

Smith, P. H. (1979). *Labyrinths of Power: Political Recruitment in 20th Century Mexico*. Princeton: Princeton University Press.

Smith, P. H. (1991). 'Mexico since 1946: Dynamics of an authoritarian regime', pp. 321-395 in {Bethell (ed).

Snoeck, M. (1986). *La industria petroquímica básica en México, 1970-1982*. México, D.F.: Colegio de México, Programa de Energéticos.

Snyder, R. (2001). *Politics after neoliberalism : reregulation in Mexico*. Cambridge, UK Cambridge University Press.

Spitz, P. H. (1988). *Petrochemicals : the rise of an industry*. New York: Wiley.

SPP. (1985). 'Plan Nacional de Desarrollo Industrial 1979-1982 ', pp. 29-240 in *Antología de la Planeación en México 1917-1985*. México D.F.: Fondo de Cultura Económica.

Steinmo, S., Thelen, K. A., & Longstreth, F. (1992). *Structuring politics : historical institutionalism in comparative analysis*. Cambridge [England] ; New York: Cambridge University Press.

Steve Frazier. (1983). Mexican Companies Enthusiastic About Central Bank Plan to settle Foreign Debt, *The Wall Street Journal* (pp. 31). New York.

Streeck, W. a. K. T. e. (2005). *Beyond Continuity. Institutional Change in Advanced Political Economies*. New York: Oxford University Press.

Taylor, G. D. (1984). 'The Axis Replacement Program: Economic Warfare and the Chemical Industry in Latin America, 1942-1944', *Diplomatic History, 8*(2), 145-165.

Teichman, J. A. (1988). *Policymaking in Mexico : from boom to crisis*. Boston: Allen & Unwin.

Teichman, J. A. (1995). *Privatization and political change in Mexico*. Pittsburgh: University of Pittsburgh Press.

Teichman, J. A. (1996). Neoliberalism and the Transformation of Mexican Authoritarianism, *International Workshop on Democracy, Civil Society, and Societal Change: Mexico in the post-NAFTA Era. September 22-24, 1995* (Vol. working paper series no. 6). York University, Toronto, ON: CERLAC.

Teichman, J. A. (2001). *The politics of freeing markets in Latin America : Chile, Argentina, and Mexico*. Chapel Hill: University of North Carolina Press.

Tello, C. (1979). *La política económica en México, 1970-1976*. México: Siglo Veintiuno Editores.

Tello, C. (1984). *La nacionalización de la banca en México*. México: Siglo Veintiuno Editores.

Thacker, S. C. (2000). *Big business, the State, and free trade : constructing coalitions in Mexico*. Cambridge, U.K. ; New York: Cambridge University Press.

The price of survival at Grupo Alfa. (1984). *Businessweek* (pp. 63).

Thorp, R. (1998). *Progress, poverty and exclusion : an economic history of Latin America in the 20th century*. Washington, D.C. Baltimore, MD: Inter-American Development Bank ; Distributed by The Johns Hopkins University Press for the Inter-American Development Bank and the European Union.

Tirado, R. (1998). 'Mexico: From the Political Call for Collective Action to a Proposal for Free Market Economic Reform', pp. 182-216 in F. Durand & E. Silva (eds), *Organized Buisness, Economic Change, and Democracy in Latin America*. Miami, Fla: North-South Center Press at the University of Miami.

Toledo B, J. D., & Zapata, F. (1999). *Acero y Estado : una historia de la industria siderúrgica integrada de México*. México, D.F.: Universidad Autónoma Metropolitana, Unidad Iztapalapa.

Torres Espinosa, E. (1999). *Bureaucracy and politics in Mexico : the case of the Secretariat of Programming and Budget*. Aldershot ; Brookfield: Ashgate.

Torres, M. A. (1988a). Grupos Locales Disputan Paraestatal, *El Norte*. Monterrey, NL.

Torres, M. A. (1988b). Tereftalatos otorga a Alfa liderazgo en Petroquímica, *El Norte*. Monterrey.

Turner, R. (1989). Petroquímica: el nuevo motor de América Latina. Una nueva oportunidad de crecimiento para los países de la región, *El Norte*. Monterrey.

Unger, K. (1990). *Las exportaciones mexicanas ante la reestructuracióon industrial internacional : la evidencia de las industrias química y automotriz*. México: Colegio de México : Fondo de Cultura Económica.

Unger, K. e. a. (1994). *Ajuste estructural y estrategias empresariales en México. Las industrias petroquímica y de máquinas herramientas*. México: Centro de Investigación y Docencia Económicas.

Valdés-Ugalde, F. (1996). 'The Paradox of the Developmental State and the Study of Institutions', *Political Power and Social Theory, 10*.

Valdés-Ugalde, F. (1997). *Autonomía y Legitimidad: Los Empresarios, la Política y el Estado en México*. Mexico D.F.: Siglo XXI Editores / Universidad Nacional Autónoma de México.

Velez, F. (1991). 'Condicionamientos Estructurales del Derecho Económico en México', pp. 23-40 in F. a. F. P. Gil Díaz, Arturo (eds) (ed), *El Efecto de la Regulación en algunos sectores de la economía mexicana*. México D.F.: Fondo de Cultura Economica.

Vernon, R. (1963). *The dilemma of Mexico's development; the roles of the private and public sectors*. Cambridge, Mass.: Harvard University Press.

Vernon, R. (1964). *Public policy and private enterprise in Mexico*. Cambridge,: Harvard University Press.

Vidal, F. S.-P. A. (1992). 'La elite corporativa mexicana enfrenta la apertura economica. Nuevos patrones de control dorporativo', *El Cotidiano*.

Vila, A. (1994). La Batalla Silenciosa: Nuevas Ideas, Nuevas Alianzas, Nuevo Corporativismo? Los Empresarios de Monterrey y el Estado, 1970-1988, *Departamento de Sociología Política* (pp. 270). México D.F.: Instituto de Investigaciones Sociales Dr. José María Luis Mora.

Villarreal, R. (1986). 'The new industrialization Strategy in Mexico for the eighties' in W. Sidney (ed), *Industrial Strategy and Planning in Mexico and the United States*: Westview Sppecial Studies.

Villarreal, R. (1996). Intervención del Subsecretario de Planeación Industrial y Comercial en el Seminario Avances y Tareas en la Implementación del PRONAFICE. In AGN (Ed.), *Seminario Avances y Tareas en la Implementaci§on del PRONAFICE*: AGN, Unidad de la Crónica Presidencial, Gobierno de MIguel de la Madrid.

Weintraub, S. (ed.) (1986). *Industrial Strategy and Planning in Mexico and the United States*: Westview.

Weintraub, S., Rubio-Freidberg, L., & Jones, A. D. (1991). *U.S.-Mexican industrial integration : the road to free trade*. Boulder: Westview Press.

Whiting, V. (1992). *The Political Economy of Foreign Investment in Mexico. Nationalism, Liberalism and Constraints on Choices*: The Johns Hopkins, University Press.

Wilkie, J. (ed.) (1990). *Society and Economy in Mexico*. Los Angeles: University of California.

Womack, J. (1991). 'The Mexican Revolution, 1910-1920', pp. 125-201 in {Bethell (ed).

Woo-Cumings, M. (1996). 'The Ties that Bind? Autonomy, Emdeddedness, and Industrial Development', *Political Power and Social Theory, 10*.

Woo-Cumings, M. (1999a). 'Introduction: Chalmers Johnson and the Politics of Nationalism and Development', pp. 1-31 in M. Woo-Cumings (ed), *The Developmental State*. Ithaca, N.Y: Cornell University Press.

Woo-Cumings, M. (ed.) (1999b). *The Developmental State*. Ithaca, NY: Cornell University Press.

Zapata, F. (1990). *Ideología y política en América Latina*. México, D.F.: Colegio de México.

Zapata, F. (ed.) (1998). *Flexibles y productivos? : estudios sobre flexibilidad laboral en México*. México, D.F.: El Colegio de México, [Centro de Estudios Sociológicos].

Zedillo, E. (1983). The program for coverage of exchange risks. A General Description and Financial Aspects. México DF: Bank of Mexico.