

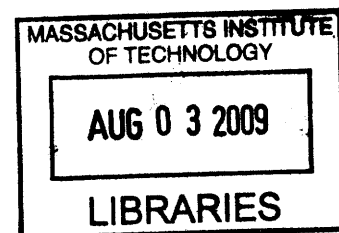
**The Limits of Liberalism? Long-run Petroleum Prices and Government
Intervention in Petroleum Markets in Japan, France, and the United
States**

by

Llewelyn Hughes

L.L.M. (Political Science)
University of Tokyo, 1998

B.A. Arts (Honors)
University of Melbourne, 1994



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Signature of Author:

A handwritten signature in black ink, appearing to be "Llewelyn Hughes".

Department of Political Science
April 2, 2009

Certified by:

A handwritten signature in black ink, appearing to be "Richard J. Samuels".

Richard J. Samuels
Ford International Professor of Political Science
Thesis Supervisor

Accepted by:

A handwritten signature in black ink, appearing to be "Roger D. Petersen".

Roger D. Petersen
Associate Professor of Political Science
Chairman, Graduate Program Committee

The Limits of Liberalism? – Long-run Petroleum Prices and Government Intervention in Petroleum Markets in Japan, the United States and France

by

Llewelyn Hughes

Submitted to the Department of Political Science on April 30, 2009 in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Political Science

Abstract

This study considers cross-national and inter-temporal variation in national oil policies in Japan, France, and the United States. A test was performed of the extent to which policies in these countries continue to emphasize national control over the petroleum supply chain, or have adopted more liberal forms of market governance. It was found that national petroleum policies converged on liberal outcomes in the 1980s and 1990s. In each country regulatory, trade and other policy instruments were restructured to give the forces of supply and demand an increasingly important role in trade in crude oil and petroleum products.

It was also found that convergence on liberal outcomes was partially reversed in some countries, but not others. This was explained through the interests and policy preferences of state actors with responsibility for setting oil policy, and domestic oil firms. In two of the cases - the United States and Japan - policies promoting national control remained in the interests of state actors and firms, meaning these policies were restructured but not discarded in response to changes in the structure of the petroleum market. In the case of France, policies supporting national control were jettisoned as national firms became increasingly internationally competitive and disinterested in obtaining state support.

It was argued that the findings are significant for our understanding of liberal convergence in the advanced industrial states. Alternative explanations of this phenomenon explain outcomes by arguing either that domestic actors have little capacity to shape policy outcomes, or by assuming the policy preferences of domestic actors uniformly match liberal policy outcomes. The findings presented here suggest: 1) the policy preferences of domestic actors remain important; 2) the policy preferences of domestic actors need not uniformly match liberal policy outcomes when inimical to interests. This suggests that identifying whether changes in international markets or other processes will lead to a convergence on liberal policy outcomes, or whether this process is likely to be reversed, requires us to identify the effects of shifts in international markets or other kinds of changes on the underlying interests and policy preferences of multiple domestic political actors.

Thesis Supervisor: Richard J. Samuels
Title: Ford International Professor of Political Science

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Chapter One – Overview of Research Question and Dissertation Structure

"Far from being run along the lines of the free market, the energy sector has been one of the few elements of a planned economy in many otherwise capitalist countries."¹

Francis McGowan, 1996, p. 4

"Salami tactics are all very well, but we want to know how long the sausage is."²

German MEP on the European Commission's push to liberalize public services

1. Introduction

The 1980s and 1990s saw a transformation of the relationship between governments and markets in the advanced industrial states. With privatization and liberalization the role of the state changed from an active participant to a passive regulator of economic markets.³ This implied a shift in the balance between public and private power identified by Shonfield some forty years ago. Shonfield argued that governments of countries in the vanguard of *Modern Capitalism* were united in the postwar years in adopting an interventionist strategy in order to achieve economic growth with an equitable distribution of wealth.⁴ As Moss and others have noted, this expansion of the state included not only promoting growth or redistribution, but extended to intervening in markets in order to socialize risk. The rise of the social welfare state, for example, increased the role of the state in protecting workers against volatility in

¹ Francis McGowan, *European Energy Policies in a Changing Environment* (Heidelberg: Physica-Verlag, 1996), 4.

² Mitchell P. Smith, *States of Liberalization : Redefining the Public Sector in Integrated Europe* (Albany: State University of New York Press, 2005), 1.

³ The literature on this shift is voluminous. For reviews see Covadonga Meseguer, "What Role for Learning? The Diffusion of Privatization in OECD and Latin American Countries," *Journal of Public Policy* 24, no. 3 (2004). A recent statement is made by Jonah D. Levy, *The State after Statism: New State Activities in the Age of Liberalization* (Cambridge, Mass.: Harvard University Press, 2006). For a historical treatment of the ebbs and flows of liberalization and protectionism see Ronald Findlay and Kevin H. O'Rourke, *Power and Plenty: Trade, War, and the World Economy in the Second Millennium* (Princeton, N.J.: Princeton University Press, 2007).

⁴ Andrew Shonfield, *Modern Capitalism; the Changing Balance of Public and Private Power* (London: Oxford University Press, 1966), p. 65.

markets, job loss, illness, or other unexpected events.⁵

Recent scholarship shows the shift in state-market relations noted above led to a retrenchment and restructuring of this role of the state in socializing risks. Brooks, for example, observes that defined benefit schemes in social welfare systems have steadily replaced defined contributions schemes, making individuals increasingly responsible for insuring themselves against risk. Avant has also documented the tendency for national security services to increasingly be provided by private sector agents. Levy defines this as a shift to a “market supporting state,” where state institutions have converged on promoting the efficient operation of economic markets, and expanding the realm within which markets operate.⁶

This study extends the examination of this transformation of state-market relations to oil markets. For much of the twentieth century oil was subject to a set of policies at odds with liberal forms of economic governance: national control over the petroleum supply chain. Indeed, insuring against the risk of petroleum supply disruptions by enhancing the control of national firms over oil was regarded as a core function of the state once products derived from petroleum began to dominate fuel used in military operations during the First World War, and oil products overtook coal as the dominant fuels in the economies of the industrialized countries.

⁵ David A. Moss, *When All Else Fails: Government as the Ultimate Risk Manager* (Cambridge, Mass.: Harvard University Press, 2002). The classic statement on welfare is Karl Polanyi, *The Great Transformation*, [1st Beacon paperback ed. (Boston.: Beacon Press, 1957). See also John Gerard Ruggie, "International Regimes, Transactions, and Change: Embedded Liberalism in the Postwar Economic Order," *International Organization* 36, no. 2 (1982). On national security as risk insurance see Mikkel Vedby Rasmussen, *The Risk Society at War : Terror, Technology and Strategy in the Twenty-First Century* (Cambridge ; New York: Cambridge University Press, 2006).

⁶ Sarah M. Brooks, *Social Protection and the Market in Latin America* (Cambridge: Cambridge University Press, 2009); Deborah D. Avant, *The Market for Force: The Consequences of Privatizing Security* (Cambridge: Cambridge University Press, 2005).

The role of the state in insuring against volatility in oil markets derived not only from its importance to industrial and military operations but also because, with a few exceptions, oil reserves were located outside the geographic boundaries of major petroleum consuming countries. Further, it proved impossible for governments to internalize the production of petroleum products in sufficient volumes and at reasonable cost through the application of policy.⁷

In this study I examine changes in the oil policies of three major petroleum consuming countries: Japan, France and the United States. I ask whether policies in these countries have shifted to emphasize market responses to ensuring the supply of petroleum in the 1980s and 1990s, or whether policy responses continued to promote national control. My findings reveal a puzzle. I discover that national petroleum policies in the states examined in this study did indeed converge on liberal outcomes in the 1980s and 1990s.⁸ In each of these countries, regulatory, trade and other policy instruments that had been used to enhance national control over the petroleum supply chain were restructured to give the forces of supply and demand an increasingly important role in trade in crude oil and petroleum products.⁹

As petroleum prices began to increase from 2000-2001, however, I find that convergence on liberal outcomes was partially reversed in some countries, but not others. In France, which maintained a nationalist response to the problem of petroleum supplies since the enactment of a French oil law in 1928, the sector was liberalized in the 1980s

⁷ Petroleum technically refers to both natural gas and crude oil. Following convention, it is used interchangeably with crude oil in this study.

⁸ I define liberal convergence as an outcome in which the market progressively replaces government as the mechanism through which resources are allocated.

⁹ I do not mean to imply that the oil market is perfectly competitive, nor that other policies were also abandoned, such as those implemented in industries producing products that are partial substitutes for oil, such as nuclear, natural gas and renewables.

and 1990s, and did not revert to policies promoting strategic control under conditions of high oil prices. In Japan, on the other hand, policies designed to enhance national control over the petroleum supply chain were also adjusted in the 1980s and 1990s. Protection of domestic refiners was abolished and the level of support for Japanese firms operating internationally was also reduced. Under conditions of high prices, however, intervention upstream was reintroduced. This was also the case in the United States, where the rejection of quotas and tariffs that increased the cost of international oil relative to that produced domestically in the 1970s were abandoned, but less costly policies designed to enhance domestic production in the name of energy independence remained a feature of national petroleum policies.

In order to explain outcomes I focus on the interests and policy preferences of state actors with responsibility for setting oil policy, and domestic oil firms. I argue that in each of the cases examined in this study shifts in the structure of the petroleum market, expressed through long-run crude oil prices, undermined policies designed to enhance national control over oil policy. This led to their reexamination. In the United States and Japan, I argue, policies that promoted strategic intervention were restructured in ways that brought them increasingly in line with liberal outcomes, because firms and actors within the state adjusted to the new market conditions, while also bargaining with other societal and state actors affected by oil policies. The interests of both sets of actors continued to be met through the promotion of national control, however, meaning these policies were restructured but not discarded.

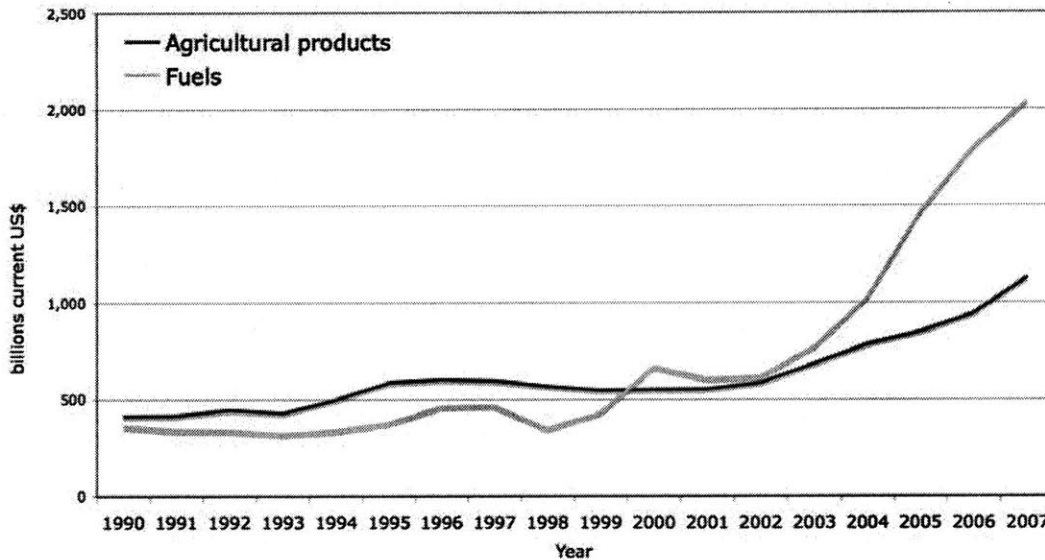
Policies supporting national control were wholly transformed in the case of France, in contrast to Japan and the United States. State actors rejected existing policies

after they were undermined by the effects of changes in long-run oil prices and the nationalizations of the 1970s. This was largely because the state had used national firms as agents to enhance national control over petroleum, yet national firms themselves sought independence as they became increasingly internationally competitive. When a third set of actors, based in European institutions, began to assert themselves in the national energy policies of member states they found that the interests of firms and state actors in the petroleum sector had changed. Liberal convergence was the outcome, with no reversion to strategic intervention as oil prices increased.

2. Significance of Findings

My findings, and the framework I develop for explaining them, are important for empirical and theoretical reasons. Empirically, trade in fuels (of which oil is a significant component) constitutes a significant share of non-manufacturing world merchandise trade. Throughout the 1990s and 2000s, for example, trade in fuels (of which oil is the most significant component) vied with agricultural products for the largest share of non-manufacturing merchandise trade.

Merchandise Trade in Agriculture and Fuels (1990-2006)



This implies the distributional effects of policy interventions that shape these flows are large both domestically and internationally, given most advanced industrial states import the majority of the oil consumed domestically. The application of quotas and tariffs in the United States from 1957 until 1979, for example, increased the price of crude products relative to international prices, meaning a transfer of income from consumers to producers. The scale of these transfers are borne out in the Cabinet Task force put in place by President Richard Nixon in 1969, which estimated that consumers would save five billion dollars in 1969 dollars annually by the removal of the oil import quota imposed to increase the competitiveness of oil produced domestically, and these savings would rise to eight billion dollars by 1980.¹⁰

Similarly in Japan, hundreds of billions of yen were used to support Japanese private sector oil firms with revenues drawn from taxpayers, and limits on the importation of oil products also imposed high costs on consumers. The abolition or

¹⁰ For a summary of the oil import quota program, and the Cabinet task Force report see Douglas R. Bohi and Milton Russell, *Limiting Oil Imports: An Economic History and Analysis* (Baltimore: Johns Hopkins University Press, 1978).

restructuring of policies designed to shape flows of oil and oil products therefore imply a reduction in costs imposed on consumers within economies.

Policies designed to shape flows of oil and oil products are also likely to affect the distribution of income between countries. If subsidies for national oil companies are contingent on the geographic diversification of oil supplies as in the case of Japan, for example, this implies the shift of economic rents obtained from one producing country to another. Given the world consumes approximately 85 million barrels a day of oil, this implies significant transfers of wealth even in the case that policy intervention only shifts a small portion of these flows from one country to another.¹¹

My findings also have important implications for our understanding of liberal convergence in the advanced industrial states, and the conditions under which we are likely to see a reversal in this process. Common explanations for liberal convergence are of two types. The first explains outcomes using the effects of global competition, or pressure from international organizations and powerful actors in the international system. Here the interests and policy preferences of domestic political actors are downplayed; domestic actors are assumed to have little capacity to shape policy outcomes, and are forced to liberalize in response to international pressures. International competition, for example, has been used to explain changes in forms of corporate governance in Germany and Japan in ways that made them more in line with liberal market economies.¹² Similarly, Kitschelt and others have noted that the pressures for liberal convergence stem from international trade competition, in addition to technological changes and increases

¹¹ Different grades of oil are discounted from the indexes used to price them, making the analogy imperfect. Nevertheless, if we assume a mean price of 100 dollars per barrel for oil traded on a given day, world trade in oil equals 8.5 billion dollars per day.

¹² Gregory Jackson, "Corporate Governance in Germany and Japan: Liberalization Pressures and Responses During the 1990s," in *The End of Diversity?: Prospects for German and Japanese Capitalism*, ed. Kozo Yamamura and Wolfgang Streeck (Ithaca: Cornell University Press, 2003).

in international financial flows.¹³ Others have pointed to international pressures in the form of legal obligations rooted in international law as an important cause of liberal convergence.¹⁴

A second type of explanation emphasizes the importance of domestic actors rather than discounting them. The most common version of this argument focuses on the diffusion of liberal forms of economic governance through emulation, where decisionmakers “look abroad, to see how other states have responded to similar pressures, to share ideas, to draw lessons and to bring foreign evidence to bear within domestic policy-making processes.”¹⁵ Meseguer, for example, argues that privatization across the OECD countries in the 1980s and 1990s was driven by a process in which governments emulated policies in other states in streamlining the public sector because they believed it led to more efficient economic outcomes. Elkins and Simmons argue more generally that interdependence increases information flows across borders, and that this has contributed to the diffusion of policies of trade and capital liberalization.¹⁶

¹³ Herbert Kitschelt et al., “Convergence and Divergence in Advanced Capitalist Democracies,” in *Continuity and Change in Contemporary Capitalism*, ed. Herbert Kitschelt, et al. (Cambridge, UK ; New York, NY: Cambridge University Press, 1999); Ian Bartle, “When Institutions No Longer Matter: Reform of Telecommunications and Electricity in Germany, France and Britain,” *Journal of Public Policy* 22, no. 1 (2002); Kozo Yamamura and Wolfgang Streeck, *The End of Diversity?: Prospects for German and Japanese Capitalism*, Cornell Studies in Political Economy (Ithaca: Cornell University Press, 2003).

¹⁴ Christoph Knill and Katharina Holzinger, “Causes and Consequences of Cross-National Policy Convergence,” *Journal of European Public Policy* 12, no. 5 (2005); Suzanne Berger and Ronald Dore, *National Diversity and Global Capitalism*, Cornell Studies in Political Economy (Ithaca, N.Y.: Cornell University Press, 1996). See also Colin J. Bennett, “What Is Policy Convergence and What Causes It?,” *British Journal of Political Science* 21, no. 2 (1991); Knill, *Journal of European Public Policy*, 2005; Stephan Heichel, Jessica Pape, and Thomas Sommerer, “Is There Convergence in Convergence Research? An Overview of Empirical Studies on Policy Convergence,” *Journal of European Public Policy* 12, no. 5 (2005); Beth Simmons, A., Frank Dobbin, and Geoffrey Garrett, “Introduction: The International Diffusion of Liberalism,” *International Organization* 60, no. Fall (2006). For an application of this argument to the diffusion of neoliberal tax policies see Duane Swank, “Tax Policy in an Era of Internationalization: Explaining the Spread of Neoliberalism,” *International Organization* 60 (2006).

¹⁵ Bennett, “What Is Policy Convergence and What Causes It?,” 220-221.

¹⁶ Meseguer, “What Role for Learning? The Diffusion of Privatization in OECD and Latin American Countries”; Beth A. Simmons and Zachary Elkins, “The Globalization of Liberalization: Policy Diffusion in the International Political Economy,” *American Political Science Review* 98, no. 1 (2004). For other learning-based arguments for liberal convergence see also Kurt Weyland, “Theories of Policy Diffusion: Lessons from Latin American Pension Reform,” *World Politics* 57, no. 2 (2005); Sarah M. Brooks, “Interdependent and Domestic Foundations of Policy Change: The Diffusion of Pension Privatization around the World,” *International Studies Quarterly* 49 (2005).

My findings suggest that each of these arguments has merit, but none are sufficient to explain outcomes. I find in the oil sector that changes in the international environment, competitive pressures, and processes of learning and adaptation in response to policy failure each played a role in driving liberalization and privatization in the oil sector.¹⁷ To take one example, fixed prices for oil and oil products, which was one component of policies applied in the search for enhanced national control over oil, were no longer tenable following the nationalizations of oil production in the 1970s and consequent volatility in oil prices, and were discarded as a result.

I also find, however, that the response of domestic policymakers and firms to these changes was not passive. Instead, they retained the capacity to adapt by implementing new strategies that continued to meet their organizational and political interests. Further, these interests did not necessarily lead to a convergence on liberal outcomes. The failure of protectionism in Japan to produce a viable national oil company, coupled with pressure from European and U.S. policymakers to reduce barriers to oil product imports in response to the construction of refineries in the Middle Eastern countries and pressure from Japanese consumer interests, for example, led policymakers to discard import licenses and other forms of regulatory control designed to control domestic prices, yet they maintained barriers to entering the Japanese refining market for non-Japanese firms for a further ten years. When this succeeded in forcing mergers between Japanese firms, policymakers continued to support subsidies for Japanese firms operating in exploration and production upstream with the goal of creating an integrated oil major.

¹⁷ Peter J. May, "Policy Learning and Failure," *Journal of Public Policy* 12, no. 4 (1992). See also Peter A. Hall, "Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain," *Comparative Politics* 25, no. 3 (1993).

Second, although learning occurred in each of the cases examined in this study, not all actors learned the same lessons, and some remained vigorously opposed to attempts to change policy outcomes if the proposed changes were inimical to their interests. This meant the process of adaptation to changes in the international oil market was contested; outcomes were determined not by a single actor learning how to more effectively pursue their interests, but instead by a process of bargaining between multiple domestic actors' interests and their policy preferences. To take another example, Japan's upstream policies were adapted by senior officials in charge of oil policy to the effects of collapsing oil prices on policy effectiveness. Reform was opposed as too radical, however, by firms that benefited from subsidies and loans provided by the state, and as insufficient by political representatives who opposed the ongoing use of government funds to support special government bodies. The partial reversal of liberal convergence in the 2000s, in turn, represented a reassertion of control over the policy process by officials responsible for oil policy, who restructured the policies of national control to make them more effective, but also ensured that they endured. This contrasts with the case of France, in which firms and political actors within the state agreed that the existing policies of protection were unnecessary, and liberalization and privatization occurred smoothly and with little disagreement as a result.¹⁸

The differences in the argument offered here with common explanations for liberal convergence can be represented in a table, shown below, categorized according to the key actors, the level of autonomy in policymaking assigned to domestic actors, and importance of political bargaining in producing outcomes. In contrast to international or

¹⁸ John L. Campbell and Ove K. Pedersen, "The Rise of Neoliberalism and Institutional Analysis," in *The Rise of Neoliberalism and Institutional Analysis*, ed. John L. Campbell and Ove K. Pedersen (Princeton: Princeton University Press, 2001), 1.

systemic arguments, my explanation for outcomes focuses on the importance of domestic actors. Unlike arguments based on learning and emulation, on the other hand, I emphasize that multiple actors exist, each of which may learn different lessons from the results of policy failure, or may oppose policies of liberalization because they are judged to be inimical to interests.

Process	Description of Actor	Importance of Bargaining	Domestic Autonomy
Competition	Systemic	Low	Low
Powerful State	International	Low	Low
International Institutions	International	Low	Low
Learning/emulation	Domestic/Unitary	Low	High
Domestic Bargaining	Domestic/Multiple	High	High

What does this imply for our understanding of the causes and consequences of liberal convergence, and the possibility of its reversal?

My findings imply there is nothing necessary about international competition, or processes of learning and adaptation, that lead us to more liberal governance outcomes. Rather, the process of liberal convergence is more complex than arguments focusing on the role of international institutions, competition, or policy learning, propose. This means in turn that identifying whether changes in international markets or other processes are likely to lead to a convergence on liberal outcomes, or indeed whether this process is likely to be reversed, requires us to identify the effects of shifts in international markets or other kinds of changes on the underlying interests and policy preferences of multiple domestic political actors. Indeed, my findings suggests that there is nothing necessary about the role of exogenous shocks or other types of economic or political processes in changing the policy preferences of domestic actors. Further, domestic actors retain

considerable leeway in the design and implementation of new policies even when an existing policy regime has been undermined by changes in market conditions, and they may not have an interest in adjusting policies so they converge on liberal forms of economic governance. In seeking to understand instances of convergence, or its reversal, therefore, we must turn to theories about political economy of protectionism, regulation, and subsidies, in order to understand how outcomes were produced. This is what I seek to do in the chapters that follow.

3. Structure of Study

This study has seven chapters. In this chapter I have summarized the questions motivating the study, the most significant findings, and their implications for our understanding of state-market relations. Chapter two reviews the literature on liberal convergence, and locates this study within this body of work. In chapter two I also develop a strategy for measuring the dependent variable used in this study – strategic intervention – and present the outcomes. The remainder of the chapter offers an explanation for these outcomes, focusing on the policy preferences of actors within the state, and firms, and how these have changed over time. Changes in long-run oil prices, I argue, are central to explaining these changes in policy preferences.

Chapters three to six make up the empirical section of the study. Chapter three outlines the major theoretical explanations for shifts in long-run petroleum prices, and describe those changes across time. I do this because of the importance placed in the study on the influence of shifts in long-run petroleum prices on policy preferences. Then, in chapters four to six, I show how these price shifts affected the policy preferences of political/bureaucratic interests, and firms, in each of the country cases: Japan (chapter

four) France (chapter five), and the United States (chapter six). Policy preferences of state actors, and firms, are not solely a function of prices, however. In each of the empirical chapters I also, therefore, detail other variables that have contributed to shifts in policy preferences across time. This complicates the discussion, but also provides a more complete explanation for policy change. Finally, in the seventh and concluding chapter, I restate the findings of the study and discuss their implications for theory and policy.

PART I: Liberal Convergence in Petroleum Markets

1. Introduction

This chapter is made up of two parts. In the first I review the literature on liberal convergence. I then define and develop a strategy for measuring the degree of liberal convergence in the petroleum sector and present the outcomes. In the second part of the chapter I develop a framework for explaining the puzzling outcomes we observe. As outlined in chapter one, I propose that policies designed to enhance national control over the petroleum supply chain met the interests of both political actors in the state and domestic oil firms. Changes in policies promoting strategic intervention were caused by shifts in the structure of the international oil market, leading to a search for a new set of policies that advanced the interests of domestic actors involved in the petroleum sector. Outcomes were determined by these actors as they adapted their preferred policies to the new conditions, while bargaining with other domestic actors who sought to reduce the costs of oil policies on their own interests.

2. Liberal Convergence – What Does it Mean, and Why Does it Matter?

In its most general form, convergence is defined as “the tendencies of societies to grow more alike, to develop similarities in structures, processes and performances.”¹⁹

¹⁹ Clark Kerr, *The Future of Industrial Societies; Convergence or Continuing Diversity?* (Cambridge, Mass.: Harvard University Press, 1983), 3. Within this general definition, a heterogeneity of phenomena associated with the “convergence” concept. Bennett identifies five different outcomes folded under the concept of convergence (policy goals, policy content, policy instruments, policy outcomes, and policy style). Knill and Holzinger, on the other hand, distinguish between convergence across two dimensions: policy outcomes, and policy outputs. Colin J. Bennett, “What Is Policy Convergence and What Causes It?,” *British Journal of Political Science* 21, no. 2 (1991); Christoph Knill and Katharina Holzinger, “Causes and Consequences of Cross-National Policy Convergence,” *Journal of European Public Policy* 12, no. 5 (2005), 776.

Although they take issue with the finding, Wolfgang Streeck and Kathleen Thelen, for example, have described a trend towards a “secular expansion of market relations inside and across the borders of national political-economic systems.” In this view, the market progressively replaced government as the mechanism through which resources are allocated.²⁰ This does not imply simply a reduction in the absolute size of the state. Instead, as Vogel, Levy and others have noted, it suggests a reconfiguration of state institutions and capacities so that they seek to promote the efficient operation of economic markets and to expand the realm within which markets operate; a “market-supporting state” in Levy’s language.²¹

Scholars have adopted a variety of strategies for measuring if forms of government converged on liberal outcomes across the advanced industrial states. A first strategy uses aggregate measures of government intervention in order to understand whether the size of the government is converging. Taken as a whole, their findings confirm a trend towards liberal convergence. Simmons, Dobbin, and Garrett, for example, employ aggregate measures of privatization revenues as a percentage of GDP, and an index for financial openness, and find that the political economies of the advanced industrial states are converging on liberal economic outcomes.²² A United Nations overview of the changing relationship between the state and the market similarly uses a range of aggregate measures to assess the changing role of government in the political

²⁰ Wolfgang Streeck and Kathleen Ann Thelen, *Beyond Continuity: Institutional Change in Advanced Political Economies* (Oxford: Oxford University Press, 2005), 2. For reviews see Suzanne Berger, “Globalization and Politics,” *Annual Review of Political Science* 3 (2000); Jonah D. Levy, *The State after Statism: New State Activities in the Age of Liberalization* (Cambridge, Mass.: Harvard University Press, 2006); Herbert Kitschelt et al., “Convergence and Divergence in Advanced Capitalist Democracies,” in *Continuity and Change in Contemporary Capitalism*, ed. Herbert Kitschelt, et al. (Cambridge, UK ; New York, NY: Cambridge University Press, 1999).

²¹ Levy, *The State after Statism: New State Activities in the Age of Liberalization*, 3.

²² Beth Simmons, A., Frank Dobbin, and Geoffrey Garrett, “Introduction: The International Diffusion of Liberalism,” *International Organization* 60, no. Fall (2006).

economies of the advanced industrial states, including public sector employment, government consumption, and central government expenditures and tax revenues, in order to assess the degree to which convergence has occurred on a smaller role for government, an outcome consistent with a liberal market outcome.²³

As noted above, a convergence on liberal forms of government does not only imply a reduction in the absolute size of the state but also a restructuring of state activities to give a greater role to market forces in determining the allocation of goods and services. Macroeconomic studies have therefore been augmented by a microeconomic approach, in which scholars examine policy change within specific economic sectors across time. Scholars have conducted studies across a myriad of policy areas, including social and fiscal policy, environmental policy, trade policy, banking regulations, telecommunications and electricity, health policy, monetary policy, migration, competition policy, agricultural policy, and education. Given the wide range of sectors, time periods, and countries and regions findings are necessarily more disparate. Nevertheless, most confirm a trend towards policy convergence. Of the 74 studies reviewed by Heichel, Paper and Sommerer, for example, 59 found some evidence of convergence.²⁴

Within this tradition, scholars have focused on examining the role of the state as a manager of risk, and in particular whether policies designed to function to insure citizens, or the country, against a variety of risks have increasingly conformed with liberal terms through greater privatization and liberalization. A focus of recent work, for

²³ World Bank, 2001, 145-153.

²⁴ For a review see Stephan Heichel, Jessica Pape, and Thomas Sommerer, "Is There Convergence in Convergence Research? An Overview of Empirical Studies on Policy Convergence," *Journal of European Public Policy* 12, no. 5 (2005), 817-840.

example, has been on the privatization of national security functions of the state. A long-standing concern of scholars of liberal convergence has similarly focused on the changing role of the state in protecting individuals against volatility in labor markets, illness or other problems through social welfare institutions.²⁵

In this study I extend this examination of liberal convergence using national policies in the petroleum market. Petroleum has historically been treated as a strategic resource, with policies introduced to enhance national control over the petroleum supply chain. This was for two reasons: first, because of the characteristics of petroleum as a commodity; and second, because of the policy response adopted historically in the major petroleum consuming countries to manage perceived risks associated with these characteristics.

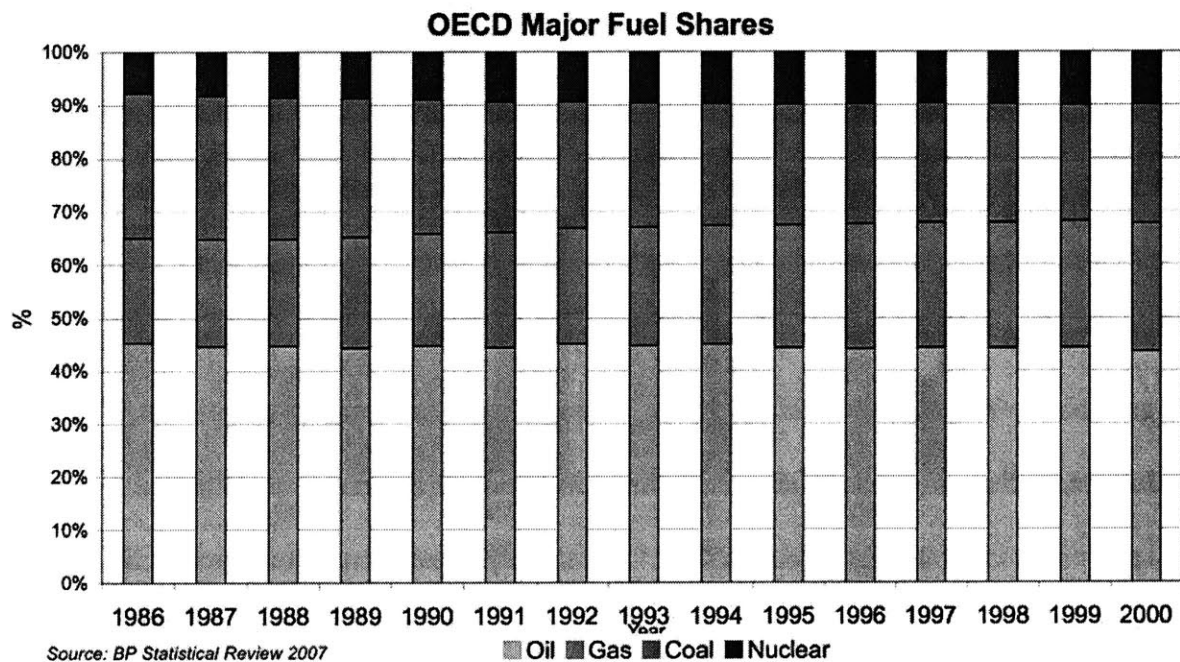
2.1. Characteristics of Petroleum

The first important characteristic of petroleum lies in its utility in a wide range of economic, and military activities. In the early part of the 20th century trading volumes in crude oil were insignificant, as petroleum products were employed for illumination or cooking purposes. This changed with the growth in the use of petroleum products in the transport sector, and the shift became decisive with the inclusion of gasoline or diesel driven vehicles in WWI war planning.²⁶ In the years following WWII, superior price and

²⁵ On the privatization of military functions see Deborah D. Avant, *The Market for Force: The Consequences of Privatizing Security* (Cambridge: Cambridge University Press, 2005). On social welfare see Jacob S. Hacker, "Privatizing Risk without Privatizing the Welfare State: The Hidden Politics of Social Policy Retrenchment in the United States," *American Political Science Review* 98, no. 2 (2004); Paul Pierson, ed., *The New Politics of the Welfare State* (Oxford: Oxford University Press, 2001); Sarah M. Brooks, *Social Protection and the Market in Latin America* (Cambridge: Cambridge University Press, 2009).

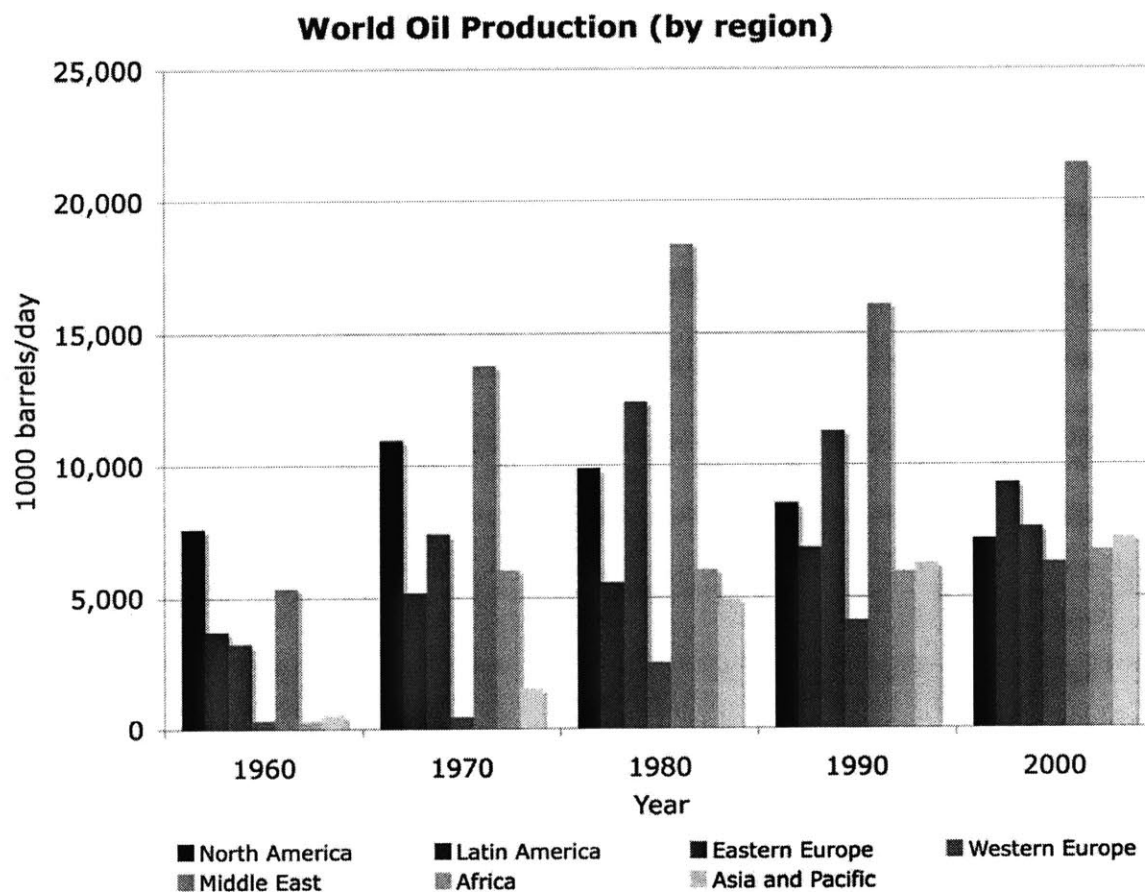
²⁶ The first widespread military application of petroleum products was the use of oil for naval propulsion systems, however this figured less significantly than transport in the growth in demand in WWI. 2. Anglo-Persian (the predecessor of BP) production for example, rose from 80,000 tons in 1912 to 897,000 tons in 1918. Fiona Venn, *Oil Diplomacy in the Twentieth Century* (New York: St. Martin's Press, 1986), 38.

fuel properties ensured that products refined from crude oil began to dominate coal as the energy source of choice in the civilian economy, as well as the military. Despite significant efforts to diversify fuel sources away from oil, products derived from crude oil remain dominant across the advanced industrial states, driven in part by the lack of substitutes within the transport sector.



The second important characteristic of petroleum lies in the fact that it is found in a limited number of regions in the world. Natural resources differ from traditional goods in that the location of production is determined by where they are found in the world, rather than some approximation of the law of comparative advantage. Coal (the carbon residue of prehistoric plant life), for example, is widely distributed geographically. Petroleum (the carbon residue of animal life), on the other hand, is distributed less broadly. As no perfect substitutes for petroleum exist at reasonable cost,

this establishes an inescapable barrier to market entry: countries that have petroleum located on their territory are able to act as producers, those that do not, can not.



Prior to WWII the United States was the dominant producer in the world oil market, with the bulk of petroleum supply trade internationally made up of exports from the U.S. Gulf Coast.²⁷ Tremendous growth in petroleum discoveries in the Middle East changed the dynamics of petroleum supply, however. The pace of this growth in low-cost oil from the Middle East was astounding. From 1953-1957, for example, proven reserves in the Middle East increased by 23 billion barrels annually, which was equivalent to total

²⁷ Helmut Jack Frank, *Crude Oil Prices in the Middle East; a Study in Oligopolistic Price Behavior* (New York,: Praeger, 1966), 10-11.

reserves in the U.S..²⁸ While the share of oil from the Middle East has been balanced by significant growth in oil discoveries in other regions of the world (and because of pricing strategies adopted by Middle Eastern producing countries), oil production in the Middle East continues to dominate the world oil market.

2.2 Policy Responses in the Major Petroleum Consuming States

This importance of products derived from petroleum to national economies and modern militaries, coupled with the limited dispersal of crude oil internationally, induced a range of policy responses in the major consuming countries, from shifting relative prices in order to promote diversification of fuels away from oil products, to the provision of incentives designed to encourage more efficient use of energy. Importantly for this study, however, a common response across the major petroleum consuming countries has been to intervene in the petroleum market in order to enhance national control over international supplies of petroleum.²⁹ In this study I term this set of policies *strategic intervention*.

This contrasts with strategies that I define as more liberal responses to the problem of the reliance on imperfect international markets for the supply of crude oil and petroleum products. These focus on lessening the role of crude oil in the economy in order to decrease the economic impact of price volatility or supply interruptions, or implementing policies designed to make the market more competitive. It is important to

²⁸ Francisco R. Parra, *Oil Politics: A Modern History of Petroleum* (New York: I.B. Tauris, 2004), 35.

²⁹ Richard J. Samuels, "Public Energy Corporations and Public Policy in Japan," (Cambridge, MA: Massachusetts Institute of Technology, 1982), 15-16. In the study I make no argument about the efficacy of this policy strategy. Indeed, there is much evidence that states have found that ownership does not confer the ability to control publicly-owned firms operating in the petroleum sector. For sustained arguments along these lines see Harvey B. Feigenbaum, *The Politics of Public Enterprise: Oil and the French State* (Princeton, N.J.: Princeton University Press, 1985); Gregory Nowell, "Realpolitik Vs. Transnational Rent-Seeking: French Mercantilism and the Development of the World Oil Cartel, 1860-1939" (Massachusetts Institute of Technology, 1988).

note that the liberal convergence hypothesis does not predict a total withdrawal from policy intervention designed to manage problems of ensuring security of supply. This is because geopolitical risks, issues with market power, and other problems that exist in the international petroleum market provide a rationale for ongoing policy intervention under the liberal paradigm through strategies such as enhancing energy efficiency, or shifting relative prices in ways that favor fuels that are partial substitutes from petroleum products.³⁰ For this reason I draw a distinction in this study between those policies designed to enhance national control over petroleum, and those that are designed to correct for market failure.³¹

That petroleum has historically been treated as qualitatively different to other goods is borne out by the fact that crude oil and products derived from it remain outside the remit of international trade institutions. Indeed, the illegitimacy of erecting barriers to trade in crude and crude products has not been addressed in negotiations at GATT/WTO because of resistance by national governments, despite trade in petroleum products not being explicitly excluded from the multilateral trade regime. Instead, trade rules governing energy products have remained the preserve of national governments, both those who produce oil, and those that consume it. This in turn is demonstrated by the two major international organizations that exist in the petroleum market: The International

³⁰ The illegitimacy of national discrimination under the liberal paradigm is institutionalized most notably through Articles III and XIII of GATT Article III: 1. The contracting parties recognize that internal taxes and other internal charges, and laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use of products, and internal quantitative regulations requiring the mixture, processing or use of products in specified amounts or proportions, should not be applied to imported or domestic products so as to afford protection to domestic production. For a review of market failure as a justification for government intervention see Joseph E. Stiglitz, *Economics of the Public Sector*, (New York : W.W. Norton, 2000). For a review of OPEC's role in the international oil market see Robert Mabro, *Opec and the Price of Oil* (Oxford, Oxford University Press: Oxford Institute for Energy Studies, 1992), 3-27.

³¹ Although it appears counter-intuitive, I include the U.S. military posture in the Middle East, to the extent that it is driven by oil interests, in the latter category. This is because the U.S. military commitment to the Middle East serves to ensure the open flow of oil, rather than secure it for U.S. national interests alone. For a summary of U.S. state actor preferences that emphasizes its role in ensuring competitive markets see Stephen D. Krasner, *Defending the National Interest : Raw Materials Investments and U.S. Foreign Policy* (Princeton, N.J.: Princeton University Press, 1978).

Energy Agency (IEA) and Organization of Petroleum Exporting Countries (OPEC). The former, created in 1974, was organized as a club of major petroleum importing countries to increase their bargaining leverage relative to producer governments. The latter is a cartel intended to shape petroleum prices through manipulating production amongst member states. The result has been that in a world of falling national barriers to trade and investment through successive negotiations at the multilateral level, oil has remained isolated from this trend.

Nevertheless, a convergence on liberal forms of economic governance should predict a decline in strategic intervention in the petroleum sector across the major petroleum consuming countries. That is, we can hypothesize that, although we may not observe a decline in policy intervention in general terms, we should observe a decline in the application of policy instruments designed to discriminate in favor of economic actors in the petroleum sector located in the home country.³²

H1: The convergence on liberal policy outcomes is correlated with a decline in strategic intervention in the petroleum sector across the major petroleum consuming countries.

2.3 Prices, Petroleum, and Liberal Convergence

At their heart, concerns about security of petroleum supplies are motivated by fears of scarcity. Given this, a reasonable first hypothesis is that we should expect shifts in petroleum prices to influence the likelihood of the introduction of policies designed to mitigate the economic costs of these increased long-run prices. Further, if petroleum

³² This formulation of the liberal convergence hypothesis follows others who have argued that deregulation and privatization leads to a change in the nature of state intervention in economies, rather than an absence of state intervention altogether.

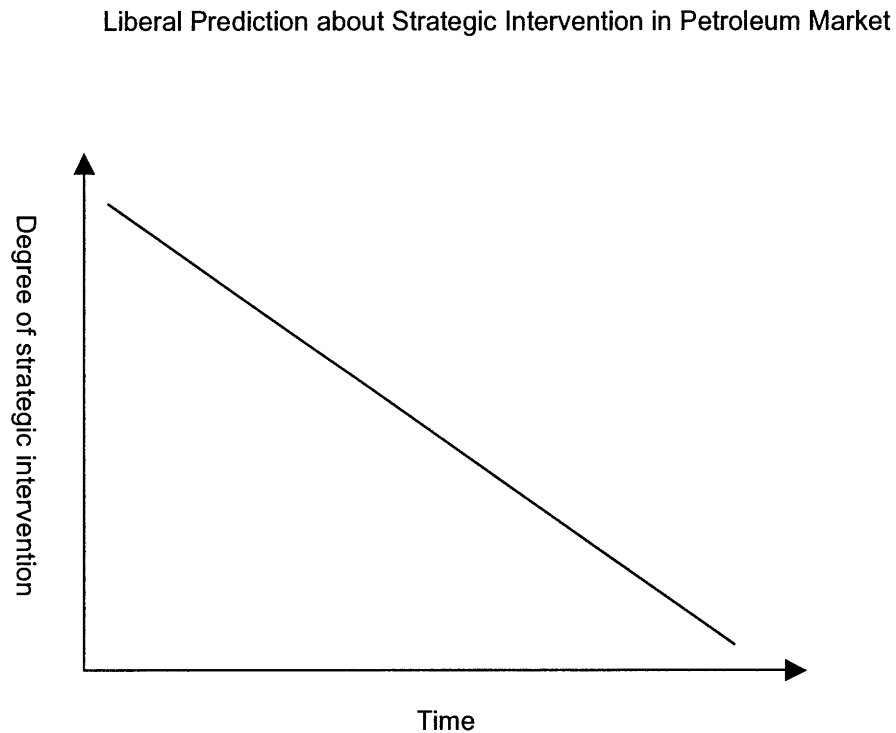
prices are an important indicator of relative scarcity, then we should expect high long-run prices to lead greater policy intervention designed to mitigate petroleum security of supply concerns.

Certainly this is what we observed in short-term policy-responses in the period leading up to and including the oil shocks. Policymakers in the advanced industrial countries identified energy supply insecurities, alongside the Soviet Union, as a threat capable of undermining the free world, and national governments intervened heavily in petroleum and other markets to manage the consequences of price increases, and reduce the likelihood of future shocks. Following this, however, petroleum prices stagnated, oscillating between ten and twenty dollars per barrel from 1986-2001, before beginning to increase once again from 2001. Indeed, in late 2007 spot prices breached one hundred dollars per barrel, equaling the peak price of the 1970s in inflation-adjusted terms.

This increase in the price of petroleum offers, I argue, a second opportunity to examine liberal convergence in the petroleum sector. If we observe an increase in policy intervention designed to enhance national control over petroleum resources, even after the broad shift towards liberalization and privatization in the 1980s and 1990s, this suggests that the shift to liberal forms of governance in the petroleum sector are subject to renegotiation. If, on the other hand, we do not observe policies designed to enhance national control in the recent period of high prices (although we may see the introduction of other types of policies), we can infer that the transformation in government-market relations are likely to endure in the petroleum sector.

H2: An increase in petroleum prices, following the “treatment” of liberalization and privatization in the 1980s and 1990s, may be correlated with an increase in policy intervention, but is not correlated with an increase in strategic policy intervention.

Graph 1: Heuristic of Prediction Drawn from Liberal Convergence



3. Definitions

The dependent variable is defined in this study as strategic intervention in petroleum markets. The term strategic is commonly used but ill-defined. In this study I define strategic intervention as *policy intervention designed to increase national control over the production, transportation, and distribution of a given resource or good*.³³ Although control through military conquest is one strategy for ensuring national control over oil, in this study I used strategic intervention to refer primarily one of two other

³³ I use the term “policy intervention” rather than “government intervention” because in the model I am proposing policy outcomes emerge from a bargaining process that involve the active participation of parts of government, but which the government does not necessarily dominate. Throughout the study I also use the term “national control” synonymously with strategic policy intervention throughout the study

outcomes: 1) the creation and/or support for national oil companies, with the goal of increasing their share of the domestic market for oil and oil products, and share of production upstream; 2) policies designed to increase the share of oil produced domestically, as a ratio of total domestic consumption, on energy security grounds. Both, I argue, serve to increase national control over the petroleum supply chain.

I define all outcomes other than strategic intervention as a convergence towards liberal policy outcomes. This is justified, I argue, because of the difference in both the goals of the policy, and the instruments used to achieve it. Firstly, and most fundamentally, the rejection of strategic intervention represents a shift towards market based transactions in order to secure the supply of oil and oil products; that is, accepting arms-length contracting as the best method for securing the supply of oil and oil products.³⁴ Secondly, the instruments used to intervene strategically in the market, described in detail below, have typically included ownership of national oil firms and/or the use of trade, fiscal and regulatory policy instruments to discriminate in favor of production by national firms or within national boundaries on strategic grounds. A shift away from the application of these policies, therefore, represents a move away from discrimination based on the nationality of firms and the use of trade barriers, and a convergence on national non-discrimination and increasingly open trade. Each are hallmarks of a convergence on liberal policy outcomes.³⁵

It is also worth noting that this study does not directly address other justifications for intervention in petroleum markets, most importantly policies designed to

³⁴ This distinction follows Richard Rosecrance, *The Rise of the Trading State: Commerce and Conquest in the Modern World* (New York: Basic Books, 1986).

³⁵ Susanne Soederberg, Georg Menz, and Philip G. Cerny, *Internalizing Globalization : The Rise of Neoliberalism and the Decline of National Varieties of Capitalism* (Basingstoke UK ; New York: Palgrave Macmillan, 2005).

mitigate the environmental externalities associated with the burning of fossil fuels, which have emerged as an important driver of government intervention in energy markets. For governments with domestically located energy resources, revenue or employment goals may also provide a rationale for policy intervention.³⁶ My definition also recognizes that policies designed to manage the reliance on external sources for the supply of petroleum need not lead to direct intervention in petroleum markets, but instead to intervention in the markets for goods that act as partial substitutes, or to other policy responses. Common responses to the oil shocks of the 1970s, for example, saw governments encourage a shift of energy demand into markets for partial substitutes for petroleum products, such as nuclear power, coal, or natural gas. Other modes of intervention sought to promote technologies that increase the efficiency of energy use, but do not increase national control over the production of petroleum.

Finally, in this study I also do not address policy interventions designed to substitute for petroleum or reduce aggregate demand for energy. This is primarily because I am interested in identifying if countries continue to implement policies designed to enhance national control or not. I recognize, however, that this introduces the possibility of omitted variable bias. It is plausible, for example, that outcomes in the petroleum sector are determined in part by the success or failure of policy initiatives in the markets for goods that act as partial substitutes for petroleum products. I have made this choice for logistical and substantive reasons. Logistically, understanding the causes of variation in patterns of government intervention across the full range of policy options lies beyond the scope of a single study. Substantively, my findings show that the policy

³⁶ On the interaction of policy interventions in the environment and energy security see International Energy Agency, *Energy Security and Climate Policy: Assessing Interactions* (Paris: OECD/IEA, 2007).

strategies and preferences of domestic political actors are the most important determinant of liberal convergence. This means results are unlikely to be systematically biased in one direction or another given that different political actors and firms operate in each of the sectors. The empirical chapters also show that budget constraints do not force trade-offs between policies in the petroleum sector and substitutes that are significant enough to change the value of the dependent variable. To take two examples, the decision by the Carter Administration to decontrol crude oil and petroleum product choices by 1981 was not affected by the decision to implement a synthetic fuels program; both policies were pursued simultaneously. Similarly, the implementation of a comparatively successful program in Japan aimed at making the use of energy more efficient was unrelated to the decision to deregulate the downstream petroleum sector in the ten years from 1986-1996.

3.1 Measuring Strategic Intervention

National firms operating in the oil sector have been central to policies designed to enhance national control over the petroleum supply chain. A review of national policies across time demonstrates, however, that a broader range of policy instruments have been applied in the attempt to enhance strategic control over petroleum markets. In order to understand variation in policies designed to enhance national control, therefore, it is necessary not only to investigate patterns of direct ownership over firms, but also to incorporate trade, regulatory, and fiscal policy instruments.

In this study I divide policy interventions into direct and indirect types. Direct intervention is defined as market intervention through government ownership of a corporate entity. Indirect intervention, on the other hand, is defined as policy intervention designed to redistribute benefits in the marketplace in order to enhance strategic control.

A typology of the instruments used to measure outcomes in this study is presented below.³⁷

	Direct	Indirect		
Instrument	Ownership	Fiscal	Trade	Regulatory
Example	1) Equity participation / "golden share" 2) Total/partial ownership 3) Military	1. Tax/tax exemptions 2. Credit instruments (subsidies, loan guarantees) 3. Diplomacy	1. Import/export tariff 2. Import/export license	1. Licensing (non-trade) 2. Volumetric or price controls 3. Technical regulations

a) Ownership

Governments can participate directly in energy markets through the ownership of, or equity participation in, national energy firms. Indeed, a number of the major European integrated oil firms were originally established, or operated, under varying degrees of government control, with ownership aimed at promoting strategic energy goals. BP, for example, was originally incorporated as the Anglo-Persian Oil Company in 1909, with the British Government taking a controlling stake during World War One. Total was created as the Compagnie Française des Pétroles (CFP) in 1924 by the French government for strategic reasons. After World War Two, ENI (1953), Deminex (1969), and Repsol-predecessor INH (1981) were established by the governments of Italy, Germany, and Spain to promote national control over energy resources.

This is not to assume that ownership or equity participation translates into effective governmental control, as noted in chapter one. During the first oil crisis of

³⁷ Adapted from International Energy Agency, *The Role of IEA Governments in Energy: 1996 Update* (Paris: International Energy Agency, 1996), 24. Kitschelt et al draw a similar distinction in describing measures of the political determination of resource allocation, differentiating between: i) the direct ownership of productive resources; ii) indirect intervention via subsidies, taxes and regulations. See Kitschelt et al., "Convergence and Divergence in Advanced Capitalist Democracies", 439.

1973-4 for example, the British government of Edward Heath was unable to persuade BP to break existing contracts in order to guarantee physical supplies of petroleum to Great Britain, despite holding majority shares in the company. Nevertheless, some form of ownership of a firm operating directly in the petroleum market is a common strategy utilized by governments in the pursuit of strategic energy goals.

Ownership also need not take the form of direct government participation in upstream activities such as exploration and production, or downstream activities such as refining or the marketing and sales of petroleum products. Government ownership in South Korea and Japan, for example, has taken the form of a public company charged with providing subsidies and other fiscal transfers to Korean and Japanese private sector firms operating in the petroleum industry.

A related option for pursuing ownership is through the use of military instruments. The use of military force can secure territory within which petroleum resources lie, for example, allowing national firms to exploit these resources. The military strategies of both Germany and Japan during World War Two were partially designed towards this end. The economic exploitation of colonial possessions by France and Japan during the colonial period was also backed by the use of military force.

It is also worth noting, however, that while military force can be used in the pursuit of national control over petroleum resources, it need not be used towards this end. U.S. military forces during the tanker wars between Iran and Iraq, for example, were used not to secure oil for U.S. consumption alone, but rather to ensure the safe passage of oil tankers through the Straits of Hormuz. President Carter's announcement that the U.S. was willing to use military force in order to ensure that no power monopolizes access to

Middle Eastern oil resources is similarly designed not to ensure exclusive U.S. access, but to guarantee an open market by denying third-party states the ability to monopolize crude reserves from major producing countries and regions.

Finally, although it is not an outcome observed in the period under investigation in this study, asserting national control over the petroleum supply chain through military means is an alternative form of ownership, although this necessarily leads to the exploitation of resources within the captured territory following annexation. The decision by France and the United Kingdom to invade the area surrounding the Suez Canal is one example of the use of military force to increase national control over oil supplies. Another is the attempt by the Japanese Imperial Army to secure access to oil resources by annexing the Dutch East Indies.

b) Market Shaping - Fiscal

Fiscal instruments can be applied in a variety of forms in the pursuit of strategic energy goals. Examples include the provision of soft loans or direct subsidies to national firms engaged in the petroleum sector in order to improve their ability to secure the rights to upstream exploration and development projects, the application of preferential tax rates, or the provision of aid or loans to governments in petroleum producing countries, with the same goal.

c) Market Shaping - Trade

Trade instruments shift the relative prices of imports and exports in order to encourage the consumption or production of domestic goods over imports. In the

petroleum sector this can be done to encourage the production of domestic petroleum resources in countries with a domestic resource base. Alternatively, import taxes on petroleum products, coupled with low taxes on crude oil imports, can increase strategic control over the production chain by encouraging the construction of refineries domestically. Tariffs or quotas applied to exports of petroleum products or crude oil can also be used in an attempt to enhance energy security of supply.

d) Market Shaping - Regulatory

Non-trade regulatory instruments represent a further mode of intervention employed to enhance strategic energy goals. Examples include restrictions on the amount of equity in national petroleum firms able to be held by non-nationals, licensing or other administrative controls over the establishment or transferal of petroleum assets within national borders, and discriminatory pricing that encourages the development of domestic resources.

3.2 Coding Strategic Intervention Versus Other Types of Policy Intervention

Each of the policy instruments detailed above need not be used in order to enhance strategic control over petroleum resources. Rather, they can also be used in the pursuit of other policy goals. An example of non-strategic application of ownership as a policy instrument, for example, is the direct ownership of the British National Oil Corporation (BNOC) and Statoil of Norway by the governments of each of these countries, with the goal of capturing a greater share of revenues from the exploitation of domestically located resources. A second example of the non-strategic use of a policy

instrument is the use of differential tax rates in order to change the domestic fuel mix in ways that enhance environmental goals, for example, by increasing the price of coal. A regulatory measure that forces energy firms to purchase a given percentage of renewable or low carbon emitting energy sources are a functionally equivalent policy alternative. In a country with a large coal resource base, on the other hand, policy might shift energy consumption towards coal for strategic reasons.

Distinguishing between the purpose of policy choices requires us to understand not only if a particular policy instrument is implemented, but also the purpose of intervention. In the cases of France and Japan this is less complicated: both countries have few domestic oil resources and there are few positive spillover effects associated with supporting oil firms in terms of employment, technological innovation, or other benefits. This means that policies discriminating in favor of domestic oil firms can be categorized as being designed to enhance the control of national firms over oil with greater confidence. In the case of the United States the existence of domestic oil resources makes categorizing the purpose of policy intervention more difficult. Given that policies have been designed to increase domestic production as a share of total consumption and have not explicitly shaped the market to the benefit of U.S. firms, it can more plausibly be argued they are aimed at increasing tax revenues or economic growth through the promotion of domestic industry. I resolve this problem by coding as strategic intervention all policies designed to increase domestic production of crude oil, and where the goal of the policy, as stated by the president, is to increase national production in order to make the United States more energy independent.

3.3 Selection of Cases

The universe of cases defined in this study is the major petroleum consuming countries. Within this universe of cases, the focus of the study lies in the institutions governing the petroleum sector in Japan, the United States, and France. Two strategies have been used in the selection of these cases. First, they have been selected because they are important, representing the geographic spread of the major petroleum consuming countries. The United States and Japan have been, within the universe of cases, consistently the largest two consumers of petroleum during the period under study. France, on the other hand, is the second largest consumer (behind Germany) within Europe, with Europe the third major petroleum importing region globally.³⁸

The second rationale for selecting cases is to ensure they do not systematically bias results in one direction. Each country relies on international market significantly for the supply of petroleum during the period under study (see appendix), ensuring the key question of the degree of ‘strategicness’ is held about constant for each of the cases. Further, the cases selected do not bias outcomes because of a lack of variation in domestic institutions or actor interests. Each has a very different institutional structures and different actors operating within the petroleum sector. Japan, for example, is a parliamentary system with relatively weak firms internationally operating in the petroleum sector, but a powerful bureaucratic actor in the Ministry of Economy, Trade and Industry (METI). France, on the other hand, maintains a presidential system and a strong bureaucratic actor in the energy sector. France’s colonial legacy, unlike Japan, also left it the legacy of a powerful integrated oil major operating in the petroleum sector:

³⁸ France also represents a harder case for the neoliberal convergence hypothesis than Germany, given its long-standing interventionist policies in the petroleum sector through policies designed to enhance national control.

Total.³⁹ Finally, the United States offers a contrast to both Japan and France. The United States has a domestic petroleum resource base, although growth in consumption has meant these reserves have been inadequate to meet domestic demand since the 1960s. Yet as a result of this resource base the United States has developed strong producer firm interests with a powerful, but not overwhelming voice in petroleum policy setting. Further, the United States' DoE and Department of the Interior, which are the departments competent in energy policy setting, are bureaucratically weak. Power is also diffused within the presidential U.S. decisionmaking system, which maintains a strong separation between the executive and legislature.

4. Presentation of Outcomes

4.1 Measuring Policy Outcomes

Outcomes for Japan, France, and the United States, are measured for the four policy instruments identified above. The multiple instruments of policy intervention cannot effectively be combined into a single index, confounding quantification of the dependent variable without introducing the possibility of significant measurement error. Further, although proxies for the magnitude of government intervention, such as budgetary spending or levels of taxation or subsidies, appear plausible surrogates for aggregate policy intervention, the validity of using single measures such as these is undermined through the conflation of the ends of intervention itself; as noted earlier, strategic intervention represents only one rationale for the application of policy in the petroleum market, other being environmental, or budgetary. Using a single measure, such

³⁹ Total is the fourth largest integrated oil major globally, and was created from the merger of Total (formerly CFP) and Elf-Aquitaine (formerly Elf-ERAP) in 2000.

as taxation levels or budgetary outlays, therefore, is likely to lead to an overestimation of the degree of strategic intervention.

Given these problems, I employ two alternative approaches to coding policy outcomes. First, I apply a simple framework to measure policy outcomes across the three states. Outcomes are summarized by a coding schema of +/- corresponding to whether strategic intervention occurs or not. These outcomes are presented in more detail in table three, where also I note the most significant change in each country case, sorted by instrument. The second method for assessing outcomes is qualitative, in which I summarize changes in policy change in each country across time.

Table 2: Summary of Outcomes by Policy Instrument

1970-1980	Japan	United States	France
Ownership	+	-	+
Fiscal	+	-	+
Trade	+	+	+
Regulatory	+	+	+
1981-2000	Japan	United States	France
Ownership	(-)	-	-
Fiscal	(-)	-	-
Trade	-	-	-
Regulatory	-	+	-
2001-2006	Japan	United States	France
Ownership	+	-	-
Fiscal	+	-	-
Trade	-	-	-
Regulatory	-	+	-

Table 3: Outcomes in Detail

Country	Petroleum Sub-Sector	Outcome: 1980s-1990s	Outcome: 2000s
United States	Upstream	<ul style="list-style-type: none"> - Liberalize prices - Reduced regulatory support 	<ul style="list-style-type: none"> - Prices remain liberalized - Intervention reinvigorated
	Downstream	<ul style="list-style-type: none"> - Status quo (non-intervention) 	<ul style="list-style-type: none"> - Status-quo (non-intervention)
France	Upstream	<ul style="list-style-type: none"> - Privatize firms 	<ul style="list-style-type: none"> - Firms remain privatized
	Downstream	<ul style="list-style-type: none"> - Remove trade barriers 	<ul style="list-style-type: none"> - Trade remains unrestricted
Japan	Upstream	<ul style="list-style-type: none"> - Privatize firms - Commit to exit market 	<ul style="list-style-type: none"> - Intervention reinvigorated
	Downstream	<ul style="list-style-type: none"> - Remove trade and regulatory barriers 	<ul style="list-style-type: none"> - Trade remains unrestricted

4.2 Japan – Summary of Outcomes

Of the cases identified in this study, Japan has the smallest indigenous share of petroleum resources; its economy is reliant on the international market for ninety-eight percent of its petroleum requirements. Further, petroleum represents the most significant share in of fuels within Japan’s energy mix, despite the use of a range of policy instruments designed to shift domestic energy demand away from crude oil and towards substitutes such as natural gas and nuclear energy.

Japanese policy intervention in the petroleum market was conditioned by this almost total lack of domestic reserves of petroleum, and the absence of colonial possessions that afforded some control over energy resources.⁴⁰ The first industry

⁴⁰ The position of Japan stands in contrast to both France, which had concessions in the Middle East as well as

legislation, passed into law in 1934, gave the government the authority to control trade flows and refining capacity through licensing, as well as control prices and distribute market share between domestic refiners and marketers. The law also gave the government the authority to provide subsidies to firms for domestic exploration and production.

The entry of Japan into membership of the major international bodies regulating international commerce following the Pacific War led to a new law that mirrored the 1934 petroleum industry law. Like the previous law, it conferred on government the authority to use licensing and other regulatory instruments in the attempt to increase the market share of Japanese refiners and distributors in the domestic market. The use of policy instruments also extended to trade. The government was able to regulate imports of crude oil and petroleum products through a licensing scheme, and also banned the export of crude oil. A public corporation was established to provide fiscal support, in the form of subsidies and low-interest loans, to Japanese private sector firms operating in exploration and production internationally.⁴¹

In contrast to the high level of policy intervention that existed prior to and following the Pacific War, Japanese policy during the 1980 to 2000 period converged on the neoliberal consensus. First, domestic controls over refining began to be loosened in 1986, and by 1996 the use of regulatory instruments designed to increase the domestic market share of Japanese firms in refining and distribution was abolished. In its place,

petroleum producing colonial possessions in Algeria. It also contrasts with the United States, which has significant domestic petroleum reserves of its own.

⁴¹ See Richard J. Samuels, *The Business of the Japanese State: Energy Markets in Comparative and Historical Perspective* (Ithaca: Cornell University Press, 1987).

Japan retained a significant volume of strategic petroleum reserves, as mandated by the IEA and are to be used under emergency conditions only.

Strategic policy intervention designed to increase the volume of oil produced by Japanese firms was also reduced both quantitatively and qualitatively. The public sector corporation designed to provide subsidies was abolished in 2001, and an independent committee established to review policy setting in the petroleum sector committed the government to exiting the market after ten years, and following the privatization of government held assets. Quantitative import targets for crude imported by Japanese firms were abandoned in 2001.

The 2001-2006 period saw a partial reversal of the liberalization and privatization policies of the 1980-2000 period. In the domestic market there was no reregulation. In exploration and production, however, quantitative targets for equity oil held by Japanese firms were reestablished in 2003, and a new public corporation was given a greater mandate to invest in upstream projects carried out by Japanese firms.

4.3 United States – Summary of Outcomes

The United States is unique among the cases examined in this study because of the significant domestic petroleum reserves located within its national borders. Indeed, until the discovery of oil reserves in the Middle East, production in the U.S. constituted the largest share of the world crude market. Nevertheless, policies designed to enhance strategic control were a component of U.S. petroleum policies. The impulse in the case of

the United States centered on increasing “energy independence,” defined as increasing the share of oil produced domestically as a ratio of total domestic oil consumption.⁴²

Standard Oil dominated the crude oil industry within the United States prior to its breakup by court order in 1911. Overproduction, rather than strategic intervention, was the initial cause for government intervention in the domestic petroleum market, however, and this occurred most significantly at the state level. In 1919 the Texas Railroad Commission ordered that production wells should be placed forty feet apart, in a bid to restrain production. The federal government, on the other hand, restrained production on lands it owned the property rights to, and in 1932 imposed both an import tariff and limits on inter-state trade in oil, with the goal of limiting domestic production.

Increased regulatory controls during World War Two were largely dismantled under President Truman. The most significant increase in U.S. petroleum policy during peacetime followed, however, in the imposition of first voluntary, and then compulsory, quotas on the importation of crude oil under the Eisenhower Administration. This change was introduced in response to the rapid increase in imports of crude oil in conjunction with the increasing role of the Middle East in world crude production, and were supported by the White House for reasons of national security, and firms for reasons of

⁴² Given the economic benefits to domestic producers this policy also entails, an alternative argument proposes that such a policy is caused by regulatory capture, in which U.S. policy is driven by oil companies’ lobbying of congressional representatives in oil producing states, or through direct lobbying of the White House. Three salient points about the dynamics of policy-setting in the United States in petroleum together undermine the explanatory power of the regulatory capture argument, however. First, congressional representatives in oil producing states have rarely initiated legislation, and have also often failed to secure their preferred policy outcome in the face of opposition from the White House or other congressional members. Second, evidence shows both that the White House is the major initiator of proposals for changing U.S. energy policy, and that proposals to increase U.S. supply as a ratio of total consumption come from presidents from both Democratic and Republican sides and across many decades. This is an unlikely outcome unless rather heroic assumptions are made about the ability of private U.S. oil firms to successfully capture energy policy in each presidency regardless of its political leanings. Third, the argument of regulatory capture ignores the fact that the most powerful domestic oil firms, in the form of the progeny of Standard Oil, have not been strong supporters of increasing domestic production. Rather it has been the smaller, and less influential, independents that have been the strongest supporters of such policies. For details see chapter four, the empirical chapter on the United States.

protection. Voluntary controls were first implemented in 1954, and then were renewed in 1957. Voluntary restraints were made mandatory in 1959, meaning that crude oil could not be imported without a license issued by the Secretary of the Interior. These controls were established under the national security provisions of the Trade Agreements Extension Act of 1954.

Mandatory import quotas was maintained for the next fourteen years. An attempt under the Nixon Administration to abolish the quota system in favor of tariffs failed, however this was carried out under the Ford Administration. Price controls were also maintained following their imposition for inflationary reasons in 1971, along with other goods. Prices on petroleum products were maintained even after those of other goods were freed in 1974, however. Further, a new regime was put in place in August 1973 under the Emergency Petroleum Allocation Act (EPAA) that set a two-tiered pricing system in place, with the objective of providing incentives to firms to explore and produce more oil domestically. Further, under the Ford Administration, licensing procedures for exploration and production on the Outer Continental Shelf (OCS) were loosened to encourage drilling. Imports of crude oil were also taxed more heavily than domestic oil, at an initial rate of one dollar per barrel from February 1975, and then an additional dollar in June of the same year.

The 1978 National Energy Act passed by Congress during the Carter Administration promoted national production. This was done through a mix of both demand and supply measures. On the supply side, an Energy Security Corporation was created in order to create oil substitutes, while an Energy Mobilization Board was designed to streamline regulatory processing for energy related projects. Tax and other

incentives were also put in place to encourage the development of oil shale within the United States. Most importantly for domestic oil production, however, was the decontrol of oil prices, which was put in place under the Energy Production and Conservation Act (EPCA) of 1975. Gradual decontrol of prices began in June 1979, and was scheduled to be completed by September 1981. The goal of price decontrol was to encourage domestic production, which had been dampened by the ceilings placed on the prices of crude oil and a range of petroleum products.

Full decontrol of prices was decreed by the Carter Administration, as noted above. Upon entering office the Reagan Administration brought forward this decontrol of prices by eight months. This marked the end of the application of trade instruments and price controls, with the goal of boosting the production of crude within the United States and on the Outer Continental Shelf (OCS). The Reagan Administration also loosened regulations governing the licensing of federal lands for exploration and production.

The major rationale for easing licensing procedures given by the Reagan Administration was primarily given as boosting economic growth and reducing government intervention in the economy, in line with its broader program, rather than the promotion domestic production because of security of petroleum supply concerns. Nevertheless, the goal of promoting energy ‘self-sufficiency’ was not absent from presidential justifications for relaxing regulations used by the Energy Task Force established by President Reagan. The Reagan Administration also initiated a review of the national security implications of the fall in U.S. production associated with the collapse of oil prices in 1986. It concluded that U.S. security would be boosted by reducing the amount of imports.

As with the Reagan Administration, strategic intervention was also encouraged under the Bush Administration. President Bush's initial proposals, developed by a controversial task force headed by Vice President Dick Cheney, recommended a range of measures, including opening drilling in the Arctic Natural Wildlife Reserve (ANWR) in order to "decrease U.S. dependence on foreign oil imports." Congressional debate over the appropriate form of government intervention in the energy sector was highly conflicted, and was also interrupted by the attacks of September 11, 2001. When the House and Senate reconciled legislative versions passed in each house in 2005, the clause promoting drilling ANWR had been removed. A range of lesser measures designed to promote domestic exploration and production were introduced, focusing on accelerating drilling on federal lands and the OCS. The justification for doing so was given as reducing the share of imported oil as a share of U.S. consumption. Although by more limited means than in the 1970s, therefore, strategic intervention remained a component of U.S. policy during the 2000-2006 period, as in Japan.

4.4 France – Policy Outcomes

Intervention in the petroleum sector in France began with the imposition of tariffs in 1871. These were, as in the case of the United States, designed to protect domestic industry, in this case the French oil shale industry. That this was not driven by strategic concerns can be inferred from the insignificance of oil as a fuel for both the military, and in the civilian economy.

The French strategy to enhance strategic intervention in both the pre-war and post-war periods was centered on national firms. These firms were supported by subsidies, as well regulatory instruments designed to increase their market share within

domestic refining and marketing, the latter through a law passed in 1928. The first firm organized by the state was the Compagnie Francaise des Petroles (CFP), which was established as a public-private partnership in 1924 with the government holding thirty-five percent of outstanding shares. The firm took advantage of the 23.75 percent stake it received in the Iraqi Petroleum Company, following the signing of the Treaty of San Remo, and later expanded into different areas.

The second group firm was Elf-ERAP, established as an umbrella firm after the Second World War. Unlike CFP it was wholly government owned, and focused on exploiting oil reserves discovered in the France Zone in North Africa and elsewhere. What was to become the Elf-ERAP group was also granted a twenty-five percent share of the domestic refining market by law through the Union Generale des Petroles (UGP). By the 1960s, the combined share of CFP and Elf-ERAP in the French market for petroleum products was approximately half, therefore reaching one of the major public policy goals of the government in the petroleum market.

In the 1980-2000 period the French government wholly liberalized the petroleum sector. In 1992 a new law was passed to replace the 1928 petroleum law. Imports and exports of crude oil and petroleum products were liberalized. The government retained emergency stocks of petroleum, as mandated by the European Commission and the International Energy Agency (IEA), but these were marked for use in emergency periods only. As part of the liberalization of trade in crude and crude products the licensing system maintained by the French government since 1928 was also abolished.

In terms of privatization, both the Elf-Aquitaine group and the CFP group (now known under the brand of Total) were wholly privatized over the 1980-2000 period. Completing this process, the two firms merged in 2000 to create the fourth largest global integrated oil major, when measured in terms of market capitalization. As part of the privatization, and merger, process, the French government relinquished its golden share in Elf, which had given it the right to stop non-French firms from acquiring a stake in the firm.

The French government, echoing Japanese policy, released a National Energy Strategy (*Stratégie énergétique Nationale*) in 2005. The law was designed to promote energy security of supply, as well as achieve environmental goals. Policy initiatives designed to revitalize France's long-standing strategy of promoting national control over the petroleum supply chain, however, were wholly absent. Instead the law focused on controlling energy demand and diversifying fuel types, as well as energy related research and development, and the stability of energy transmission and storage networks. The increase in petroleum prices, therefore, did not lead to a revitalization of strategic intervention, as it did in the case of Japan.

PART II: Explaining Outcomes

5. Restatement of Puzzle

How are we to explain the outcomes outlined above? How can we best explain variation in strategic intervention within countries across time? And how can we explain variation across countries, most notably the transformation of policies of national control in the case of France, in contrast to Japan and the United States, where we observe apparent convergence on more liberal policy outcomes, followed by a reemergence of strategic intervention in both cases?

5.1 Explaining Policy Change

Explaining the variation identified above requires us to identify the most important actors, their interests, and how and why their preferences over outcomes changed over time. In this study I argue that two sets of actors are particularly important in determining whether strategic intervention continued to be pursued as a component of policy: state actors in the executive (bureaucratic and political) with responsibility for oil policy, and firms engaged in the oil sector.

Including firms and political actors from within the state means this study takes a middle path between the two opposing views of the drivers of oil policy: realist-mercantilism and regulatory capture. In the former the interests of the state are assumed to lie in maximizing national security and the state, as a unitary actor, is assumed to determine policy outcomes. In the latter, policies implemented in the national interest are assumed to be a façade behind which firms vie to increase economic rents by raising

barriers to market entry. The state, in this understanding of policy outcomes, is understood as passive, implementing policy demands derived from firm interests.⁴³

In contrast, the argument here is that the existence of strategic intervention is a function of the policy strategies adopted by both actors state and firms.⁴⁴ As such, I argue that strategic intervention has never been solely about securing oil. For firms, for example, it has also been about securing competitive advantage within the international oil market. For bureaucratic and policymakers, on the other hand, the goal of enhancing security over oil supplies was met through policies of national control, however, these policies also served organizational and political interests, such as increasing budgets and responding to political demands from the voting public, as described below.

I argue that the interests of both were met most of the twentieth century through policies designed to achieve this goal. The oil shocks, and the shift in market structure they represented, I argue, led to a period of renegotiation, under which both sets of actors reexamined whether strategic intervention remained in their interests. Further, these actors were forced to bargain with others both inside and outside the state when attempting to determine which policy instruments could be applied. In the case of France, for example, the national oil firms determined that strategic intervention was no longer in their interests. State actors in the Ministry of Industry, whose organizational mission was to support these firms, therefore also lost interest in promoting strategic intervention. There was therefore little opposition to proposals from the European Commission, and within the Ministry of Finance, to increase competition in the sector; the former with the

⁴³ A summary of this position can be found in Richard A. Posner, "Theories of Economic Regulation," *Bell Journal of Economics and Management Science* 5, no. 2 (1974), 335-358.

⁴⁴ In this sense my argument follows that of Milner. See Helen V. Milner, *Interests, Institutions, and Information: Domestic Politics and International Relations*, Princeton Paperbacks (Princeton, N.J.: Princeton University Press, 1997).

goal of completing an internal market for energy, and the latter with the hope that greater competition would contribute to lower inflation. In the cases of Japan and the United States, on the other hand, firms and state actors continued to have an interest in maintaining policies of strategic control. Although adjustments were made in the particular instruments used to promote these policies in response to changes in the structure of the oil market, and the position of other societal and state actors, policies of national control were not wholly jettisoned as in the case of France.⁴⁵

Including actors from within the state, as well as firms, makes it explicit that while the two actors are dependent on the others in the pursuit of their interests, each have their own sets of underlying preferences over outcomes that may or may not align in the pursuit of national control. Governments depend, by necessity, on industry, for example, yet have imperfect control over firm decisionmaking. Firms themselves also have interests that may, or may not, coincide with those of state actors; while state support can be useful to them, it can also constrain them. This is the case even when the state has created oil firms, as occurred in Japan and France.

Where the interests of the industry and the state have not aligned, I find that firms have often successfully opposed policies promoted by the state, although state actors have also been able to introduce policies opposed by firms. In the case of the United States, in particular, state actors and firms have had a more arms-length, and less coalitional relationship. Nevertheless, state actors' pursuit of strategic control through increasing the share of domestic crude production as a ratio of total consumption

⁴⁵ For a review of theories of government regulation that distinguishes between supply and demand theories of regulation, and also presents an explanation that incorporates both supply and demand see Nathaniel O. Keohane, Richard L. Revesz, and Robert N. Stavins, "The Choice of Regulatory Instruments in Environmental Policy," *Harvard Environmental Law Review* 22 (1988).

necessarily promoted domestic industry. Industry also successfully resisted proposals to increase state intervention in the sector, and attempted to shape state policies in support of their interests.

The relationship between state actors and firms is therefore complex. Neither are wholly independent from one another: state actors must pursue strategic intervention through promoting industry, while firms may find it useful to promote competitiveness through the use of policies requiring action by the state. Yet at the same time both have a set of underlying preferences that need not be pursued through strategic intervention. I propose that when public matched private purpose, as it did for most of the twentieth century as firms sought market share and profits, and state actors sought security of supplies as their overriding goal, the policy regime in favor of strategic intervention obtained. The effects of the change in the structure of the oil market, reflected by increasing price volatility, led both sets of actors to review existing policies. When the policy strategy adopted by one, or both, of these actors diverged from strategic intervention, I find that the policy regime in support of strategic intervention was transformed, and replaced by a more liberal response in the petroleum sector to the problem of relying on the international market for the supply of oil. Where state actors and domestic industry were able to find a new policy equilibrium that met their preferences and retained a focus on national control, then policies were adjusted but not jettisoned.

5.2 State Actor and Firm Interests, and Preferences, Over Policy Outcomes

In this study I view both state actors and firms as seeking to advance their interests in a rational way in strategic interaction with others.⁴⁶ I assume interests are fixed, but preferences over policy outcomes can shift as these policies become more or less able to satisfy these interests. I pay particular attention to the effects of shifts in the international petroleum market on the viability of existing policies, and therefore the preferences of state actors and firms over policy outcomes.

5.2.1 State Actor Interests and Preferences Over Policy Outcomes

Putting the interests of state actors and firms at the heart of the explanation of policy change raises the question of the origins of their interests. In this study I propose the interests of state actors, whether political or bureaucratic, lies in their organizational and political incentives.⁴⁷ For economic and financial ministries with the organizational mission of managing the oil sector, lack of access to refined petroleum products, or volatile prices for these products, represents a threat to their ability to successfully carry out this mission. For political representatives, on the other hand, inflation driven by higher prices for petroleum products, or at the extreme the inability of consumers to obtain these products, leads them to suffer political costs such as the failure of their legislative program, or a loss at the ballot box. Each, therefore, has an interest in ensuring the stable supply of crude oil and the products refined from it.

⁴⁶ Following Scharpf, as cited in Peter A. Hall and David W. Soskice, *Varieties of Capitalism : The Institutional Foundations of Comparative Advantage* (Oxford: Oxford University Press, 2001), 6.

⁴⁷ A summary of strategies for assigning state actor preferences see Peter A. Hall, "Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain," *Comparative Politics* 25, no. 3 (1993). See also Andrew B. Whitford, "Competing Explanations for Bureaucratic Preferences," *Journal of Theoretical Politics* 19, no. 3 (2007).

This fact alone does not, however, lead state actors responsible for oil to choose a particular policy strategy. Rather, multiple responses are possible, as noted above. In this study I am interested in whether and why states pursue policies designed to enhance national control. I therefore categorize policy outcomes according to whether *strategic intervention* is a component of oil policies or not. The question is how state actors choose the former policy in addition to others. The inability of any strategy to wholly mitigate the problems of supply and price volatility inherent in the structure of the petroleum market means the choice between the two is not obvious.

I argue that state actors choose according to whether the policy promotes political or organizational interests. In the cases of Japan and France, where economic ministries have been the major state actors involved in petroleum decisionmaking, a major organizational interest in addition to ensuring stable supplies of petroleum lies in promoting domestic industrial competitiveness. For Japan, for example, the Ministry of Economy, Trade and Industry (METI) is the bureaucratic organization responsible for the energy sector, and had a long-standing organizational mission of promoting the international competitiveness of Japanese industry in addition to coordinating long-term responses to volatility in the oil sector.⁴⁸ GATT-induced liberalization forced METI to abandon the use of its formal tools of industrial policy over ongoing rounds of multilateral negotiations. Promoting firms therefore remained an important organizational mission of METI, however; it responded not by abandoning its organizational mission of promoting industrial competitiveness, but by supporting the interests of firms operating in industries under its regulatory jurisdiction through the aggressive application of

⁴⁸ The classic statement in English is Chalmers A. Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975* (Stanford, Calif.: Stanford University Press, 1982).

multilateral trade rules. Importantly, the energy sector differs from other industrial sectors in that it remains largely outside multilateral rule-making. This means the application of METI's traditional tools of industrial policy remain viable, enabling it to support firms through the use of traditional tools of industrial policy.⁴⁹

Oil policy setting in France, as in Japan, has been dominated by bureaucratic organizations and interests. The chief regulatory agency has been the Ministry of Industry, which retained authority for monitoring the national oil companies and issuing licenses for the importation of oil and oil products. Their role was complemented by the Ministry of Finance (Ministry of Economy after 1978 when the Ministry of Finance was split), which gained the authority to set prices domestically from 1976. Historically the interests of both organizations lay in supporting industry. For the Ministry of Finance and its successors maintaining price controls over domestic oil and oil products, and setting these higher than the international price, ensured that the national oil companies could carry out investments without draining the public purse.⁵⁰ As a line ministry with responsibility for regulating the oil sector on the other hand, the Ministry of Industry (and particularly the Directorate General of Hydrocarbons, which was directly responsible for oil policy setting) had an interest in supporting its clients, in the form of national firms operating in the sector.⁵¹

In the United States the major bureaucratic organizations charged with managing oil policy, the Department of Energy (DoE) and Department of the Interior (DoI), are

⁴⁹ For an investigation of the changes in MITI's policy strategy in response to pressure from GATT see Amy E. Searight, "MITI and Multilateralism: The Evolution of Japan's Trade Policy in the Gatt Regime," (Palo Alto: Stanford University, 1999).

⁵⁰ Harvey B. Feigenbaum, *The Politics of Public Enterprise: Oil and the French State* (Princeton, N.J.: Princeton University Press, 1985). As described in chapter five, this interest shifted to controlling inflation later, which led them to support price liberalization in a falling oil price environment.

⁵¹ See Ibid. This is confirmed by the former Director of the DGH. Gilles Bellec, Director of Hydrocarbons (1984-1989), interview with author, Ministry of Industry, Paris, France, July 18, 2008.

weak relative to their bureaucratic counterparts in Japan and France. Instead, the president is the most important actor within the state responsible for initiating energy policy. This is because the political implications of oil market volatility are structured differently to many other policy problems in ways that increase the incentive for the president to lead. Volatility in the oil market is viewed as a foreign policy issue by the public. Although scholars have questioned the attentiveness of voters on foreign policy issues, and therefore the influence of these types of issues on presidential popularity and her ability to pass her legislative agenda, energy policy, in contrast to other questions of foreign policy, concerns pocketbook issues for the voting public, and policy responses are also primarily domestic.⁵² This makes energy policymaking salient for both the public and Congress, and increases the incentive for the president to take the lead in crafting a policy response. That presidents have an incentive to lead in oil policymaking is suggested by the fact that every president since Richard Nixon has announced a comprehensive energy policy, including for oil, soon after entering office.⁵³

What determines how the president is likely to respond? Like the bureaucratic organizations of MITI and the Ministry of Industry, the president also responds to her political incentives in crafting her response. The president first has an interest in increasing her chances of reelection, and secondly in passing her preferred policy agenda. On both counts the president must take into account public opinion, given the salience of energy policy as an issue of importance for voters. If she fails to do so, then voters are able to harm the president two ways. Firstly and most directly, they can vote her out

⁵² But see John H. Aldrich, John L. Sullivan, and Eugene Borgida, "Foreign Affairs and Issue Voting: Do Presidential Candidates 'Waltz before a Blind Audience?'" *American Political Science Review* 83, no. 1 (1989).

⁵³ On the salience of foreign policy and domestic issues see Brandice Canes-Wrone and Kenneth W. Shotts, "The Conditional Nature of Presidential Responsiveness of Public Opinion," *American Journal of Political Science* 48, no. 4 (2004).

through elections, although the effects of this are limited in second terms. Secondly, they can stymie the president as she seeks to achieve her interests by influencing the voting behavior of congressional representatives. Congressional representatives, in turn, have an incentive because of elections to reflect public opinion in addition to representing more concentrated interests from their constituency. Putting the foreign policy character of the problem, as well as its salience for voters, mean the president has a strong incentive to take the lead on policymaking in the energy sector.⁵⁴

If the president must take into account public opinion in shaping her response to oil market volatility, what does public polling suggest about the preferred policies of the voting public? On this question the answer has been stable over time. As is shown chapter six, the public strongly favors promoting energy independence by increasing the ratio of domestic oil production to total oil consumed (although this is tempered by environmental concerns). The president therefore has an incentive to respond to public opinion by promoting increased domestic production of crude, so long as it does not transgress the environmental concerns of voters. Indeed, although it has varied from

⁵⁴ Ibid. Most scholarship recognizes a reciprocal relationship between public opinion and the policy positions taken by presidents. That is, public opinion affects presidential policies, and presidents in turn are able to influence public opinion. Page and Shapiro present the strongest evidence that public opinion shapes policy outcomes, especially in areas where there is stable opinion over salient issues. Canes-Wrone finds that presidents are more responsive to public opinion on issues that are familiar to voters in their everyday lives, as well as when presidential approval levels are not high or when an election is close. She also finds that presidents are able to marshal public opinion in seeking to pass her agenda through Congress, but that she tends to do this only for policy positions that already match public opinion. Supporting this, Edwards III, Mitchell and Welch find that policy issues of high salience have a demonstrable effect on the public standing of the president, and by extension the likelihood of her reelection and ability to pass her legislative agenda through Congress. This gives her an incentive to respond to public opinion. In the other direction, Cohen finds that the president is able to influence public opinion but her ability to do so is ephemeral. Canes-Wrone and Shotts, "The Conditional Nature of Presidential Responsiveness of Public Opinion.", Brandice Canes-Wrone, *Who Leads Whom? : Presidents, Policy, and the Public*, Studies in Communication, Media, and Public Opinion (Chicago: University of Chicago Press, 2006), George C. Edwards III, William Mitchell, and Reed Welch, "Explaining Presidential Approval: The Significance of Issue Salience," *American Journal of Political Science* 39, no. 1 (1995); Jeffrey E. Cohen, "Presidential Rhetoric and the Public Agenda," *American Journal of Political Science* 39, no. 1 (1995); Benjamin I. Page and Robert Y. Shapiro, "Effects of Public Opinion on Policy," *American Political Science Review* 77, no. 1 (1983).

presidency to presidency and with changes in oil prices, energy independence has remained a component of presidential proposals, and policy outcomes, since the 1970s.

5.2.2 The Role of Ideas in Shaping Preferred Policy Outcomes

An alternative method for assigning policy preferences of political and bureaucratic actors is through ideas. It is possible, for example, that heuristics that continue to frame the oil market as one in which supply interruption are likely to occur, and likely to be of significant magnitude (as was possible in the early decades of the international oil market) continue to inform political and bureaucratic policy preferences in the oil sector. In this understanding of state actor preferences over policy outcomes it would therefore be ideas about the nature of risk in the oil market, rather than organizational or political incentives, that shape the likelihood policies of national control will be chosen in addition to other over strategies for managing the problems associated with relying on a highly-imperfect market for the supply of oil.

While this is possible, I believe the framing of interests and policy preferences used here more plausibly identifies the reasons bureaucratic and political actors continue to support strategic intervention across time. First, the evidence presented in the empirical chapters suggests that there exist organizational and political incentives for continuing with strategic intervention for actors within the state. Second, while some actors may have believed that national control was the most appropriate response to volatility in the international oil market, explaining the continued application of these policies across a longer span of time can more plausibly be achieved by pointing to organizational and political incentives, unless it is assumed that policymakers within Japan and the United

States across the three decades that make up this study all equally misunderstand the character of the oil market.

5.2.3 Firm Interests and Preferences Over Policy Outcomes

I assume that firms are interested above all in maximizing profits. Within this broad goal, I argue they can have preferences in favor of market or non-market (i.e. policy-based) strategies. Which strategy they choose depends on their production profile. I argue that less competitive firms are more likely to seek protection and support. More competitive firms, on the other hand, are less likely to appeal for government protection, and more likely to seek growth and profits through pursuing strategies focused on the market.

In the petroleum sector competitiveness is closely linked to the degree of vertical integration and firm size, because of the substantial economies of scale that exist in the industry because of high capital costs, and greater profits generated through the production and sale of crude oil.⁵⁵ More vertically integrated, and more international, firms are less likely to pursue support from government. Less vertically integrated, domestically focused, firms, are more likely to seek protection, and support, from the government.

This characterization of firm interests follows Milner, who argues that high levels of international exposure shapes firm policy preferences against protection. The proposals advanced here can be understood as an extension of Milner's thesis in two ways. First, it applies Milner's insight to an important commodity market in which the

⁵⁵ A non-vertically integrated firm focused on refining and distribution, for example, may oppose trade constraints because its refineries are structured to sell to the international market, rather than simply the domestic market.

ownership of upstream resources is important to firm profitability, and necessitates greater international exposure. Second, while recognizing the importance of competitiveness in driving firm preferences for seeking non-market strategies in order to seek greater profits, my argument recognizes that protection is not the only type of assistance sought by firms; firms can also seek subsidies and other benefits, as described above.⁵⁶

Summary of Interests and Preferences Over Policy Outcomes

		Firms	
		Not Competitive	Competitive
State Actors	Organizational or Political Interest?	Strategic Intervention	Minimal or no S.I.
	No Organizational or Political Interest?	Minimal or no S.I.	Liberal Convergence

5.3 Mechanism of Change in Actor Preferences Over Policy Outcomes

How then, can we explain reproduction and change in the policies of strategic intervention using the framework developed above? In this study I argue that *changes in the international petroleum market, expressed through long-run prices*, represents an important cause of actors changing their preferences over policy outcomes.⁵⁷

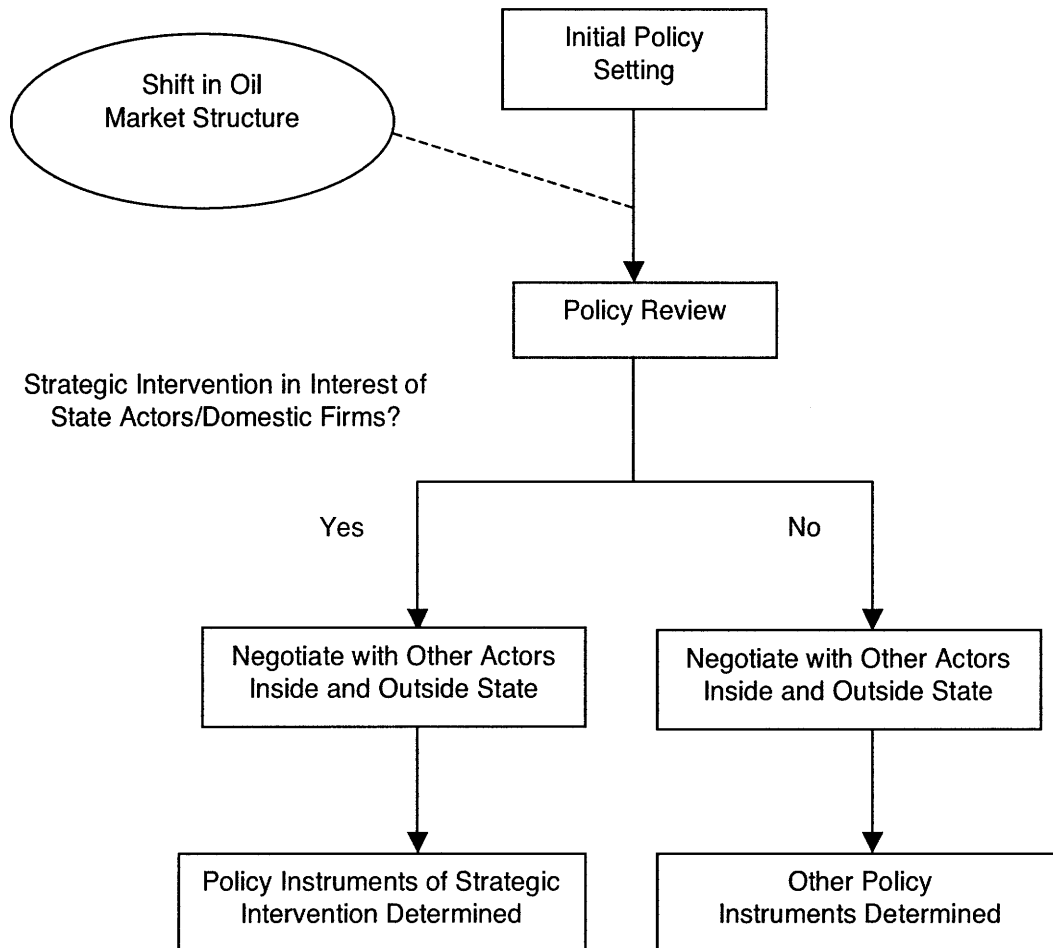
Strategic intervention, I argue, has endured because it has continued to meet the interests of both firms and state actors responsible for oil policy. For firms, national control continued to benefit them by helping them to secure market share domestically,

⁵⁶ See Helen V. Milner, *Resisting Protectionism: Global Industries and the Politics of International Trade* (Princeton, N.J.: Princeton University Press, 1988).

⁵⁷ See chapter three for a discussion of the relationship between market structure and price. I do not propose that shifts in long-run oil prices are the only cause of policy preference change. Empirical chapters detail less systematic mechanisms driving shifts in the policy strategies of actors.

and also increase control over production internationally. This does not mean, however, that such policies were introduced solely as a function of firm interests. Rather, national control continued to be in the interests of state actors because it provided a road map of how to insure against the risks associated with a reliance on a highly imperfect international market for the supply of petroleum, while also meeting organization and political goals.

I propose that changes in the structure of the oil market caused a search for new policies for two reasons. First, for state actors responsible for oil policy setting, shifts in the structure of the oil market undermined the efficacy of existing policies, leading them to reassess the status quo. Second, firm strategies for maximizing profits are significantly affected by changes in market structure and long-run petroleum prices, also leading them to reassess the utility of the existing policies. More competitive firms - commonly vertically integrated - are less likely to seek non-market strategies in response to changes in market structure. Firms that are not vertically integrated (and therefore more reliant on the domestic market), on the other hand, are more likely to pursue non-market strategies. Third, renegotiation of existing policies between state actors responsible for oil policy and firms, allowed other actors inside and outside the state to influence outcomes in order to minimize the costs of policies on their own interests. Although this did not effect the likelihood of strategic intervention being implemented or not, it did shape the instruments used in order to promote this goal. A schematic diagram showing this framework is shown below:



5.4 Using the Framework to Explain Outcomes in Japan, the United States, and France

I argue that the framework presented above offers a more coherent explanation for outcomes than explanations that relegate the importance of domestic actors' interests and policy preferences, or that focus on learning by a unitary domestic actor. In the case of France, for example, the repudiation of policies of national control occurred because of a shift in the policy preferences of both state actors and the national firms. The shift in policy outcomes was driven by the effect of shifts in the international petroleum market. This undermined the existing regulatory structure designed to enhance strategic control

over petroleum through the promotion of national firms. Firms responded by shifting outside the French market, taking advantage of their increasingly diversified portfolio of assets internationally both in refining and production. This meant there was little interest in protection. It also meant there was no interest in continuing to support firms from within the Directorate of Hydrocarbons, which had been the major supporter of strategic intervention. The general move of policy preferences towards liberalization and privatization, and away from the *étatisme* that characterized much of French economic policymaking from the end of the Second World War, by other actors within the state, and the push of the European Commission to integrate the energy markets of member countries, met state actors responsible for oil, and firms, that were no longer interested in maintaining the status quo.⁵⁸ Further, this disinterest of both state actors, and firms, in support for national control led to continued support for liberalization and privatization under conditions higher oil prices in the 2000s.

In the case of the United States, the adjustment of the existing policies of strategic intervention also occurred because of a shift in the policy preferences of state actors and firms. Unlike in France, however, strategic intervention was not wholly rejected. This is because the existence of domestic resources meant that it remained in the interest of the president and domestically-focused firms, to continue to promote increasing domestic production in the name of *energy independence*. The outcome has therefore not been total rejection of the institutions of national control, but rather their adjustment away from the use of trade quotas and tariffs to promote domestic production,

⁵⁸ For a similar argument see Andrew Moravcsik, *The Choice for Europe: Social Purpose and State Power from Messina to Maastricht*, Cornell Studies in Political Economy (Ithaca, N.Y.: Cornell University Press, 1998), 37. This argument matches outcomes in terms of the relatively smooth process of petroleum liberalization in France, in contrast to that of the electricity and gas sectors. In the latter firms have been far more resistant to initiating policies designed to converge on the neoliberal market model, because they have more to lose from doing so given their reliance on the French domestic market for revenues.

and towards more limited questions of federal leasing. This matches the interests of the president, who is interested in implementing policies that respond to oil price volatility but also are politically popular, and firms, which seek to obtain access to exploration and development opportunities.

In the case of Japan, like in the United States and in contrast to France, policy restructuring did not lead to a complete abandonment of strategic intervention. Rather, the abandonment of controls over trade reflected a decision to discard trade instruments as a means for enhancing strategic control because of the failure of those policies to promote the competitiveness of Japanese firms. The privatization of JNOC assets also reflected the poor performance of these firms thanks to changes on long-run petroleum prices, and a subsequent attempt to recalibrate the policy setting, rather than the abandonment of national control as a policy goal. Once again, this matched the interests of firms, which continued to demand policy support from the government given their lack of competitiveness in the international petroleum market, and left open the possibility of a renewal of policy instruments in support of national control under conditions of high long-run oil prices.

Summary of Outcomes – Empirical Cases Inserted

		Firms	
		Less Competitive	More Competitive
State Actors	Organizational or Political Goal?	Japan Upstream (2000 -) U.S. Independents Upstream (1980-)	France Downstream (1980 -) U.S. Majors Upstream (1980-)
	No Organizational or Political Goal?	Japan Downstream (1980 – 2000) France Upstream (1980 -)	Japan Downstream (2000 –)

6. Data and Methods

The dependent variable in this study is national policies designed to ensure security of petroleum supplies in Japan, France, and the United States. It is a dichotomous variable, taking the value of strategic intervention, or non-strategic (liberal) intervention. It is measured through the four instruments identified above, with evidence drawn from laws and regulations in each of these countries. Policy outcomes are, as argued above, a function of the policy preferences of political/bureaucratic and firm actors (independent variables).

6.1 Evidence Used to Identify State Actor Policy Strategies

The first set of actors identified in this study as important to outcomes are state (political and bureaucratic) actors, here understood as the initiators of policy. Differences in national political institutions mean that their makeup varies across cases of Japan, the United States, and France. In the case of Japan, long-term policies are often initiated within METI. Data used to identify policy preferences is obtained from internal and public documents, interviews and statements recorded in media sources, trade journals, and direct interviews with participants in the policy process. In the case of the United States, policy is initiated by both the executive (White House) and the legislature (Congress). In terms of major policy initiatives in the energy sector, however, the White House is more dominant, with each incoming president typically announcing a comprehensive set of energy goals designed to be achieved through the presidency. In this study I focus, therefore, on the White House as the indicator of political/bureaucratic policy preferences. Data on White House policy preferences are obtained from official

policy proposals, participant memoirs, and secondary sources including interviews and statements recorded in media sources, and trade journals. Finally, in the case of France, policy is initiated by the executive, and from within the Directorate for Oil and Gas in the Ministry of Industry (now Ministry of Finance, Industry and Labor). Data on the general shift in policy preferences detailed in the empirical chapter on France are obtained from secondary sources. Data on the direct effect of market changes on policy preferences are obtained from participant interviews, and media. Finally, data used to identify European policy preferences are taken from primary sources obtained from the European Commission and Council of Ministers, as well as secondary sources.

6.2 Evidence Used to Identify Firm Policy Strategies

The second important set of actors that help shape outcomes are firms. In order to identify the preferred policy strategies of firms in Japan and the United States I use statements and positions announced by the major industry associations as proxies for firm policy preferences. I justify this on logistical and substantive grounds. Logistically, the large number of firms operating in the petroleum sector in both the United States and Japan makes it difficult to collect direct evidence from each of these. Further, firms typically do not publicly detail lobbying efforts, complicating the data collection process. Industry associations, on the other hand, are designed to act in the interests of member companies. As such they have an explicit role in the policy formulation process. Data collection is therefore simplified. Further, given their role as representative of firm interests in the political process, using industry association policy preferences as data does not significantly undermine the validity of their statements as indicative of

underlying firm preference. In the case of France, on the other hand, more direct evidence of the policy preferences of firms is used given the dominance of the Total and Elf-Aquitaine groups within the French petroleum sector. This data are taken directly from annual reports, interviews with firm representatives, and industry reports.

Chapter Three - Changes in the International Petroleum Market

1. Outline

In chapter two I argued that petroleum policies in Japan, France, and the United States, were adjusted in response to shifts in the structure of the international petroleum market. For state actors responsible for oil policies, shifts in long-term oil prices undermined existing policies. This caused a reassessment of existing policies to see if they continued to match their interests. For domestic firms, on the other hand, shifts in the structure of the oil market also led them to reassess their preferred policy outcomes. More competitive firms, which in the petroleum sector largely equates with firms that are big and vertically integrated, were less likely to seek support from the state, and more likely to adopt market-based strategies to manage the effects of shifts in market structure. Non-competitive firms, on the other hand, were more likely to seek governmental support in the name of strategic intervention.

Given the important role I ascribe to shifts in market structure and long-run oil prices, in this chapter I describe the major changes that occurred in the petroleum market in the period under study, as well as the relationship between the structure of supply in the petroleum market, and price changes. I begin by outlining the major theoretical explanations of the relationship between prices and market structure.

2. Theoretical Explanations of Long-term Oil Prices⁵⁹

Two paradigms have dominated research into the question of how the dynamics of supply influence price in the petroleum market. In the first view, the most important long-run driver of price is taken to be the geological fact of petroleum's exhaustibility. In the second view, exhaustibility is relegated to a "geological fact of no economic interest,"⁶⁰ and the most important variable affecting supply in the petroleum market is understood to be producer market power.

The former position was first elaborated in Harry Hotelling's seminal study of exhaustible resources in 1931.⁶¹ Hotelling proposed that resource prices, including in the case of petroleum, are determined by the problem of exhaustibility. Given this, Hotelling argued, a resource owner must decide the rate at which to extract and sell the resource. In a competitive market, Hotelling proposed that the price of an exhaustible resource should be determined by the efforts of producers to maximize the net present value of their asset

⁵⁹ The problem of strategic control is linked to the supply of petroleum, rather than demand, hence this chapter's focus on the structure of supply in the petroleum market. I also recognize that changes in the cyclical and structural composition of demand also significantly influence petroleum prices. The pace of economic growth in the major economies, for example, influences demand for oil because economic growth increases energy consumption. The opposite is also true; that is, sharp increases in oil prices can affect economic growth, which in turn affects the demand for oil. Demand also varies seasonally, increasing during winter in the northern hemisphere. More long-standing, structural changes in demand, on the other hand, are caused by technological innovation and changing competitiveness between fuels. For a review of the literature on this question see, *inter alia*, James D. Hamilton, "Oil and the Macroeconomy since World War II," *The Journal of Political Economy* 91, no. 2 (1983); Donald W. Jones, Paul N. Leiby, and Inja K. Paik, "Oil Price Shocks and the Macroeconomy: What Has Been Learned since 1996," *The Energy Journal* 25, no. 2 (2004); Robert B. Barsky and Lutz Kilian, "Oil and the Macroeconomy since the 1970s," *The Journal of Economic Perspectives* 18, no. 4 (2004).

⁶⁰ Morris A. Adelman, "Mineral Depletion, with Special Reference to Petroleum," *The Review of Economics and Statistics* 72, no. 1 (1990), 1.

⁶¹ Harold Hotelling, "The Economics of Exhaustible Resources," *The Journal of Political Economy* 39, no. 2 (1931). For an early discussion of the economic characteristics of exhaustibility of resources see Lewis Cecil Gray, "Rent under the Assumption of Exhaustibility," *The Quarterly Journal of Economics* 28, no. 3 (1914). Devarajan and Fisher summarize the development of Hotelling's theory. See Shantayanan Devarajan and Anthony C. Fisher, "Hotelling's 'Economics of Exhaustible Resources': Fifty Years Later," *Journal of Economic Literature* 19, no. 1 (March 1981). Solow offers an elegant summary of the theory of exhaustible resources in his 1973 Ely Lecture: Robert M. Solow, "The Economics of Resources or the Resources of Economics," *The American Economic Review* 64, no. 2, Papers and Proceedings of the Eighty-sixth Annual Meeting of the American Economic Association (1974). Also Dermot Gately, "A Ten-Year Retrospective: Opec and the World Oil Market," *Journal of Economic Literature* 22, no. 3 (1984) for a summary of the theory of exhaustible resources applied to petroleum.

over time.⁶² This implies that price increases at the rate of interest. If the price of the resource increases more slowly than the rate of interest, then resource holders will extract the resource more quickly in order to earn a superior return.⁶³ If the resource price is increasing faster than the rate of interest on the other hand, the optimal choice is to retain the resource in the ground as an asset, allowing it to continue to gain value.

Hotelling's thesis was elegant. It was also useful because it generated an easily testable proposition: if long-term prices are correlated with the rate of interest over time, this represents evidence in support of the theory. If not, then the theory is cast into doubt. The first real empirical tests of Hotelling's thesis came with the wave of research into resource economics that coincided with the oil shocks of the 1970s.⁶⁴ Most notably, Morris A. Adelman demonstrated that the prediction derived from Hotelling's Rule, as it came to be known, does not hold in the case of petroleum: petroleum prices did not rise with the interest rate over the long-term. Rather, Adelman demonstrated that prior to 1970 there was no evidence of an upward price trend for crude oil.⁶⁵

Given this, Adelman proposed an alternative model of petroleum prices, which remains the dominant paradigm for understanding prices in the petroleum market.⁶⁶ In this model it is *artificial*, rather than geological, scarcity that explains variation in petroleum price over time. Adelman argued that reserves of petroleum are best understood as an inventory, with the inventory level a function of investment in

⁶² Net present value is defined as the present value of future cash flows obtained from an asset. Robert S. Pindyck and Daniel L. Rubinfeld, *Microeconomics*, 5th ed., Prentice-Hall Series in Economics (Upper Saddle River, NJ: Prentice Hall, 2000), 542.

⁶³ In a monopoly market the marginal revenue of the monopoly producer is predicted to rise at the rate of interest. See Devarajan and Fisher, "Hotelling's 'Economics of Exhaustible Resources': Fifty Years Later", 67-68.

⁶⁴ *Ibid.*, 65.

⁶⁵ Adelman, "Mineral Depletion, with Special Reference to Petroleum", 2.

⁶⁶ One indicator of the degree to which Adelman's insight has become the new paradigm in resource economics is to examine the treatment of resource economics in microeconomic textbooks. See for example, *inter alia* Pindyck and Rubinfeld, *Microeconomics*, 28-30; N. Gregory Mankiw, *Principles of Economics*, 3rd ed. (Mason, Ohio: Thomson/South-Western, 2004), 353.

exploration and production and technological innovation. Under this model, prices should not rise at the rate of interest, but rather should be determined by investment levels, which are themselves determined by the balance of supply and demand.

The inventory model offered an explanation of why we should not expect a gradual increase in petroleum price over time. It did not, however, account for the significant long-run increases as well as decreases in petroleum prices. In order to account for this outcome, Adelman pointed to a second feature of the petroleum market: market power.⁶⁷ Natural resources differ from traditional goods in that the location of production is determined by geography rather than comparative advantage. Coal (the carbon residue of prehistoric plant life), for example, is widely distributed geographically. Petroleum (the carbon residue of animal life), on the other hand, is distributed less broadly. Given that petroleum has high barriers to entry, primarily derived from its distribution across limited number of regions, economic (and political) advantage can be secured by restraining supply. As a result, rather than price increasing as a linear function of increasing natural scarcity, as assumed by Hotelling's Rule, *artificial* scarcity through the exercise of market power became the dominant analytic lens through which researchers sought to account for price movements.⁶⁸

⁶⁷ See, inter alia, Morris A. Adelman, "The Clumsy Cartel," (Cambridge, MA: Massachusetts Institute of Technology, 1979); Morris A. Adelman, "Scarcity and World Oil Prices," *The Review of Economics and Statistics* 68, no. 3 (1986).

⁶⁸ This does not mean there was consensus amongst economists about the causes of the rapid increase in petroleum prices in the 1970s. A number of scholars contended, for example, that price shocks followed a path explained best explained by a rise in petroleum demand and short-term losses of supply, coupled with the short-term inelasticity of demand, rather than any exercise of market power by the OPEC cartel. See Gately, "A Ten-Year Retrospective: OPEC and the World Oil Market", 1101 for a summary of this view.

2.1 Summary of Empirical Tests of Price Determinants in Petroleum Sector⁶⁹

The paradigmatic shift from Hotelling's Rule to the inventory model heralded a change in the focus of research. The majority of empirical studies now test the effect of OPEC market power on petroleum prices, or assume that OPEC is an important determinant of petroleum prices, and attempt to identify a model for understanding OPEC behavior. Most studies agree that OPEC maintains some price setting power, but is constrained by a "competitive fringe" of non-OPEC producers,⁷⁰ the existence of partial substitutes for petroleum, intra-producer relations, and demand elasticity.⁷¹ Each of these forces constrains the ability of the cartel to set prices.⁷²

The dominant strand of empirical research into the petroleum market assumes OPEC is significant, and goes on to examine how OPEC behavior should best be characterized. Dahl and Yücel, for example, reject the alternative hypothesis that OPEC is a competitive producer, instead finding that OPEC producers collude with one another when producing.⁷³ Smith focuses on the internal dynamics of OPEC in characterizing the cartel as "weighed down by the effect of forging and enforcing a consensus amongst its members,"⁷⁴ while Kaufman, Dees, Karadeloglou and Sanchez find that "OPEC has

⁶⁹ See appendix for a summary of econometric tests.

⁷⁰ Carol Dahl and Mine Yücel, "Testing Alternative Hypotheses of Oil Producer Behavior," *The Energy Journal* 12, no. 4 (1991).

⁷¹ Paul Stevens, "A Survey of Structural Change in the International Oil Industry 1945-1984," in *The Changing Structure of the World Oil Industry*, ed. David Hawdon (London ; Dover, N.H.: Croom Helm, 1985); Fadhil J. Al-Chalabi, "The World Oil Price Collapse of 1986: Causes and Implications for the Future of OPEC," in *After the Oil Price Collapse: OPEC, the United States, and the World Oil Market*, ed. Wilfrid L. Kohl (Baltimore, Md.: Johns Hopkins University Press, 1991); Solow, "The Economics of Resources or the Resources of Economics." for a theoretical treatment of the effect of substitutes on OPEC's ability to set prices.

⁷² Hillard G. Huntington, "Oil Price Forecasting in the 1980s: What Went Wrong?," *Energy Journal* 15, no. 2 (1994); Dermot Gately, "Strategies for OPEC's Pricing and Output Decisions," *Energy Journal* 16, no. 3 (1995).; Gately, "A Ten-Year Retrospective: OPEC and the World Oil Market."

⁷³ Dahl and Yücel, "Testing Alternative Hypotheses of Oil Producer Behavior", 126.

⁷⁴ James L. Smith, "Inscrutable OPEC? Behavioral Tests of the Cartel Hypothesis," *The Energy Journal* 26, no. 1 (2005).

considerable power over price via decisions over quotas, production, and operable capacity.”⁷⁵

An alternative finding is presented by Alhajji and Huettnner, who use data from 1973-1994 to reject the hypothesis that OPEC acts as a coherent cartel, and instead propose that Saudi Arabia dominates, with other member states playing an insignificant role in influencing price. They bolster their argument by noting that OPEC should not be characterized as a cartel as it has no mechanism for punishing defection by OPEC member governments, a central requirement of cartel formation in theoretical treatments, represents less than fifty percent of total world production, and commonly fails to agree on price targets.⁷⁶

Part of the difficulty in assessing the effect of OPEC on prices lies in the assumption of standard tests that OPEC maximizes profits, which ignores political preferences across OPEC countries, as well as within countries across time.⁷⁷ As Stevens notes, for example, given that an assumption about behavior is at the core of the modeling process, tests based on assumptions at odds with underlying OPEC behavior are likely to lead to faulty conclusions.⁷⁸ A second problem limiting the ability of empirical tests to identify the character of OPEC, or its precise effects on price, is data quality. Stevens also notes, for example, that data aggregation is difficult because of the differentiated nature of petroleum as a product, and the questionable reliability of data issued by the governments of producer countries. Comprehensive data sets, such as those

⁷⁵ R. K. Kaufmann et al., "Does Opec Matter? An Econometric Analysis of Oil Prices," *The Energy Journal* 25, no. 4 (2004).

⁷⁶ A. F. Alhajji and David Huettnner, "Opec and Other Commodity Cartels: A Comparison," *Energy Policy* 28, no. 15 (December 2000).

⁷⁷ Paul Stevens, "Understanding the Oil Industry: Economics as a Help or Hindrance," *The Energy Journal* 16, no. 3 (1995).

⁷⁸ *Ibid.*, 130.

produced by the International Energy Agency (IEA), are also compiled from government figures and face similar issues with reliability.

Perhaps the most intuitive, although imprecise, evidence of the influence of OPEC over petroleum price is given by Adelman and Parra. In a market with many suppliers, reservoirs with the lowest cost of marginal production should be exploited first, followed by reservoirs with the next highest marginal cost, and so on.⁷⁹ Adelman and Parra argue that the fact of OPEC influence over prices can be seen in the significant gap that exists between the marginal cost of production in low-cost production centers in OPEC, and world petroleum prices over the long-term. Using data garnered from the Saudi Aramco buyout of international oil company interests in 1976, for example, Adelman estimates Saudi development and operating costs to be approximately thirteen cents per barrel in 1978.⁸⁰ This stands in sharp contrast to oil prices over the same period, as well as the 1980s when prices dropped significantly.

Empirical tests of the relationship between market structure and price, then, make the market structure of supply a central explanatory variable. There remains disagreement, however, about the how to characterize the cartel that exercises market power. Questions center on whether OPEC is a functioning cartel, if Saudi Arabia dominates production within the cartel, and whether OPEC members attempt to maximize long-run returns on their petroleum assets, or target a revenue stream designed to meet social and political need in the short to medium term. Regardless of these

⁷⁹ Robert Mabro, *Opec and the Price of Oil* (Oxford, Oxford University Press: Oxford Institute for Energy Studies, 1992), 6.

⁸⁰ Adelman, "Scarcity and World Oil Prices."; Gately, "A Ten-Year Retrospective: Opec and the World Oil Market", 1108.

disagreements, however, empirical findings suggest that OPEC plays a role in influencing prices in the international petroleum market.

Studies also note, however, the ability of the cartel to influence price is constrained by a number of factors, including the existence of partial substitutes, cartel dynamics, and long-run demand elasticity. In the following sections I identify how changes in the structure of supply have influences prices over time. I begin by reviewing market structure in the early period of the oil market, before discussing the relationship between price and market changes in the three periods under investigation in this study.

3. Market Structure and Price across Time

In this section I describe changes in market structure, and long-run petroleum prices. In begin by outlining the structure of the international petroleum market prior to 1970.

3.1 Early Market Structure

Trading volumes in crude oil were insignificant, however this changed with the growth of the transport sector, and the shift became decisive with the inclusion of gasoline or diesel driven vehicles in WWI war planning.⁸¹ Coupled with the discovery of new reserves in regions outside the main consumer countries of the United States and Europe,⁸² this ensured that physical or political control over oil producing territories

⁸¹ The first widespread military application of petroleum products was the use of oil for naval propulsion systems, however this figured less significantly than transport in the growth in demand in WWI. 2. Anglo-Persian (the predecessor of BP) production for example, rose from 80,000 tons in 1912 to 897,000 tons in 1918. Fiona Venn, *Oil Diplomacy in the Twentieth Century* (New York: St. Martin's Press, 1986), 38.

⁸² New discoveries centered on Latin America and the Middle East.

became an important component of international diplomacy.⁸³ Nevertheless, the United States remained the dominant producer state in the world oil market prior to WWII, with the bulk of petroleum supply trade internationally made up of exports from the Gulf Coast.⁸⁴

The production of petroleum outside the United States was managed by a system of “guided laissez-faire,” dominated by a small number of multinational oil companies (MNOCs)⁸⁵ that operated in a quasi-cartel like structure, with occasional diplomatic support from host governments.⁸⁶ Colonial relationships buttressed the system, with six of the thirteen countries that later formed OPEC remaining as colonies or protectorates of the European powers until decolonization began in the late 1950s.⁸⁷ These vertically integrated MNOCs utilized their overwhelming financial power and technical expertise to establish long-term concessional contracts in non-US oil producing states, which ceded production and pricing decisions in oil resource development to them. MNOCs typically enjoyed concessions of at least fifty years, and contract terms did not stipulate spending requirements on exploration, production, or reinvestment rates.⁸⁸ They also made pricing decisions unilaterally.

⁸³ In 1901 oil was discovered in Mexico. Commercial quantities of oil were discovered in 1908 in Persia. Despite this, US production remained dominant in world markets until the 1950s, and was dominated by US firms, which until then had insignificant holdings internationally.

⁸⁴ Helmut Jack Frank, *Crude Oil Prices in the Middle East; a Study in Oligopolistic Price Behavior*, Praeger Special Studies in International Economics and Development (New York,: Praeger, 1966), 10-11.

⁸⁵ Here MNOC refers to the “majors,” made up of: Exxon (or Esso, Standard of NJ), Shell, BP (British Petroleum, originally Burma Oil and Anglo-Iranian), Gulf, Texaco, Mobil (Standard of NY), and Chevron.

⁸⁶ The phrase “guided laissez-faire” is taken from Nye. See Joseph Nye, “Energy Security,” in *Energy Security*, ed. David Deese and Joseph Nye (1980), 8. For details see Venn, *Oil Diplomacy in the Twentieth Century*, Francisco R. Parra, *Oil Politics : A Modern History of Petroleum* (London ; New York: I.B. Tauris, 2004).

⁸⁷ Nye, “Energy Security.”

⁸⁸ Louis Turner, *Oil Companies in the International System*, 3rd ed. (Winchester, Mass.: Allen & Unwin, 1983).

Major Concessions in the Middle East 1950

	Iran	Iraq	Kuwait	Saudi
Concessionaire	BP (AOIC)	IPC Group	KOC	Aramco
Production (1950 kbd)	660	140	344	547
Year of Expiry	1993	2005	2025	1993
MNOC Equity Share				
BP (AIOC)	100	23.75	50	-
CFP	-	23.75	-	-
Chevron	-	-	-	30
Exxon	-	11.875	-	30
Gulf	-	-	50	-
Mobil	-	11.875	-	10
Shell	-	23.75	-	-
Texaco	-	-	-	30
Total	100	95	100	100

Source: Parra, 2004, p. 32

Tremendous growth in petroleum discoveries in the Middle East, and the inability of the MNOCs to monopolize the development of these new fields, changed the dynamics of petroleum supply. The pace of this growth in low-cost oil from the Middle East was astounding. From 1953-1957, for example, proven reserves in the Middle East increased by 23 billion barrels annually, which was equivalent to total reserves in the U.S., the world's largest producer at the time.⁸⁹

The majors were unable to maintain control over the development of these reserves to market; by 1958, for example, there were some 190 US companies, as well as non-US firms, carrying out exploration and production activities internationally, compared to just twenty eight before 1945.⁹⁰ The inevitable result was that price moderated as the number of suppliers proliferated, and the market share of the majors fell. The majors' share of production in regions other than the U.S. and Soviet bloc fell

⁸⁹ Parra, *Oil Politics : A Modern History of Petroleum*, 35.

⁹⁰ Frank, *Crude Oil Prices in the Middle East; a Study in Oligopolistic Price Behavior*, 95.

from ninety two percent in 1955 to seventy six percent in 1965, and in refining from eighty one percent to fifty eight percent over the same period.⁹¹

This moderation of prices in the 1960s masked a second change in market structure. As noted above, MNOC market share was eroded by the rise of independent concessionaries, which presented oil producing governments with a new set of actors with whom to negotiate contract terms. Demand was also increasing quickly. World energy demand grew 4.4 percent annually from 1970-1973, and production of coal, natural gas and other energy sources were unable to meet this demand. As a result international demand for oil grew at an average of 7.6 percent per annum during the same period.⁹² Further, investment in non-Middle Eastern petroleum supplies was also inadequate to meet demand, and alternative suppliers that had made up the shortfall in previous moments when the world oil supply was constrained, such as the 1956 Suez Crisis, were unable to do so. By 1971, for example, the United States was a net-importer of oil, and two other countries that had used spare capacity to compensate for supply disruptions, Venezuela and Iran, were now members of the OPEC cartel.⁹³ These changes caused an increase in the market power of the OPEC member states that “colored everything that occurred during the next decade.”⁹⁴

3.2 Mechanism for Price Setting

The method of price setting evolved in the pre-war WWII period to reflect the dominance of U.S. crude oil on the international market. Prices were determined using

⁹¹ Steven A. Schneider, *The Oil Price Revolution* (Baltimore: Johns Hopkins University Press, 1983), 86. See also Parra, *Oil Politics : A Modern History of Petroleum*, 67.

⁹² Parra, *Oil Politics : A Modern History of Petroleum*, 161.

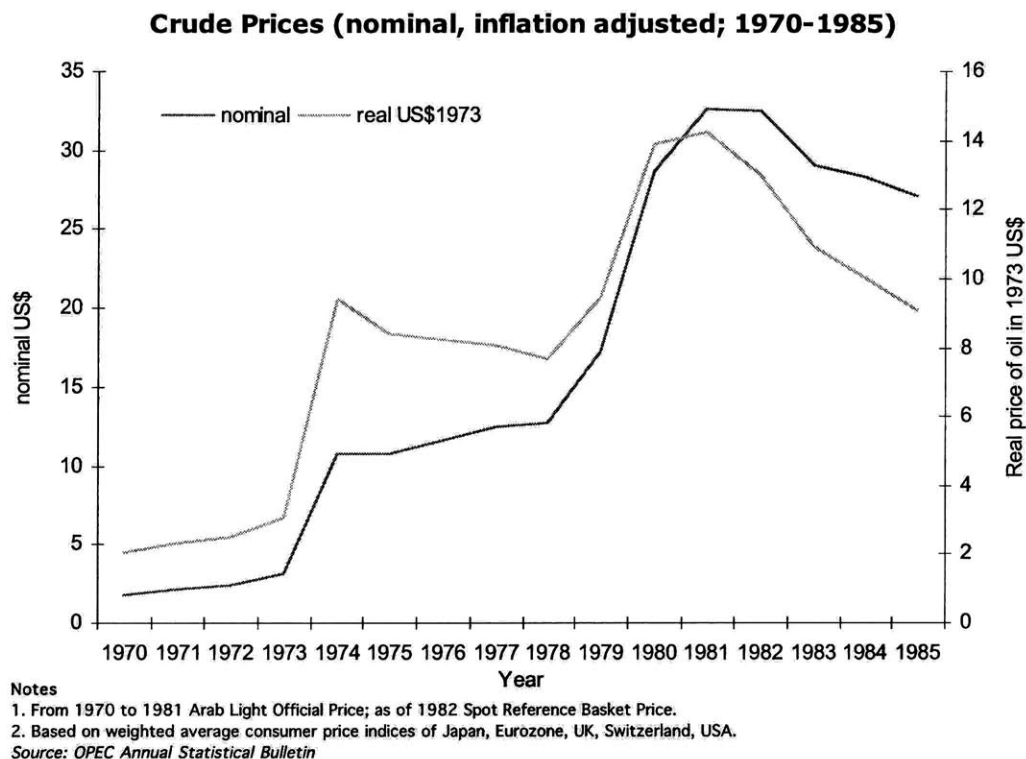
⁹³ Nye, "Energy Security", 8; Hanns Maull, "Oil and Influence: The Oil Weapon Examined," in *Economic Issues and National Security*, ed. Klaus and Trager Knorr, Frank N. (Kansas: Regents Press of Kansas, 1977), 262-3.

⁹⁴ Maull, "Oil and Influence: The Oil Weapon Examined", 114.

the price set for Gulf of Mexico oil, with freight and insurance added to produce the Free-On-Board (f.o.b.) price, representing the price at delivery to port. This was backed by a system of agreements between the major international oil firms to ensure that prices were not undercut in other markets.

Although a number of factors led to the breakdown of this model, the growth in Middle Eastern oil production and peaking of U.S. production were the most significant. These changes had two effects. First, they reduced the rationale for setting prices in the major European markets based on U.S. prices, and second, they lowered the barriers to entry into the market. The first change to pricing came with the establishment of a second base for setting prices, established in the Middle East. The price setting mechanism in this case still followed the Middle East, but allowed for price movement in a band to better reflect differences in transportation costs. Finally, from the mid-1950s discounts became increasingly common, until they were being offered on larger and larger volumes of crude at increasingly long periods. Indeed, the increased discounting was a direct cause for the formation of the OPEC cartel in 1960, which formed with the goal of bringing stability to prices. The shift in price setting from the international oil majors to the producer governments, detailed below, completed this process.

3.3 Increasing Prices (1970-1980)



By the late 1960s the governments of OPEC member countries enjoyed greater nascent market power as the primary source of internationally traded crude, as well as an increased number of potential buyers. In June 1968 OPEC fired the first salvo in the battle to assert control over pricing and production decisions through the “Declaratory Statement of Petroleum Policy in Member Countries,” extending host governments’ regulatory controls over company exploration and other details. This increased the pressure points producer governments had over firms, while stopping short of breaking the concessionary arrangements that were the foundation of the industry. The ability of the MNOCs to resist this pressure was limited; as Francisco Parra notes, “to the

companies it appeared that a huge expansion in the Middle East would be essential, and fear of losing the privileged access they enjoyed...to Middle Eastern oil, drove them to appease producer government demands.⁹⁵

Following this success OPEC demanded in December 1970 an increase in posted prices, threatening joint action if their demands were not met. This led to the 1971 Tripoli Agreement, when MNOCs were forced to negotiate posted prices for oil with OPEC governments rather than set them unilaterally.⁹⁶ Such successes led to further demands for equity participation in concessions by OPEC governments. By 1975-6 OPEC governments had moved from having no control over price and production decisions in relation to oil resources located in their territory to controlling approximately sixty percent by 1974, to almost full control by 1976.⁹⁷

This change was epochal. The transfer of control over production and pricing decisions to producer countries did not undermine the underlying structure of the petroleum market, which tends to cartelization because of the limited dispersal of petroleum resources. It did, however, increase the likelihood that disruptions would occur. First, although the MNOCs under the former production regime were able to raise prices above the marginal cost of production, the threat of sanction by home governments established a powerful politically-determined ceiling on the magnitude of excess profits they could extract.⁹⁸ Producer states, on the other hand, were less easily sanctioned, and were therefore capable of extracting greater profits from the manipulation of price.

⁹⁵ Parra, *Oil Politics : A Modern History of Petroleum*, 114.

⁹⁶ Turner, *Oil Companies in the International System*, 131.

⁹⁷ Ibid., 131. Major nationalizations of concession-holder operations took place in Algeria and Libya (1971), Iraq (1972-5), Libya once again (1973) and Kuwait, Qatar and Venezuela (1976).

⁹⁸ Morris A. Adelman, "World Oil: Ten Years after The "Energy Crisis", (Cambridge, MA: Massachusetts Institute of Technology, 1984), 9.

Second, while the MNOCs were private firms that sought to maximize profits and resisted politicization, the locus of the new cartel was found in state-led firms controlled by producer state governments. This led to the politicization of the production and distribution of oil, and, as the 1973 crisis proved, opened the possibility that the oil market might be manipulated for political as well as economic gains.

Third, the advent of a cartel dominated by state firms increased the likelihood of demand-supply mismatches as a source of market failure. The MNOCs effectively matched the production and distribution of oil in response to demand signals from consumer markets given their long experience operating within the international oil market and their vertically integrated structure, which allowed information to flow from downstream markets to upstream production. Years of concessionary arrangements left producer governments with less experience in predicting changes in demand. Further, producer government firms were often not vertically integrated, instead continuing to rely on the MNOCs for refining and distribution. This increased the likelihood of unintended volatility in price caused by a misreading of market conditions.

This vulnerability of the economies of the advanced industrial countries to supply disruptions was proven with the first (1973-4) and second (1978-9) oil crises. The first oil “shock” began ten days after the start of the Yom Kippur War between Israel and Egypt-Syria on October 16, 1973. Representatives of the Organization of Arab Oil Producing Countries (OAPEC)⁹⁹ met in Kuwait and voted to unilaterally increase the price of oil by seventy percent in order to pressure industrialized states to sanction

⁹⁹ OAPEC was established in 1969 by Kuwait, Libya and Saudi Arabia. Its membership increased to include Algeria, Abu Dhabi (now part of UAE), Dubai, Bahrain and Qatar in 1970, and Syria, Egypt and Iraq in 1972. Tunisia joined in 1982 but suspended its membership in 1986. It is functionally separate from OPEC.

Israel.¹⁰⁰ Later, in response to President Nixon's announcement of support for Israel, OAPEC announced that it would cut oil production by five percent on a monthly rolling basis, and would embargo exports to the United States and the Netherlands.¹⁰¹ The situation worsened for consumers in November when OAPEC met and decided to reduce supply by twenty five percent from September 1973 levels, and a further five percent in December. Spare capacity in other countries only replaced one million of the five million barrels per day removed from the world market, and oil prices skyrocketed.

Political upheaval in the Middle East also led to price spikes in 1978-9. In this case, however, political instability in Iran was compounded by economic opportunism. The crisis was precipitated by an Iranian oil worker strike beginning in October 1978, causing Iranian oil production to plummet. It fell below the level needed for Iranian domestic consumption on December 26, 1978 and exports stopped between December 27 and March 5. This represented a fifteen percent drop in the volume of internationally traded oil.¹⁰²

The reduction in Iranian crude supply did not lead to an absolute shortfall in crude supplied to the market. Instead, supply and demand remained largely in balance throughout the last quarter of 1978 and first quarter of 1979 as surplus capacity in other countries was available to make up the shortfall.¹⁰³ Nevertheless the price effects of the Iranian cutback were significant due to a failure of the price mechanism to accurately reflect the overall balance in supply and demand. The failure stemmed from the dual

¹⁰⁰ Punitive measures primarily against the US were initiated by Algeria and Iraq before the announcement of the embargo on October 16, but were relatively minor in scope and did not significantly affect oil flows. See Schneider, *The Oil Price Revolution*, 222.

¹⁰¹ Although Rotterdam was a key center for oil trading and distribution within Europe, the embargo only applied to domestic consumption.

¹⁰² Schneider, *The Oil Price Revolution*, 430-6.

¹⁰³ Morris Albert Adelman, *The Economics of Petroleum Supply : Papers by M.A. Adelman, 1962-1993* (Cambridge, Mass.: MIT Press, 1993), 513.

pricing structure in the international market. At the time official prices posted by producing states remained the basis for the majority of oil traded. There also existed a spot market however, which was used for the trading of smaller quantities of crude between refiners and others to enable the balancing of inventories. As sales were cut back to third-party firms by the MNOCs,¹⁰⁴ they entered the spot market, where physical supplies were limited, in an attempt to make up contract shortfalls.¹⁰⁵ This bid prices up, causing spot prices to rise to over double the official rates posted by producers, leading them to increase their prices to reflect prices in the spot market.¹⁰⁶ Problems were exacerbated by a later cut in production by Saudi Arabia's Aramco in January 1979 of around one million barrels per day.

These oil crises appeared to herald a new era for governments in the advanced industrial countries, in which control over production decisions was held by sovereign governments in producer states making decisions based not only on concerns over profit. Further, unlike in the 1956 Suez Crisis, when spare U.S. capacity had been able to compensate for supply shortfalls in Europe, U.S. crude production had peaked, meaning there was no supplier of last resort. Given the lack of ready substitutes for many petroleum products, this shift suggested an ongoing vulnerability to economic and political decisions made in producer governments. Projections of future prices made by

¹⁰⁴ Although production in the Gulf states was largely taken out of the hands of the MNOC producers, they retained a significant role in distribution.

¹⁰⁵ Thomas L. Neff, "The Changing World Oil Market," in *Energy Security*, ed. David Deese and Joseph Nye (1980).; Data on volumes traded on the spot market at the time remains anecdotal. An Exxon report calculated it at around 1.8 million barrels per day in the fourth quarter of 1979. See Parra, *Oil Politics : A Modern History of Petroleum*, 229-230.

¹⁰⁶ Neff, "The Changing World Oil Market", 30; Al-Chalabi, "The World Oil Price Collapse of 1986: Causes and Implications for the Future of OPEC", 5.

the IEA, national governments, industry bodies and firms continued to predict price increases throughout the 1980s, underlining these fears.¹⁰⁷

Changes in market structure in the following decade, however, confounded the predictions of the governments and others in the advanced industrial states. Instead of remaining high, prices began to fall from a peak of thirty-two dollars per barrel in 1981, reaching thirteen dollars in 1986 in nominal terms. The reduction in prices was also significant when adjusted for inflation, falling to \$4.40 in 1986 in real terms.

This fall in prices was caused, on the supply side, by the stimulation of investment in non-OPEC production, which weakened OPEC market power. During the 1970s OPEC members were responsible for some fifty percent of global oil production and seventy five percent of global oil trade.¹⁰⁸ The increase in crude prices of the 1970s led to new discoveries that undermined this market share, however, as well as causing fields to be developed within established producing regions that otherwise would not have been.¹⁰⁹ Exports of Mexican crude, for example, jumped from 533,000 bpd in 1979 to a peak of 1.525 million bpd in 1984.¹¹⁰ Production in the North Sea also grew significantly. In the United Kingdom controlled region it jumped from an average of 1.67 million to 2.68 million barrels per day between 1980 and 1986, and Norwegian production increased from an average of 528,000 to 806,000 barrels per day over the same period.

Ironically, the initial response of the OPEC governments to the growth in non-OPEC supply contributed to its loss of market share. Since the nationalization of

¹⁰⁷ John R. Brodman and Richard E. Hamilton, *A Comparison of Energy Projections to 1985* (Paris: OECD, 1979).

¹⁰⁸ Edward L. Morse, "A New Political Economy of Oil?," *Journal of International Studies* 53, no. 1 (1999), 7.

¹⁰⁹ Al-Chalabi, "The World Oil Price Collapse of 1986: Causes and Implications for the Future of OPEC", 131-137.

¹¹⁰ George W. Grayson, *Oil and Mexican Foreign Policy*, Pitt Latin American Series (Pittsburgh, Pa.: University of Pittsburgh Press, 1988), 41.

production OPEC established a price for long-term crude contracts, using the Saudi Arabian produced Arabian Light as a reference, and then adjusted the price per barrel for other crudes according to differences in quality. Until 1986 the OPEC governments agreed to focus on defending this official price through production cutbacks.¹¹¹ In essence this was equivalent to reducing Saudi Arabian production, as other governments within the cartel did not reduce production; Saudi production fell as a result from an average of 10.2 million barrels per day in 1980 to 3.6 million in 1985.

The flaw in this strategy was that firms producing in the non-OPEC countries were able to take market share from OPEC member countries by undercutting the official price, which the British National Oil Corporation and Norwegian producers producing in the North Sea, as well as producers in Egypt and the Soviet Union, dutifully did. As a result, OPEC's share of global oil production fell to twenty nine percent in 1986 from a peak of fifty two percent in 1973.¹¹² The loss of market share is consistently identified in OPEC statements as a key drivers behind the fall in prices, and the subsequent decision by OPEC to abandon the official price. In the opening speech to the 70th meeting of OPEC in July 1984, for example, the speaker noted his frustration at the flooding of the market by non-OPEC supplies, along with their unwillingness to restrain supplies in order to stop the falls in price: "it is not only that most of the major non-OPEC producers did not exercise any restraint on their production in an endeavor to support OPEC's effort to stabilize the market, but on the contrary, many of them have increased output."¹¹³ In the meeting minutes from the same conference it was noted that "the increased production

¹¹¹ See appendix for history of price regimes.

¹¹² Huntington, "Oil Price Forecasting in the 1980s: What Went Wrong?", 12.

¹¹³ Organization of Petroleum Exporting Countries, "Opening Address to the Eighty-Seventh Meeting of the Conference by the President of the Conference," (OPEC, 1990), 214.

from oil-exporting countries, non-members of OPEC, had greatly contributed to the recent market situation.”¹¹⁴

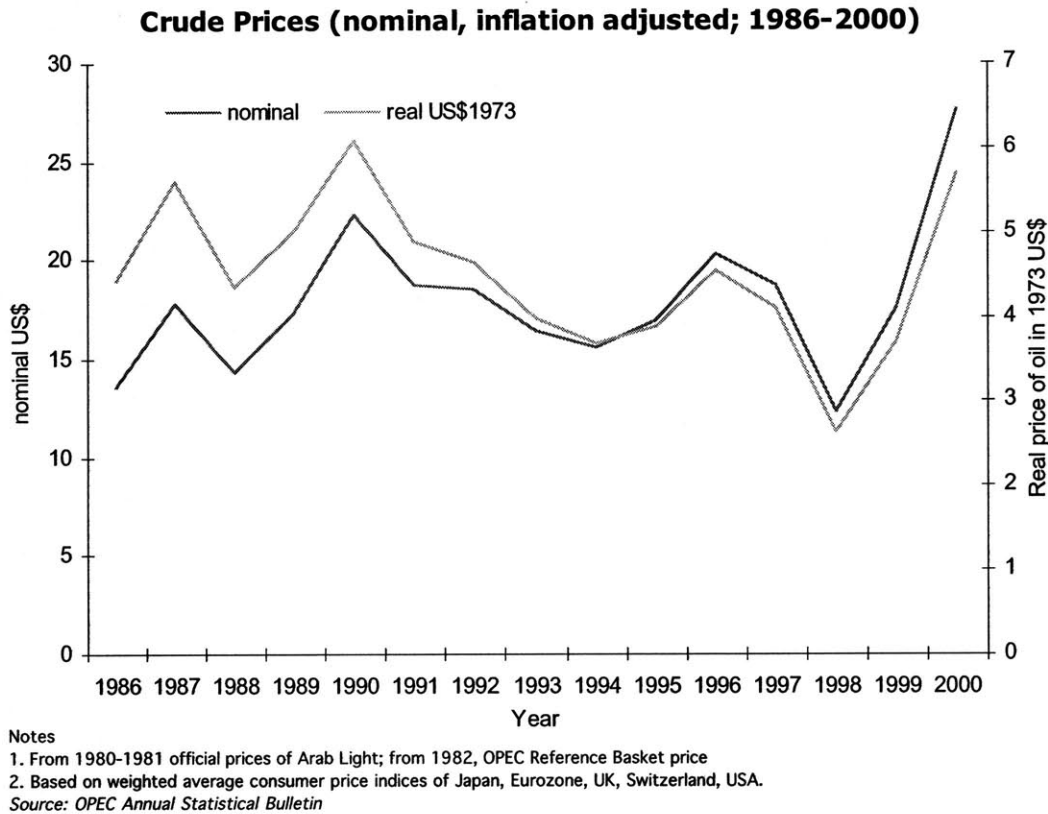
OPEC governments adopted a second strategy in the face of falling prices: negotiating with the major new non-OPEC suppliers in order to defend a price floor. This strategy was also undone, however, by the fact that new supplies came from regions in which governments were unlikely to cooperate with OPEC’s pricing strategies; the most significant contributors to the growth in production were Alaska (discovered in 1968), the North Sea (1971) and Mexico (1972-3).¹¹⁵ The United States government for example, as a net importer of oil, did not cooperate in OPEC’s attempts to raise the price floor; its response to the high prices of the 1970s were instead guided by its role as a major consumers, with policy efforts to coordinate consumer government responses to the price shock through the establishment of the IEA, as well as restrict the growth in domestic demand.¹¹⁶ Mexico also refused OPEC overtures to cooperate with its price setting policies despite having control over production decisions through the national oil company PEMEX; it had little to gain from overt cooperation with OPEC, had a different profile to the OPEC producers that gained political independence in the 1970s, given it had nationalized its industry in 1938. The Norwegian and British governments also had little sympathy for the predicament of the OPEC producers.

¹¹⁴ Ibid., 217.

¹¹⁵ Parra, *Oil Politics : A Modern History of Petroleum*, 249.

¹¹⁶ See G. John Ikenberry, *Reasons of State: Oil Politics and the Capacities of American Government*, Cornell Studies in Political Economy (Ithaca: Cornell University Press, 1988).

3.4 Falling Prices (1980-2000)

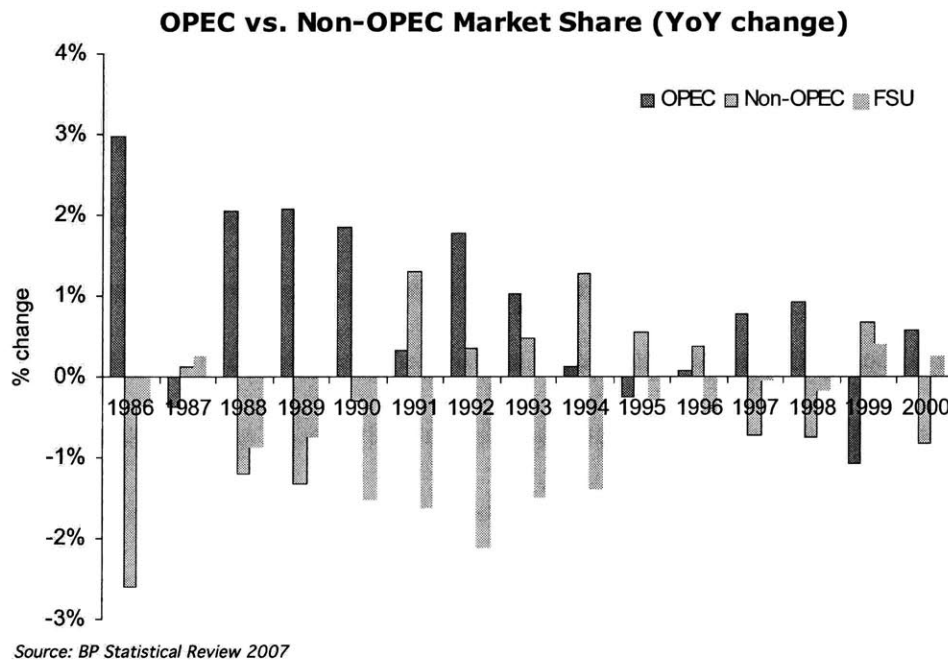


The balance between OPEC and non-OPEC supply remained comparatively stable between 1986 and 2000, and nominal prices also remained below twenty five dollars per barrel until 2000. Price was also low after adjusting for inflation, varying between two and four dollars per barrel until 2000. This decrease in prices did not signal the end of OPEC as a force in the international oil market. Indeed discipline within OPEC increased as a result of the collapse in prices that followed, and the organization continued to influence the price of petroleum, although at a far lower price level than previously predicted.

The benign market conditions were driven by ongoing growth in non-OPEC supply throughout the mid-1980s and 1990s, confounding predictions that it would be

insufficient to meet growing demand while mitigating growth in OPEC. The number of countries producing greater than 100,000 barrels per day, for example, grew from thirty six in 1980 to forty eight in 2000. Further, new suppliers in the developing world contributed a significant component of the aggregate growth in non-OPEC supply over the 1990s. From 1990 to 2000 for example In Latin and South American producers such as Brazil, Columbia, Ecuador, and Argentina as well as Mexico, added at least 100,000 barrels per day to production levels. In Asia on the other hand, producers in Australia, China, Malaysia, India, and Vietnam, contributed at least 100,000 barrels per day to the growth in non-OPEC supply. African supply also increased markedly over the 1990-2000 period, with Algeria, Angola, Egypt, Nigeria, and the Sudan, adding at least 100,000 barrels per day to production. The exception to this steady growth in production in the non-OPEC areas is the former Soviet Union, where it declined precipitously following its collapse; production from the Russian Federation, Kazakhstan and Azerbaijan fell from 11.2 to 7.2 million barrels per day (a thirty five percent drop) between 1990 and 1999,¹¹⁷ before beginning to recover. In total non-OPEC supplies grew by 7.8 million barrels per day between 1980 and 1990, with total non-OPEC oil increasing from twelve mbd in 1965 to thirty four mbd by 1995.

¹¹⁷ The most significant producers in the former Soviet Union are the Russian Federation, Kazakhstan, Azerbaijan and Uzbekistan. All figures calculated British Petroleum, *BP Statistical Review of Energy* (London: British Petroleum, 2007).



The failure of OPEC's strategy to maintain prices through production cutbacks led to the abandonment of the official selling price. The de facto abandonment of official pricing was made de jure in December 1988 when OPEC agreed at the 84th meeting of the Conference held in Vienna in November 1988 to establish a target price, named the reference price, and use production quotas to support this price level. The decision to target market share rather than price enabled OPEC to regain some of ground it had lost to new producers outside its organization. As a result OPEC market share, or more properly Saudi Arabian market share, for they had borne the brunt of the attempt to defend the official price through reducing production as noted, recovered.

OPEC meetings in the 1990s emphasized the important role the growth of non-OPEC supplies played in limiting price increases, and OPEC continued to attempt to develop cooperative relations with other oil producers in the name of market

“stability.”¹¹⁸ This continued importance of non-OPEC producers in restraining OPEC’s price setting power throughout the 1990s attained equilibrium in a system through which non-OPEC producers produce at full capacity, while OPEC producers, and most notably Saudi Arabia, as the “swing producer” adjust production volumes in order to maintain a target price.

The benign nature of the market in this period is demonstrated by the first Gulf War. Iraqi and Kuwait production plummeted during the crisis, however the shortfall was met by an increase in production of over three million barrels per day by Saudi Arabia, as well as production increases in Iran and the United Arab Emirates, which served to maintain OPEC market share but mitigated price rises. It therefore did little to alter the underlying balance between OPEC and non-OPEC producers. In other periods non-OPEC producers met the bulk of demand growth. During the 1993-4 period for example, non-OPEC producers met about eighty percent of demand growth, while OPEC production remained flat.

3.4.1 OPEC Dynamics

Aside from this reduced market share, the weakened position of OPEC was compounded by problems related to cartel bargaining and enforcement. The benefits of forming a producer cartel are obvious; by restricting production cartel members can increase prices above the marginal cost of production, thereby obtaining greater profits. This ability of cartel members to manipulate prices is constrained, however. First, if substitutes exist for the good being produced, consumers can switch consumption if price increases make it competitive. This is clearly relevant to the case of petroleum; fuel

¹¹⁸ Parra, *Oil Politics: A Modern History of Petroleum*, 265.

switching for electricity generation, for example, decreased demand for petroleum markedly in the major petroleum consuming countries in the wake of the oil crises, as outlined below. Nevertheless, the lack of substitutes derived from petroleum appropriate for use in the transport sector, most notably, mean that substitutability no longer plays a significant role in constraining the exercise of market power by OPEC.

Second, if it is relatively easy to enter the market for producing a good, then price increases are likely to prompt new entrants into the market in the search for profits. This dilutes the market share of the producer cartel, thereby reducing its ability to influence prices. The growth in non-OPEC production, outlined above, serves as a key example in the petroleum sector; increases in prices in the 1970s led to greater investment, and production, from non-OPEC areas, as shown above. Nevertheless, in the case of petroleum the geographic fact of the limited distribution of petroleum reservoirs around the world makes it impossible for countries with no indigenous petroleum resources to enter the market. Further, countries that do possess domestically located resources are also constrained by the amount of the resource located domestically, and the costs of extraction.¹¹⁹

A further set of constraints on a cartel's ability to manipulate prices relate to organization dynamics. To be effective, members of a cartel must reach agreement on production quotas designed to restrict supply, and members must have the capacity to monitor and enforce the implementation of production agreements. The bargaining and enforcement phase presents particular problems given the incentive to cheat on assigned quotas increases along with price. Further, in the case of OPEC, the bargaining and

¹¹⁹ The barriers to entry in the production of products derived from crude, on the other hand, while high, are not insurmountable. Both the Japanese and the Germans, for example, produced small amounts of transport fuel from coal during the 1939-1945 war.

enforcement process is made more difficult because production agreements are entered into by sovereign governments with policy concerns that are not purely profit driven, but extend into the social and political realms. OPEC member governments are also largely reliant on petroleum for revenues, making them less resilient to reductions in petroleum prices or assigned production volumes. Finally, different resource endowments and demographic constraints amongst OPEC member countries give their governments different incentives to acquiesce to production agreements.¹²⁰

These differences have caused difficulties in reaching agreement on quotas. Indeed, OPEC set official quotas for the first time only in 1982, some twenty-two years after the organization was first established. Problems in enforcement have also led to endemic cheating within OPEC ranks. The United Arab Emirates, for example, has continually overproduced relative to its assigned quota because the lack of unified government.¹²¹ Kuwait has also commonly ignored OPEC quotas when likely to result in reductions in export revenues.¹²² This led to Iraq opting out of participation in OPEC production agreements from 1986, and colored the Iraqi decision to go to war. In the wake of the end of the Iran-Iraq war Iran also concentrated on increasing oil revenues as quickly as possible in order to assist with reconstruction efforts, regardless of assigned quotas.

The negative effects of overproduction on OPEC's ability to maintain price levels were noted in press announcements by the organization during the 1986-2000

¹²⁰ For a theoretical treatment of the bargaining and enforcement problems in OPEC Lisa Blaydes, "Rewarding Impatience," *International Organization* 58 (2004). For an summary of the problems of bargaining and enforcement with a specific focus on OPEC see Robert Mabro, *OPEC's Production Policies : How Do They Work?, Why Don't They Work?* (Oxford: Oxford Institute for Energy Studies, 1989).

¹²¹ Mabro, *OPEC's Production Policies: How Do They Work?, Why Don't They Work?*

¹²² Eliyahu Kanovsky, *The Economic Consequences of the Persian Gulf War: Accelerating OPEC's Demise* (Washington, D.C.: Washington Institute for Near East Policy, 1992).

period.¹²³ Indeed, a systematic investigation of the degree to which OPEC members have followed agreements reveals significant and ongoing overproduction by a number of OPEC member countries. Calculating average production levels on a barrels per day basis for each member country for a given quota period, and then comparing this average to assigned quotas, demonstrates that OPEC members have produced in excess of assigned quotas fifty eight percent of the time. Further, in twenty six percent of cases, member countries have overproduced at least 100,000 barrels per day, representing significant production in excess of agreed quotas.¹²⁴ The mean level of over/underproduction in the period between the establishment of official quotas in 1982 and the end of 2000 was 104,000 barrels per day.

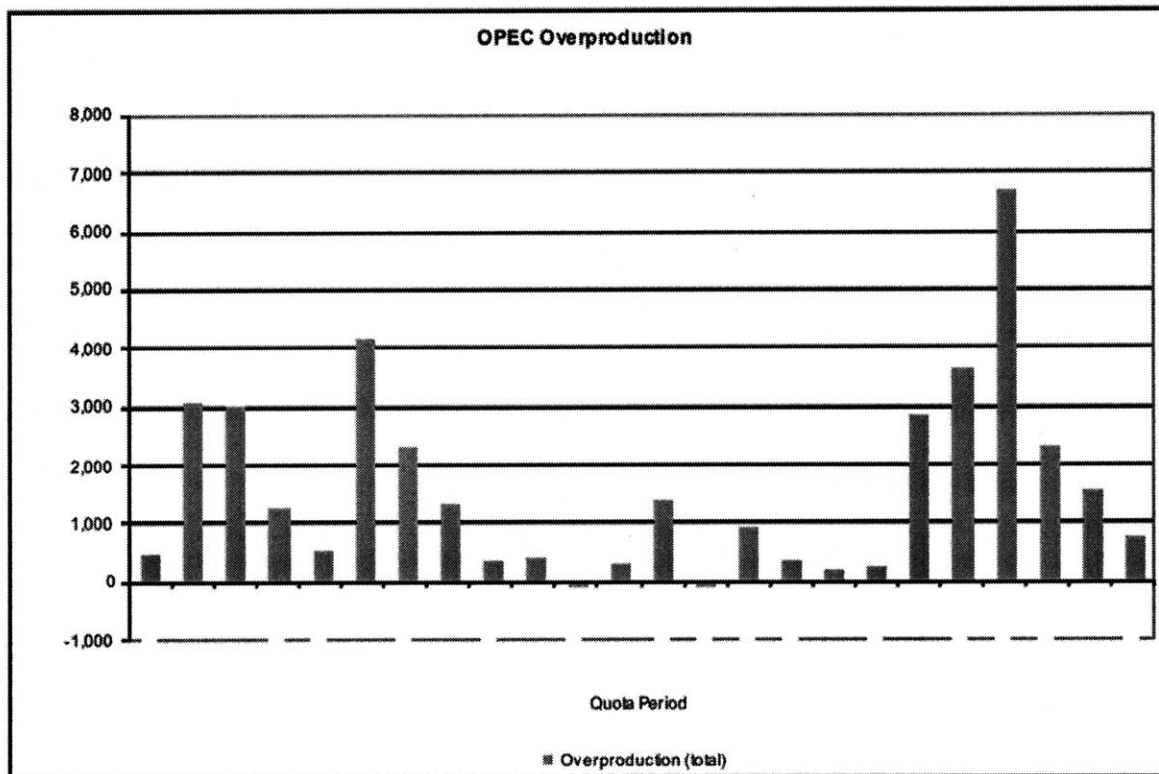
Further, these figures almost certainly understate the actual degree of cheating. Official quotas have been adjusted at times to reflect the overproduction of certain members, and OPEC's inability to enforce the agreement. Further, Iraq chose not to participate in the quota system from 1986, rather than cheat, because it was deadlocked with Kuwait over quota allocations. Finally, production data is released by the petroleum producing governments, and while it is impossible to determine how accurately they report production figures, the incentives to underreport production are clear.

Despite these drawbacks, the data demonstrates that cheating within OPEC ranks has been prevalent, an unsurprising finding considering the implications of falling petroleum prices for economic performance in the OPEC countries; the collapse in oil

¹²³ See, for example, Organization of Petroleum Exporting Countries, "Opening Address to the Eighty-Fourth Meeting of the Conference by the President of the Conference," (OPEC, 1988).

¹²⁴ Calculated by author. In methodology I Mabro, *OPEC's Production Policies: How Do They Work?, Why Don't They Work?* Saudi Arabia is excluded from the calculation given its role as swing producer.

prices in the 1980s caused widespread damage to the OPEC economies, increasing the incentives to cheat.¹²⁵

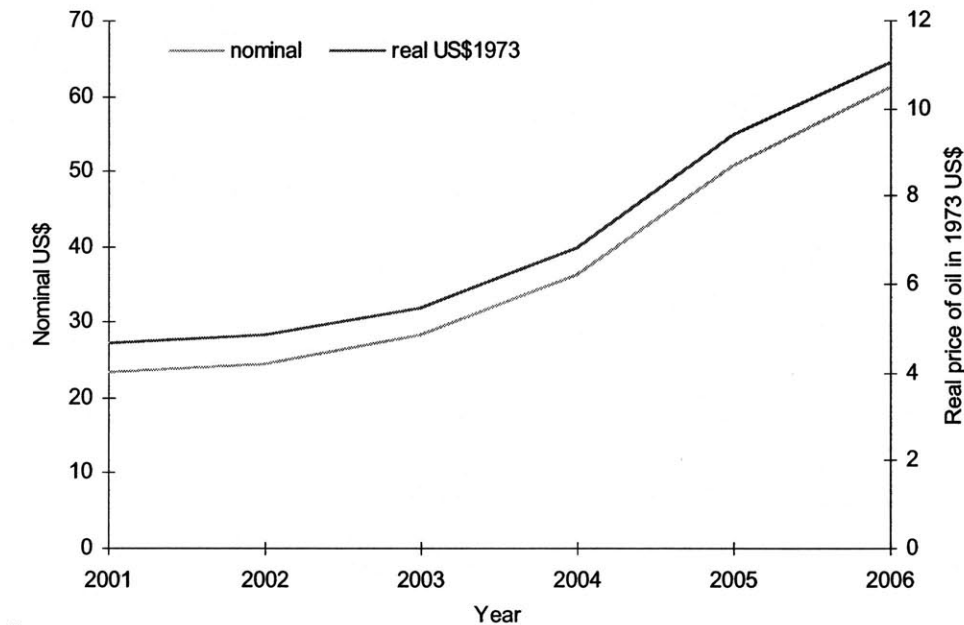


3.5 Increasing Prices (2001-2006)

Crude prices rose above the twenty dollars a barrel mark at the end of the 1990s, a significant increase from a decade earlier when they had hovered around the ten to fifteen dollar range. Prices then appeared stable until the latter half of 2003, when they increased dramatically, breaking seventy dollars a barrel at the end of 2006. They have remained above fifty dollars a barrel since this time, except a short drop at the end of 2006. Real prices also doubled, and approached the levels of 1973.

¹²⁵ Kanovsky, *The Economic Consequences of the Persian Gulf War: Accelerating OPEC's Demise*, 95.

Crude Prices (nominal, inflation adjusted; 2001-2006)



Notes

1. OPEC Reference Basket price of seven crudes (new 2005 Basket methodology includes eleven crudes)

2. Based on weighted average consumer price indices of Japan, Eurozone, UK, Switzerland, USA.

Source: OPEC Annual Statistical Bulletin

In this case there is little evidence to support the contention that the increase in prices observed in the 2001-2006 period is caused by an increase in market power by the OPEC countries. The share of the market enjoyed by OPEC fluctuated between 39.7 percent and 42.9 percent of world production during these years.¹²⁶ Indeed, rather than the expansion of OPEC market power, analysis suggested that the OPEC faced problems meeting demand because of reduced capacity. The IEA, for example, estimated that spare capacity within OPEC, which plays the role of swing producer as noted earlier, fell below one million barrels per day in 2004, meaning there were fewer producers able to match sudden increases in demand.

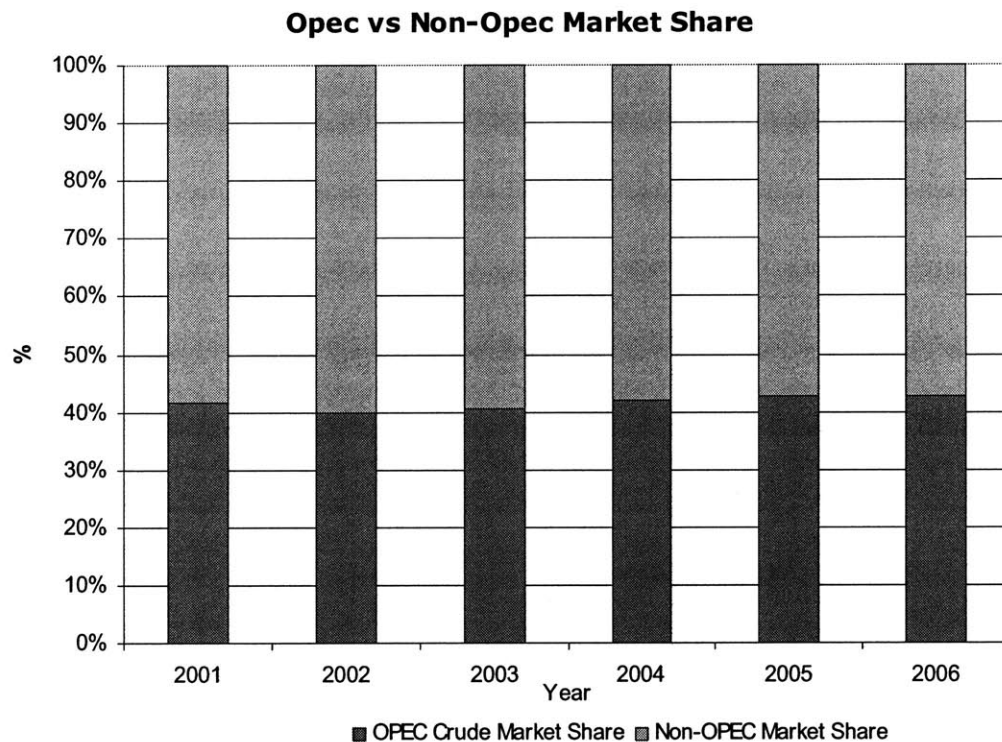
Further, although OPEC in March 2000 established a price band of twenty-two to twenty-eight dollars per barrel, above or below which member countries were

¹²⁶ Calculated from data taken from Petroleum, *BP Statistical Review of Energy*.

supposed to implement production cuts (increases), the band has only been used once, when production was increased by 500,000 barrels per day on October 31, 2000, and the use of the band was suspended on January 30, 2005. Further, following increases in production during the initial phases of the second gulf war, OPEC members have instigated a number of production cuts, as well as increases. On April 23, 2003, for example, OPEC decided to cut production by two million barrels per day; on September 24, of the same year it announced a further reduction of 900,000 barrels, and on February 10, 2004, at the 129th meeting the production quota was lowered once again by one million barrels to 23.5 million barrels per day. On June 3 of the same year, however, at the 131st meeting held in Beirut quotas were increased to twenty six million barrel, and then twenty seven million at the following meeting. Ongoing increases in price, coupled with calls by the IEA for OPEC to increase production further, suggest that restrained OPEC production has been a factor in the rise in prices.

Importantly, production in non-OPEC countries has been unable to meet increased demand while restraining price. This stands in contrast to the 1990s, when, as noted above, non-OPEC suppliers were at times responsible for meeting almost the total increase in world demand. This change in the ability of non-OPEC suppliers to meet incremental demand was driven not only by a lack of investment in production infrastructure, but also signs that a number of fields that had played a role in tempering OPEC market power in the 1980s and 1990s were beginning to mature. Total U.S. production, for example, is forecast by the UEA to fall by 170,000 barrels per day between 2007 and 2012. Production in the United Kingdom and Norway, which manage North Sea oil, on the other hand, fell by 1.6 million barrels per day between 2000 and

2007, with U.K. production falling eight percent. and Norwegian production falling three percent, over this time.¹²⁷ Mexican supply was also projected to fall by 400,000 barrels over the 2007-2012 period as its major fields mature. As a result the IEA noted that although substitutes to oil such as oil sands and bio fuels, were likely to increase as a component of overall supply, within the non-OPEC areas the “conventional crude component of global production appears...to have reached an effective plateau.”¹²⁸



Source: BP Statistical Review 2007

Projections of future prices are problematic; in the 1980s, as noted above, projections proved uniformly pessimistic about the likely level of prices, compared with actual outcomes.¹²⁹ In the 2000s, however, there once again appears uniformity in

¹²⁷ The Energy Information Agency notes that production in the Norwegian side of the North Sea appears to have peaked in 2001, and in 1999 in Great Britain. Energy Information Agency, *International Energy Outlook 2007* (Washington, D.C.: Energy Information Agency, 2007), 32.

¹²⁸ International Energy Agency, *Medium-Term Oil Market Report* (Paris: International Energy Agency, 2007), 30.

¹²⁹ For a criticism of projections see Michael C. Lynch, "The Analysis and Forecasting of Petroleum Supply: Sources of Errors and Bias," in *Energy Watchers VII: Energy Outlook after 2000: Issues of Fuel Choice and Priorities*, ed.

projections that non-OPEC production is likely to increase less rapidly than OPEC in future years, implying an increase in OPEC's share of production, and therefore a greater opportunity to exercise market power in order to support high prices. The medium term oil report of the IEA, for example, predicted that between 2007 and 2012 global oil demand would increase at 2.2 percent per year, while non-OPEC supply would grow at one percent per year over the same period, compared to 1.4 percent over the period 2000-2007.¹³⁰ The Energy Information Agency (EIA), the information gathering service of the U.S. Department of Energy (DOE), also predicted a fall in non-OPEC supply, arguing that OPEC would supply more than half of the projected increase in petroleum demand to 2015, and two-thirds of the increase to 2030, assuming existing policy settings did not change.¹³¹ This translates into a price of ninety five dollars a barrel on a nominal basis, with a projected lowest price of fifty eight dollars and a projected high of 157 dollars a barrel.¹³²

3.5.1 Other Causes of Price Increases

If market power does not explain the increase in prices, then what does? One significant component of the cause of the increase in oil prices over the 2001-2006 period is the strength in demand growth. The most notable component of the increase in demand growth during the period is the increase in growth from non-OECD regions. Of the important petroleum consuming countries, defined as those that use more than one million barrels per day on average over the 2001-2007 period, the biggest growth came

Dorothea H. El Mallakh (Boulder, CO: ICEED, 1995). 153-181.

¹³⁰ International Energy Agency, *Medium-Term Oil Market Report*.

¹³¹ Known as the *reference case*, this projection assumes no change in existing policies from those of today. Energy Information Agency, *International Energy Outlook 2007*, 29.

¹³² *Ibid.*, 30.

from China, which increased petroleum consumption by 7.8 percent per year, followed by Saudi Arabia and Iran, with 4.6 percent and four percent growth respectively. The growth in consumption in the OECD over the same period, by contrast, was virtually static at 0.5 percent.¹³³

Overall, growth in petroleum consumption continued at an average rate of increase of 1.5 percent per year over the 2001-2006 period, after growing at 1.4 percent for the 1990s, and 0.2 percent in the 1980s, with most of this growth, as noted above, generated from the developing countries rather than the advanced industrial economies. Projections of future demand assumed continued growth in the developing countries. The reference case for the IEA, for example, assumes an average rate of growth of 2.2 percent (1.9 million barrels a day) worldwide between 2007 and 2012, with growth in the non-OECD countries outpacing that of the OECD countries by three times.¹³⁴ Similarly, the EIA projects a doubling of petroleum consumption in the non-OECD countries of Asia between 2004 and 2030, compared to a thirteen percent growth over the same period in OECD countries in the North America, Europe and Asia.¹³⁵

An additional factor noted by analysts as contributing to the increase in prices is the increased role of financial players in the energy markets. A 2006 report of the U.S. Senate on the role of market speculation on oil and gas prices, for example, noted that “the traditional forces of supply and demand cannot fully account for [the] increases” in price.¹³⁶ Evidence supporting this proposition comes from the rapid rise in investment in the petroleum market coming from financial investors, the simultaneous rise in both

¹³³ Calculated from Petroleum, *BP Statistical Review of Energy*.

¹³⁴ International Energy Agency, *Medium-Term Oil Market Report*, 7-8.

¹³⁵ Energy Information Agency, *International Energy Outlook 2007*, 30.

¹³⁶ Permanent Subcommittee on Investigations of Permanent Subcommittee on Investigations of the Committee on Homeland Security and Governmental Affairs, *The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat*, 109th Congress, 2nd Session, June 27 2006, 1.

crude oil inventories, which are used by refineries to balance supply and demand, and prices,¹³⁷ and the seeming adequate levels of supply of physical crude despite the large demand increases noted above.

The rise in financial investors, in turn, emerged from the emergence of forward markets for petroleum which occurred following the establishment of spot markets as mechanisms for determining contract prices for crude oil following OPEC's abandonment of an official selling price in 1986. The forward market enables buyers and sellers of crude oil to guarantee prices for the delivery of the product at some future date, enabling them to make costs or revenues more stable. They also enable actors to enter into the market to buy and sell contracts for future deliveries of crude oil without any intention of buying or selling physical crude oil, with the intention of making profits from price movements.

The unregulated nature of the market for futures contracts means that comprehensive data is not collected measuring the ratio of speculative investment to total crude oil contracts.¹³⁸ Data nevertheless suggests that there has been a substantial increase in the amount of investments in crude oil contracts held by speculators. It has been estimated, for example, that in May 2007 twenty four percent of the two million open contracts on the main trading exchange in North America (NYMEX) were held by financial investors.¹³⁹ The International Monetary Fund (IMF) has also estimated that \$100-\$120 billion dollars of investments were made in energy markets between 2002 and

¹³⁷ Under normal conditions high levels of inventories are associated with lower prices, given the role that inventories play as an additional element of aggregate supply.

¹³⁸ The problem of lack of data was noted, for example, by the Permanent Subcommittee on Investigations of the Committee on Homeland Security and Governmental Affairs investigating the role of speculation in oil prices. See Permanent Subcommittee on Investigations, *The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat*, 6.

¹³⁹ Philip K. Verleger Jr., "Impacts of Passive Commodity Investors on Energy Markets and Energy Prices," *Comments on Energy Markets* 1, no. 1 (2007), 2.

2005, the majority of which were in crude oil.¹⁴⁰ This compares with a total world value of oil inventories of approximately one hundred and five billion dollars.¹⁴¹

4. Summary

The structure of supply is an important influence on the direction of long-term prices in the international petroleum market. For the major petroleum consuming states, it not only influences process, but also acts as a signal of future price trends. The importance of market power over the 1970-2000 is confirmed by empirical tests, although they also demonstrate that the exercise of market power is constrained by long-run demand elasticity and other factors.

Influenced by this changing structure of petroleum supply, the market experienced two major convulsions between 1970 and 1980. The immediate cause of both was political. However both followed a shift in the structure of the international petroleum market that saw decisions over production and pricing move from MNOCs to firms controlled by the governments of the producer state members of the OPEC cartel, and the loss of domination of international trade by oil produced in the United States.

Prices moderated in the early 1980s, driven by an increase in supply from areas other than OPEC, and also a reduction in demand in the major petroleum consuming states. Official estimates during the period nevertheless continued to predict that oil prices would remain high into the 1980s and 1990s. Continued growth in petroleum supplies from areas outside OPEC, and lagging demand, combined to confound these

¹⁴⁰ Pelin Berkma, Sam Ouliaris, and Hossein Samiei, "The Structure of the Oil Market and Causes of High Prices," (New York: International Monetary Fund, 2005).

¹⁴¹ John E. Parsons, *Does Wall Street Move the Oil Price?* (Cambridge, MA.: Center for Energy and Environmental Policy Research, MIT, 2007).

predictions, however. As a result prices remained stable and low in comparison with the 1970s.

Finally, in the 2000s, prices began to increase once again. The cause of price increases this time appears less influenced by a rise in OPEC market power in the short-term, although the organization has cut production a number of times in the attempt to maintain higher prices. Rather, an unexpected increase in demand from developing countries has contributed to this, coupled with the influence of a rise in the volume of oil traded by speculators. Assessments of future price trends, on the other hand, point to a fall in non-OPEC supplies over the long-term, increasing fears in the major petroleum consuming economies that the rise in prices will remain over the long-term.

Despite a range of policies introduced in the advanced industrial states in order to reduce the share of oil in their domestic economies, products derived from crude continued to dominate consumption in the transport sector, meaning that oil remained crucial to their economies. Further, this volatility had important consequences for the policies introduced in the advanced industrial states to manage their reliance on the international market for the supply of petroleum. In the next three chapters I move on to examine how policies in the major petroleum consuming countries of Japan (chapter four), France (chapter five) and the United States (chapter six) responded to these changes in price, and structure of supply, across time.

Appendix

Table 1: OPEC Membership

Country	Year of Membership
Iran	Sep-60
Iraq	Sep-60
Kuwait	Sep-60
Saudi Arabia	Sep-60
Venezuela	Sep-60
Qatar	Dec-61
Indonesia	Dec-62
Libya	Dec-62
UAE	Nov-67
Algeria	Jul-69
Nigeria	Jul-71
Angola	Jan-07
Gabon	1975 to 1995
Ecuador	1963 to 1993

Pricing System in World Oil Market

Years	Main Actors	Pricing System	Details
Around 1921-1948	MNOCs	Gulf plus	US major exporter to world market. Oil bought at well head by refiners and prices posted by them. Volume of US production controlled by state commissions. "Gulf coast plus" price and freight to buyers terminal used for oil produced outside US.
1948-?	MNOCs	London equalization	Venezuela and Middle Eastern production begins to crowd out Gulf exports. London becomes point from which to charge freight charges, as "competitive interface" b/w ME and Europe. US government pushed for the change because it paid free world's oil bills, and using the gulf plus formula meant it was paying more because of freight.
1950s-	MNOCs	NY Equalization	US becomes net importer in '49, undermining London as equalization point. New York used for calculation of prices, with some regional variants also emerging.
1973 - 1982	OPEC	Fixed Pricing	Long-term contract prices determined by reference price (OPEC) and bilaterally negotiated price (non-OPEC). Saudis act as swing producer to meet price objectives; no production quotas for other OPEC members. OPEC uses Arabian Light as marker crude, with other prices adjusted according to quality.
1982-1986/7	OPEC	Fixed Pricing + Quotas	Long-term contract prices determined by reference price (OPEC) and bilaterally negotiated price (non-OPEC). Saudis act as swing producer to meet price objectives; others have a production quota. OPEC uses Arabian Light as marker crude, with other prices adjusted according to quality.
1988-	OPEC, market	Spot Market	Long-term contract prices adjusted according to spot price. Price-band established by OPEC, backed by quotas. Saudis no longer act as formal swing producer, and explicit price target dropped.

Sources: Parra (1994), Melamid (1962), Mabro (1986)

Table Three: Summary of Empirical Tests of Determinants of Petroleum Prices

Summary of Econometric Tests of Petroleum Price Determinants

Author	Publication	Test	Time Period	Result
Kaufmann, Dees, Karadeloglou, Sanchez	EJ 25:4, p.67-90	Develops model of world oil market to test determinants of price	1986-2000	1. "OPEC has considerable power over prices." 2. "OECD stocks of crude oil have a negative effect on real oil prices."
Gulen	EJ 17:2, p.43-54	Tests whether OPEC operates as a cartel, and whether OPEC production affects the price of oil	1965-1993	1. "There is evidence of output coordination among [OPEC] members, especially in the output rationing era (1982-1993)." 2. "There is no statistically significant causal relationship between non-OPEC production and the price of oil in either
Alhajji and Huettner	EJ 21:3, p.31-60	Tests whether: i) OPEC; ii) OPEC core; iii) Saudi Arabia are competitive producers, or Cournot.	1973-1994	1. "This study suggests that the world oil market is not competitive since the competitive model is rejected and it is dominated by Saudi Arabia and OPEC or the core." 2. "The market power of Saudi Arabia, associated with oil price controls in the US, enabled OPEC in general and Saudi Arabia in particular to generate extra profits."
Smith	EJ 26:1, p.51-82	Tests alternative hypotheses of OPEC behavior: cartel, perfectly competitive, Stakelberg, Cournot	1973-2001	1. "OPEC is much more than a non-cooperative oligopoly, but less than a frictionless cartel. All traditional explanations of OPEC behavior are strongly rejected, except the hypothesis that OPEC acts as a...cartel weighed down by the cost of forging and enforcing consensus."
Dahl and Yucel	EJ 12:4, p. 117-129	Tests competing hypotheses of OPEC production decisions (dynamic optimization, target revenue, competitive, cartel, swing producer)	1971-1987	1. "We find no evidence that any of the OPEC countries behave in a competitive manner." 2. "Taken as a whole, the evidence suggests that loose coordination or duopoly is most consistent with OPEC behavior."
Wirl and Kujundzic	EJ 25:1, p.45-62	OPEC influence on oil price by measuring price effects of OPEC conference decisions	1984-2001	1. "The announcement of price increases seems to have a significant impact on future oil prices only in the medium term."
Jones	EJ 11:3, p. 117-129	Tests whether OPEC members are cartel or competitive	1983-1988	"Despite recent appearances of disarray...OPEC's production behavior can still best be explained by a partial market sharing cartel."
Griffin	AER 75:5, p. 954-963			

EJ: The Energy Journal

AER: American Economic Review

Chapter Four – Japan Case

“A tail wind blows only for those who know its direction.”
[Kaze no fuku hōkō wo shiru mono ni nomi, ōikaze wa fuku]

Liberal Democratic Party report on energy
security, November 1978

1. Outline

In this chapter I examine changes in Japanese national petroleum policies from 1980-2006. I find that the policies of national control were restructured over the 1980-2000 period, leading to a reduction in strategic intervention. I also find, however, that the rise of oil prices in the 2001-2006 period saw a partial reversal of policy intervention designed to secure national control over oil: the domestic market remained open following liberalization across the 1986-1996 period, however from 2001-2006 policies designed to enhance strategic control over the exploration and production of petroleum were reenergized.

How can we explain this partial reinsertion of policy in the form of the provision of subsidies designed to enhance strategic control over petroleum? And, given this reinvigoration of policy intervention, how can we explain the period of liberalization and privatization that occurred in the 1980-2000 period? This chapter argues that the most significant cause of policy change in the Japanese case lay in the adaptation of the policies of strategic intervention employed by the Ministry of Economy, Trade and Industry (METI) to the effects of changes in the international oil market. For METI, the shift in policy preferences over the 1980-2000 period did not amount to a rejection of strategic control in the form of supporting national firms as the in the oil sector. Instead, these changes represented a restructuring of the policies used to promote domestic firms. In refining and distribution, support for firms failed to produce a significant international

oil major, and Japanese firms operating in the sector remained fragmented and small. When the collapse in demand following the price rises of the 1970s undermined the viability of the firms, decisionmakers responsible for oil within METI chose to expose domestic firms to prices in the international market, rather than continuing to protect them from competition. This, it was hoped, would force mergers between these firms, thereby making them more competitive internationally, meeting not only METI's preference for protecting against oil supply volatility, but also promoting domestic firm competitiveness. The success of this strategy, and the changes it wrought on the firms themselves, meant there was no voice for increased intervention in the downstream sector under conditions of high prices in the 2001-2006 period. Instead, both firms and METI bureaucrats shifted their preferred policies towards the provision of subsidies in order to help these firms succeed in the upstream.

Similarly, in exploration and production, the process of privatization was not caused by a rejection of the goal of strategic control, nor by firms rejecting policy support because of their competitiveness. Rather, it was caused by a restructuring of the instruments through which security through national control was sought in response to the effects of falling oil prices on the existing policies of support. This left the door open to the reversal of policy under the environment of high prices during the 2001-2006 period.

In line with the framework developed in chapter two, I argue that changes in the preferences of METI within responsibility for oil policy, and firms, as they adapted to shifts in the oil market, were the most important causes of policy change. I also proposed, however, that they were forced to negotiate with others when determining the particular

form this support took. In particular, groups affected by policies that increased oil product prices worked to ensure the costs they incurred from strategic intervention were minimized. These details are also outlined in this chapter.

As with the other empirical chapters that make up this study, I begin by establishing the initial policy setting through a review of Japanese petroleum policy to 1980. I then examine the liberalization and privatization process during the 1980-2000 period, and the partial reversal of that process under conditions of high petroleum prices.

2. Initial Conditions

The history of Japanese policy intervention in the petroleum market is conditioned by Japan's almost total lack of domestic reserves of petroleum, and the absence of colonial possessions with energy resources.¹ State support for national oil firms has, as a result, been a longstanding public policy goal. As in other countries, consumption in the late 19th and early 20th century was concentrated in kerosene, which was used primarily for illumination purposes. An increase in the consumption of light oils, used in the fishing industry, and gasoline and heavy oil, used by the military, meant the share of kerosene fell in relative terms following WWI however, from 65 percent of total energy demand in 1914 to 35 percent in 1924.

Domestically produced petroleum proved inadequate to meet growing demand. Production peaked following the introduction of rotary drilling at 83 percent of domestic consumption in 1918, a level it has never since reached.² The increasing use of heavy oil

¹ The position of Japan stands in contrast to both France, which had concessions in the Middle East as well as petroleum producing colonial possessions in the Franc Zone. It also contrasts with the United States, which had significant domestic petroleum reserves of its own.

² Nihon Sekiyu, *Nihon Sekiyu Hyakunenshi [a One Hundred Year History of Petroleum]* (Tokyo: Nihon Sekiyu Kabushikigaisha, 1988), 208. For an English language history see Richard J. Samuels, *The Business of the Japanese State: Energy Markets in Comparative and Historical Perspective* (Ithaca: Cornell University Press, 1987).

in military operations, and supply problems of the first world war, led the Japanese navy in 1918 to develop its first detailed policy position on securing petroleum. It emphasized strategic control of petroleum resources through the nationalization and creation of a domestic monopoly in refining, as well as maximizing imports during peacetime in order to retain domestic reserves of crude for use in the event of war.³ Although not adopted by cabinet, this marked the first attempt by an arm of government to address the problem of petroleum security of supply.

The first attempt by government to design a national petroleum policy came in 1921 by an investigative committee (*sekiyu seisaku ni kansuru chōsakai*). It was followed by a Ministry of Commerce and Industry (MCI) effort in 1926 to develop a national fuels policy through the Fuel Investigation Committee (*nenryō chōsakai*). Its findings were passed to an industrial commission under the Minister for Commerce and Industry, leading to the establishment of the ministry's first detailed policy in 1929. One component of this study was the goal of increasing national control of downstream refining industry as an element of national policy, although it did not receive budgetary support.⁴

The Manchurian crisis of 1931 and subsequent expansion of Japanese military operations on the continent played an important role in moving oil policy forward. Most obviously, it increased demand for petroleum products. Gasoline demand, for example, increased from 555,060 kilolitres in 1930 to 1,006,507 in 1938. Over the same period

³ “*Gunjijō no Hitsuyō ni Motodoku Sekiyu Seisaku*.” Cited in Nihon Sekiyu, *Nihon Sekiyu Hyakunenshi [a One Hundred Year History of Petroleum]*, 205-6.

⁴ “*Sekitan Sekiyu Oyobi Sono Daiyō Nenryō ni Kansuru Gutaiteki Kokusaku*.” Nihon Sekiyu puts this lack of support down to the fiscal crunch caused by the depression. See *Ibid.*, 303.

heavy oil consumption also increased from 1.1 to 2.6 billion litres.⁵

As in France, the push for policy intervention was driven by the policy preferences of domestic refining firms, which were placed in a difficult position because of rising crude prices. Prices for crude increased from 9.53 yen in December 1931 to 20.78 yen/100 gallons in August 1932 due to restrictions on U.S. exports, yet rapidly growing refining capacity and a fragmented industry limited the ability of firms to raise prices. In response, the MCI brokered negotiations between the six major firms in the downstream industry, leading to an agreement on October 25, 1932 to coordinate prices and output. In short, to cartelize.⁶

Public purpose and private profits underpinned the development of a national energy strategy, with cooperation between the MCI, the army and navy, finance and foreign ministries, and the resources bureau (established within cabinet in May 1927). Sub-committees were charged with designing policies to promote the domestic petroleum industry, increase participation in upstream exploration and production by Japanese firms, and develop alternative fuels. They reported to cabinet on September 15 of the same year that strategic control over energy resources was the best method for enhancing energy security of supply. The report concluded, for example, that importers and refiners of crude oil should be made responsible for maintaining stockpiles equivalent to fifty percent of previous years' imports. The report also recommended the government establish a licensing system to regulate imports of crude and petroleum products and restrict entry into the domestic refining market, provide subsidies for exploration and production in order to increase control over upstream resources, and subsidize the

⁵ Tosuke Iguchi, *Nihon Sangyo Hattatsushi: Sekiyu* [*The History of Industrial Development in Japan: Petroleum*] (Tokyo: Gendai Nihon Sangyo Hattatsushi Kenkyukai, 1963), 245.

⁶ *Ibid.*, 245-6.

production of domestically available alternatives to petroleum products, such as ethanol and oil shale.

2.1 Petroleum Industry Law (1934)

The formation of the formal institutions of strategic control came with the passing of the first industry legislation in March 1934. At the time the domestic refining market was fragmented, with only eight refiners owning more than one refinery, and only four of seventeen importers of crude oil also owning refining assets.⁷ The law, which came into effect from July 1 of the same year, gave the government the authority to control trade flows and refining capacity through licensing. It also established a legal basis for providing subsidies for domestic exploration and production and stockpiling, as well as giving the government the power to fix prices and distribute supply amongst domestic refiners. In short, the law gave government a comprehensive set of indirect policy instruments (trade, fiscal, and regulatory) through which to shape the domestic petroleum market in order to increase the share of domestic firms.

Strategic control also meant shifting market share away from international firms marketing petroleum products in Japan. In the first set of gasoline production quotas, allocated in 1935, domestic firms were given favorable conditions, reallocating some ten percent of market share towards them. The process was repeated across the major petroleum products.

The government effort to promote cartelization and increase the market share of Japanese firms was taken over by industry once the government sponsored agreement lapsed in 1934. The seven major firms in the industry formed a price cartel across

⁷ Nihon Sekiyu, *Nihon Sekiyu Hyakunenshi [One Hundred Year History of Petroleum]*, 312.

petroleum products that excluded Rising Sun and Standard Vacuum, which were the major foreign marketing firms operating in the Japanese market. The effects in terms of prices, and market share, can be seen below:

Domestic vs. Foreign Firm Market Share in Major Petroleum Products 1934-37⁸

		1934	1935	1936	1937 (planned)
Gasolin	Refiner (Dom.)	47%	49	52	57
	Importer (Dom.)	4	4	5	5
	Importer (For.)	49	47	43	38
Kerosene	Refiner (Dom.)	54	57	62	67
	Importer (Dom.)	0	0	0	0
	Importer (For.)	46	43	38	33
Lubricant	Refiner (Dom.)	89	87	88	90
	Importer (Dom.)	1	2	2	2
	Importer (For.)	10	11	10	8
Heavy Oil	Refiner (Dom.)	15	18	24	25
	Importer (Dom.)	44	40	40	45
	Importer (For.)	41	42	36	30

The second feature of the institutions of national control focused on the upstream production of crude. On March 28, 1938 the Petroleum Resources Development Law (*sekiyu shigen kaihatsuhō*) established a system of fiscal support for Japanese firms, who were only required to repay if they moved to the production phase. It also established a registration system for exploration and production projects, improving information flows to the MCI on upstream planning by private sector firms.

2.2 War and Occupation

Unsurprisingly, the Pacific War led to the increasing use of policy instruments

⁸ From "Petroleum Industry Law-related Materials," in *Ibid.*, 307.

designed to increase national control over the petroleum supply chain. In the downstream sector, the outbreak of war achieved in the short term what the first PIL was only partially successful in doing: increasing the control of national firms over the domestic market for petroleum products. The domestic refining industry was converted into a monopoly in September 1939 (*sekiyu kyōhan*). This structure continued for nine years before being disbanded by the occupation authorities GHQ in March 1949. Increased control over refining and marketing was useless, however, without adequate supplies of crude, and it is here that military and bureaucratic decisionmakers faced the problem identified some twenty years earlier by military planners as Japan's Achilles heel. Until the first world war non-belligerents typically provided the physical and financial resources required to wage war. That this was no longer the case was brought home starkly to the Japanese government by the September 1941 decision by the United States to embargo the export of oil to Japan. At the time Japan relied on the United States and Britain for some ninety percent of aggregate crude oil and petroleum products.⁹

The lack of access for Japanese firms to upstream development rights represents a fundamental difference with France, where CFP's stake in the IPC, and Elf-ERAP's access to upstream reserves through the discovery of substantial crude resources in Algeria and elsewhere in the Franc Zone, gave French firms direct access to the production of crude. Japanese firms, on the other hand, remained largely reliant on purchases of crude produced by others.

Imperial Oil, a public-private partnership established in October 1941, a month after the start of the oil embargo, attempted to manage this problem. It was charged with carrying out upstream exploration and production operations, however its efforts proved

⁹ Ibid., 318

inadequate. By the end of the war it controlled ninety-one percent of Japan's meager domestic production, but efforts to gain control of resources internationally floundered.

Defeat in war had an important long-term effect on firms and others involved in the Japanese petroleum sector. Whereas non-Japanese firms in the pre-war period largely marketed petroleum products, or sold crude, to Japanese refiners and distributors operating within the domestic market, the years during and after the occupation saw foreign firms enter into direct agreements with Japanese firms, enabling them to enter the downstream sector. As a result Japanese refining firms lost its monopoly in petroleum refining and marketing.

Japanese firms were also left with two-thirds of their refinery capacity destroyed following the war,¹⁰ and demand was anemic, falling from over five million kilolitres at the start of war between China and Japan in 1937, to some 256,000 kilolitres at the conclusion of the war. The occupation authorities also closed refineries still operational on the pacific coast in October 1945, and banned crude oil imports until January 1950. This left the surviving industry to rely on meager production from domestic fields and smaller east coast refineries.

The most significant effect of the occupation on firm alliances was the tie-up of Japanese with U.S. firms in refining and marketing. The new joint ventures made sense to both policymakers and firms for both political and economic reasons. Foreign firms had ready access to the crude imports that Japanese firms required in order to meet rising demand, while Japanese firms retained domestic sales and marketing expertise. Further, domestic firms were too weak to finance the expansion of refinery capacity, and joint

¹⁰ *Oil and Gas Journal*, December 26, 1955,173-4. Cited in Chih Chen Ching, "Crude Oil Prices and the Postwar Japanese Refining Industry" (Doctor of Philosophy, Massachusetts Institute of Technology, 1967), 165.

ventures with foreign firms lowered the cost of capital when borrowing from third-parties or directly from international petroleum firms.

Tie-ups also weakened political opposition within the occupation authorities to rehabilitation of the domestic petroleum industry. Between 1949 and 1952 the major Japanese firms partnered with foreign firms: Caltex with Koa Petroleum (July 1949), Nihon Sekiyu with Caltex (1951), Mitsubishi Petroleum with Tidewater, Toa Fuels with Standard Vacuum (February 1949), Showa Petroleum with Shell (December 1952), and Maruzen Petroleum with Union (August 1949). These cooperative relationships took the form of joint ventures, as required by the Law Concerning Foreign Investment.¹¹ Further, foreign firms were unable to own more than 50 percent of these ventures, meaning Japanese managers maintained control over the firm while gaining access to the capital needed for investment. Refining and marketing firms, such as Idemitsu Kōsan, that did not enter into tie-ups with foreign affiliates, gained access to capital through loans from the majors, or from banks with the majors acting as co-signatories, in return for guarantees of the purchase of crude.¹² The result was that by 1962 foreign petroleum firms controlled about ninety percent of Japanese imports of crude oil through long-term contracts, and held stakes in some seventy five percent of refining capacity.¹³ Strategic control remained out of reach.

¹¹ The Law Concerning Foreign Investment was passed in May 1950 with the goal of encouraging investment in capital-poor Japan while maintaining control over foreign currency reserves. The law stated that investment was allowed only if it contributed to the self-support and sound development of the Japanese economy as well as to the improvement of the international balance of payments." See Laura Elizabeth Hein, *Fueling Growth : The Energy Revolution and Economic Policy in Postwar Japan* (Cambridge, Mass.: Harvard University Press, 1990), 209.

¹² Ching, "Crude Oil Prices and the Postwar Japanese Refining Industry", 182-4.

¹³ Hein, *Fueling Growth: The Energy Revolution and Economic Policy in Postwar Japan*, 305.

2.3 Petroleum Industry Law (1962)

The rehabilitation of Japan's economy led to an adjustment in the instruments used to protect and nurture domestic industry. Since the occupation international flows of trade and capital were managed through The Foreign Exchange and Foreign Trade Control Law (December 1949), and the Law Concerning Foreign Investment (May 1950). The laws were designed to manage the twin problems of capital and foreign currency scarcity. In the petroleum sector they enabled the government to allocate foreign exchange towards the purchase of crude and away from the importation of crude products. This served to enhance the goal of supporting national firms in the oil sector by increasing the amount of petroleum products refined in Japan, as well as allocating Japan's dollar reserves efficiently.

The reentry of Japan into the world economy, symbolized by negotiations to enter the General Agreement on Trade and Tariffs (GATT) and become an article eight member of the International Monetary Fund (IMF), made the existing policy structure designed to enhance national control untenable.¹⁴ These negotiations led cabinet to announce, on September 26, 1951, that it would liberalize the importation of crude oil by October 1962. The second PIL was the response to this change, and enhanced national control over domestic industry while conforming with the requirements set for entry into the international trade regime. In other words, this was a *reformulation* of the policy framework used in the effort to enhance strategic control, rather than an increase or decrease in this efforts.

As with the first PIL, the new law gave the government authority to influence

¹⁴ Article eight in the IMF prohibits restrictions on foreign currency flows to balance international payments. For details see Bai Gao, *Japan's Economic Dilemma: The Institutional Origin of Prosperity and Stagnation* (New York: Cambridge University Press, 2001), 101-103.

supply and pricing decisions. It also mimicked the pre-war powers conferred to MITI's predecessor, establishing governmental authority over the flows of crude and crude products in and out of Japan, as well as the distribution of these goods within the Japanese market.¹⁵ That the goal of the law to enhance strategic control over the petroleum industry is made clear in the final report of the roundtable established to debate how to frame national policy:

"Petroleum is an international product, but is also a product for which our country is extremely reliant on imports. It is therefore necessary for us to promote a comprehensive petroleum policy based on placing a part of the domestic petroleum industry under the influence of the state, in order to secure reasonably priced and stable supplies."¹⁶

Ultimately, after some nine revisions, the bill was passed by cabinet on March 6, 1962. Compromise with opponents led a clause initially to be attached stating that the law could be changed or abolished depending on changes in external market conditions. Industry lost control of the debate in parliament, however, and the clause was dropped during the committee phase. This meant that the law as it came into force on July 10 with no implicit sunset clause.¹⁷

The main industry association for the downstream sector, the Petroleum Association of Japan (PAJ), failed to produce a unified position on the bill. As in the United States, where independent producers were the strongest supporters of trade restraints under the banner of national security, smaller domestic refining firms supported the bill because of the protection it afforded them. Larger firms, on the other hand, either agreed with its temporary implementation to allow time for domestic firms to adjust, or

¹⁵ Although the law conferred considerable powers to the state it represented a significantly weaker outcome than that initially hoped for by state planners in energy policy. For a summary of the politics of the enactment of PIL, as well as a general summary of the extent and structure of Japanese state intervention in the oil sector to the mid-1980s see, Samuels, *The Business of the Japanese State: Energy Markets in Comparative and Historical Perspective*, 168-227.

¹⁶ Cited in Iguchi, *Nihon Sangyo Hattatsushi: Sekiyu*, 528.

¹⁷ Nihon Sekiyu, *Nihon Sekiyu Hyakunenshi [a One Hundred Year History of Petroleum]*, 591-5.

came out against it. Firms in the upstream sector, on the other hand, supported the law as it promised greater support for domestic exploration and production.¹⁸

The central feature of the PIL was a five-year rolling plan prepared on behalf of the MITI minister that calculated supply and demand of crude and crude products, as well as refining capacity levels. The plan was enforced through a system that required firms to lodge plans with the ministry, and conferred the authority to the regulator to order changes to these plans, as well as to alter production levels in refineries. Government also regulated the construction of new refining capacity and retained the power to halt mergers and acquisitions of refining companies. In order to manage supply, refineries were required to notify the state of annual refining plans, and MITI, as the competent ministry, nominally had the authority to order changes to these plans in response to market conditions. Although imports of petroleum products were allowed, they were intended solely to meet gaps between planned domestic production and demand. This occurred most commonly in the cases of naphtha and residual fuel oils.¹⁹

This amounted to the archetype of plan rational *etatism*. In law the minister was conferred with the authority to order firms to adjust import plans in order to solve mismatches between planned consumption and production. In practice, however, this power was not exercised between 1962 and 1988, when Lions Petroleum attempted to import petroleum products without the cooperation of the regulator. Instead, the industry arranged adjustments through the Petroleum Industry Association, with MITI coordinating in the case the firms were unable to reach agreement among themselves.

¹⁸ Major consumer industries such as electricity and steel that used petroleum products as feedstock lobbied against the law, arguing it would raise prices for petroleum products.

¹⁹ Tsutomu Toichi, "OPEC Export Refineries and the Implications for Japan's Petroleum Policy," (Cambridge, MA: MIT, 1985).

This did not mean the law was irrelevant to corporate strategy. Instead, it shifted the basis of competition between firms from price (refined products have uniform standards, making price the focus of competition) to refining capacity. Production schedules were determined using a formula that included installed refining capacity, meaning that constructing refining capacity guaranteed an increase in market share. This made competition for licenses strong: in the first year following the passing of the law applications were made to increase refining capacity by 1,037,150 barrels per day, of which 421,150 barrels were approved. Between 1963 and 1973 the applications to approvals ratio fluctuated between fifteen and forty percent, offering further evidence of the significance of licenses.²⁰

The PIL established a formal basis for employing policy instruments aimed at enhancing strategic control over petroleum. In this it marked a shift from the previous regulatory framework employed after WWII, in which laws originally designed to manage the problem of capital scarcity were employed to achieve this policy goal.

The law also created a new institutional structure within which stakeholders could negotiate over energy policy. First established under the Industrial Structure Council, this energy policy committee was made an independent advisory committee to the minister in June 1965, and became the key venue for negotiations between organizations and actors with an interest in petroleum, and the energy sector more generally.²¹

The first report, produced by the committee in November 1963, was pivotal in

²⁰ Nihon Sekiyu, *Nihon Sekiyu Hyakunenshi [a One Hundred Year History of Petroleum]*, 641-2.

²¹ On the committee system see Chalmers A. Johnson, *Miti and the Japanese Miracle : The Growth of Industrial Policy, 1925-1975* (Stanford, Calif.: Stanford University Press, 1982); Frank J. Schwartz, *Advice and Consent: The Politics of Consultation in Japan* (Cambridge, UK ; New York: Cambridge University Press, 1998).

establishing the policy instruments and organizational resources available to marshal in response to price turbulence in the 1970s. It set the scene by predicting that the domestic demand for energy was likely to double every five years, far outpacing the capacity of domestic production. In recognizing this, it confirmed the need to develop policies to manage the emerging reliance on external supplies for a product of increasing importance to the civilian economy. It also implied a shift away from policy discrimination in favor of coal, which had been based on the assumption that coal, coupled with domestically produced oil, would be sufficient to meet the energy needs of the Japanese economy.

The report argued that national policy should enhance strategic control over energy supplies through subsidizing the development of oil fields both domestically and internationally by Japanese firms, increasing the number of tankers controlled by Japanese firms, as well as continuing to enhance the independence of the Japanese refining industry. It also proposed the first hard target for strategic control of upstream resources: by 1987 thirty percent of oil consumed in Japan should be developed by Japanese firms.²²

Two new organizations were created in order to promote these goals. In the downstream, smaller national firms were encouraged to merge through the provision of subsidies, with the goal of promoting domestic refining and reducing the market power of international majors in the Japanese market. A step towards this goal was achieved in 1965, when Kyōdō Petroleum was established from national firms Asia Petroleum, Japan Mining, and Tōa Petroleum. Low-cost financing from the Japan Development Bank (JDB) and preferential treatment in the assigning of refining capacity, enabled the newly

²² See Samuels, *The Business of the Japanese State: Energy Markets in Comparative and Historical Perspective*, 205-6. As such, the law was an almost perfect mirror of the French law.

established firm to grow from 11 percent of the domestic market in 1967 to 18.5 percent in 1970, the largest share of any refiner.²³

As with the formation of the CFP in France, the organization of the Japan Petroleum Development Corporation (JPDC), created in 1967 in order to promote upstream goals internationally, reflected public and private purpose. Until 1964 only four Japanese firms operated in the upstream. Domestically, Imperial Oil and JAPEX continued to develop Japan's meager resources, while Arabia Petroleum and the North Sumatran Petroleum Development Firm operated internationally. The creation of the JPDC encouraged firms to move into the upstream. It did so through the provision of cheap financing for exploratory activities, rather than operating upstream projects directly. As a result, by the end of 1973 there were some forty firms engaged in the upstream, although not all were operators but rather participated as equity holders.

By 1967, then, the full panoply of policy instruments identified in chapter two were applied in the search for security through control by national firms. The government directly participated in the market through the JPDC and JAPEX, which used fiscal instruments in the form of subsidies and low interest loans to support Japanese firms in both the upstream and downstream. Trade instruments also restricted imports and exports in ways that strengthened the domestic refining industry, and regulatory instruments gave the government the authority to regulate sectoral investments and prices.

2.4 Response to Oil Shocks

At first the high prices of the 1970s reinforced the rationale behind strategic intervention in the upstream and downstream sectors of the petroleum industry. Major

²³ See Nihon Sekiyu, *Nihon Sekiyu Hyakunenshi [a One Hundred Year History of Petroleum]*, 650-651

consumer groups acquiesced to the increased use of fiscal and regulatory instruments on energy security of supply grounds. The regulator, political actors and firms operating in the upstream and downstream sectors largely agreed that increased support was desirable, although there was disagreement over where the line should be drawn between the private and public sector spheres of action.

In refining and marketing, the implicit authority conferred to government through the PIL was made explicit through the passing of two laws conferring formal powers to regulate prices and distribution during emergencies. In the upstream a new body was created with increased authority to support upstream activities on security of supply grounds, as well as establish a national petroleum stockpile. The biggest area of disagreement occurred not over whether to enhance strategic intervention, but rather to how to fund it. Here, consumers and the downstream firms fought, and lost, a battle with the regulator over whether to broaden the tax base in order to fund these new initiatives.

In general economic terms, the first oil shock magnified inflationary pressures already present in the Japanese economy, and heralded the end of Japan's long period of remarkable growth.²⁴

2.5 Petroleum Sector Performance

The economic shock of petroleum price rises forced the domestic industry into crisis. This did not occur because of a loss of actual physical supplies of crude oil; the

²⁴ In the United States the Nixon Administration suspended convertibility of the U.S. dollar to gold on August 16, 1971, and two days later the Bank of Japan revalued the Japanese yen upwards by almost seventeen percent to 308 yen to the dollar, the first adjustment in the yen-dollar rate since the Dodge Line established a rate of 360 yen in 1949. Following this, the Bank of Japan bought U.S. dollars to manage the rise of the yen. Coupled with loose fiscal policy settings associated with Japanese Prime Minister Tanaka Kakuei's program of Rebuilding the Japanese Archipelago, this fed inflationary pressures into the Japanese economy. See Suzuki Yoshio, *Nihon No Kinyū Seisaku [Japanese Fiscal Policy]* (Tokyo: Iwanami Shinsho, 1993), 36-43.

amount of contracted crude lost by Japanese firms through the OAPEC embargo was not as large as predicted in industry estimates. Initial estimates made in mid-November 1973 were that almost one-third of contracted import volumes would be lost, however actually only one-fifth of contracted crude was lost, and for a one month period in November 1973 and February 1974. Otherwise the reduction of import volumes stood at around ten percent of contracted supply.

First Oil Shock: Crude Oil Import Plans vs. Actual

	Oct-73	Nov-73	Dec-73	Jan-74	Feb-74	Mar-74
Initial Import Plan	26,488	28,031	27,635	26,378	25,717	25,810
PAJ Assessment (11/16/73)	25,658	24,942	19,125	17,701	17,211	17,144
(ratio to initial plan)	96.9%	89.0%	69.2%	67.1%	66.9%	66.4%
PAJ Assessment (12/05/73)	25,032	22,995	22,734			
(ratio to initial plan)	94.5%	82.0%	82.3%			
Actual	24,975	23,343	25,126	23,718	21,110	25,113
(ratio to initial plan)	94.3%	83.3%	90.9%	89.9%	82.1%	97.3%

Source: *Nihon Sekiyu, Nihon Sekiyu Hyakunenshi [A 100 Year History of Japan Petroleum]*, p. 759.

Rather, the effect of the crisis had a short-term, political component, and a long-term structural component. In the short-term, downstream sector firms faced difficulties because of their inability to pass prices on to consumers, even when the costs related to purchasing crude oil increased. Under the PIL the ministry had the power to issue guidance over prices to firms operating in the downstream, necessitating negotiations over the extent to which costs could be passed on. Although industry was able to pass on price increases in November 1973 following the announcement of the embargo by OAPEC on October 17, the perception of impending shortages, and claims that firms in the sector were price gouging, mitigated against further increases. Product prices were frozen until March 18, 1974.

Long-term structural problems associated with changes in demand proved more challenging. Unlike French and many U.S. firms, Japanese firm sales were focused almost wholly in refining and marketing, and this lack of vertical integration compounded the short-term problem of being unable to pass prices as they could not balance the losses in the refining sector by gains from the rising value of crude production to consumers. Further, Japanese firms, like those of France and the United States, faced the long-term structural problem of stagnating demand for petroleum products and a shift in the composition of product consumption. Both led to underutilized refining capacity. Although the rise in the yen against the U.S. dollar meant the cost of crude to refiners in relative terms fell even as the dollar value of a barrel of crude increased, this was not enough to insulate refiners and wholesalers from the twin blows of increased purchasing costs of crude oil and falling demand for products.

The lull between the first and oil shocks did not ameliorate the difficult position of downstream sector firms. Although demand for petroleum products recovered in 1976 and passed 1973 demand in 1978, the second oil shock hit late in that year. Further, this time a rising yen meant that demand was less supported by export industries, as it had been during the first price shock of 1973-4. This led to the thirteen major refining firms recording combined losses of 17.5 billion yen for the first quarter of 1974.²⁵ The industry as a whole was on the edge of solvency, reaching a mean capital-to-assets ratio of 3.94 percent in 1975, and falling to 4.49 percent in 1981 following the second price shock.

²⁵ Nihon Sekiyu, *Nihon Sekiyu Hyakunenshi [a One Hundred Year History of Petroleum]*, 762.

Firm Performance in Petroleum Industry

Year	Return on Assets		Profits to Sales		Capital-to-Assets Ratio	
	Petroleum	Manufacturing	Petroleum	Manufacturing	Petroleum	Manufacturing
1960	8.86	7.72	6.44	7.29	12.40	31.99
1965	3.07	3.56	2.24	4.28	14.73	26.67
1970	3.08	5.28	2.18	5.43	12.07	21.80
1971	1.98	3.27	1.47	3.38	11.25	20.43
1972	1.89	4.04	1.32	4.52	10.73	20.47
1973	2.49	5.93	1.90	6.01	9.55	19.80
1974	-1.09	3.50	-0.51	3.33	5.19	37.05
1975	1.21	1.34	-0.64	1.37	3.94	18.37
1976	2.98	3.12	1.51	3.05	5.12	18.47
1977	3.43	3.17	1.80	3.08	6.81	19.82
1978	0.90	3.98	0.51	3.81	7.56	21.48
1979	2.81	5.55	1.36	4.75	5.44	21.93
1980	3.75	5.52	1.80	4.52	6.40	23.71
1981	-2.25	4.66	-1.09	3.86	4.49	25.00
1982	1.65	4.32	0.80	3.71	6.49	26.86

Note: RoA: (operating profits/capital)*100
Profit-to-Sale: (Operating profit/income before tax)*100
Capital-to-Asset Ratio: (capital/total assets)*100

Source: Idemitsu Sekiyu Shiryō, 1984, p. 125.

The most immediate response to the oil shocks was political. The political costs of higher prices promised to be painful, with parts of the country in uproar as consumers rushed to shops to panic buy basic products such as toilet paper, soy sauce and soy beans. As a result the initial policy response was dominated by short term political exigencies. The six-day war began on October 6, 1973, with OAPEC announcing its embargo on October 17. By December 7 the cabinet had passed two laws designed to increase control over pricing and distribution. In doing so it established a firm legal basis for price setting and distributive policies already implementable under the PIL through administrative guidance.²⁶

Diplomatic means were also attempted. Prior to the first oil shock Japanese

²⁶ See Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*, 298. Laws are Law for the Adjustment of Oil Supply and Demand (*Sekiyu Juky Tekiseikaho*) and Emergency Measures Law for the Stabilization of the National Lifestyle (*Kokumin Seikatsu Antei Kinkyu Sochiho*).

refiners purchased petroleum through the international oil majors, either independently or as part of a joint venture, and the Middle East was of little diplomatic interest to policymakers.²⁷ The loss of control over production by the majors changed this calculation. At first the government, in contrast to the government of the United States, adopted a diplomatic strategy that emphasized cooperation with Arab producer governments. It acquiesced to the demands of Arab governments against Israel and dispatched senior politicians to the region to sign agreements, including offers of development assistance. As a result Japan was placed on the list of “friendly countries” and excluded from the producer embargo.

Ironically, Japanese firms and consumers gained little from this strategy. The Arab producer states, lacking well developed refining and marketing facilities, were forced to rely on the international oil majors to sell their crude, as before. These companies in turn complied with demands not to sell to the United States and the Netherlands, which were the main targets of the embargo, but also rendered them ineffective by selling Middle Eastern oil to other states, and routing oil produced in other regions to the targets of the embargo. As a result the three major oil consuming regions of Europe, North America, and Japan, lost equivalent amounts of contracted oil, regardless of their diplomatic stance. The strategy of the majors also meant that any benefits of improved relations between Middle Eastern producers and Japan could not be captured by Japanese firms, but would be shared by all in the form of increased supplies to the market.

Diplomatic efforts also did little to enhance national control of upstream

²⁷ Ronald A. Morse, "Energy and Japan's National Security Strategy," in *The Politics of Japan's Energy Strategy : Resources-Diplomacy-Security*, ed. Ronald A. Morse (Berkeley: Institute of East Asian Studies University of California, 1981).

exploration and production. Nor were they likely to, given that Middle Eastern governments would not relinquish control over upstream production. Aside from these diplomatic and regulatory responses, therefore, the oil shocks initiated a process of analysis and renegotiation of how to respond to the new market conditions.

2.6 State Actor Policy Preferences

In one sense the problem engendered by the nationalization of production was less severe for Japanese firms, and therefore MITI, than firms in France and the United States. Both firms and the MITI bureaucrats responsible for oil policy had long been in favor of strategic intervention, with the goal of the latter focused on building an integrated Japanese oil major. The lack of upstream reserves held by Japanese firms, however, meant they did not face the problems of CFP or Elf-Aquitaine in seeing their producing assets in the Middle East and elsewhere nationalized. It was unnecessary, therefore, to focus on the loss of producing assets held nationally in designing a policy response.

The replacement of the international oil majors with producer governments nevertheless provided ammunition to advocates of the increased use of strategic policy instruments. Iran's attempt to raise prices in November 1970, for example, was noted in an internal MITI memorandum prepared in August 24, 1971.

"The attack on oil prices by OPEC, which began with the price rise by Iran in November [1970], will have a decisive effect on Japan's petroleum situation given that our country imports 90% of its crude from the Middle East, and 95.6% from OPEC countries. A fundamental reconsideration of not only petroleum policy, but resource policy that responds to these circumstances is therefore asked for."²⁸

²⁸ Ministry of International Trade and Industry, "Sōgō Enerugii Chōsakai Sekiyubukai No Kongo No Unei Ni Tsuite [on the Coming Operation of the Petroleum Committee under the Comprehensive Energy Council]," (Tokyo: Ministry of International Trade and Industry, 1971), 1.

The focus of discussion was on support for national firms operating in the production of oil. Policy intervention in refining and distribution was already significant, as regulations under the PIL protected domestic industry with the explicit goal of building up a strong domestic player, and new laws giving the government emergency powers to set prices and volumes.

Debate prior to the oil price shocks already focused on asserting greater control over upstream resources. The Petroleum Committee within MITI, for example, convened in September 1971 to discuss the new market developments, reconfirming that strategic control should be the overriding goal of policy in the petroleum sector:

"In order to achieve a stable and affordable [petroleum] supply it is necessary to maintain freedom of action from all types of foreign influence across all activities in the petroleum industry, from the development and importation of crude oil, through to refining and the sale of products. This is necessary because of our country's external dependence for almost all its oil supply, changes in the supply-demand balance, and the presence of the three major powers [in the market]: the international petroleum majors, OPEC, and the socialist bloc."²⁹

In accordance with this finding, the committee recommended increasing the scope of activities of the JPDC, authorizing it to promote the participation of Japanese firms in projects with non-Japanese firms in which Japanese firms held an equity stake, purchase development rights, and repeating the long-standing goal of using policy to encourage the development of an integrated Japanese major.

As the process of the nationalization of oil within the OAPEC region was underway, a MITI briefing paper distributed to members of the small committee for policy under the Petroleum Council on April 8, 1974, argued that the loss of control over upstream oil by the majors required an increase in policy intervention, and that the decision of the majors to distribute cutbacks across major consumers also demonstrated

²⁹ —, "Sōgō Enerugii Chōsakai Sekiyu Bukai Chūkan Hōkoku [Interim Report of the Petroleum Committee within the Comprehensive Energy Council]," (Tokyo: Ministry of International Trade and Industry, 1971), 22.

they could not be relied upon to ensure security of supply. The final report of the petroleum committee noted that increased government intervention is a necessary corollary of the politicization of the oil market, and argued for increasing “policy oil,” supporting upstream activities by national flag firms, and increasing stockpiling requirements.³⁰

There was little opposition to the proposed changes. Major energy consumers, supported greater intervention. Keidanren, the peak industry association, for example, agreed that financing for upstream development should be increased, upstream and downstream mergers promoted, and subsidies increased in order to strengthen the performance of the sector.³¹ A parallel process within the LDP agreed that increased intervention in the petroleum market was a necessary outcome of the oil shocks. A 125 page report released in November 1978 identified oil as a strategic resource, pointing out that it is necessary for both military operations as well as the economy, and has no perfect substitutes, particularly in the transport sector. It also created a new definition of “resource defense,” presaging the comprehensive security concept announced by Prime Minister Ōhira in 1981, and arguing the solution to Japan’s weak resource base was to increase “policy oil,” provide greater subsidies for stockpiling, and increase risk coverage provided by government for upstream exploration and development.³²

In the wake of the shocks, the JPDC was given increasing powers to finance private sector operations, including the authority to directly purchase upstream development rights under the condition these were sold to private sector firms. In 1978

³⁰ Nihon Sekiyu, *Nihon Sekiyu Hyakunenshi [a One Hundred Year History of Petroleum]*, 835.

³¹ Keidanren, “Sekiyu Wo Chūshin to Suru Enerugii Ni Kansuru Yōbō [Request in Relation to Petroleum and Other Energy Resources],” (Tokyo: Keidanren, 1973).

³² Liberal Democratic Party, “Enerugii No Anzen Hoshō Ni Tsuite [on Energy Security],” (Tokyo: Liberal Democratic Party General Affairs Council, 1978). “Resource defense” is a translation of “*Shigen Bōei*.”

the JPDC was renamed the Japan National Oil Company (JNOC) for “assuring maximum control of oil resources” by continuing to subsidize private sector activities, as well as establish a national petroleum stockpile in addition to the ninety days of petroleum holdings required to be held by private sector importers under the PIL.³³

Revision of JPDC/JNOC (1967-1978)

	Jul-67	May-72	Jun-75	Jun-76	Jun-78
Exploration	1. Equity capital 2. Low interest loans 3. Technical assistance	1. Upstream geophysical surveying added	1. Domestic E&P added 2. Oil shale added 3. Purchase upstream rights if soon sold to domestic firms		
Stockpiling		1. Loan for purchase of oil for used in stockpile	1. Increase lending window for oil used in stockpile		1. National 90 day stockpile established
Other				1. Finance and loans for improving refining industry	

Source: Adapted from JNOC 20 Year History, p. 5.

A victory for the upstream firms was achieved in that no conclusion was reached on which firms should be absorbed and which should remain, nor whether policy should promote a shift of downstream firms into the upstream, or vice versa.³⁴ Increased intervention, in other words, did not mean that policy was adjusted to pick winners. This

³³ Richard J. Samuels, "Public Energy Corporations and Public Policy in Japan," (Cambridge, MA: Energy Laboratory, 1982).

³⁴ Ministry of International Trade and Industry, "Sōgō Enerugii Chōsakai Sekiyu Bukai Chūkan Hōkoku [Interim Report of the Petroleum Committee within the Comprehensive Energy Council]." An internal memorandum prepared within MITI at the time is instructive, proposing in effect that all combinations should be tried: 1) finance refining firms' shift into the upstream; 2) finance refiner efforts to move upstream through a joint development company; 3) promote joint investments by upstream firms and refiners in refining projects; 4) promote upstream firms' investments in refiners; 5) promote upstream firms' independent investments in refining. Under these conditions, increased fiscal support for Japanese firms was likely to lead to greater exploration internationally, but not at the expense of any firms through mergers or acquisitions. Ministry of International Trade and Industry, "Kaihatsu, Seisei, Hanbai No Ikkanka Ni Tsuite [on the Integration of Petroleum Development, Refining and Sales]," (Tokyo: Mining and Coal Bureau, 1971).

suited firms, which enjoyed subsidy support for upstream operations but did not want to see competitors gain an advantage in seeking access to exploration or production rights. This problem was to remain the biggest failure in Japanese upstream policy until it was partially addressed in 2002 by the attempt to limit policy support to firms capable of integrating vertically. Without this, financing was provided irrespective of the likelihood that the receiving firm would develop into an integrated major. As a result, Japanese firms' participation in exploration and production remained even more fragmented than in refining and marketing.

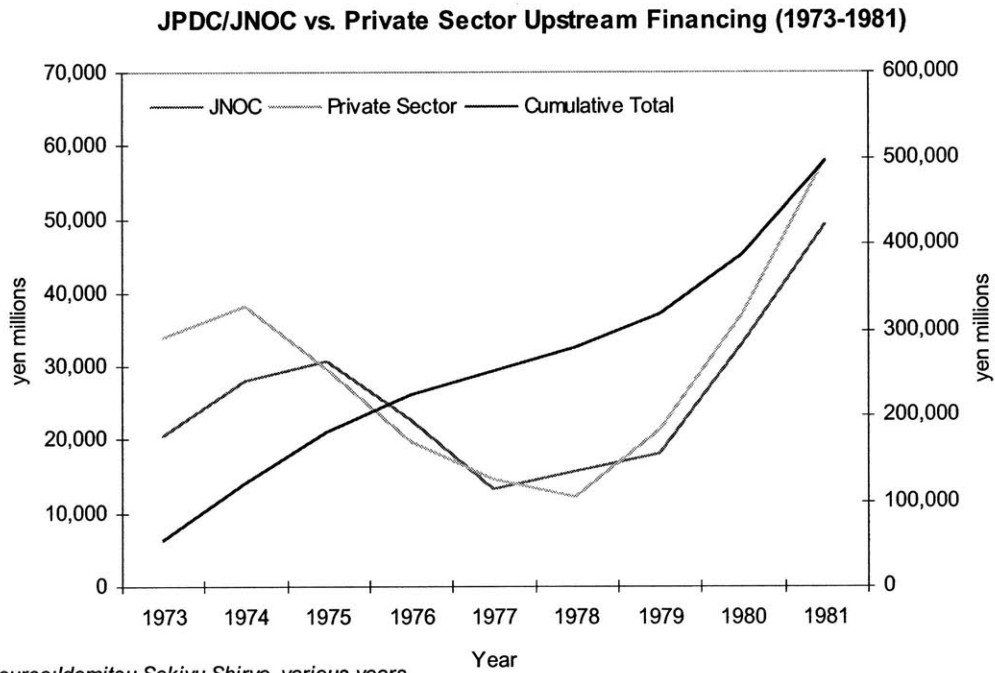
As part of the enhanced set of policy instruments, equity capital was provided to underwrite exploration, with up to seventy percent of total equity requirements provided for offshore projects, and up to eighty percent for projects on the Japanese continental shelf. If projects reached the development phase JNOC then guaranteed debt, usually in coordination with private sector banking syndicates that had political risk underwritten by the Export-Import Bank of Japan (ExIm Bank)³⁵ or the Development Bank of Japan (DBJ). In 1980, its purview was extended to allow the purchasing of crude oil and investment in international projects.³⁶

What were the effect of these policies? If measured in terms of total investments in upstream exploration or development projects, increased subsidies in the upstream were an unbridled success. The level of overall investment and number of projects jumped after stagnating from 1973 to 1978, during when company performance mitigated against large investments in risky upstream projects. Further, the increase represented not

³⁵ Part of the Japanese Bank of International Cooperation (JBIC) since 1999.

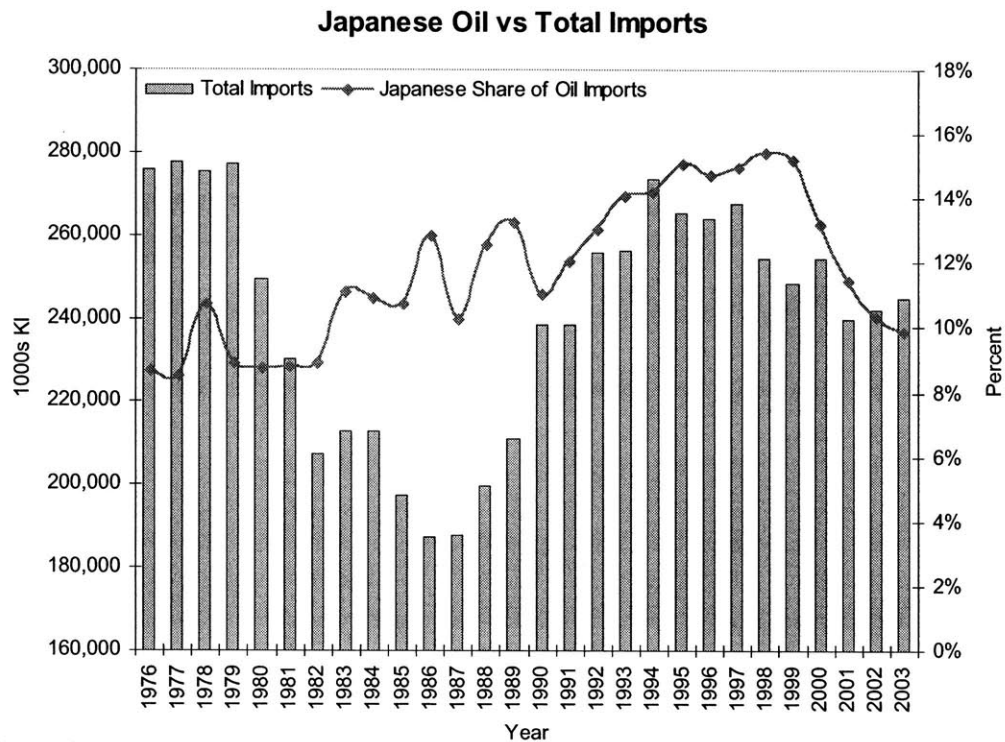
³⁶ This was first proposed in the Petroleum Committee interim report of October 23, 1978. See Ministry of International Trade and Industry, "Kongo No Sekiyu Seisaku No Hōkō [the Current and Future Direction of Petroleum Policy]," (Tokyo: Ministry of Economy Trade and Industry, 1978), 14-15.

only marginal increases in JNOC financing, but also investments by private sector firms that had more confidence investing under generous JNOC conditions.



Source: Idemitsu Sekiyu Shiryō, various years

Measuring outcomes in terms of the total share of Japanese firms' crude imports, the other hand, produces a different outcome; it fell short of the thirty percent target, instead fluctuating between ten and fifteen percent of aggregate imports.



Source: Sekiyu Kogyo Renmei, *Wagakuni Sekiyu Kaihatsu no Genjo to Mondaiten/Kadai*, various years

3. Explaining the Restructuring of Strategic Intervention 1980-2000

3.1 Outcomes

In contrast to the period leading up to and including the 1970s, the 1980-2000 period saw policy support for Japanese firms reversed. This was a remarkable break from the past. Since at least 1934, other than the interlude of foreign occupation, the institutions of strategic control remained an integral part of the response to the perceived vulnerability associated with relying on external markets for the supply of petroleum. Support for Japanese firms in exploration and production also reversed.

The application of policy instruments designed to increase strategic control over petroleum changed in two ways. First, the quantitative extent of policy support decreased in both the upstream and downstream. Second, policy shifted towards minimal

intervention under normal market conditions, while continuing to grant emergency powers to the government, in the form of price setting and product distribution.

In refining and marketing the PIL was eviscerated over a ten year period. By 1996 informal instruments giving the government authority to regulate trade, and entry and exit into the domestic refining sector were all but gone. Significant mergers took place as a result, and final abolition of the law in 2002 marked an epochal change in the relationship between government and the market.

Government support for exploration and production by Japanese firms was also limited. The major public firm utilized by the government to support private sector firms' efforts was abolished, and numerous firms created and supported through its financing privatized. A new organization was established in its place with decreased authority to underwrite risk in upstream projects. Quantitative targets for crude imported by Japanese firms were also abandoned, as was the stipulation that government-financed oil be brought back to Japanese shores. Each of these changes reduced policy intervention that aimed at enhancing strategic control of petroleum.

Taken together, these changes represent an apparent convergence towards liberal outcomes. Rather than the abandonment of support for national control, however, I argue it represented an adaptation of the policy instruments applied by METI to changes in the structure of the international oil market, expressed through long-run oil prices. The most important agent of policy change was the bureaucrats in the executive responsible for oil policy. They determined that the existing policies had failed to achieve the desired public policy outcome, and so decided to use, rather than distort, prices in order to achieve the same goal. Subsidization of Japanese firms' operating in exploration and production was

similarly reversed through a process of adaptation, but not a rejection of the goal of strategic control of petroleum.

The evidence presented below shows firms also largely opposed the proposed changes. This is unsurprising: no Japanese firm enjoyed a significant share of international exploration and production, in contrast to both French and U.S. firms, and remained weak as a result. It is unsurprising, therefore, that they continued to lobby for ongoing support from government. Their position was overturned, however, by state actors.

3.2 State Actor Policy Preferences

The most important cause of the shift in the policy preferences of actors within MITI responsible for oil was the effects of the changes in the structure of the international oil market on the viability of domestic refining firms. This occurred in two ways. First, these firms were severely weakened by the price gyrations of the first and second oil shocks, and remained fragmented. Lower oil prices in the mid-1980s – equivalent to a decrease in the cost of inputs for refiners – did not enable them to recover. Given this, the existing set of policy instruments, which relied on protectionism in order to create lead firms in the petroleum sector, were reviewed and ultimately rejected. The viability of a number of important national projects in exploration and production undertaken under conditions of high oil prices were also undermined by the collapse in oil prices, leading to a readjustment of the policy instruments.

These changes to the institutions designed to promote national control over oil were foreshadowed in debate within MITI in the early 1980s. The salience of energy as a

public policy issue was high in the wake of the cutoff of Iranian supplies and increase in crude prices. Within this, security of petroleum supplies was unsurprisingly most prominent, with 'policy oil' - the term used to refer to national-flag oil and long-term supply contracts negotiated on a government-to-government basis - proposed as the most effective way of enhancing national control.

In the long term, the problem for state actors lay in determining whether the goal of enhancing national control should be jettisoned, and if not, how existing policies should be adjusted given the negative effects of the oil shocks on the agents at the center of this strategy - Japanese firms. The thirty-six refiners and distributors suffered significant losses from the first oil shock, as noted above, with total combined losses of some 240 billion yen to the end of FY1975. The paid-in capital of firms in the sector as of 1979 stood at 5.2%, which compared unfavorably with the average across Japanese manufacturers (21.96%), and the US majors 45.57%, according to industry statistics collected by MITI.³⁷

Opinion within MITI was divided on how to respond, according to the record of the internal committee established in October 1980 to "assist in building consensus within the ministry." The committee met eighteen times through to May 1, 1981 and was chaired by the head of the Petroleum Committee Shiga Manabu. It had senior representatives from all MITI sections involved in oil policy setting, as well as trade officials and representatives from the Cabinet Secretariat. It therefore represents a useful proxy for the status of preferences over policy outcomes from within the bureaucracy

³⁷ Sekiyu Bukai, "Sekiyu Sangyo No Keiri Jokyo to Seihin Kakaku Mondai [on Problems Related to the Financial Position of the Petroleum Industry and Petroleum Product Prices]," Sogo Enerugii Chosakai (Tokyo: Ministry of International Trade and Industry, 1981).

following the crises.³⁸

Discussion within the committee focused on changes in the international market, its effects on domestic industry, and how this should be reflected in national policy. It began by noting that nationalization in producer countries was a significant event that changed the structure of the international oil market from one in which international majors dominated supply, to one where producer governments became the major suppliers.

Opinion was not unified on the question of how to reflect the change in market structure in the petroleum sector in national policy. Some on the committee proposed that the failure of the existing strategy meant it should be jettisoned in favor of a liberal response, in which the abolition of restrictions on trade in petroleum products would enhance Japan's security of supply by increasing the number of firms qualified to import petroleum products regardless of nationality. This view equated with abandoning the policy of strategic intervention, and instead relying on the diversification of supply sources obtained through many buyers and sellers to provide the best method to ensure security of supply.

Others argued that strategic control over the domestic refining industry remained the best policy response to Japan's reliance on imports, noting that the law was the most significant factor ensuring Japanese firms maintained significant market share within the domestic market. Other arguments marshaled for maintaining this "refine-at-home" policy focused on the possibility that the open market for petroleum products (as opposed to the more liquid crude market) was inadequate to meet demand. Finally, proponents of

³⁸ ———, "Sekiyu Kihon Mondai Kenkyukai Chukan Hokokusho [Interim Report of the Research Committee on Fundamental Problems in Petroleum]," ed. Sekiyu Kihon Mondai Kenkyukai (Tokyo: Ministry of International Trade and Industry, 1981).

the status-quo argued that keeping the PIL served as a useful way of obtaining information about industry plans, even if price setting and other clauses were not invoked.³⁹

The effects of the shift in the structure of the international petroleum market on domestic demand was also noted. Two facts stand out in the analysis: the problems for firms associated with the reduction in absolute demand, and the shift in demand away from heavy oils used for electricity generation and manufacturing processes. These problems, and their negative effects on the industry, meant that although consensus did not exist on how to manage this problem, and whether changes to the PIL should be made, agreement was reached that the ongoing problems faced by Japanese firms should be the focus of subsequent discussions about how to adjust domestic institutions to the changed international market.⁴⁰ Discussions laid clear the problems the industry faced. In a survey conducted by MITI, refiners recorded that eight firms had refinery overcapacity of ten percent, with four firms holding up to fifteen percent overcapacity, and five firms with overcapacity of fifteen percent or above.⁴¹ In FY1981 the industry lost 345.6 billion yen, and 123.7 billion in FY1982.⁴²

In the ensuing discussions with industry MITI's commitment to a public policy role in the petroleum sector remained fixed.⁴³ MITI identified the role for public policy as

³⁹ Sekiyu Shingikai Sekiyu Bukai, "Naibu Shiryo: Kongo No Sekiyu Sangyo No Arikata Ni Tsuite [Internal Report: On the Future of the Petroleum Industry]," ed. Sogo Enerugii Chosakai (Tokyo: Ministry of International Trade and Industry, 1981).

⁴⁰ Ibid., 20.

⁴¹ ———, "Kongo No Sekiyu Sangyo No Arikata Ni Tsuite (Sanko Shiryo) [Internal Report: On the Future of the Petroleum Industry: Additional Material]," ed. Sogo Enerugii Chosakai (Tokyo: MITI, : Ministry of International Trade and Industry, 1981), 1-1.

⁴² ———, "Sekiyu Sangyo Ni Okeru Kozo Kaizen No Genjo to Kongo No Hoko [the Current State and Future Direction of Structural Reform in the Petroleum Industry]," (Tokyo: Ministry of International Trade and Industry, 1983), 3.

⁴³ Ministry of International Trade and Industry, "Sekiyu Sangyo No Kozo Kaizen No Hoko to Sekiyu Sangyo No Arikata Ni Tsuite [on the Direction of Structural Reform in the Petroleum Industry and the State of the Petroleum

maintaining a viable domestic industry that remained independent, and ensuring security of supply by monitoring the character of firms entering the sector, and promoting the diversification of supply. The policies preferred for carrying out public purpose began to change, however. For the first time it was asserted that intervention should be decreased under normal market conditions, and that while the “refine-on-the-doorstep” policy should be maintained, the market should play a more central role in allocating products within the Japanese economy. It was also asserted that firms should be allowed to be left to determine what to produce at home, and what to import.⁴⁴

The shift in focus towards greater openness to imports meant officials leading debate on petroleum policies had to determine how to reflect these changing policy preferences institutionally. Here there was no support for wholly jettisoning the PIL, which was identified as continuing to play an important role in enabling the ministry to retain the powers to shape flows of imports and exports in order to ensure security of supply, as well as monitor the situation regarding mergers, a key goal of the ministry given its strong preference to see leading companies emerge from the weak and fragmented sector.⁴⁵ The ongoing importance to MITI’s policy preferences of ensuring national control through support of Japanese firms is in the introduction to the interim report produced following debate over how to manage the industry:

“The central axis of the petroleum supply system in Japan’s domestic petroleum industry is the wholesalers, who obtain supply of crude oil, produce [refined products] and then distribute. Increasing the concentration of wholesalers is extremely important in order to establish a supply platform that is stable and efficient...Under the current extremely difficult conditions, it is more of an urgent task than ever to increase industry concentration among wholesalers in order to respond quickly and appropriately to the needs of the national economy through

Industry],” (Tokyo: Ministry of International Trade and Industry, 1985), 11.

⁴⁴ Ibid., 17.

⁴⁵ Ibid., 21.

the stable supply of petroleum.”⁴⁶

It is also worth noting that the fall in oil prices of the 1980s did not reverse this conclusion. This is perhaps counterintuitive: the change should have been a boon for the industry, reducing the cost of feedstock for refiners and increasing demand for their products. This windfall from the twin effects of the lower per barrel oil price and rising yen did not materialize, however, for two reasons. First, the industry was unable to take full advantage of falling in crude prices. Although protected from prices in the international market through restrictions on trade, prices for petroleum products within Japan were set in a market. Rather than respond gradually as cheaper oil was refined and sold, these prices responded almost instantaneously to oil prices, meaning that product prices fell while the refining and distribution system was still processing inventory from higher priced crude. Further, falling prices and refinery utilization rates led to a price war as firms tried to make up for losses.⁴⁷ As a consequence, higher sales volumes only increased losses accumulated by the downstream sector.

Second, consumption of heavy oil, which was a significant component of overall refined product demand, did not recover in a U-shaped pattern; the high prices of the 1970s had induced a shift in demand to alternative fuels, as well as an improvement in energy efficiency. This meant that the problem of overcapacity was not resolved by lower prices. According to a survey of the twenty one refining firms completed by MITI, the falling price of oil and ongoing weak demand gave them combined operating losses of

⁴⁶ ———, "Motouri Kigyo No Shuyakuka Ni Tsuite Chukan Hokoku [Interim Report on the Concentration of Wholesale Firms]," (Tokyo: Ministry of International Trade and Industry, 1984), 3.

⁴⁷ Tōichi Tsutomu, Managing Director, Institute for Energy Economics Japan and Petroleum Council member, interview by author, Tokyo, Japan, July 4, 2006; Interview with head of PAJ/President of Japan Oil, *Keidanren Geppo*, April 1986, 52-60.

136.6 billion yen in the first half of 1985.⁴⁸

The centerpiece of this change was the shift of policy preferences towards allowing greater imports, while maintaining the law regulating the industry of the whole. This, it was deemed, would ensure that the flows of crude oil and petroleum products were increasingly determined through market mechanisms, but that entry and exit into the market remained constrained, to the advantage of Japanese domestic firms. In other words, the idea of using, rather than distorting, prices in order to improve Japanese firm performance was mooted. Allowing prices to operate freely would, the argument went, force mergers within industry and therefore move industry closer to producing a national flag firm capable of competing in the international petroleum market. Until this point the relationship between the market and energy security of supply had been conceived of in zero-sum terms. A new position was emerging, however, that argued that the market could be used as policy instrument itself in order to strengthen the downstream industry. Some twenty years later the head of the petroleum section within MITI at the time, Naitō Masahisa, noted the intentions within the ministry at the time:

“While I was in the Ministry of International Trade and Industry I pushed deregulation of the petroleum industry, but deregulation is nothing more than an instrument. In other words, through deregulation [I wanted to] increase industry concentration. Why increase concentration? In order to make an oil firm that is able to compete internationally.”⁴⁹

National control therefore remained the leitmotif of intervention in the petroleum sector, but the configuration of policies changed because of the ongoing weakness in the

⁴⁸ Nihon Keizai Shimbun, September 6, 1985.

⁴⁹ Interview with Naitō Masahisa, *Enerugii Fōramu*, September 2005, 62; This finding is corroborated by Tōichi Tsutomu, Managing Director, Institute for Energy Economics Japan and Petroleum Council member, interview by author, Tokyo, July 4, 2006. and Kodaira Nobuyori, former Director General, Agency of Natural Resources and Energy (2004-06) and former Director, MITI Petroleum Planning Division (1995-96). Interview by author, Tokyo, Japan, July 19, 2007.

downstream industry.⁵⁰ This was done through the introduction of a special law that operated alongside the PIL, and allowed imports of gasoline, kerosene, and light oils, but limited trade to firms with refining and storage capacity within Japan, and able to meet Japanese quality standards.⁵¹ In practice this meant that only Japanese refiners and wholesalers were able to meet the requirements, and therefore import petroleum products. Indeed, critics of the bill argued that it increased, rather than decreased, the extent of regulatory control over trade in petroleum products.⁵² It also it served to establish in law a practice that had until then been carried out through informal guidance.⁵³

The law included a ten year sunset clause. The purpose of the clause was to leave open the possibility that trade could be restricted once again if the balance of supply and demand in crude oil became less favorable in the 1990s. Placing a ten year restriction ensured that stakeholders could revisit the question of the structure of the international market, along with the question of whether imports should be continued, at the end of the period.⁵⁴

The law ensured that both foreign and Japanese competition were banned from importing petroleum products. Indeed, resolve within MITI to restrict market access is

⁵⁰ The continuation of policy support for firms in exploration and production, despite the proposed shift in downstream policy, offers further evidence that the change in policy preferences did not represent a rejection of the idea of national control. The reform of these policies did not begin until 1997, some ten years after the initial changes made to regulations governing refining and marketing. Further, as detailed below, the privatization and the recalibration of instruments designed to enhance national control were also made in order to render more effective the strategy of national control, rather than reject that goal.

⁵¹ Under the PIL imports were not banned, but rather importers were required by law to register import plans with MITI. Under this system MITI had only recognized the importation of naphtha, LPG and heavy oil in order to enable firms to balance supply and demand, but imports of gasoline, kerosene and light oils were banned. See *Nihon Keizai Shimbun*, October 23, 1985.

⁵² Fukuoka Yasuo, House of Representatives Trade and Commerce Committee, 103rd Session of the Diet, November 20, 1985, Takahashi Hiroshi, "Gasorin Yunyu Kaikin: Matta Nashi no Ikinokori Kyōsō Jidai he[Allowing Gasoline Imports: No Escape from the Era of Competition for Survival]," *Shūkan Tōyō Keizai*, February 8, 1986, 90-93.

⁵³ Kodaira Nobuyori, former Director General, Agency of Natural Resources and Energy (2004-06) and former Director, MITI Petroleum Planning Division (1995-96). Interview by author. Tokyo, Japan, July 19, 2007.

⁵⁴ The bill originally proposed to place a five-year limit on the right to import, based on IEA predictions of a tight market in the 1990s, but this was extended to ten years during Diet interpellations, under the rationale that a review of market conditions after five years was premature.

demonstrated by the celebrated case of Lions Petroleum, in which MITI threatened to ban development assistance to the Philippines if their state firm contracted with Lions Petroleum. Although the PAJ officially opposed the change, in private its members recognized it as a reasonable outcome for the industry; certainly it ensured that refiners and wholesalers could manage inventory more effectively while retaining control over physical supplies.⁵⁵

A second effect of the reduction in intervention under the PIL was to increase the importance of the review of the law prior to its expiry after ten years, in 1996. The review concluded once again that the increasing competitiveness of the international oil market had lessened supply risks, making intervention unnecessary. In the report produced in 1995 the committee charged with reassessing state policy towards the petroleum industry, for example, noted that:

"The development of the international oil market has positively affected Japan's ability to ensure stability of oil supply through the dispersal through the market of the influence of decreases in supply, and other effects...An emphasis on reliance on the functioning of the international oil market should be at the basis of policy going forward...Regarding the refining industry, supply and demand adjustment mechanisms in the PIL should be abolished, as should regulations allowing for price intervention in peacetime."⁵⁶

The law was allowed to expire, therefore, marking the abandonment of attempts by the state to increase strategic control of petroleum through the protection of firms engaged in domestic refining, and leading to widespread reorganization of the industry, including mergers between the major Japanese refining interests and foreign majors.⁵⁷

⁵⁵ Nihon Keizai Sangyō Shimbun, September 13, 1985, 3. On the Lions Petroleum case Frank K. Upham, "The Man Who Would Import: A Cautionary Tale About Bucking the System in Japan," *Journal of Japanese Studies* 17, no. 2 (1991).

⁵⁶ Quoted in: Ibid., 358-9 (author's translation).

⁵⁷ Further, unlike in 1986 when political opposition eviscerated proposed reforms, changes in the structure of domestic politics by 1996 had weakened the veto power of those arguing to maintain the ban on imported products. Kosuke Oyama, "The Policymaking Process Behind Petroleum Industry Regulatory Reform," in *Is Japan Really Changing Its Ways?: Regulatory Reform and the Japanese Economy*, ed. Lonny E. Carlile and Mark Tilton (Washington, D.C.: Brookings Institution Press, 1998).

3.3 Firm Policy Preferences

Discussions among MITI officials responsible for oil policy about how to adjust the policies of strategic intervention to the shift in long-run prices drew firms into the debate. This is unsurprising given their poor financial condition. It also afforded them an opportunity to seek state support for managing the problems associated with falling demand and overcapacity.⁵⁸

In contrast to MITI officials, the policy preferences of firms remained stable around maintaining barriers to entry in the domestic petroleum market through trade and regulatory restrictions on imports of petroleum products, while seeking independence of action in reducing industry fragmentation.⁵⁹ An internal memorandum of industry produced by MITI in 1981 records that firms wanted to retain independence in dealing with the problem of reducing overcapacity, as well as maintain the PIL in order to keep barriers to competition from imports of petroleum products.⁶⁰ This opinion was repeated in subsequent hearings in 1985. Daikyo Oil, for example, noted in its response to a ministerial request for comments that uncontrolled imports would cause significant harm to the national economy and should be avoided, while the refine-at-home policy should be maintained. It also argued that if imports should be allowed, only firms able to ensure the stable supply of products should be allowed to do so. Further, holding up the example, of the spin-off of its refining interests in order to combine them in a common

⁵⁸ Data on the policy preferences of firms is obtained from industry association positions, as well as internal memoranda on firm hearings within committee where available.

⁵⁹ The exception to these policy preferences is Idemitsu Kosan, which argued in strong language that the attempt to build lead firms in the industry was bound to fail if policy continued to protect industry, and trade in petroleum products remained constrained.

⁶⁰ Small Committee within the Petroleum Committee, "'Naibu Shiryo: Hiaringu Ni Okeru Kakushabetsu Iken [Internal Memorandum: Firm Positions in Hearing]'" (Tokyo: Ministry of International Trade and Industry, 1981).

firm with Maruzen, it argued that firms should be allowed to move forward with efforts to create lead firms independently, rather than be forced to merge through the use of the PIL.⁶¹ Kyodo Oil similarly argued that firms should be allowed to proceed with the rationalization of overcapacity at their own pace, and further proposed that firms receive public support in order to shore-up their financial positions. Like Daikyo, they also argued in prepared remarks that petroleum imports should only be carried out by firms with refining capacity in Japan.⁶² The industry association representing the refining industry also lobbied the government to maintain the refine-at-home policy; in other words, to limit imports of petroleum products, in order to maintain stable supply.⁶³

This does not mean firms hoped to maintain the status-quo. Poor performance and ongoing fragmentation meant most recognized that the existing industry structure was untenable, and that the solution lay in increasing firm size through mergers and increasing tie-ups in refining and marketing. Firms also preferred, however, that the government not force mergers between them, but rather that they be allowed to proceed independently.

In short, the negative effects long-run prices had on Japanese domestic firms, undermined national regulatory and trade instruments designed to enhance strategic control over the petroleum sector. This led both groups of actors to accept the need for adjustments to the existing set of institutions. For state actors, the determination of a new set of policy preferences took some five years. It was driven by ongoing poor firm performance, which undermined the existing strategy in which firms were central to the

⁶¹ Sekiyu Shingikai Sekiyu Bukai Shoiinkai, *Hiaringu Kaitosho [Hearing Response Form]*, June 3 1985.

⁶² Sekiyu Shingikai Sekiyu Bukai Shoiinkai, *Hiaringu Kaitosho [Hearing Response Form]*, May 30 1985.

⁶³ Sekiyu Renmei, "Sekiyu/Enerugii Seisaku Ni Kan Suru Teigen [Proposal Regarding Petroleum and Energy Policy]," (Tokyo: Sekiyu Renmei, 1982), 8.

strategic of enhancing security of petroleum supplies through building lead companies. For firms, on the other hand, there was recognition that changes were required in order to reduce industry fragmentation and overcapacity.

Crucially, however, the interests of both MITI bureaucrats and firms remained in line with using policy to promote domestic industry. This is unsurprising in the case of Japanese firms, which remained heavily reliant on the domestic market and retained little presence in exploration and production of oil internationally. The poor prospects for the industry also meant they were willing to accept the need to adjust through mergers, although they hoped to maintain control over this process. Rebuilding the industry also required support for dealing with the problem of overcapacity.

For MITI bureaucrats there was no attempt shift policy away from an equilibrium that remained focused on national control. Beginning in 1981, a minority opinion within MITI, which dominated the long-run response to the crisis, began to propose opening the domestic market to imports, and loosening regulatory constraints. As firms continued to flounder, a consensus was reached that the existing policies needed to be adjusted to make domestic firms more competitive, but that improving the performance of national firms remained a viable response to the problems inherent in the international petroleum market.

The consensus was reached, therefore, to reduce regulations over refining and production plans over a five year period. The agreement of firms to acquiesce to this change was based on an understanding they would continue to control imports and exports. In this way open trade would be allowed to equalize prices, but ongoing regulations would ensure that Japanese firms controlled this trade. Gradual market

opening was implemented through a five year action plan that removed guidance until the PIL. The licensing of refining capacity, which was the strongest formal power conferred to the government under the PIL, was loosened immediately. Other important changes were the abolition of firms' production plans by the end of 1988, and firm refining schedules within five years. A member of the committee established to design these institutional changes, Morozumi Yoshihiro, noted that the changes were "epochal for petroleum policy."⁶⁴ Although an exaggeration, Morozumi's statement was accurate in that the decision that "under normal conditions, petroleum supply should be left to the independent action of a powerful petroleum industry,"⁶⁵ represented a significant shift towards liberalization.

3.4 Downstream Results

The reduction of regulatory and trade restrictions from 1986-1996 had the effect desired by MITI. After 1996 the price spread between the international and domestic markets for petroleum products equalized, most notably in gasoline, for which domestic prices had long been in excess of the international price. Downstream firms shifted to a new pricing regime for gasoline, kerosene and light oil to one that adjusted monthly to reflect international market prices.⁶⁶

The controlled introduction of imports of gasoline and other fuels also led to firm mergers. In expectation of the change Showa Oil and Shell merged with one another

⁶⁴ Meeting minutes for "Sekiyu Sangyō Kihon Mondai Kentōkai, "Sekiyu Sangyō Kihon Mondai Kentōkai Hōkokusho [Report of the Deliberative Committee into the Petroleum Industry]," (Tokyo: Ministry of International Trade and Industry, 1988).

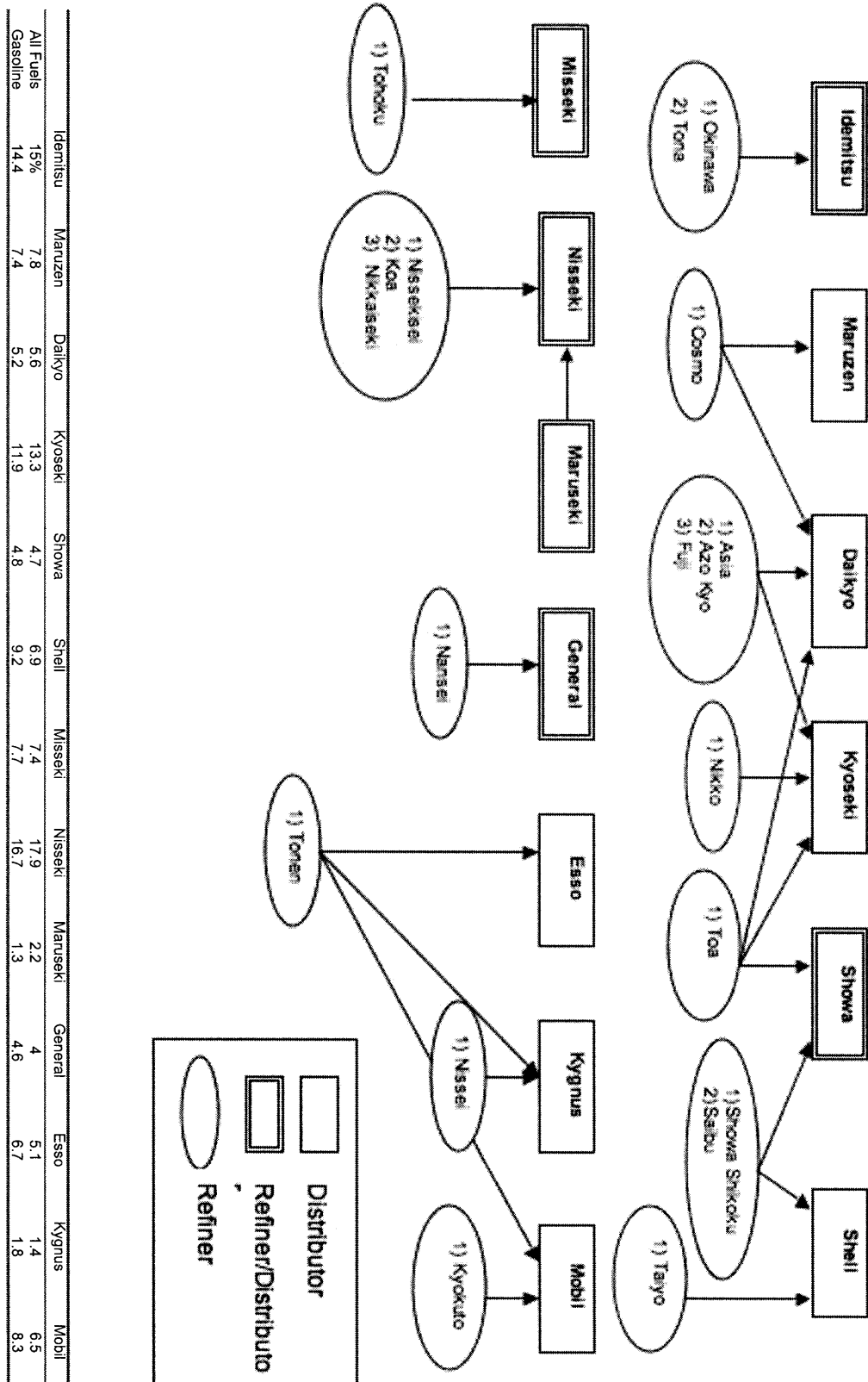
⁶⁵ Sekiyu Sangyō Kihon Mondai Kentōkai, "Sekiyu Sangyō Kihon Mondai Kentōkai Hōkokusho [Report of the Deliberative Committee into the Petroleum Industry]," (Tokyo: Ministry of International Trade and Industry, 1988).

⁶⁶ Petroleum Association of Japan, "Sekiyu Gyōkai No Suii [Trends in the Petroleum Industry]," (Tokyo: Petroleum Association of Japan, 1996), 3.

in 1995. Then, following the entry into force of the law in 1996, Cosmo, Daikyo and Maruzen joined together under the Cosmo banner, followed by Nihon Kogyo and Kyodo Oil in 1992 which formed Japan Energy.

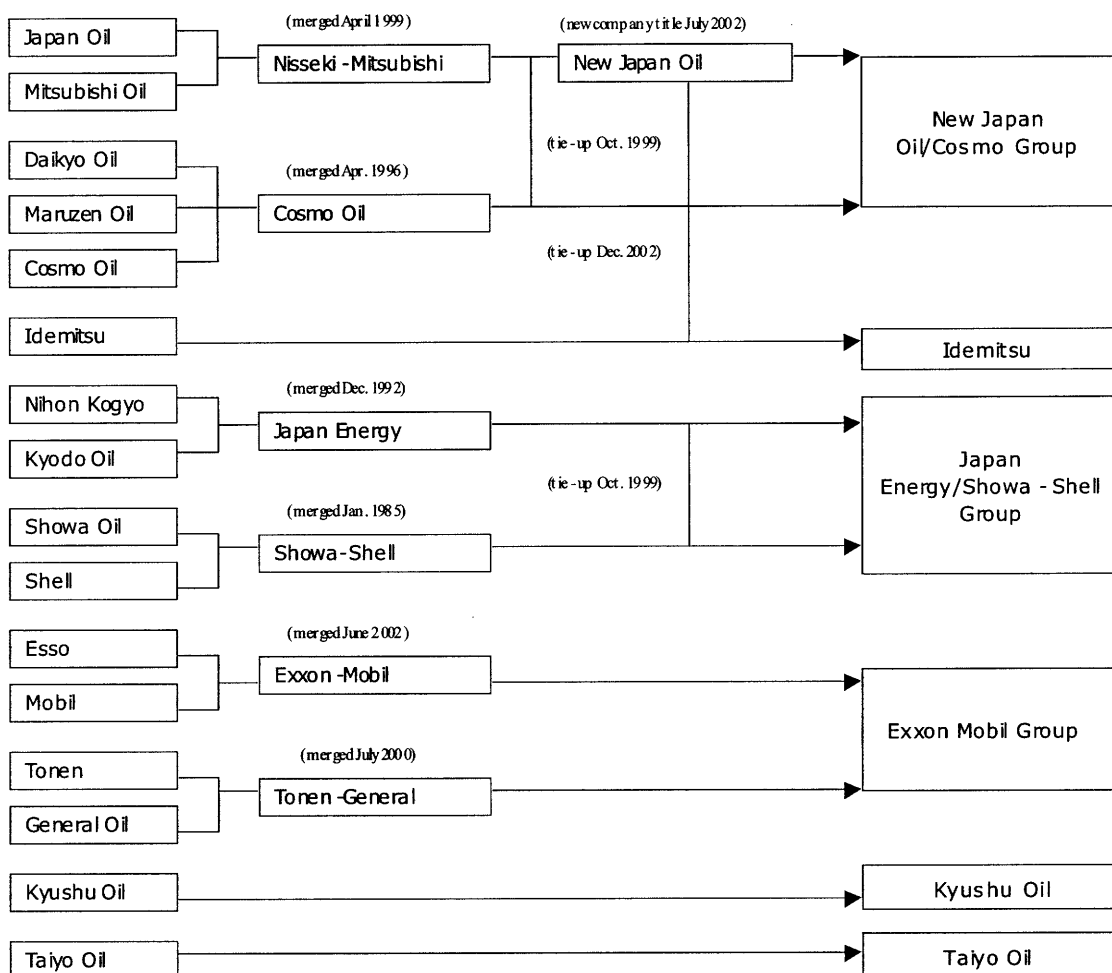
The second wave of mergers began after the abolition of the special law. The largest downstream refiner, Nihon Sekiyu, cut its long standing ties with Caltex, and merged with Mitsubishi Oil in April 1999, and then entered into partnership in refining and distribution with Cosmo Oil in October of the same year. Japan Energy and Showa/Shell also joined refining and distribution networks, although they did not formally merge. Then, in 2000, Toa and General Oil merged to form Tonen-General, and finally in 2002 Idemitsu and Shin-Nihon Sekiyu joined refining operations. By the end of the process firm mergers and partnerships reduced the sixteen firms operating in the downstream sector to four groups.

Fragmentation and Market Shares in Japanese Refining/Distribution Industry



Source: MITI internal document, 1983

Mergers in Downstream Sector



Source: adapted from *Energy Forum*, September 2005, p. 65

3.5 Negotiations with Other Actors

In chapter two of the study a framework of policy change was introduced that proposed changes in the policy preferences of state actors and domestic petroleum firms, occurring in response to changes in the international oil market, were the most important factors in explaining changes in policy across time. I also noted, however, that state actors responsible for oil policy, and firms, were also forced to negotiate with other actors in determining which policies were viable.

In the case of Japan, the position of major consumer industries within Japan shifted in response to change in the oil market. In the 1970s fears about disruptions to physical supply meant major consumers supported increased strategic intervention on energy security grounds. Under the retreat of OPEC and the low price regime, consumers called for balancing the benefits of policy intervention in the oil market with the costs this implied for industries using petroleum products as an input. Peak industry body Keidanren, for example, argued that although the long-term security of petroleum supplies was not guaranteed, the best solution to the problem was to let the market set prices during normal market operation, but retain emergency powers.⁶⁷ By doing so, it was argued that consumers could take advantage of lower energy costs, while also providing insurance against supply problems in the case of market disruptions. In a May 1988 statement Keidanren also included petroleum, along with other energy sources, as an area to be included for ongoing liberalization and deregulation.⁶⁸ Further, a succession of committees operating outside the traditional ministerial committee system promoted the benefits of deregulation and liberalization, beginning with the Maekawa Report, which operated as an advisory body to the prime minister and reported in 1986 that Japan should lower barriers to trade and in order to increase imports and domestic consumption. The Maekawa Report did not mention energy or petroleum, but noted that imports of manufactured products should be imported in order to improve the international division

⁶⁷ *Keidanren Geppō*, June 1988, 42. The positions of Keidanren and the PAJ matched on the question of tax increases, on the other hand. Keidanren argued, in common with the PAJ, that an increase in the petroleum tax was unjustified, and repeating its position that energy security of supply policies should be funded out of general revenues given its status as national policy. Petroleum Association of Japan, "Sekiyu Gyōkai No Suii [Trends in the Petroleum Industry]," (Tokyo: Petroleum Association of Japan, 1986), 144-5.

⁶⁸ Keidanren, "Kisei Kanwa Ni Kansuru Yōbō [Request Regarding Deregulation]," in *Keidanren 50-Nenshi [Fifty Year History of Keidanren]* (Tokyo: Keidanren, 1999), 557.

of labor and make the domestic distribution system more efficient.⁶⁹ It continued with the Hiraiwa Commission, which specified in November 1993 that the domestic market should be opened further, although its conclusions left room for adjustment within MITI in petroleum policy by noting that regulations should be kept to a minimum during normal market operation only if possible to do so. Specifically, the Hiraiwa Report named gasoline, kerosene and light oil as three products for which regulation under normal market conditions should be changed, stating that in petroleum “regulations in petroleum should be kept to the minimum necessary, and, where possible, the formula “free under normal conditions, restricted under emergencies” should be introduced.”⁷⁰

3.6. Policy Adjustment – Upstream

The bifurcation of the Japanese firms into those operating in the domestic sector and those operating internationally meant the debate over how to adjust policies designed to support Japanese firms in the upstream was conducted on a parallel track to the

⁶⁹ On the use of informal committees see Richard J. Samuels, "Leadership and Political Change in Japan: The Case of the Second Rincho," *Journal of Japanese Studies* 29, no. 1 (2003). For the assessment by the PAJ see *Petroleum Association of Japan, "Sekiyu Gyōkai No Suiri [Trends in the Petroleum Industry],"* (Tokyo: Petroleum Association of Japan, 1993), 167.

⁷⁰ Tōichi Tsutomu, Managing Director, Institute for Energy Economics Japan and Petroleum Council member. Interview by author, Tokyo, Japan, July 4, 2006. On the history of the deregulation process in the 1980s see Keidanren, *Keidanren 50-Nenshi [Fifty Year History of Keidanren]* (Tokyo: Keidanren, 1999). See Nakatani Iwao and Hiroko Ōta, *Keizai Kaikaku No Bijon: Hiraiwa Ripōtō Wo Koete [a Vision of Economic Reform: Beyond the Hiraiwa Report]* (Tokyo: Tōyō Keizai Shinpōsha, 1994), 6.

The nationalization of oil production of the 1970s was also followed by efforts by governments in the Middle East to capture a greater share of revenues from crude production. This was done by investing in refining capacity for the export of petroleum products, and Middle Eastern producers added some 1.2 million barrels of capacity between 1984 and 1987. Governments in the European Community feared their own markets would be flooded, and pressured the Japanese government to open its market to imports of petroleum products. According to Diet testimony, the Japanese proposal was that the joint communiqué prepared within the International Energy Agency should note that the market should have a greater role in the supply of petroleum products, but not that they should be traded under a free-trade regime. The United States did not attempt to significantly influence the shape of Japanese policy, and concurred with the Japanese proposal. Further, this is identified as a secondary cause of liberalization, as the decision to prepare a law for the partial opening of the Japanese market to trade in petroleum products was made before the meeting with European countries and the United States - the other major consuming regions. Committee on Commerce and Industry, *Testimony of Nonouchi Takashi, Director General of Agency of Natural Resources and Energy*, September 3 1985.; Committee on Commerce and Industry, *Testimony of Murata Keiji, Minister of International Trade and Industry*, November 20 1985.

liberalization debate. The direction of policy change mimicked that of the downstream: a reduction in the role of government in enhancing strategic control over petroleum resources through privatization. Further, like liberalization of the domestic petroleum sector, the most significant factor leading to the shift in strategy adopted in the exploration and production of oil was the shift in long-run crude oil prices and its effects on Japanese firms. Following the oil shocks a number of public-private partnerships were established and invested in by JNOC, however the falling oil price, and rising yen, meant these failed.⁷¹ This saddled JNOC with substantial debts, and the political costs associated with the scale of these losses led to the reform of JNOC.

Once again, the adjustment of policies did not amount to a rejection of support for national firms in the name of strategic intervention. Rather, they amounted to an adjustment of the instruments applied in order to achieve this goal. Japanese firms also continued to support the provision of subsidies and low-interest loans for exploration and production efforts internationally. The result was a reduction, and restructuring of the policy instruments designed to achieve strategic control, but not a rejection of this goal. This left open the possibility of a reenergizing of strategic intervention under conditions of high prices once again, which is what occurred.

3.7 MITI Policy Preferences - Upstream

The mechanism through which the shift in long-run oil prices undermined the status quo was associated with the government financed JNOC. The scale of the debts associated with upstream policy support provided through JNOC to firms reached some

⁷¹ The rising yen meant that the income from the sale of oil, which was calculated in dollar terms, fell, relative to the cost of financing.

342.2 billion yen from the 264 firms invested in by JNOC to the end of 1997. National companies established in the wake of the oil shocks comprised almost three-quarters of the losses at 251.9 billion.⁷² Japan Oil Development Company (JODCO), for example, was established on February 22, 1973 and purchased rights in Abu Dhabi from British Petroleum, but retained some 465 billion yen of unpaid loans and capital. The North Sea and Sino-Japanese projects, both commenced in 1980 in the wake of the second oil shock, also held over 100 billion yen in unpaid capital or loans.

Top Ten JNOC Investments by Value

(unit: yen millions)

Project	Year	Main Investor	Capital	Loan	Total	Outstanding
Canada Oil Sands	1978	Mitsui Bussan	26,333	0	26,333	26,333
Angola Oil	1985	Cosmo Oil	5,250	27,924	33,174	5,250
Mubarras Oil	1979	Nippon Oil	12,190	28,221	40,411	37,818
Indonesia Nippon Oil Coop.	1979	Nippon Oil	29,351	13,306	42,657	29,351
INPEX North Caspian	1998	Nippon Oil	21,590	23,969	45,559	45,559
United Oil Development	1970	(sold 2001)	16,033	35,795	51,828	49,171
Sakhalin Oil Development	1976	(failed)	13,531	38,522	52,053	45,009
Sino-Japan Oil Development	1980	(failed)	64,483	53,192	117,675	117,675
North Sea Oil	1980	(failed)	29,209	98,031	127,240	123,011
JODCO	1973	AOC Energy	447,511	372,200	819,711	465,234

Source: JOGMEC

The problem, once again, was the major vehicle determined by the government to implement national policy – the Japan National Oil Corporation - was significantly undermined by the shift in long-run oil prices. National projects were undertaken under the assumption that prices would remain at 40-50 dollars a barrel over the life of the project. This stood in contrast to the assumptions of the international majors at the time, which maintained a twenty five dollar a barrel assumption, and meant that the projects were saddled by massive debts when the long-run oil price dropped. Indeed, if prices had

⁷² Yomiuri Shimbun, “Sekiyu Kōdan, 3400-oku en Kaishū Funō: Shusshi/yuushi Saki Kaihatsu Gaisha no Yuda Saikutsu, Shippai Tsudzuki [JNOC, 340 billion yen Unrecoverable: Ongoing Failures in Oil Field Exploration by Development Companies Receiving Investments or Loans],” November 16, 1997, 1; Yomiuri Shimbun, “Kyogaku Akaji no Sekiyu Kaihatsu Gaisha Ōsugiru Shusshi Gaisha, Sekiyu Shokku ni Endaka ga Ōiuchi [Enormous Losses at Petroleum Development Firms: Investment Target Firms too Numerous, the Oil Shocks and Rising Yen are the Cause],” November 16, 1997, 38; Yomiuri Shimbun, “Sekiyu Kaihatsu Gaisha: “Kokusaku” no Moto, Kyogaku Fusai, Hiyō, Rieki Mokusan Kurū [Petroleum Development Firms: Under National Policy, Huge Losses, Costs and Profit Forecasts Off],” November 16, 1997, 39.

not dropped so precipitously, one observer suggested it is not clear that JNOC reforms would have occurred⁷³ Later calculations carried out by the ministry determined that the investments held by JNOC were profitable if calculated after the rise in petroleum prices.⁷⁴

A Board of Audit of Japan (*Kaikei Kenshin*) confirmed the poor state of the projects overseen by JNOC when examining the state of its balance sheet from 1995 as part of its regular review of the state of government finances. It was the first review since 1976, and the auditors assigned four staff members, who spent some 30-80 work days per year for a three year period reviewing each project, including interviews with JNOC and firms receiving JNOC assistance. The results were presented in the administrative oversight committee of the House of Representatives on December 3, 1997. They were extraordinary. By the end of FY1997 JNOC had invested or loaned over 1.7 trillion yen to 266 firms. Of these just 44 were producing oil, while 68 remained in the exploration phase and ten were in the process of being dissolved. This left 144 firms already wound up, responsible for losses totaling 372 billion yen.⁷⁵

When asked to explain the losses, Komatsu Kunio, the president of JNOC at the time, noted without apparent irony that the drop in the price of oil, which should have been applauded by those concerned about Japanese energy security, had harmed Japan's upstream development plans:

"In the mid-1980s the price of oil collapsed and remained low, and the yen continued to increase in value. These factors had a serious influence on the condition of the

⁷³ Ishii Akira, Chief Economist, Japan Oil, Gas and Metals National Corporation (JOGMEC). Interview by author, audio recording, Tokyo, Japan, July 5, 2006. A second effect was the rising yen, as revenues from the projects were in U.S. dollars, whereas loans from JNOC were in yen.

⁷⁴ Kodaira Nobuyori, former Director General, Agency of Natural Resources and Energy (2004-06) and former Director, Petroleum Planning Division (1995-96), Ministry of Economy, Trade and Industry. Interview by author, Tokyo, Japan, July 19, 2007; senior official at JOGMEC. Interview by author, Tokyo, Japan, July 20, 2007.

⁷⁵ Administrative Oversight Committee, *Debates*, December 3, 1997.

companies. I think this was an extremely unfortunate event for our country's upstream petroleum development."⁷⁶

These failures linked to the shift in long-run oil prices, as with those of the domestic refining and distribution firms, initiated a process of review of the existing institutions designed to enhance national control over petroleum. The MITI minister, Horiuchi Mitsuo, ordered the Director General of the Agency of Natural Resources and Energy (ANRE), the body within MITI with responsibility for petroleum policy, to review the findings.⁷⁷

An internal ANRE group gathered for the first of ten meetings on June 17, 1998. It reported to the minister on September 29. Using a cash flow analysis under which the committee assessed each projects' expected production to 2020, and then subtracted operational costs to reach a final figure for likely repayments, they found that just eleven of 123 firms on the books of JNOC at the time were in the black, and this number was likely to rise to 19 firms by 2020. Of the 1.392 trillion yen JNOC had spent by the end of 1997 they determined losses were expected to amount to between 504 and 687 billion yen, with total unrecoverable investments 438 billion yen after the sale of assets and repayment of investments from profitable firms.⁷⁸ The committee also found that twenty seven of the existing firms should be dissolved immediately as there was no prospect of improving their financial position.

The new MITI minister, Yosano Kaoru, continued with the review of existing policy upon entering office.⁷⁹ In response to criticism that the internal auditors had an

⁷⁶ Komatsu Kunio statement to Administrative Oversight Committee, *Debates*, December 3, 1997.

⁷⁷ Economy and Industry Committee, *Debates*, October 15, 1998.

⁷⁸ Economy and Industry Committee, *Debates*, October 15 1998. The revenue flows were calculated under two scenarios. The first used a \$16.1/barrel Dubai assumption (the lowest value from the average spot price of the last 3-5 years), with an exchange rate of 110 yen/dollar (five year average). The second used a \$20.7 /barrel (highest six month average from the last six years) and 145 yen/dollar (monthly average for August 1998) assumption.

⁷⁹ In the House of Councilors election held on July 12, 1998, the government of Hashimoto Ryūtarō performed poorly,

interest in downplaying JNOC's problems, Yosano created a committee that would be free from charges of bias.⁸⁰ He appointed Shiono Hiroshi, an expert in administrative law, to head the body, along with members expert in accounting and law. The specialists agreed with the internal audit, as well as reiterating the role oil prices played in undermining JNOC's financial position, first by encouraging support for large projects following the oil shocks, and then damaging the financial position of these projects through the collapse in prices of 1986.

"Because of the collapse of oil prices in 1986, and the rapid rise of the yen, the financial position of firms invested in [by JNOC] worsened. In response, JNOC postponed loan repayments, halted interest payments lowered the rate of interest charged, and carried out other special policies for 13 firms. If these actions had not been taken and repayments demanded, the firms would be bankrupted, and as a result JNOC would have been unable to reclaim repayment."⁸¹

Crucially, the report did not recommend the dissolution of JNOC, supporting the proposition that the shift in policy towards JNOC was driven by a process of learning in which the existing structure of policy support were adjusted, but the idea of national control itself not abandoned. Rather, it suggested that the causes of previous failures should be reviewed, and auditing and information disclosure processes improved. The report noted that thirteen firms continuing to receive support from JNOC, including the national project firms Sino-Japan Oil Development, North Sea Oil, and Sakhalin Oil Development, should be wound up, and other firms sold off as appropriate in order to improve the overall performance of the company.

and the cabinet, including the prime minister, resigned. On July 30th the new Prime Minister, Obuchi Keizō, took over the leadership, and appointed the new minister for MITI.

⁸⁰ Yosano made clear this intention in a February 25, 1999 press conference: "When the previous report was released people in the Diet and elsewhere pointed out that an assessment should be carried out from a neutral, expert position. For this reason, last November I ordered that the Committee on JNOC Upstream Projects should be convened with the preeminent experts in law, corporate accounting, economics, and petroleum development technologies, within the Petroleum Council," in "Yoshino Tsūsangyō Daijin Danwa [Release by MITI Minister Yosano]," February 24, 1999.

⁸¹ Ministry of International Trade and Industry, "Sekiyu Kodan Kaihatsu Jigyo Iinkai Hokokusho [Report of the Committee on Jnoc Upstream Projects]," ed. Sekiyu Kodan Kaihatsu Jigyo Iinkai (Tokyo: Ministry of International Trade and Industry, 1999), 16.

The implications of the proposed changes were profound in two ways. First, for the first time in the postwar period a government policy document had explicitly proposed supporting some firms above others in order to promote the development of an integrated energy firm. This stood in contrast to earlier changes, which increased or decreased the level of policy support for firms without taking this key step.

Second, the report presaged the idea that policy support for Japanese firms operating in the upstream should be stopped once the process of selective support through the disposal of profitable JNOC assets, and other means of support, was complete. If followed through, this implied, as in France, a complete withdrawal of policy support under normal market conditions for firms operating in the upstream and the downstream sectors once state goals had been achieved.⁸²

In order to achieve this goals, the first five years was noted as a key period within which existing subsidies should be expanded to allow JNOC to subsidize the purchase of existing fields in order to develop the portfolio of the proposed major; the first time that that JNOC would be allowed into the development side of the business. During this period it also recommended that JNOC assets should be sold off to firms capable of forming an integrated energy firm. In the following five years it proposed the chosen firms should then receive support designed assist them in becoming more competitive internationally. Following this, the committee hinted at the possibility that the state would withdraw from the provision of policy support.

⁸² Interviews confirm the committee's intention to withdraw state support after a ten year window, citing the example of the German firm Deminex, which was dissolved by the government in 1997. Arai Mitsuo, former member, Committee on Basic Problems in Petroleum Committee (2000). Interview by author, Tokyo, Japan, July 12, 2007; Kikkawa Takeo, former member, Committee on Basic Problems in Petroleum Committee (2000). Interview by author, Tokyo, Japan, July 18, 2007.

3.8 Firm Policy Preferences

The upstream industry, represented by industry association the Japan Petroleum Development Association (JPDA), was not alarmed with the initial decision to review upstream oil policies. Rather, its chairman saw a review of JNOC's activities as a useful opportunity to rethink how the government should extend support to Japanese firms operating in the upstream sector.⁸³

The industry did not support a more thorough review of the structure of policy instruments, however. The JPDC were given an opportunity to present to the committee, but not sit as a member.⁸⁴ This meant its approval was not required for the report to be established as policy. It is unlikely they would have signed if given the opportunity. The first problem was that the report did not refer to petroleum as a strategic good, rather stopping by noting that it has "considerable differences" with other goods because of price volatility and OPEC market power.⁸⁵ While this did not amount to a repudiation of the use of policy instruments in the upstream, it was a step back from the understanding of the market expressed in earlier government-backed assessments. The JPDC repudiated this view in its public comments, responding that the committee should record that "petroleum is absolutely a strategic good, and in future debates over petroleum development policy the need for strategic decisionmaking must be kept in view."⁸⁶

The industry association representing upstream firms also did not support the

⁸³ Sekiyu Kōgyō Renmei, "Wagakuni Sekiyu/Tennen Gasu Kaihatsu No Genjō to Kadai [Current State and Issues in Japan's Petroleum and Natural Gas Development]," (Tokyo: Sekiyu Kōgyō Renmei, 1999), ii.

⁸⁴ The committee makeup was heavily weighted towards specialists and consumer groups. Of the eighteen members of the committee, only two (Mitsui Bussan and Imperial Oil) were involved in the upstream business, with Teikoku mainly involved in domestic exploration and development projects. The rest were made up of representatives of consumer groups, and academic and think tank experts.

⁸⁵ "Ta no shōhin to ha sōtō kotonaru seishitsu wo yū shiteiru."

⁸⁶ Sekiyu Kōgyō Renmei, "Wagakuni Sekiyu/Tennen Gasu Kaihatsu No Genjō to Kadai [Current State and Issues in Japan's Petroleum and Natural Gas Development]," (Tokyo: Sekiyu Kōgyō Renmei, 2000), 143-4.

proposal that state support for upstream activities should be temporally bounded, and that policy should “pick winners” by channeling subsidies only to firms judged capable of growing to a scale enabling them to compete internationally. It responded that picking winners contravened the stated goal of letting the market determined outcomes.⁸⁷

“The JPDA recognizes that the formation of a central corporate group is one idea, however, the actual joining of firms through partnership or merger relates to the very root of corporate management. For this reason, it is not [a process] that the government or JNOC should lead, but rather this should be left completely to private firms, with the government creating the environment for this to occur.”⁸⁸

In introductory remarks to the annual report of September 2001, Japan Petroleum Development Association (JPDA) and JAPEX chairman Wakasugi Kazuo, also noted his concern that the upstream sector was not given not given a seat at the table of those deciding JNOC, and their own, fate, and that any reforms proposed could eviscerate JNOC’s ability to subsidize upstream projects:

“Special government bodies are being reformed, and the organization and activities of even the JNOC, which has played an important role in the development of our country’s petroleum and natural gas projects, are being reexamined from the ground up. The content of the reforms are not yet clear, but in the current energy situation I can only be extremely worried that the direction of reform is being set hurriedly without examining the fundamental role JNOC plays in enhancing energy security of supply for our country through the independent development of [energy] projects.”⁸⁹

His concern was understandable, given the number of projects funded by government money. Of the 67 projects that had reached the production stage between the years of 1961 and 2003, just ten did not received financial backing from JNOC in some form and the unwinding of this support was as a consequence likely to make any number of these no longer viable.

The publication of the August 2000 report into policy intervention in petroleum

⁸⁷ Ibid., 145.

⁸⁸ Ibid., 45.

⁸⁹ —, “Wagakuni Sekiyu/Tennen Gasu Kaihatsu No Genjō to Kadai [Current State and Issues in Japan’s Petroleum and Natural Gas Development],” (Tokyo: Sekiyu Kōgyō Renmei, 2001), i-iii.

exploration and development left upstream firms facing a new situation. Quantitative targets for imports by national flag firms were discarded. Further, a policy process from which these firms were excluded concluded that only upstream operators with the potential to become significant international players should receive policy support. For firms - by their own admission largely uncompetitive in bidding for the rights to develop upstream projects because of their size - this was a serious threat.

It was also not the end of the challenge. On July 6 of 2001, Horiuchi Mitsuo, the MITI minister who managed the initial investigation into JNOC finances, met with Prime Minister Koizumi Junichiro and proposed that JNOC be abolished. Koizumi accepted the idea, and instructed the minister in charge of administrative reform to draw up plans.⁹⁰ In doing so, Horiuchi inserted the problem of JNOC reform into a broader battle over reforming the plethora of Japanese special government bodies. This dynamic mirrored the effect of the broader push to deregulation on policy outcomes in the downstream sector during the low-price environment. Further, because of the work already completed on the financial position of JNOC, and the intervention of Horiuchi, JNOC was included in the first group of seven bodies scheduled to be closed or privatized.⁹¹ The cabinet passed the plan on December 19 the same year, and the laws were prepared to be put to parliament in the first session of the following year.

This new challenge to JNOC did not lead to the withdrawal of policy support for upstream activities, for two reasons. First, there was the problem of the need to sell-off of assets held by JNOC in upstream projects, which would take some years. Second,

⁹⁰ According to reports, when Horiuchi met with Koizumi and explained the situation at JNOC, the prime minister replied: "Is that the situation? OK, then let's do it, let's abolish it; that is our basic position." Komine Jun, "Chokugeki Intabyū: Kokumin no Zeikin wo Dobu ni Suteta Sekiyukōdan wo Haishi Seyo [Interview with Horiuchi Mitsuo: Abolish the JNOC that Threw the Public's Taxes in the Ditch], *Energy Forum*, September 2001, 69-77.

⁹¹ "Nana Hōjin Haishi/mineika [Seven Government Bodies to be Abolished or Privatized]," *Nikkei Shinbun*, November 21, 2001, 1.

Horiuchi and Koizumi had committed to abolishing the body itself, but did not reject maintaining a role for government in the upstream or maintaining a strategic stockpile.⁹² Indeed, there remained strong support within state actors for ongoing subsidization of exploration and production. This meant that while the committee proposal of 2000 to wind up subsidies for the upstream after ten years remained in place, the gap between those managing the reform of special government bodies, and MITI and upstream firms, did not lie in whether support for the upstream should be continued.⁹³ Rather it was focused on how firms JNOC maintained investments in should be dealt with, and the extent and types of support the government should be allowed to continue to provide.

The upstream industry was understandably unnerved, and made clear its objections to the hijacking of the MITI discussions through its association:

"In June 2001 reform of the JNOC law added support for the purchase of not only exploration rights, but also the purchase of fields already producing to JNOC's responsibilities. But while these revisions were being carried out to petroleum and gas policies, reform of special government bodies was being carried out as a central component of the administrative reform process since last summer. Further, it was decided that JNOC would be abolished ahead of other bodies as a model case for reform...This did not take into account our industry or other interested parties' opinions, and in July this year JNOC was abolished and the new independent administrative body established, and a program to set up a special purpose company was also put into law."⁹⁴

The conclusion of the negotiations between METI, the administrative reform group, and the LDP represented a compromise. In July 2002 a law passed parliament abolishing JNOC but also establishing a new public body, the Metal Mining Agency of Japan (JOGMEC) made up of two previous bodies. In this way administrative reform

⁹² Komine Jun, "Chokugeki Intabyū: Kokumin no Zeikin wo Dobu ni Suteta Sekiyukōdan wo Haishi Seyo [Interview with Horiuchi Mitsuo: Abolish the JNOC that Threw the Public's Taxes in the Ditch], *Energy Forum*, September 2001, 69-77.

⁹³ "Tsukinai Kecchaku he Shushō Futaiten [PM will not Deviate from a Decision by the End of the Month]," *Nikkei Shimbun*, November 21, 2001, 3; Kodaira Nobuyori, former Director General, Agency of Natural Resources and Energy (2004-06) and former Director, Petroleum Planning Division (1995-96), Ministry of Economy, Trade and Industry, Interview by author, Tokyo, Japan, July 19, 2007.

⁹⁴ Sekiyu Kōgyō Renmei, "Wagakuni Sekiyu/Tennen Gasu Kaihatsu No Genjō to Kadai [Current State and Issues in Japan's Petroleum and Natural Gas Development]," (Tokyo: Sekiyu Kōgyō Renmei, 2002), 43.

could claim a victory by cutting the number of government bodies, while supporters of ongoing upstream policy support also secured this goal.

At the same time, the reforms reduced JOGMEC's capacity to support upstream oil exploration and development projects in two ways. First, the portfolio of energy assets held by the government body was reduced through privatization, with companies in which JNOC held shares broken into three groups. The first group of shares were used as core assets of a new Japanese major company,⁹⁵ and were merged and then the new company listed on the stock exchange. The second set of assets were sold off through a tendering process.⁹⁶ The third set of assets – those of firms not yet in the development phase – remained in JOGMEC hands.

This sell-off of assets, first recommended in 2000, had its first success with the emergence of a new and more powerful upstream player, created through the merger of the former JNOC-financed INPEX and Imperial Oil. The newly listed INPEX, which operated internationally, and Teikoku Oil, which owned mostly domestic assets, announced their merger in December 2005. Although still small on international terms, the two firms, which had been the number one and number three upstream firms in terms of upstream assets, were scheduled to reach a combined production of 560,000 barrels of oil equivalent by FY2009.⁹⁷ In an interview with business daily the *Nihon Keizai Shimbun*, the chairman of the newly merged firm, Matsuo Kunihiko, noted that the firm aimed to grow by five percent per year, and to reach a production level of one million

⁹⁵ The assets of INPEX and its subsidiaries, along with JODCO were used.

⁹⁶ Lead companies in these firms were given first bidding rights on the projects, and by February 2005 24 of 27 firms had been sold off for a total profit of 13.49 billion yen. For a complete list see Sekiyu Kōgyō Renmei, "Wagakuni Sekiyu/Tennen Gasu Kaihatsu No Genjō to Kadai [Current State and Issues in Japan's Petroleum and Natural Gas Development]," (Tokyo: Sekiyu Kōgyō Renmei, 2006), 59-60.

⁹⁷ "Jun-meja Mezashite Keiei tōgō – Sōgō Hokan to Kibō Kakudai de Kaigai Keneki no Kakutoku he [Merger Aimed at Creating a Mini-Major – Looking to Secure International Development Rights through Mutual Support and Scale Growth]," *Energy*, December 2005, 18-19.

barrels by 2015, making it one-seventh the size of market leader Exxon-Mobil in terms of its reserves base.⁹⁸

The second change was that lending conditions to the private sector were restricted. The provision of loans was halted, and equity capital supplied for overseas exploration projects reduced to fifty from seventy percent of total capital costs. Loan guarantees were also cut to fifty percent,⁹⁹ making government financing far less attractive to firms. By 2006 JOGMEC had offered no new loans or guarantees to upstream firms' exploration projects. Although high oil prices were a contributory cause, the upstream industry also suggested this was also driven by the restrictive lending conditions, and continued to lobby for JOGMEC to extend funds not only to firms with the ability to grow into a Japanese major, but also to other firms.¹⁰⁰

4. Intervention Reinvigorated (2001-2006)

Liberalization and privatization led to a qualitative and quantitative reduction in strategic intervention in the Japanese petroleum sector. As argued above, this was not because of a rejection of the institutions of national control by either state and firm actors, however. Instead, the interests of both sets of actors remained in line with continuing intervention in support of domestic firms.

It is unsurprising, therefore, that the increase in petroleum prices that began in earnest in the second half of 2003 and a shift in the market structure towards tight supply conditions led to the reenergizing of policy intervention on strategic grounds. Prior to this

⁹⁸ Nihon Keizai Shimbun, Intabyū: Kokusai Sekiyu Kaihatsu Teikoku HD Kaicho Matsuo Kunihiko [Interview: Matsuo Kunihiko, Chairman of INPEX-Teikoku Oil],” 7.

⁹⁹ JOGMEC, "Heisei 17-Nendo Keikaku [Plan for 2005],” (Tokyo: JOGMEC, 2004), 11.

¹⁰⁰ Sekiyu Kōgyō Renmei, "Wagakuni Sekiyu/Tennen Gasu Kaihatsu No Genjō to Kadai [Current State and Issues in Japan's Petroleum and Natural Gas Development]"; Tanaka Toshiaki, former employee Mitsubishi Oil and member, MITI JOGMEC Technical Committee. Interview by author, June 11, 2006.

change intervention had been reduced and focused: the ceiling on the provision of equity capital fell, and a quantitative target for upstream acquisitions was abolished. Following the shift to a high price environment, the direction of policy change was reversed: a quantitative target for upstream acquisitions by national flag companies was reestablished, and the amount of equity able to be provided to firms increased substantially. In contrast with the upstream sector, however, in the downstream sector policy did not shift towards increased policy intervention. This suggests that the liberalization that occurred in the 1990s is likely to remain in place.

How can we explain the partial reintervention in petroleum markets from 2001-2006 on strategic grounds? Using the framework developed in chapter two, I have argued thus far that the policies of strategic intervention matched the interests of both state actors and firms. Further, I have argued that the changes in strategic intervention during the 1980-2000 period represented an adjustment to market conditions, but not the rejection of national control as a goal of public policy: METI, and firms, remained committed to national control, however the instruments used to pursue this goal were altered in response to the effects of changes in the international petroleum market.

This framework enables us to explain outcomes in the 2001-2006 period, and in particular the continued support for upstream intervention over the 1980-2000 period as opposed to the lack of reintervention in refining and marketing. State actors remained committed to strategic intervention, while firms supported upstream intervention because they remained weak in the upstream. Liberalization of the refining and marketing sector, on the other hand, was more successful than protectionism in creating more competitive firms internationally, thereby satisfying state goals. Further, the firms themselves

adjusted by restructuring, while increasingly taking advantage of opportunities in the international market in both exploration and production and the sale of petroleum products regionally. This meant neither was interested in reregulation in the downstream sector under conditions of high prices.

As in the 1970s the long term policy response to high prices was caused by a shift in the structure of the international petroleum market, with projections of an ongoing tight market and growing OPEC market power. This led to debate over the appropriate long-term policy response to the new environment. The dynamic of this debate was affected by the domestic effects of higher oil prices in the 2000s, which different from those of 1973. Since that time policy support for fuel diversification, and the promotion of energy efficiency technologies, had reduced the sectoral effects of increasing petroleum prices.¹⁰¹

This meant the policy response was driven not by a sense of crisis about the performance of firms operating in refining and marketing, but rather by the predicted shift in the structure of the market itself. A METI assessment, for example, argued that both supply and demand elements meant the international petroleum market was undergoing a structural change likely to continue for the long term. On the demand side, METI argued that faster demand growth, focused on China and India, was likely to continue in the long-term. On the supply side, the same assessment argued that insufficient investment in energy infrastructure, the fall in non-OPEC supply as fields

¹⁰¹ This does not mean, however, that the effects were non-existent. In 2006, the twelve ministries and agencies set up a committee to examine the effects of high oil prices on the economy, which concluded that high prices were unlikely to cause serious economic problems in the short term, but the effects on small and medium sized enterprises should not be discounted. A survey taken of these firms by METI demonstrated that 71.4 percent of respondents suffered from higher prices. METI referred to the shift to a high price regime as a “creeping crisis.” On the report and survey see Nikkei Shimbun, April 21, 2006, 5; Nikkei Shimbun, May 17, 2006, 5. For the cite see Ministry of Economy Trade and Industry, “Shin Enerugii Senryaku Ni Tsuite [on the New National Energy Strategy],” (Tokyo: Ministry of Economy Trade and Industry, 2003), 15.

outside OPEC matured, and growing energy nationalism in petroleum producing countries, all were likely to restrict the supply of petroleum. The end result, according to this view, was likely to be ongoing tight supply conditions and high prices.¹⁰²

The outcome was an increase in strategic intervention once again. The process through which the change was instituted utilized the Basic Law on Energy, which into force in 2002. Under the law the METI minister was charged with establishing a basic energy policy by the end of 2003, and revising the plan every three years. In the first plan, passed by cabinet on October 7, 2003, the new strategy removed references to a shift away from petroleum, instead calling for a best-mix strategy in which petroleum was placed alongside other fuels as a component of a fuel diversification strategy. The revised 2006 energy plan then mandated that JOGMEC be given the authority to extend higher levels of financing to upstream projects.¹⁰³

The committee presiding over the preparation of the new energy plan noted the consensus on the importance of energy security of supply.

"To date, METI has been dealing with issues such as the introduction of competition into domestic energy markets and how to respond to global environmental problems. But because of the increasingly difficult domestic and international energy situation, it has been decided to develop a "New National Energy Strategy" that focuses once again on the axis of energy security. The interim report will be prepared by the end of March, and the final report by the end of May. Then, it is planned to be reflected in the basic policies for economic and fiscal reform after discussion within the Council on Economic and Fiscal Policy."¹⁰⁴

Most striking amongst the policy changes prefaced in the new energy strategy was the reestablishment of a target for upstream oil acquisitions, set at 40 percent of total consumption. The quantitative target was only abolished in 2000, and the reversion to the

¹⁰² ———, "Shin Kokka Enerugii Senryaku [New National Energy Strategy] " (Tokyo: Ministry of Economy Trade and Industry, 2006), 1-5.

¹⁰³ ———, "Enerugii Kihon Keikaku [Basic Energy Plan] " (Tokyo: Ministry of Economy Trade and Industry, 2007), 41-42.

¹⁰⁴ Sogo Enerugii Bukai, "Briefing Notes," (Tokyo: Ministry of Economy Trade and Industry, 2006).

use of quantitative targets symbolized the policy shift under conditions of higher prices and the predicted shift in market structure. JOGMEC's mandate under the new energy strategy was also extended by an increase in the risk money: the organization was given the authority to increase the amount of equity capital provided to projects if they met a number of conditions, most notably if the scale of the project is large enough, and if Japanese firms were operators or national flag firms hold thirty percent or more of the project rights. If the project reaches the development phase, then JOGMEC is required to sell its interest in the project.¹⁰⁵

4.1 Firm and METI Preferences

For firms, weakness internationally led them to support ongoing policy intervention in the name of strategic control, and this included both those whose origins were in domestic refining and distribution, and those originally engaged in exploration and production work internationally. During debate over how to adjust the state support in exploration and production, the industry association of the upstream industry, the JPDC, requested an increase in the upper limit for loans and loan guarantees to firms operating in the upstream.¹⁰⁶ In an interview on the new energy strategy the head of the largest Japanese upstream operator – the newly merged INPEX-Teikoku group also noted his dissatisfaction with the previous reforms, and signaled his support for the need to increase loans and subsidies under conditions of higher oil prices:

"The situation has completely changed since JNOC was abolished and oil was ten dollars a barrel. National development of upstream resources is needed for energy

¹⁰⁵ JOGMEC, "Oil & Gas Bijinesu Tsūru Risutu [Jogmec Business Tool List]," (Tokyo: JOGMEC, 2007), 4-5.

¹⁰⁶ Sekiyu Tsushin, June 27, 2006; Sekiyu Kōgyō Renmei, "Wagakuni Sekiyu/Tennen Gasu Kaihatsu No Genjō to Kadai [Current State and Issues in Japan's Petroleum and Natural Gas Development]," (Tokyo: Sekiyu Kōgyō Renmei, 2003), 56.

security reasons. We can't reject the fact that the decision at the time was too short-sighted, even though resource development policies are [generally] strongly shaped by the times.¹⁰⁷

State actors most immediately involved in the provision of upstream financing, when given an opportunity to present to the committee charged with redrawing Japan's energy policy, expressed their organization's satisfaction that the METI draft that recommending an increase the amount of risk money made available to upstream firms both qualitatively and quantitatively.¹⁰⁸

In the downstream sector, on the other hand, there was not support for intervention. There is little mystery about the lack of support among state actors for shifting back towards protectionism. The application of trade instruments proved ineffective in promoting the goal of creating an integrated national oil firm. Trade liberalization, on the other hand, moved this goal forward by causing mergers and acquisitions within the industry. For firms in the downstream, on the other hand, the shift to a high price environment represented a political opportunity. They were faced with two choices. The first was to use high prices to argue for the implementation of trade and other restrictions on the market, with the goal of securing advantage over import competition. The evidence demonstrates, however, that firms in the downstream sector chose the second option, which was to do nothing.

This shift in position represents an apparent puzzle. Facing a similar situation, why did firm preferences change between the 1980 and 2000? For almost forty years the PIL had largely shaped their competitive environment of Japanese refiners and marketers by offering protection from international competition on strategic grounds. Why then, did

¹⁰⁷ Nihon Keizai Shimbun, Intabyū: Kokusai Sekiyu Kaihatsu Teikoku HD Kaichō Matsuo Kunihiro [Interview: Matsuo Kunihiro, Chairman of INPEX-Teikoku Oil],” 7.

¹⁰⁸ Sogo Enerugii Bukai Shoiinkai, "Meeting Notes," (Tokyo: Ministry of Economy Trade and Industry, 2006).

the increase in oil prices, understood by the regulator to be caused by a structural shift in the market rather than a short-term phenomenon, not lead firms to lobby for renewed protection?

The most important cause of the shift in firm policy preferences, as with METI, was linked to the effects of the liberalization and privatization period of the 1980s and 1990s. As noted above, firms operating in refining and marketing undertook a wide range of mergers. As well as external reorganization through mergers, they implemented a series of medium-term strategic plans designed to improve company performance through diversification geographically and in terms of product lines. These decisions were informed, as in the case of France, with the knowledge that domestic demand for refined products was unlikely to grow significantly, meaning profitability needed to be sought internationally rather than through a return to protectionism at home. Changes implemented as a result of liberalization and privatization, coupled with falling domestic demand, led firms to adopt market rather than non-market measures in order to improve performance and future prospects. This made them disinterested in policy support within the domestic economy.

The largest of the wholly domestic refiners and marketers, *Nippon Oil*, for example, continued to reduce refining capacity throughout the 1990s and into the 2000s, aided by a merger with Mitsubishi Oil. This strategy was complemented by expanding geographically in order to engage in exploration and production and become more vertically integrated, while also expanding horizontally through shifting into business areas other than petroleum.¹⁰⁹ The management plan for FY2003-2005 made the goal of vertical integration explicit, establishing a medium-term goal of increasing production

¹⁰⁹ "Message from the President," Nippon Mitsubishi Oil Corporation Annual Report 2001, 2-3.

worldwide to 150,000 barrels per day of oil equivalent by the end of FY2005, from 50,000 in FY2002. This was then extended to the goal of 200,000 barrels per day by the end of FY2015 in a subsequent strategy. This shift was reflected in capital expenditures, which were greater in the area of oil exploration and development, and initiatives designed to expand the firm horizontally (191 billion yen over three years), compared to investments in refining and sales (150 billion over the same period). In the third strategic management plan announced by the firm to FY2011 seventy percent of new investments were slated for use on oil and gas production and other investments in new business areas.¹¹⁰ Further, a component of the investments in refining was driven by the recognition that market growth for petroleum products in Asia represented an alternative strategy for improving profitability given the projections of future falls in domestic demand.¹¹¹ The establishment of a subsidiary in Shanghai aimed at developing a marketing network in China, as well as efforts to increase the marketing of lubricants into Southeast Asia, reflected this new emphasis on markets outside Japan. The firm also signed a contract with China National Petroleum Corporation (CNPC) to produce refined products on its behalf, and then agreed to convert its refinery based in Osaka to a joint operation focused on exports in FY2008.

4. Conclusion

Firms therefore, as well as state actors, supported ongoing intervention in the petroleum sector on strategic grounds in the 2001-2006 period, however this support was limited to exploration and production internationally. Policy support in refining and

¹¹⁰ Nippon Oil Corporation Annual Report 2005, 5.

¹¹¹ Nippon Oil Corporation Annual Report 2002, 7.

marketing, in contrast, was not reintroduced. In chapter two of this study I proposed that instances of strategic intervention can be understood as a meeting of the interests of state actors and firms. Further, I argued that policy changes can be understood as an adjustment to the effects of shifts in the structure of the international petroleum market on the efficacy of the existing policy regime.

The case of Japan presented here suggest this framework accurately captures the effects of changes in the petroleum market structure on policy. In the 1970s the profitability of Japanese firms operating in the petroleum sector was harmed by the shift to a high price environment. The response of almost all these firms was to demand ongoing protection from international competition. State actors with responsibility for petroleum policy also advocated heavier intervention in the petroleum market on strategic grounds. The outcome was increased policy intervention through the passing of two emergency laws, and greater quantitative intervention in the upstream sector.

During the 1980-2000 period policy intervention in the Japanese petroleum sector fell markedly. In the downstream sector, long-standing protection of domestic firms on strategic grounds was abolished. In the upstream, low prices undermined the financial position of the government vehicle used to provide financing upstream. In both cases METI sought to adapt existing policies in response to changes in the international oil market. Against this, domestic firms and others that supported ongoing strategic intervention in the petroleum market proved incapable of defending the policy status-quo. The defection of the MITI bureaucrats responsible for oil policy from the provision of these benefits was at the root of policy change. I also argued, however, that the shift in the policy preferences of these actors within the state did not amount to a rejection of the

goal of national control. Instead, it represented an adjustment to the existing instruments used to pursue this goal, given they had been undermined by the effects of shifts in long-run oil prices.

Understanding this explains the effects of the shift to a high price environment on outcomes under conditions of high long-run prices from 2001-2006. Ongoing support for national control by state actors, as well as the weakness of Japanese firms in the international petroleum market, meant that a new government vehicle was created to offer improved terms to national flag firms operating in the upstream. In refining and marketing, on the other hand, this shift to increased strategic intervention was not replicated. This can be explained by the causes and effects of change in the previous period. State actors agreed on the need to liberalize because of the failure of the existing policies to achieve the desired outcome, a failure that was exacerbated by the effects of the shifts in long-run prices. As an alternative, liberalization had proven an effective strategy for achieving this goal. For firms, on the other, liberalization led them to shift their strategies towards vertical integration upstream, and entering markets for petroleum products in the Asian region. This made downstream firms interested in securing support from the state for their exploration and production activities, but also made them no longer interested in protectionism downstream.

In the following two chapters I extend the analysis of institutional changes in the petroleum sector to France and the United States: two countries with substantially different national institutions, political actors, and domestic resources, to Japan.

Chapter Five – France Case

"In time of peace as in war, oil is an indispensable primary product in the economy of an important nation...Oil produced and refined in France should be the objective."

Decree establishing the Bureau de Recherches de Petrole, cited in Leslie E. Grayson, *National Oil Companies*, 26

"We were like priests not believing in God anymore."

Gilles Bellec, Director of Hydrocarbons (1984-1989), Ministry of Industry, July 18, 2008

1. Outline

This chapter documents changes in petroleum policies in France over the 1980-2006 period. France, like Japan, entered the 1970s with a comprehensive set of regulations governing the oil market and designed to support national firms in the name of enhancing national control. The legal basis for regulating the domestic petroleum market was the 1928 oil law, which established a state monopoly on the importation of crude and crude products, and then delegating this right to national firms. The French government, in contrast to the governments of Japan and the United States, held significant stakes in these firms, both of which were engaged in exploration and production internationally, as well as refining and marketing within the French market.¹

By the end of the period examined in this study, policies designed to support

¹ Direct intervention through state ownership was characteristic of French policy intervention across economic sectors. For a summary see Pepper D. Culpepper, "Capitalism, Coordination, and Economic Exchange: The French Political Economy since 1985," in *Changing France: The Politics That Markets Make*, Peter A. Hall and Bruno Palier, and Pepper D. Culpepper ed., (New York: Palgrave Macmillan, 2006).

national champions in the oil sector seek were abandoned. The two oil firms in which the government retained shareholdings and managerial representation – Elf-Aquitaine and Total – were privatized over the 1990s, and merged into a wholly independent firm in 2000. This created the fourth largest global integrated oil major, and left state actors with no explicit controls through which to shape firm behavior in order to meet public policy goals. In the domestic market the government relinquished the monopoly it had over the importation of crude and crude products, and which it had delegated to national firms, and released its control over prices.

The robustness of this transformation was demonstrated by the new French energy law passed in 2005, following the rise in long-run oil prices; the French government increased policy intervention in energy markets, but did not return to the law of 1928. Instead, new measures were designed to shape the supply and demand for energy, but not in ways calculated to enhance strategic control over petroleum resources. The new pattern of policy intervention therefore fits within the liberal convergence hypothesis. It also suggests that the old French goal of enhancing national control over the petroleum supply through strategic intervention is dead.²

² This outcome is overdetermined, given that reneging from European commitments on energy policy would be likely to have significant and negative consequences, which shifts the balance in favor of retaining a liberal approach to petroleum policies regardless of the position of domestic firms. Research showed no demand for a return to strategic intervention among policymakers and firms, however, suggesting that it is not only European constraints, but also the

The questions become, therefore: how did this change come about? Why did the policy preferences of state actors shift in away from supporting national oil firms in the name of enhancing national control over petroleum, and what was the response of firms? And why was the retrenchment of policies of strategic intervention more robust than in the cases of Japan and the United States?

To return to the hypotheses developed in chapter two of the study, I argued that the liberal convergence hypothesis proposes a secular decline in strategic intervention over time. On this reading of the evidence presented in this chapter, outcomes in the case of France appear to be consistent with the hypothesis. In this chapter I explain this outcome by a shift in the preferences of firms away from strategic intervention. For firms, the commercial importance of the French market fell over time relative to other markets. This implied that the protection afforded by the 1928 law was less significant in attaining commercial goals. Changes in the international oil market led French firms to further diversify their sources of production globally, undermining their interest in remaining within the policy regime developed by the state. Finally, state ownership acted as a constraint on the expansion of these firms. When questions of liberalization and privatization were raised, therefore, they did not face significant costs in the dismantling

change in policy strategic adopted by state actors and firms, that is the most important cause of policy stability in the case of France.

of the status quo, and also expected benefits from acquiescing to such change.

The decision to jettison the policies promoting national control occurred not only because of the shift in the policy preferences of firms, however, but also because the Directorate of Hydrocarbons – the division in charge of the petroleum sector within the Ministry of Industry – was no longer interested in defending the status quo. In particular, unlike in Japan where METI still had a role in championing its weak petroleum industry, the role of the directorate in supporting industry through regulatory and other means was no longer necessary given the increasing strength of the firm, and the desire of its management for greater autonomy.

This shift meant that negotiations with other actors within the state was smooth.³ At its most general level, as Levy, Culpepper, Schmidt and others have noted liberalization and privatization reflected a change in the strategy adopted by state actors in the 1980s and the 1990s in order to restrain inflation and promote economic growth. This shift encompassed parties of both the left and the right, and was reflected by a move away from *dirigisme*, and towards a greater reliance on the mechanism of the market to allocate goods and services.⁴ In particular, the Ministry of Finance began to support price

³ The contrast with the electricity and gas sectors here is instructive. Although European recommendations to liberalize the French markets in gas and electricity were made simultaneously to those in oil, the latter proceeded far more quickly.

⁴ Jonah D. Levy, "Economic Policy and Policy-Making," in *Developments in French Politics 3*, ed. Alistair Cole,

liberalization in the petroleum sector as prices began to decline in the 1980s, because of the expectation that this would help reduce inflation. Political leaders agreed with this strategy. Likewise privatization, as a method for reducing government debt, also extended into the petroleum sector. Aside from securing petroleum supplies, therefore, the goals of promoting macroeconomic stability and economic growth no longer fitted with the policy of strategic intervention in the petroleum sector.

This general shift towards economic openness matched, therefore, the particular effects of changes in the international oil market on the policy preferences of firms and their supporters within government. By the time of the decision to loosen prices and relinquish the system of licensing, therefore, the effects of changes in the international petroleum market meant the directorate, in the pithy phrase of its director, was made up of “priests not believing in God anymore.”⁵ When a third set of actors based in Europe – the European Commission, Directorate General of Competition (DGC) and European Court of Justice (ECJ) – began to propose changes in French oil policy in the 1980s as they pursued their mandate to complete the internal market envisioned in the Rome

Patrick Le Gales, and Jonah D. Levy (Houndmills, New York: Palgrave Macmillan, 2005).; Culpepper, "Capitalism, Coordination, and Economic Exchange: The French Political Economy since 1985"; Vivien A. Schmidt, *From State to Market? The Transformation of French Business and Government* (New York: Cambridge University Press, 1996).

⁵ Gilles Bellec, Director of Hydrocarbons (1984-1989), interview with author, Ministry of Industry, Paris, France, July 18, 2008.

treaties, therefore, they found no resistance from within the state.⁶ Strategic intervention was therefore jettisoned in favor of a response to the problem of reliance on the international market for petroleum embedded in Europe.

In this reading of the evidence, European Commission proposals were an alternative model for organizing a policy response to the reliance on the international market for the supply of petroleum, and although they did not solely determine outcomes, they acted as a catalyst for policy change in two ways. First, as Smith notes, there is a systematic bias towards a policy preference for liberalization of national markets, and away from national modes of regulation, built into the structure of European organizations. This meant the insertion of the DGC and European Commission into French decision-making provided the impetus for the dismantling national regulatory regimes in the petroleum sector across member states.⁷ Second, European institutions played a more active role in changing French policy on two occasions. First, the DGC pushing for licenses to import petroleum products to be allocated to new firms. Second, the ECJ forced the abolition of the government's golden share in Elf-Aquitaine that represented the last vestige of state control over the public and public-private firms that

⁶ Indeed, the memorandum of the meeting at which national governments debated the recommendations of the EC to liberalize energy markets makes no note of objections because of the petroleum sector, and the chief negotiator for the French government has no recollection of receiving instructions to resist the proposals related to the petroleum sector, in contrast to the electricity and gas sectors.

⁷ Mitchell P. Smith, *States of Liberalization: Redefining the Public Sector in Integrated Europe* (2005), 23.

were envisioned to secure France's supplies of petroleum.

To understand the instruments utilized in France to shape the national response to the increasing reliance on the international petroleum market for the supply of petroleum, I review French petroleum policies period prior to 1980. I also describe European policymaking in the petroleum sector, in addition to French national policy, before moving on to consider in more detail the mechanisms through which French national institutions transformed over the 1980-2006 period shifted from a focus on national control towards a liberal response to the reliance on external markets for the supply of petroleum.

2. Initial Conditions

French petroleum policy was not initially shaped by notions of the strategic character of oil. This is unsurprising given that use of products derived from oil was similarly limited to illumination and lubricants. Firms and the state were nevertheless interested in the market for petroleum products for more typical reasons of political economy. Tariffs imposed in 1871, for example, were designed to shield a nascent oil shale industry from increasing oil and oil product imports sourced from the United

States.⁸

As oil security of supply became an issue of security following World War One, policy became linked to the penetration of the domestic market by the international oil majors for reasons of national security, rather than economic protectionism.⁹ This made national purpose inseparable from private gain: both state and firm actors sought policies designed to protect the domestic market, firms for reasons of profit, and policymakers in order to enhance control by French firms over petroleum exploration and production internationally.¹⁰

Strategic intervention in France was more successful than in Japan. Access to upstream reserves – crucial in establishing an integrated oil firm capable of loosening the grip of international firms on the domestic market – was secured by French firms. First, in 1921 the French government was allocated a twenty-five percent share in the Turkish Petroleum Company (TPC), renamed the Iraq Petroleum Company (IPC) in 1927. The conference that led to the signing of the Treaty of San Remo was convened in 1920 in order to dispose of the assets of the Deutsche Bank, which relinquished them following

⁸ Gregory Nowell, "Realpolitik Vs. Transnational Rent-Seeking: French Mercantilism and the Development of the World Oil Cartel, 1860-1939" (Massachusetts Institute of Technology, 1988), 108. For import data see 106.

⁹ French leaders feared import dependence of during French reliance on imports from the United States during WWI, and the cancellation of U.S. traffic across the North Atlantic. John Zysman, *Political Strategies for Industrial Order: State, Market, and Industry in France* (Berkeley: University of California Press, 1977), 67.

¹⁰ Guy de Carmoy, "The New French Energy Policy," *Energy Policy* (1982), 181

Germany's defeat in World War One. Their share in the joint exploration and production firm was allotted to the French government. In 1923 industrialist Ernest Mercier was invited to organize French commercial interests in order to exploit this share. Mercier established the CFP in 1924. French President Raymond Poincare, who wrote to Ernest Mercier at the time of its establishment, clarified the public purpose of the private firm:

"[It should be a] policy instrument capable of carrying out a national oil policy. The company must be essentially French and remain completely independent. It will try to develop oil production under French control in different productive regions."¹¹

CFP took a 23.75 percent stake in the TPC/IPC in 1927. (Shares taken by other firms were: British Petroleum 23.75 percent, Royal Dutch-Shell 23.75, Near East Development (Standard New Jersey and Socony Mobil) 23.75, Partex Gulbenkian, 5.) The success of the TPC/IPC in discovering oil deposits in Mosul (in present day Iraq) represented the first instance of a French-flagged firm gaining access to a significant share of oil for export to France.

Access to upstream crude could not alone solve the problem of the dominance of multinational firms in domestic refining and distribution. Given this, private and public interests demanded further regulatory action be taken with direct and indirect policy instruments. First, the government directly intervened in the domestic refining market

¹¹ Cited in Nowell, "Realpolitik Vs. Transnational Rent-Seeking: French Mercantilism and the Development of the World Oil Cartel, 1860-1939", 309.

through the establishment of the refining firm CFR in 1927, which was allocated the right to refine a volume of crude equivalent to twenty-five percent of French consumption. In this way CFR became the refining outlet for CFP in the French domestic economy.¹² This relationship was cemented by the shareholding structure, with CFP holding fifty-five percent of shares at the time of CFR's establishment. A further thirty-five percent were allotted to the five largest French refining firms.¹³ The goal of CFR remained focused in refining. It met success in this endeavor, supplying almost twenty percent of domestic demand by 1936. In terms of marketing, it had a complex set of agreements with independent marketers that precluded it from selling its products domestically, other than to large industrial users in cement, electricity, and other industries.¹⁴

The second initiative was the 1928 oil law, which established a system of import quotas for both crude and crude products. It was designed to ensure that French owned firms controlled at least half of the domestic petroleum infrastructure, complementing a national target for international crude production of fifty percent of crude imported to be owned by French firms. License holders of both types were also required to maintain three months of supply in storage within France. Although they were not required to own

¹² The government also took a stake in CFP, after originally taking none, because of conflict between domestic interests. It secured a thirty percent share.

¹³ Nowell, "Realpolitik Vs. Transnational Rent-Seeking: French Mercantilism and the Development of the World Oil Cartel, 1860-1939", 353-4.

¹⁴ Leslie E. Grayson, *National Oil Companies* (Chichester: John Wiley and Sons, 1981), 50.

the physical storage itself, there were few options for leasing available, meaning ownership of storage was the typical means through which this requirement was met. This created a further barrier to market entry. Other components of the law established the legal authority for the government to force private-sector firms to submit to national supply contracts.¹⁵ The result of the French law was to raise the barriers to market entry in domestic refining and distribution, thereby serving to shield French firms operating in the sector from international competitors.

The 1928 law was administered through a system of licensing. Crude import quotas were issued for twenty year periods (known as “A20”), with eleven firms given the right to import crude through the first allotment. In this allocation French firms represented 54.2 percent of total quota rights. Imports of refined products, on the other hand, were issued for three year periods (“A3”). They placed regulatory restrictions on the importation of petrol and lubricants, but not other products. The former was typically carried out by seven to nine firms, of which two were the French firms of CFP and the SNEA.

Holders of licenses for importing crude oil were required to own refinery capacity in France equivalent to ninety percent of their sales of refined products, while

¹⁵ Dominique Finon, "French Energy Policy: The Effectiveness and Limitations of Colbertism," in *European Energy Policies in a Changing Environment*, ed. Francis (ed.) McGowan (1996), 24.

A3 licensees were required to purchase eighty percent of their products either from A20 license holders, or through equivalent long-term suppliers. Finally, maximum retail prices were fixed by the Ministry of Industry, as were average margins for storage and refining. These were adjusted on an annual basis following negotiations between firms and the government and in response to inflation and changes in the cost of crude. Prices were set in order to ensure that France remained profitable for refiners to invest in, further shaping the market in order to increase the share of oil refined within domestic borders. This final step, in turn, was predicated on the unilateral setting of prices by international oil firms in producer countries.¹⁶

The goal of the quota system and fixed prices was not to limit consumption: rights to import were initially awarded in excess of total domestic consumption. Rather, the goal was to redistribute market share in order to encourage the growth of the French refining sector, and the share of French firms within that sector.¹⁷ The success of the law can be seen in the establishment of fifteen refineries in France after it was passed, with the two largest owned by CFR. Refinery capacity increased from three hundred thousand in 1927 to eight million tons/year in 1938; imports of refined products as a ratio of total

¹⁶ Fixed exchange rates under the Bretton Woods system also facilitated the pricing structure by ensuring a stable franc-dollar rate. This was important given that oil was priced in dollars, while products sold in the domestic market were priced in francs.

¹⁷ Grayson, *National Oil Companies*, 25.

consumption consequently fell from ninety-four percent in 1929, to eighteen percent in 1938.¹⁸ Evidence to support its success is also found in the fall in imports of petroleum products, and rise in crude imports, that occurred following the introduction of the law.

French Oil Imports in the 1870s

(Unit: 1000s of kgs)

Year	Crude	Refined	Total
1869	19,200	13,800	33,000
1870	19,484	19,052	38,536
1871	13,251	23,220	36,471
1872	31,130	13,436	44,568
1873	39,546	15,000	54,546
1874	34,565	12,000	46,565
1875	29,847	13,800	43,647

Source: Nowell, dissertation, p. 116

The import quota system of 1928 was reestablished after the interlude of the war (during which CFP's international interests were protected in London, although CFP's crude reserves located in the Middle East were cut off by Allied forces). It had slightly altered conditions: the twenty year licenses for crude oil imports were reduced to thirteen years, and when they came up for renewal once again in 1965 the licensing period fell once again to ten years. The implied market share of French refining and distribution firms at this time remained steady at 49.6 percent following the distribution of quotas in 1950.

¹⁸ Mohamed Sassi, "The Emergence of a French Oil Industry between the Two Wars," *Business and Economic History On-Line* (2003), <http://www.thebhc.org/publications/BEHonline/2003/Sassi.pdf>, 19-20.

Crude Import Licences

(unit: percent)

	A20	A13	A10	A10
	1931-1951	1951-1964	1965-1975	1976-1985
International	45.8	50.4	38.7	44.5
National	54.2	49.6	61.3	55.5

Source, Grayson, p. 41

The importance of national control to the policy preferences of state actors is demonstrated by the most significant change to French oil policy following World War Two: the creation of new national firms. These increased policy intervention above existing regulation of the domestic market through the 1928 law and the minority stake of the state in CFP. Specifically two firms – the SNPA and the RAP – were established with the aim of carrying out exploration and production work for gas and oil with France itself. In 1945 President Charles De Gaulle then ordered the establishment of BRP to give added impetus to the drive for increasing national control over the production and refining of crude. BRP was established as a wholly public company, and the shares in firms owned by government-controlled entities, other than CFP, were shifted under the umbrella of this firm.¹⁹ The decree establishing the company demonstrates the intention of using the firm to enhance national control over the petroleum supply chain:

“In time of peace as in war, oil is an indispensable primary product in the economy of an

¹⁹ CFP was not fully nationalized and used as the vehicle for De Gaulle’s post-war aims in petroleum because its private shareholders, and significant international relationships, meant even after nationalization it would be less able to privilege public over private goals. See Grayson, *National Oil Companies*, 52.

important nation...Oil produced and refined in France should be the objective.”²⁰

In contrast to CFP, which was a private-public partnership but with majority private shareholding, the BRP was wholly publicly owned. The structure of the firm combined that of Japan’s Imperial Oil (which began operations as a firm focused on domestic production) and the JPDC (which was able to finance, but not directly participate in, upstream ventures). It was also designated as the umbrella firm under which the various holdings of the French state were placed, including both RAP and the government’s fifty-one percent holdings in SNPA.

By the 1950s, therefore, the full panoply of policy instruments were deployed in order to enhance national control over the oil supply. Numerous firm entities were involved in the exploration, refining and distribution, and marketing of oil and oil products. The 1928 oil law served to increase their market share, and limit that of multinational firms operating in the French market.

Unsurprisingly, the market share of French firms within France increased significantly in the 1950s and 1960s as a result of these measures. Across petroleum products, for example, the share of international oil majors in the French domestic market fell from an average across products of 80.5 percent in 1945, to 60.4 percent in 1955, and

²⁰ Ibid., 26.

then to 53.4 percent in 1965.²¹ At the end of the 1950s the two major French integrated groups held approximately twenty-three percent of the market share each, secured at the expense of the multinationals and smaller independent French firms.

An important influence on the success of French oil policy was the emergence of Franc Zone oil, which served to achieve the goal of ensuring crude supplied from French territories matched domestic demand, and was also beneficial from a balance of payments perspective. CFP began its exploratory work outside the Middle East for the first time in 1948 in the Algerian Sahara. Its first big find was achieved there in 1956 (with production commencing in 1958).

French Oil Imports 1947-1966

unit: 1000s tons

	Franc Zone	Rest of World	Finished Products
1947	0	5029	2102
1956	34	24979	1286
1957	122	23940	2744
1958	814	27610	1749
1959	1438	27733	2125
1960	7321	23702	2687
1961	12013	23005	2642
1962	13520	23641	3070
1963	15999	27259	4047
1964	17974	31218	4415
1965	18498	40057	4068
1966	19218	43534	4916

Source: Grayson p. 39

²¹ Ibid., 52.

Franc Zone Production 1946-1966

unit: 1000s tons

	France	Algeria	West Africa
1946	51.6	0.2	0
1956	1263.6	33.5	0
1959	1610.2	1232.4	753.3
1960	1976.5	8599.7	853.6
1963	2522.2	23646.4	998.9
1966	2932	33257.2	1509.5

Source: Grayson p. 39

In the early 1950s CFP began to produce more crude than CFR could refine, chiefly because of success in Iraq and Qatar. Unsurprisingly, given how long it became in crude, investments in the 1960s therefore focused on expanding downstream operations, with the largest investments focused on expansion in markets outside France. CFP first secured a share in distribution through a distribution company in West Africa (where it was not constrained in entering the downstream sector by existing commercial agreements). By 1970 sales of petroleum products continued to be greater in France than outside, but only marginally, standing at 21,497 million tons, compared to 19,050 tons outside. As Grayson notes, the expansion of CFP operations both vertically (from the upstream to downstream) and geographically, meant that by the time of the nationalizations of the 1970s “the group was...a multinational operation, with markets outside France in Britain, Italy, Germany, and Portugal, most of Africa, Australia, and the

United States, and production in the Middle East, North Africa, and Canada.”²²

The expansion of CFP operations occurred not only organically, but also through the gradual acquisition of independent French firms throughout the 1950s and 1960s. The appearance of the TOTAL brand in 1953, and its adoption in France in 1957, was coordinated by CFR. It allowed some twenty independent French marketers to sell under a single brand, and by 1960 only the independents Desmaris Freres (later acquired by CFR in 1966) and ANTAR (acquired in 1970 by Elf-ERAP and others) remained viable.²³

Franc Zone oil was also developed by BRP. The most significant finds were in Algeria and Gabon. Following these successes it faced, like CFP, the problem of finding adequate avenues for refining and marketing produced crude, a problem made more acute given that crude oil in West Africa and Algeria was more expensive to produce than that of the Middle East. One solution was to use the regulatory powers provided for in the 1928 law to order firms operating in France to take a share of Franc Zone crude. A second solution pursued was the created of a new firm dedicated to refining France Zone crude. The UGP was established to this end by the state, with BRP made the majority shareholder. It quickly established a market share of four percent within France through the purchase of existing refinery and distribution operations owned by Caltex within

²² Ibid., 56.

²³ Ibid., 60.

France. In 1963, when new quotas were announced, some three-quarters of BRP crude sourced from within the Franc Zone was sold through government mandated purchases by firms operating in the French market, with the remainder sold through UGP.

The creation of UGP to stand alongside BRP, as well as the existence of other firms under their umbrellas, led to a complex set of shareholding structures. These were rationalized in 1965 through the creation of the public firm ERAP, under which BRP, RAP, SNPA and UGP were placed. The Elf trademark emerged in 1967 and subsumed all firms other than SNPA, leading to the creation of the two major groups of CFP and Elf-ERAP. Oil production across the Elf-ERAP increased during the 1960s from 603 thousand barrels in 1960 to 5.14 million barrels in 1965 and 8.275 million barrels in 1969.²⁴ Capital spending in exploration also increased from seventy nine million Francs in 1963 to 217 million in 1966, and 378 million in 1969, while spending on production increased from seventy nine million French francs in 1963 to 207 million over the same period.²⁵

²⁴ SNPA annual Reports, various years.

²⁵ SNPA annual Reports, various years. Figures are for both oil and gas exploration and production.

Restructuring of French Public Firms into ERAP

Company	Subsidiary	Activity
BRP	CREPS, SPAFE Gabon, SOFRepal, SPAFE Congo, SAFRAP, SNRepal	Oil exploration and production
RAP		Oil and gas production
SNPA	SNGSO, CeFeM, ORGANICO	Oil and gas exploration; oil, gas, and sulphur production,; gas distribution, petrochemical production
UGP	UIP, Cie Nat. de Navigation	Oil refining and distribution, and transportation

Source: Grayson, p. 79

French policy entered the 1970s, therefore, with a well developed set of regulations designed to increase the share of French firms in the domestic industry by limiting the share of the international oil majors in refining and marketing to approximately half the domestic French market.²⁶ This met with success: two major French groups with partial government holdings enjoyed approximately twenty three percent of the domestic market share each across petroleum products. Further, these firms – which later operated under the umbrellas Elf-ERAP and CFP/CFR – owned productive capacity equivalent to total French consumption, thereby achieving another of the public policy goals established at the outset of France’s national oil policy.

This achievement can not be attributed solely to the success of strategic intervention. History also mattered. In the case of France successful exploration work of CFP in the Middle East and the Elf-ERAP group in Algeria, and elsewhere in the Franc

²⁶ Horst Mendershausen, *Coping with the Oil Crisis : French and German Experiences* (Baltimore: Johns Hopkins University Press, 1976), 30-31.

Zone, were both obtained from French diplomatic and military successes. The entrepreneurial skills of figures such as CFP's de Mez, who dominated the firm for a quarter of a century, has also been identified as important to CFP's successes. Nevertheless, the 1928 law was effective in redistributing market share within French refining and distribution, and the state also provided financing to French firms. Absent public policy intervention, it is unlikely that the rapid expansion of the firms would have been achieved.

2.1 European Policies

In the introduction to this chapter I noted that European organizations played a role, along with shifts in the oil market, in shaping outcomes. In this section I use statements of the European Commission to identify the European preferences towards energy policymaking prior to 1980. I argue that the European Commission had stable preferences towards reducing barriers to trade and investment between member countries in order to complete the European single market. Their effect on member countries' policies during this period, however, was limited.

At first glance this appears paradoxical. The possibility that energy might

become a source of conflict among European states played an important role in the decision to negotiate the Treaties of Paris, signed on April 18, 1951 establishing the European Coal and Steel Community (ECSC).²⁷ The ECSC sought to create a common market for coal throughout the six founding countries, thereby establishing trade, rather than military force, as the instrument through which to secure coal supplies (then the dominant fuel within national economies). The ECSC, did not, as its title suggests, extend to energy resources other than coal.²⁸ The EEC also committed to reducing obstacles to the creation of an internal market encompassing all goods and services between their countries, implicitly including crude and petroleum products. The history of the engagement of European institutions in the petroleum policies of national governments, as well as gas and electricity, is largely one of a movement towards the attainment of this goal.

Despite European pretensions, energy policymaking in fuels other than coal continued to be governed by national, rather than supranational rules. This was explicitly recognized in the first attempt by the European Commission to formulate a set of

²⁷ Explanations of the sources of European integration are contested. See Andrew Moravcsik, *The Choice for Europe : Social Purpose and State Power from Messina to Maastricht*, Cornell Studies in Political Economy (Ithaca, N.Y.: Cornell University Press, 1998) for a review.

²⁸ Janne Haaland Matlary, *Energy Policy in the European Union* (New York: St. Martin's Press, 1997), 16. The Treaties of Rome, signed on March 25, 1957, created a second energy-related institution - Euratom – which was intended to promote the peaceful use of nuclear energy.

guidelines, albeit non-binding, for national energy policies across the member states of the EEC. Released by the European Commission in 1968, the *First Guidelines for a Community Energy Policy*, noted that “in contrast to the situation regarding products of the other industries and of agriculture, there are still serious obstacles to trade within the Community as regards to energy products.”²⁹ In keeping with its mandate to complete the internal market in Europe, the Commission also made explicit the view that national regulatory schemes designed to limit trade in energy products undermined this goal:

“If the situation does not improve, and if a common energy market is not achieved in the near future, the level of integration already attained in this field will be endangered...measures at the national level are leading to a gradual disintegration of the Community’s energy economy; uneconomic systems of aid, consumption taxes varying from country to country, and increasingly nationalist supply and marketing policies are the result. This dangerous trend can only be changed by a Community energy policy which fully integrates the energy sector into the common market.”³⁰

The 1968 guidelines on energy policy did not amount to a binding set of regulations, or directives designed to extend to energy resources the principles outlined in the founding treaties.³¹ Instead, national policies were recognized as legitimate by the Commission, given the non-competitive structure of energy markets. To frame a European energy project, EC guidelines instead focused on increasing information on the

²⁹ Commission of the European Communities, “First Guidelines for a Community Energy Policy,” (European Community, 1968), 5.

³⁰ Ibid., 5.

³¹ The European Council plays the legislative role in the European institutions. Directives or Regulations, which amount to the legislative output, are binding on Member States, and can only be initiated by the Council. It creates this legislation based on recommendations made to it by the European Commission. For a summary of the European institutions see R. L. Leonard and Leo Cendrowicz, *Guide to the European Union*, 9th ed. (London: The Economist, 2005).

energy sector available to the European institutions, proposing the implementation of a process of medium-term energy forecasting at the European level, including monitoring supply and demand, and investment and import requirements in the oil and gas sectors. Further, the guidelines noted that, aside from information gathering, a European stockpiling program for crude oil and oil products would be useful in mitigating the risks associated with supply disruptions.³²

Although not included through the proposal for specific legislation, the 1968 guidelines also recognized that the energy sector was not exempt from the common market principles established through the Treaties of Rome. They noted that a common customs tariff for oil products, as well as the harmonization of oil product standards across all member countries, represented a necessary step in establishing a common market. The guidelines also recommended that state monopolies, such as those established in France through the 1928 oil law, should be dismantled in accordance with Article 37 of the EEC Treaty, and that firms should be forced to compete with one another on a non-discriminatory basis.³³ Each of these European statements of principle stood contrary to existing French institutions, which gave authority to the government to regulate the domestic refining market in order to discriminate in favor of French firms.

³² Commission of the European Communities, "First Guidelines for a Community Energy Policy.", 10-11.

³³ Ibid., 10-17.

The only move of the European institutions to actively shape the policies of member governments had more limited goals than completing the internal market. Following the Suez Crisis of 1967, a 1968 European Council Directive required member states to hold the equivalent of sixty-five days of oil consumption in the form of stocks.³⁴ There were no provisions in the directives for oil sharing or the joint release of stocks, however. This meant that although the scheme marked the first significant entry of the European institutions into the energy sector, it did not promote the pooling of sovereignty over the management of oil stocks, and did not therefore undermine the nationally-based program of positive discrimination in favor of domestic firms that stood at the heart of French oil policy.

The first oil shock of 1973-1974 did not change this conclusion. The first recommendations to emerge from the European Commission were short-term, and, much like in the case of the United States, designed to enable better information to be gathered at the European level about imports and exports to and from member countries, and consumption of crude oil and petroleum product within them. In a request submitted to the European Council for action, the Commission proposed that the Council order member governments to institute a system of automatic licensing for trade in both crude

³⁴ This was increased to ninety days under a subsequent 1972 Directive. The relevant directives are 68/414/EEC and 72/425/EEC.

oil and oil products. In the scheme proposed by the Commission, member governments would be required to automatically issue, for free and in any quantity, export licenses to firms, and member governments would then inform the Commission of the details of firm transactions.

Limited to this, the European initiative was an information gathering exercise.

The Commission also requested, however, that European institutions be given the authority to suspend the authorization of licenses in order to ensure security of supply.

The European Council accepted the recommendation, issuing a binding regulation mandating that member governments implement an automatic licensing system for all exports to third countries. The decision was time-constrained, however, with the Commission recommending it be conferred these powers until June 30, 1974.³⁵

The incompatibility of the policy preferences of the European Commission with French policy is clear in the initial proposal of the European Commission to the question of how to enhance the security of supply of member states. The Commission examined the question of how to guarantee physical supplies of petroleum, but the recommendation of the Commission was decidedly supranational. Existing European initiatives focused on

³⁵ The legal justification for this decision was found in European regulation (EEC) 2603/69, articles five and six of which given the European Commission the authority to track, and restrict, exports of goods across the member countries.

collecting information about supply and demand patterns from the member countries, but the potential application of the authority conferred by the Council to regulate exports of crude oil and petroleum products focused on exports from European member states to third-countries. Exports *between* European member countries, on the other hand, were not subject to regulation, nor was the ability of member governments to restrain trade with other member states within the EEC recognized as legitimate. This emphasis on shifting of the authority to restrict trade in the name of security of supply from individual member countries to the member countries collectively, was noted in non-binding guidelines issued in 1973 prior to the Commission regulations.

*"The main object here is to preserve effective competition and ensure freedom of movement within the Community. The achievement of this aim is being impeded, inter alia, by technical obstacles resulting from differences in the specifications of petroleum products; these will need to be harmonized. In addition it will be necessary to frame without delay a common set of rules on imports and exports of hydrocarbons, including surveillance of oil imports in connection with which controls can be introduced in case of need."*³⁶ [italics added]

The second binding decision made by the Council of European Ministers related to the petroleum sector focused on demand management. On November 7, 1977 the Council of Ministers issued a regulation conferring on the European Commission the authority to set a Community-wide target for reducing petroleum consumption by ten percent, acting on the request of a member country, or on its own initiative. The

³⁶ Commission of the European Communities, "Guidelines and Priority Actions under the Community Energy Policy," ed. European Communities Commission (European Communities Commission, 1973), 6.

effectiveness of the target was limited, however, to a two-month period, after which a new mandate was required from the European Council.³⁷

In sum, the authority of the European Commission over the petroleum policies of member states was extended during the 1970s to include the capacity to initiate short-term responses to supply shocks, and to ensure security of petroleum supplies to member countries by restricting exports of crude oil and petroleum products. European Commission initiatives attempted, but failed, to lower trade and regulatory barriers to trade in oil or oil products between member states, however, and also did not succeed in harmonizing state aid towards national firms operating in the petroleum sector. The initiatives did not, therefore, undermine French institutions designed by France to enhance national control over the petroleum supply chain. The frustration of the Commission at its inability to extend its mandate was evident in its communication to the European Council in October 1981:

"In the course of recent years the European Council has repeatedly declared the need for the Community to face up to the energy challenge...But it has not led to the implementation of an overall strategy comprising action by the Community, Member states and producers and consumers. The inadequacy and inconsistency of the action taken in the wake of these expressions of political will can only be deplored."³⁸

³⁷ A number of other directives and regulations were passed by the Council of Ministers related to electricity, coal, demand management and others. See Annex 1, ———, "Energy Policy in the European Community: Perspectives and Achievements (Communication from the Commission to the Council)," ed. Commission of the European Communities (1980).

³⁸ ———, "The Development of an Energy Strategy for the Community: Communication from the Commission to the Council," ed. Commission of the European Communities (1981).

2.2 Effects of Oil Shocks

Despite European pressure it was the effects of the oil shocks that facilitated the transformation of policies of strategic intervention in France. This occurred in two ways. First, these effects weakened the position of French oil firms that were central to the strategy of state actors seeking to enhance security of petroleum supplies through strategic intervention. They did so by reducing their reserves and cutting demand for products. Second, as in Japan and the United States, the oil shocks reduced aggregate demand for petroleum products, and shifted the structure of demand. This not only harmed firms, but also undermined the domestic regulatory structure by rendering the system of fixed prices unmanageable. Both changes had the effect of shifting the policy preferences of state and firm actors away from the ongoing strategic intervention on the petroleum sector.

For the Elf-ERAP group, the upheavals of the 1970s harmed them both because of the renegotiation of prices and taxation structures through the Teheran and Tripoli Agreements of February 14 and April 2, and because of nationalizations. Initially, French firm holdings in Algeria were secured through negotiations over Algerian independence; on July 29, 1965 the French and Algerian governments reached an agreement to change the legal structure for exploration and production work, with a joint venture established

called the Societe Petroliere en Algerie (Sopefal) between ERAP and the Algerian firm Sonatrach. French companies were then required to give any exploration permits they held to the joint firm in return for a payment of the book value of the asset. Following the completion of the Sonatrach pipeline in March 1966, this enabled the Algerian El Gassi field in which SNPA maintained a holding, to gain a significant share of overall firm production, with production increasing to 12,535,000 barrels in 1966.³⁹

On February 24, 1971, however, the Algerian government nationalized both gas and oil, leading to new agreements signed for CFP (June 30, 1971) and Elf-ERAP (December 15, 1971) with less accommodative terms. For Elf-ERAP, the loss of Algerian production was a significant blow. Until 1970 Algerian crude had dominated their production through the El Gassi field. After Algerian independence it remained the second largest center of production, after Gabon, however by 1976, Algerian production was wholly lost to the firm.⁴⁰

CFP production levels were also harmed by the nationalizations. Production in Algeria, which along with Iraq dominated production prior to nationalization, fell by more than half. The operations of the IPC in Iraq, which CFP continued to hold equity in, were nationalized in 1972, although CFP assets in the south of Iraq through the Basrah

³⁹ SNPA, annual report, FY1966.

⁴⁰ SNEA/Elf-Aquitaine, annual reports, various years.

Petroleum Company were left untouched by the nationalizations. By 1976 production in Iraq had also dropped by greater than half from its peak in 1974. Total CFP production fell by sixteen percent by 1976 from its peak in 1974.⁴¹

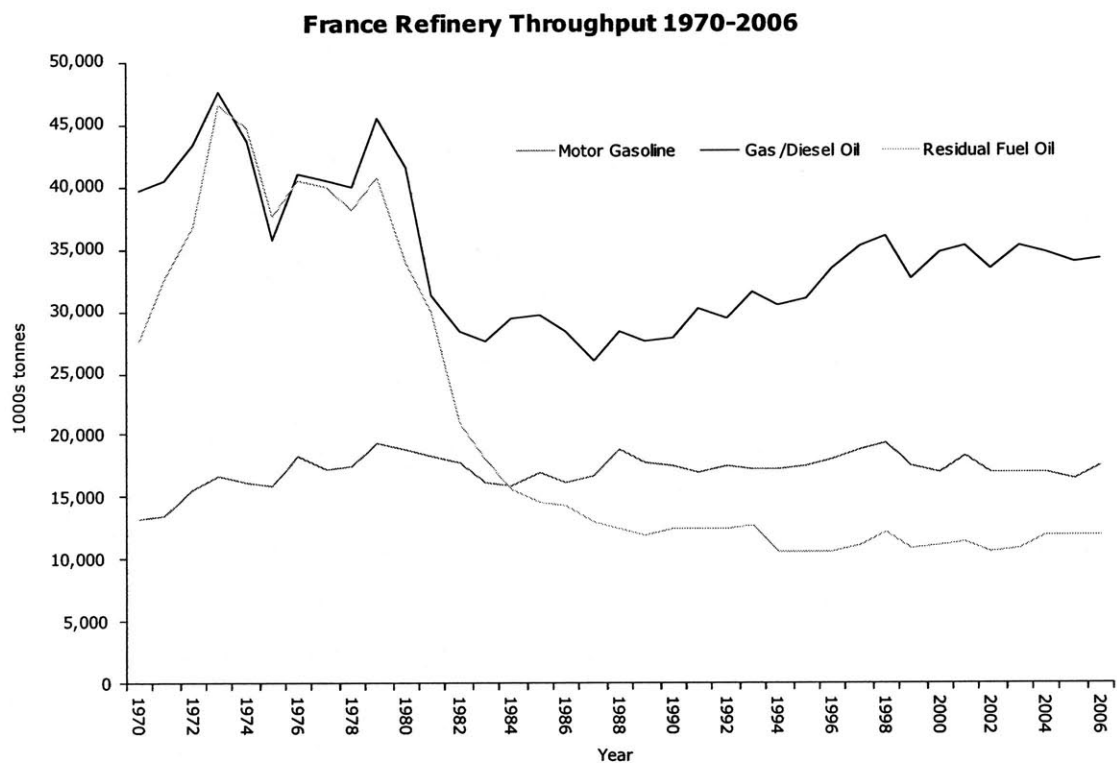
Although not initially predicted, a second blow to the firms came in refining and marketing, where margins fell because of reduced demand for refined products and refinery overcapacity.⁴² As in the other countries considered in this study, the rapid increase in oil prices had a significant and negative effect on the demand for refined petroleum products, both because of failing demand, and because of a shift in the composition of demand for electricity generation and other industrial processes away from oil. Between 1973 and 1975 French demand for crude fell by 330,000 barrels per day, equivalent to a fall of more than twelve percent from 1973 levels. Between 1979 and 1985 demand fell by almost 650,000 barrels per day, or a quarter of the level of demand in 1973. The total drop in demand represented 770,000 barrels of oil per day between 1973 and 1985 period, or some thirty percent of aggregate demand.⁴³ Elf-ERAP noted in its annual report for FY1979 that “refining is an industry that is destined to decline, at

⁴¹ Figures taken from CFP, annual reports, various years.

⁴² SNPA, for example, predicted in its annual report for FY1972 that demand for petroleum products would continue to grow at an average of five percent annually for the next twenty years. See SNPA Annual Report FY1972, 5.

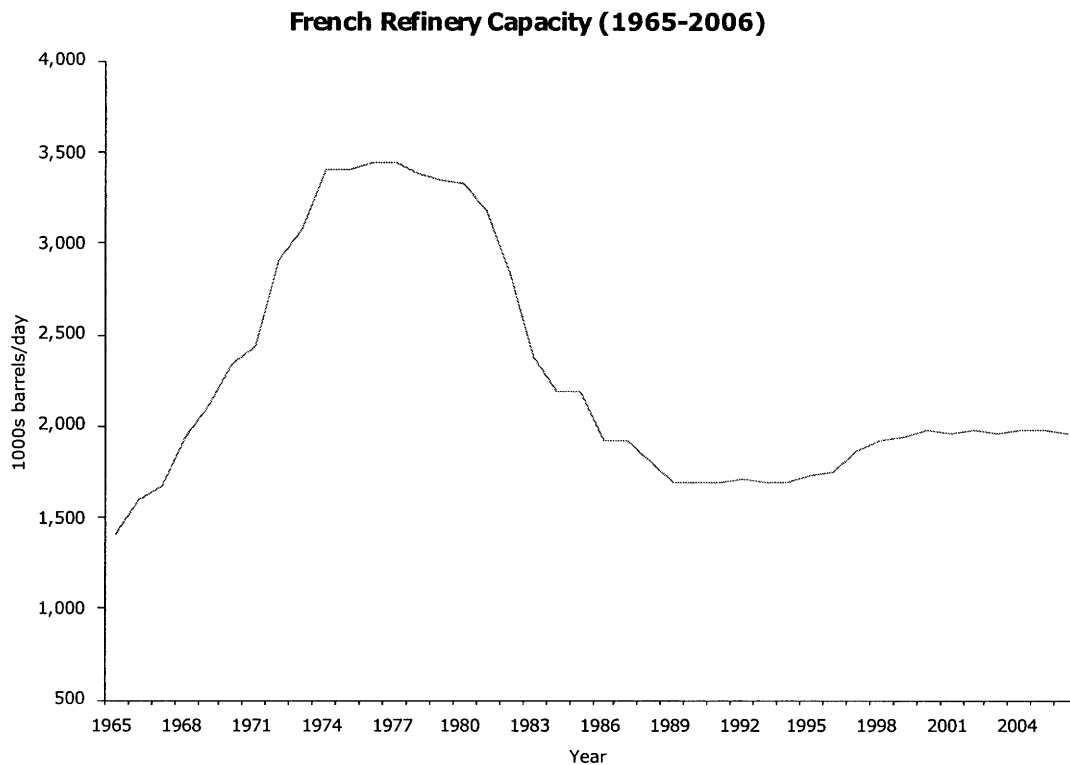
⁴³ Calculated by author from BP Annual Review of Statistics.

least in volume terms.⁴⁴



Source: OECD Product Consumption and Supply Database

⁴⁴ SNEA, annual report, FY1979, 2.



Source: BP Statistical Review 2007

Part of the problem for the firms lay in the fact that they were being forced for the first time to buy crude oil using prices not determined by them, but were constrained by the government from raising prices for petroleum products within the domestic market during the 1973 crisis. (This did not happen during the 1979 price increase, driven by the nationalization of Iranian oil). The state also forced the refining and distribution arm of Elf-Aquitaine to sell to preferred customers and independent retailers, meaning they had to buy crude on the open market and sell at a loss.⁴⁵

For state actors, on the other hand, in the broadest sense, the oil shocks

⁴⁵ SNEA, annual report, FY1973, 3-4.

contributed to the problems of inflation and low growth that afflicted the French economy through the 1970s and 1980s, and which was a major preoccupation of economic policymaking. The oil shocks also had more specific effects on the French institutions of national control, outlined below. Most notably, they introduced two sources of instability. First, as noted above, they harmed the firms that were at the centerpiece of the French strategy by stripping them of a portion of the oil they relied on for production, and by dampened demand and shifted the composition of demand domestically. Second, the oil shocks undermined the existing regulatory structure by introducing instability into the procedure used for price fixing. Central to the system of maintaining market share for the French national firms was the fixing of retail prices, which were regulated at each step of the production chain. The price of contracts for crude was itself then set by the firms through negotiations with producing countries. The oil shocks undermined this structure, as price renegotiations, and then nationalizations, removed control over crude price setting from French firms and handed it to the governments of the producer countries. The loss of price-setting power for crude contracts occurred in advance of the nationalization of the production assets, beginning with the Tripoli Agreement of 1971 as noted in chapter two. Other sources of price instability were rising inflation and the break of the franc-dollar exchange rate, both of which served to introduce further volatility to

crude oil prices.⁴⁶

3. Explaining Policy Transformation: 1980-2000

From 1980-2000 French national petroleum policies were transformed from the stable equilibrium centered on majority share ownership of Elf-Aquitaine and CFP/Total, coupled with fixed prices and a system of licensing conferring to the government authority to intervene in the domestic market in order to increase the market share of these firms. Price controls were abandoned by 1986, and a revised version of the petroleum law was passed on 31 December 1992 that eschewed firm discrimination on national grounds. This marked the end of policies designed to enhance strategic control over petroleum that had been in place for over sixty years.

The abolition of the system of fixed prices and import licensing, coupled with privatizations, occurred in three stages over a ten year period. The system of fixed prices was the first component of the national regulatory system to be adjusted. It was initially relaxed in 1982 in order to more closely link domestic prices with the international market, and was finally abandoned in 1985-6, along with fixed margins for refining and storage. Second, the system of licensing was abandoned over a ten year period, ending in

⁴⁶ The loss of control over price setting was noted by ERAP in its annual report. See ERAP, annual report FY1973.

1992 in line with commitments made to the European Commission and the International Energy Agency. Third, privatization was carried out as part of a broad shift towards reducing the role of the state in the market, but was crucially not opposed by firms or state actors this was done without opposition from the firms.

The new law did not ignore the problem of security of supply. Instead, it discarded the goal of ensuring French security of petroleum supplies through shaping flows of crude and crude products in order to provide advantage to French firms. The first article of the law demonstrated the difference in approach from the law of 1928:

“Article 1: Subject to compliance with the provisions of this Act, the import and export, processing, transportation, storage and distribution of crude oil and petroleum products can be conducted freely.”⁴⁷

Instead of intervention under normal market conditions, the maintenance of strategic stocks became the focus of policy in managing the problem of security of supply. This was, in other words, a choice to bring France in line with multilateral solutions to the security of supply problem in the petroleum sector: free trade, harmonized regulations, and strategic stocks maintained for emergency purposes. In fact, the 1992 law explicitly states it was designed to be in line with European directives in the petroleum sector. Regarding strategic stocks, importers of crude oil and petroleum

⁴⁷ Law No. 92-1443.

products were required to store quantities of each equivalent to ninety days.⁴⁸ The new law also required firms operating in the petroleum sector to respond to government requests for information about import and export plans for crude oil and petroleum products.⁴⁹

The government also privatized both Elf-Aquitaine and Total. The most significant reduction in state holdings in Total came in 1992, when the share held by the State fell from 31.7 percent of outstanding shares, to 5.4 percent. The sale was not simple in structure. In June of 1992, the government firms offered 12.4% of its holdings for sale. At the same time, it sold 7.7% to three French financial institutions: AGF, GAN and Credit Lyonnais, giving these three firms jointly a ten percent stake. Further, these sales included an agreement with the government that they would not sell their shareholdings for a further ten years. Finally, the government exchanged 6.1 percent of its shares for non-voting certificates, bringing its interest in Total to 5.4%. In 1992 the government also reduced its representation on Total's Board of Directors from four members to two, and abolished its right to veto the election of directors and the appointment senior management other than the Chairman. The firm became a wholly commercial entity as part of its merger with Elf-Aquitaine in 2000. Shareholdings in Elf-Aquitaine were also

⁴⁸ Articles Two and Three, Law No. 92-1443.

⁴⁹ Article Seven, Law No. 92-1443.

relinquished, falling from 66 percent in 1975 to 51.6 percent in 1992, thirteen percent in 1994, and finally zero percent in 1996. In 2000, the government also relinquished its “golden share,” through which it maintained the ability to veto any attempted takeover by another firm if deemed not to be in the national interest.

State Shareholding in Elf and CFP-Total		
	CFP-Total	Elf
1975	35%	66%
1986-88	31.7%	53.9%
1992	5.4%	51.6%
1994	5.4%	13%

Source: Adapted from Finon, 1996

There is one caveat to the broad transformation of French national institutions. At odds with the trend towards abolishing policy intervention in the domestic market and maintaining strategic reserves only for use during emergencies, was the fact that a remnant of the 1928 petroleum law remained intact: Article Eight of the law required refiners to notify the government of plans to build or scrap refining installations one month prior to the implementation of such a plan, and conferred to the government the authority to reject such a change if it determined that it might serve to disrupt the supply of petroleum products within France. The government also retained the ability to sanction

firms failing to comply with an order by penalizing it a fine of up to ten million francs.⁵⁰

In chapter two I argued outcomes are best explained as a function of the policy strategies adopted by state actors and firms. In the case in France, as described above, the preferences of both led them to support national control in the petroleum sector until the 1980s. From the 1980s, I find that both groups of actors shifted their preferred policy strategy away from strategic intervention. This led to a complete reversal of earlier policy preferences in which both state and firm policy preferences were aligned in support of strategic intervention.

For state actors I argue the change was driven by three factors: first, the effects of changes in the international petroleum market on firms, meant the Directorate of Hydrocarbons, which had previously championed the policy within government, to follow the lead of the firms in shifting away from strategic intervention; second, other political and bureaucratic actors within the state – most notably The Ministry of Finance and the leaders within the Socialist government – supported liberalization and privatization in order to solve problems with inflation and government indebtedness; and third, at key moments the Directorate General of Competition, and the European Court of

⁵⁰ Article Eight, Law No. 92-1443. Interviews suggest this article is designed to allow the government to maintain veto power over changes in refinery structure for reasons of local employment and local supply conditions, rather than on national security grounds.

Justice, influenced policy in ways that shifted it away from strategic intervention.

Without the first of these, in particular, it is more likely that French policy in petroleum would have followed that of the electricity and gas sectors, both of which were insulated from the shift towards liberalization and privatization in the 1980s and 1990s.

Firms, on the other hand, acquiesced to liberalization because of changes in their material interests. This occurred because of the gradual shift in the structure of the firms: the French domestic market became less important as they shifted increasingly into international markets, and government ownership became a hindrance as they sought to expand further. This shift was accelerated by the effect of changes in long-run petroleum prices. Firms responded by expanding internationally in the search for assets to replace those nationalized in the 1970s, and in the search for greater revenues to make up for losses in the domestic refining market because of falling demand. In this way, both sets of actors rejected the institutions of national control, and acceded to their transformation into a new set of institutions designed to insure against petroleum security of supply problems through the liberal response designed by European institutions.

3.1 State Actor Policy Preferences

The general shift towards support for liberalization and privatization across the

French economy (outlined below) is necessary, but not sufficient, to explain the transformation of French policies of national control in the petroleum sector.⁵¹ The importance of sectoral dynamics in explaining outcomes is suggested by the resistance to liberalization and privatization that continued in the other major sectors of France's energy industry - electricity and gas - throughout the 1980s and 1990s, as noted above. Although all three were the focus of European Commission initiatives, petroleum policies were adjusted quickly compared to those of electricity and gas, for which national policy dominated throughout the 1990s and 2000s. Indeed, as Schmidt notes, energy was one of a few sectors of the economy that remained insulated from the urge to liberalize in the late 1980s, ostensibly because of its strategic character.

The missing piece of the puzzle in explaining the transformation of French institutions of national control lies, I argue, in the particular effects of the shift on long-run prices on the French petroleum sector. In fact, the effects of changes in the international petroleum market had already undermined the policy status quo by the time of the general shift in political preferences towards liberalization and privatization across the French economy. This meant that the drive to reduce the role of the state in the economy, supported by the proposed changes to petroleum regulations made by the

⁵¹ A similar point is made by Matlary, *Energy Policy in the European Union*.

European Commission in 1987, occurred in an environment in which there was little interest among state actors, and firms, in isolating the petroleum sector from the broader institutional changes being wrought across the French political economy. Absent state actors willing to defend the policies of national control, and with the existence of an alternative proposal in the shape of the European Commission, French policies of strategic intervention in the petroleum sector were jettisoned.

As in Japan, the poor performance of domestic refining and distribution opened the debate over the structure of domestic policy. Price variability, and falling demand, resulted in significant losses in refining for the firms, in the order of US\$700 million in 1980-1981 alone according to one estimate.⁵² The performance of the industry through the 1970s was dismal, as shown below.

French Refinery and Distribution Sector Performance 1973-1979
(unit: millions current French Francs)

	1973	1974	1975	1976	1977	1978	1979
Revenues	27.239	56.97	56.459	67.981	73.516	76.616	101.685
Annual Investments	3.342	3.523	2.812	2.456	2.921	2.847	3.082
Net Income	193	112	-386	-87	-608	-859	2.113
Profits	-462	-3.658	-1.193	-2.482	-1.999	927	-784

(Source: *La Vie Francaise*, 19 January, 1981, p. 28)

These losses revealed a deeper problem with the system of fixed prices that governed the sector: the need to adjust prices to reflect the new structure of the international oil market, in which price setting for crude oil was no longer internal to the

⁵² Roger Vielvoye, "Jitters in France," *Oil and Gas Journal*, May 25 1981.

international oil firms, but was determined by firms and governments of producer countries. This variability in crude prices was accentuated by the pricing of oil in U.S. dollars, meaning that the abandonment of the franc-dollar exchange rate exposed firms to exchange rate risk given that revenues from sales within France were calculated in French francs, while firm procurement of crude oil from outside the Franc Zone were made in U.S. dollars.

The shift of the position of two state actors on the position of price liberalization was key. First, for the Directorate of Hydrocarbons, which had traditionally supported the interests of firms in policymaking, lobbying from firms, who had suffered significant losses as a result of the increased prices of inputs coupled with fixed prices for outputs, led them to change their position.⁵³ For The Ministry of Finance, on the other hand, price volatility initially made them less positive about liberalization, because of fears of its potential effects on inflation. As prices began to recede, however, liberalization held out the promise of contribution to a lessening of inflationary pressure, given the important role of petroleum products across the economy more generally. Agreement was therefore easily reached among the firms (see below), the Directorate of Hydrocarbons, and the Ministry of Finance that existing system of fixed prices was inadequate. The decision was

⁵³ Gilles Bellec, Director of Hydrocarbons (1984-1989), interview with author, Ministry of Industry, Paris, France, July 18, 2008.

taken in the Prime Minister's office, with the details of the new pricing mechanism determined through negotiations between the Directorate of Hydrocarbons, firms, and the European Directorate General of Competition. For the former, as noted, price flexibility promised to enable firms to adjust prices in response to shifts in crude input costs, thereby partially arresting the huge losses the firms were accruing in the refining sector.⁵⁴

The new pricing mechanism, implemented in 1982, linked domestic prices for the major petroleum products to international prices, rather than allowing them to be set unilaterally within the Directorate of Hydrocarbons. Prices were linked to crude and product prices in the international market by linking to the Rotterdam spot market, and an average of prices for petroleum products across members of the EEC. Prices within France were then adjusted automatically in response to international movements. The shift was applied to regular and super gasoline, home heating oil, and diesel, and represented the first adjustment in the regulatory edifice shaping outcomes in the French domestic petroleum market.⁵⁵

A second adjustment to the price mechanism was made under the Socialist Mauroy cabinet in 1985. The shift in price mechanism was once again supported by the Ministry of Finance. Indeed, as oil prices fell the Minister for Economy and Finance

⁵⁴ Senior policy maker in oil sector, interview with author, Paris, France, August 20, 2008.

⁵⁵ Staff reporter, "France Agrees to Ease Grip on Products Prices," *Oil and Gas Journal*, May 3, 1982.

Pierre Beregovoy (1984-1986) supported price liberalization because of the positive effects it was likely to have on reducing inflationary pressures in the economy. The Directorate of Hydrocarbons also supported the change in formula because the problems price fluctuations were having on firm profitability, as well as because of the expected positive effects on inflation. The decision to do so was taken by the Prime Minister.⁵⁶ Prices were allowed to float freely across petroleum products, marking the end of the system of fixed prices that ensured firm profitability.

The second significant change in policy preferences related to the delegated monopoly on trade in crude oil and petroleum products retained by the state, and implemented through licensing and trade restrictions. The idea of loosening the issuing of licenses was first raised by the Minister of Economy and Finance Beregovoy at the time of the shift to the full liberalization of prices in 1985-6. Beregovoy supported relaxing the requirement that marketing firms purchase eighty percent of their products from licensed companies. Doing so, it was estimated, would allow firms to take advantage cheaper products in the Middle East and elsewhere, thereby reducing prices in the domestic market and cutting inflation.⁵⁷

⁵⁶ Senior policy maker in oil sector, interview with author, Paris, France, August 20, 2008.

⁵⁷ Jean Du Rusquec, Advisor to the CEO, Total and former member of Ministry of Finance, interview with author, Paris, France, July 23, 2008.

This proposed change was more controversial than the relaxation of prices. This is unsurprising: as shown in the preceding pages the system of licensing lay at the heart of the law of 1928 had been the key to securing market share for French national firms domestically, in conjunction with the system of fixed prices and margins that served to limit price competition between firms already established within France in refining and marketing. The abolition of this system of licensing was seen, therefore, as a significant step away from the strategic intervention, and towards an open market for the supply of petroleum products.

Reflecting the more controversial nature of the idea of abolishing the system of licensing, the State Secretary for Energy M. Martin Malvy, initially opposed the change on the grounds that the regulatory changes could negatively affect French firms already struggling with problems of overcapacity. Over the long-term, firms' position in the domestic refining market had been guaranteed through the requirement that eighty percent of products sold by distributors be obtained from within France, as noted above. Removing this requirement promised to allow cheaper products into the French market, but also could have the effect of ceding national flag firms market share to refiners with capacity outside France, and to distribution firms in France with access to refined products produced outside France.

The support of the Directorate of Hydrocarbons which was responsible for administering the licensing system towards abolishing the delegated monopoly meant baulking at this change was likely to be short-lived. As with prices, the directorate followed the lead of the firms. While the directorate continued to require firms applying for A3 licenses to obtain the right to import petroleum products, the procedure had become increasingly redundant because of the national firms' success in establishing themselves in the domestic market, and because the firms themselves were becoming less reliant on the domestic market – a trend exacerbated by their responses to the oil shocks.⁵⁸

Their secondary goal, after ensuring security of petroleum supplies, of supporting national firms, was therefore best met by enabling deregulation of licensing, rather than continuing to enforce it even though the firms it was designed to protect were no longer interested in maintaining it. Indeed, the firms supported the one change Malvy did implement during his tenure; on August 15, 1982 he announced that this requirement could be fulfilled through refinery capacity throughout Europe, rather than within France alone. This suited the interests of Total and Elf-Aquitaine, both of which were diversifying their refinery assets outside France and into Europe and elsewhere.

This change to allow European refinery capacity marked the first shift away

⁵⁸ Gilles Bellec, Director of Hydrocarbons (1984-1989), interview with author, Ministry of Industry, Paris, France, July 18, 2008.

from a sole focus on the French market. It also presaged the complete dismantling of the system of delegated monopoly. The change to the so-called 80/20 rule, whereby refiners were expected to purchase eighty percent of their crude from holders of crude import licenses - was relaxed by Industry Minister Alain Madelin.⁵⁹ Madelin announced a number of measures, most importantly the immediate suspension of the rules of 80/20 and 90/10, which required importers of refined products to purchase from European refineries, and refiners to maintain refinery capacity equivalent to ninety percent of their domestic sales within France. He also extended by a period of six months the existing import authorizations of refined products ("A3") to enable a new system to regulate trade to be determined.⁶⁰

A second influence on the decision by the Directorate of Hydrocarbons to acquiesce to the dismantling of the delegated state monopoly was pressure from the European DGC to shift the allocation of licenses, and specifically pressure on Ministry of Industry to provide a greater share of licenses authorizing the importation of petroleum products to supermarkets which were seeking to enter the market at the retail level. This was done on the grounds of increasing competition within the domestic French market,

⁵⁹ This occurred under the cabinet of newly installed Prime Minister Jacques Chirac (1986-1988). Staff reporter, "Petrole: Une Reformette," *L'Express*, 7 June 1985; Veronique Maurus, "La Regime Le La Loi De 1928 Sera Maintenu," *Le Monde*, 25 May 1985.

⁶⁰ Edouard Thevenon, "Produits Petroliers: Importations Plus Faciles," *Le Figaro*, 25 September, 1986.

and was supported by the Ministry of Finance because of its expected positive effects on inflation.

What, then, of the firms that were at the center of French national petroleum policy?

3.2 Firm Policy Preferences

Strategic intervention prior to the transformation of the French institutions of national control served the interests of French firms in addition to the state. How then, can we explain their support for policy change? In this section I argue that the commercial interests of Elf-Aquitaine and Total predisposed them to support liberalization and privatization of the French petroleum market for two reasons. First, because the decreasing importance of the French market to the firms made domestic regulatory changes less relevant to their businesses; and second, the effects of the changes in the international petroleum market made them support greater flexibility in firm operations, leading them to favor liberalization and privatization. The increasingly international character of the firms, and the greater profitability to be found in markets outside France, meant that both firms responded to changes in the petroleum market by increasing investments in international markets, rather than attempting to lobby for the

use of regulatory measures domestically in order to protect market share at home. There was hence no demand for ongoing protection by either Total and Elf-Aquitaine.

In the long-term, nationalization caused the firms to pursue a set of responses that reflected the fact that growth existed in developing new markets internationally in crude production and the marketing of products. This reduced their interest in fighting to protect market share in the domestic French market for petroleum products. Tax policy remained important, given firm headquarters remained located on French soil, however policies designed to enhance strategic intervention within the domestic French market became increasingly unimportant to the firms. Indeed, to the extent they hindered growth, firms supported the weakening the institutions of national control.

Data drawn from the annual reports of both firms demonstrates the decreasing importance of the French market to the Total and Elf-Aquitaine groups.⁶¹ Elf-Aquitaine began to diversify away from refining prior to the 1970s. Recognizing that production of gas from the Lacq field that initially dominated revenues would plateau, the firm began to expand internationally in crude as well as in natural gas. This is demonstrated by the increase in spending in oil exploration, which grew from forty-four million Francs in

⁶¹ Veron also uses revenues and other data to examine the increased internationalization of European national champions across a number of sectors. See Nicholas Veron, *Farewell National Champions*, ed. Bruegel, Bruegel Policy Brief (Brussels: Bruegel, 2006).

1961 to fifty eight million in 1962, and then eighty million in 1963 and 119 million in 1964. By 1964 about two-thirds of all spending in exploration (oil and gas) was located outside France, in Africa, North America, Australia and New Zealand,⁶² a shift noted by the Chairman in his address to shareholders for fiscal year 1968.⁶³

The price increases and nationalizations of the 1970s accentuated this trend. The main goals established by the firm in 1973, aside from improving productivity and lobbying to increase domestic prices, focused on using firm resources on exploring for new sources of petroleum for exploitation. A secondary goal was diversifying out of refining in recognition that nationalizations were likely to lead to the entrance of Middle Eastern suppliers into the petroleum products market, and a consequent loss of market share and profits.⁶⁴

The decision of the firm to shift out of the domestic products market was also driven by the fact that the refining infrastructure of Elf-Aquitaine, which was focused on

⁶² SNPA, annual report 1964, 8-11. It is worth noting that much of this test drilling ended in failure, with the notable exceptions of the discoveries at Rainbow Lake in Canada, and later at the El Gassi field in Algeria, both of which served to increase commercial crude production by the firm.

⁶³ "Extract from the Chairman's Address," Annual Report FY1968, 4.

⁶⁴ Elf-Aquitaine Annual Report, 1973, 4-5. It is worth noting that Elf-Aquitaine was already an integrated firm across natural gas, sulfur/sulfuric acid, crude and products, petrochemicals, and later hygiene and healthcare. Sales were initially dominated by gas, with crude and products increasing in importance rapidly in the late 1960s and 1970s. In 1966, for example, sales of crude and petroleum products made up sixteen percent of total sales, which increased to 21 percent in 1971 and 32 percent in 1975. The other business sectors Elf-Aquitaine was involved in are gas (1975: 27%), sulfur (7%), chemicals (13%), hygiene and health (19%) and coal (2%). Data compiled from Elf-Aquitaine Annual Reports, various years.

the French market, rarely made a significant contribution to group profits.⁶⁵ This had two causes. First, falling demand and overcapacity, combined with the high costs of restructuring refining facilities due to changes in product structure, meant revenues obtained from the refining of petroleum products fell while costs increased. In 1973 Elf-Aquitaine owned shares in five French refineries: Ambes, Feyzin, Gargenville, Grandpuits, and Hauconcourt), and four others in Europe, but outside France: Reichstett, Albatross, Speyer, and Klarenthal). ANTAR, in which it had a significant stake, had shares in three French refineries: Donges, Vern-s-Seiche, and Valenciennes), and two outside Europe: Klarenthal and Herrlisheim. However, in response to falling demand Elf-Aquitaine, along with other firms, shut down refinery capacity in the domestic market, as shown below.

⁶⁵ Staff reporter, "Elf Aquitaine," *Petroleum Economist*, August 1989 1989, 246.

Refinery Closures in France 1976-1985

unit: millions tons/year

	1976-1980	1981-1984
BP Dunkirk	0.8	4.4
BP Lavera	2.5	
BP Vernon		3.4
CFR Gonfreville		6.8
CFR La Mede		3.1
Eso Bordeaux		2.9
Elf Gargenville		6.1
Elf Valenciennes		3.3
Elf Ambes	2.1	
Elf Vern-s-Seiche	1.45	
Mobil Frontignan	0.3	
Mobil Gravenchon		0.5
Shell Berre		7.2
Shell Petit-Couronne		8.1
Raff. De Strasbourg-Herlisheim		4.6
Raff. De Lorraine-Hauconcourt		5.1
Total	7.15	55.5

Source: COM (85) 32 final

This reduced interest of Elf in maintaining the existing regulatory structure, which had initially been designed to increase the shares of French firms in domestic refining and distribution. Indeed, the long-term problems with refining were noted by the Elf Chairman as part of his remarks to shareholders in the Annual Report for 1983:

"The future of this sector looks bleak. World excess refining capacity (and particularly in Europe), and the awaited arrival of products from the Middle Eastern refineries, raises the question of just how much refining capacity France really needs."⁶⁶

The poor performance in the downstream did not mean that the firms were wholly disinterested in refining. Instead, management from both firms were interested in entering in the U.S. market in order to extend the geographic scope of downstream

⁶⁶ Chairman's Address, Annual General Meeting of Shareholders, June 6, 1984.

operations.⁶⁷ Elf, for example, made investments in the United Kingdom and Spain, with the long-term goal of becoming a significant player in the downstream business across Europe as a whole, rather than simply in the French market.⁶⁸

A second reason firms shifted their policy preferences away from ongoing support for the institutions of national control was because of the differences in interests that emerged between the firms and state actors in the wake of the oil shocks. In France, as in Japan, state actors decided to disallow Elf-Aquitaine and other firms from fully passing-on the increased crude oil procurement costs to consumers within the French domestic market during the 1973-4 crisis, harming profitability.⁶⁹ Performance in the refining division improved in 1979-80 given this problem did not occur, however firms remained pessimistic about the long-term prospects for the division, noting in 1979, as in 1973-4, that “refining is an industry that is destined to decline, at least in volume terms.”⁷⁰

As well as increasing its geographic spread in refining, Elf, for example, was bullish about its prospects in developing reserves of crude oil internationally, and indeed

⁶⁷ “Elf Eagerly Courts Downstream Investment by Producing Countries,” *International Petroleum Finance*, Vol. 11, No. 10, 1988, p. 1. See also Elf-Aquitaine, annual report, FY1991, 2.

⁶⁸ Staff reporter, “Elf Chairman Eyes Profits, Not Sentiments,” *Petroleum Intelligence Weekly*, September 30 1991, 8. Staff reporter, “French Refiners Face Shakeout with Soaring Costs, Downturn,” *Oil & Gas Journal*, September 20, 1993.

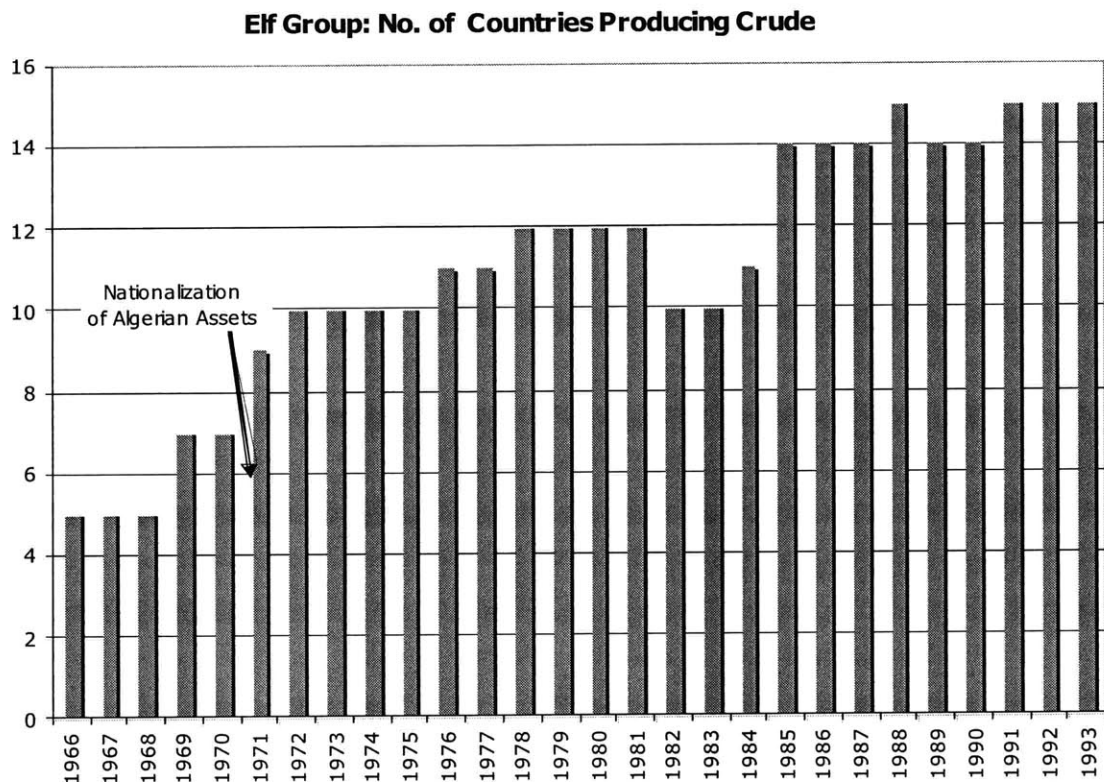
⁶⁹ SNPA, annual report FY1973, 3; SNPA, annual report FY1975, 26.

⁷⁰ Elf-Aquitaine, annual report FY1979, 2.

saw this as crucial to its long-term future. At the Annual General Meeting for FY1979, for example, the president noted that the problems of the 1970s demonstrated that access to equity oil was crucial in ensuring firm success, and that Elf was not relegated to the role of a services company. He therefore made the development of international exploration and trading “absolute priority” within the firm.⁷¹ The sale of crude internationally which made an increasing contribution to Elf-Aquitaine’s profits, and the number of countries from which Elf-Aquitaine produced crude grew, in reflection of this increased emphasis on international markets.⁷²

⁷¹ President’s Address to Annual General Meeting of Shareholders June 12, 1980, 2.

⁷² Staff reporter, “Elf Aquitaine”, 246.



Source: Elf Group Annual Reports, various years

Note:

Elf, SNPA, and SNP affiliates. (1971-1972); Elf-Aquitaine (1973-); 1983 interpolated from 1982 & 1984 results

This diversification strategy was mirrored by Total, which extended into refining and distribution outside France and increased investments upstream. Sales of refined petroleum products in France as a ratio of total sales, for example, fell from forty-one percent in 1983, to thirty-five percent in 1990, to nineteen percent in 2004, meaning that sales in the rest of the world grew from fifty-eight percent to eighty-one percent over the same period.⁷³ The share of sales in Europe, as a component of total sales outside

⁷³ Includes sales of gasoline, jet fuel, kerosene and gas oil, fuel and heating oils, lubricants, and other more minor products. Data here, and below, calculated by author from Total annual reports, various years.

France also increased over this period, and grew particularly rapidly following the entrance of the firm into Eastern Europe.

Total reflected the change in corporate strategy by reorganizing business operations in 1990 in order to promote international operations. The reorganization of the business was made, in the words of the 1990 annual report, because "Total's basic refining and marketing operations now cover the whole of Europe, while its downstream activities are worldwide in their reach. The reorganization is designed to adjust to this new situation."⁷⁴ In refining it unified its management structure for Europe, meaning that it no longer had a national organization around the refining and marketing of petroleum products, but rather optimized operations across Europe. For Total-CFP also, the utilization rate in French refineries stood at only sixty percent, compared to close to ninety percent in the four refineries operated in Total Petroleum North America."⁷⁵

Other trends accentuated the decreasing importance of the French market for Total. Although data is available only from 1983, for example, sales of crude oil, as opposed to products, fell in France as a ratio of total sales. In 1983, for example, the Total group sold some 18.8 million tons of crude in France, which increased to twenty one million tons by 1990 (an increase of nine percent). Sales to the rest of the world, on the

⁷⁴ Total, *Annual Report 1990* (Paris: Total, 1990), 18.

⁷⁵ Staff reporter, "Total-CFP," *Petroleum Economist*, July 1988, 266.

other hand, grew from 24.2 million tons to forty seven million over the same period.

The decision of the firms to respond to weaker performance and future prospects within France by expanding internationally (and across business segments for Elf-Aquitaine), was reflected in the shift into more profitable markets for refining and distribution, and greater investment in exploration and production.

In addition, evidence suggests they supported transforming the institutions of national control because of the greater flexibility this provided in organizing commercial operations. This was most clear in the case of the liberalization of fixed prices in 1982 and 1985-6. Fixed domestic prices under conditions of newly floating fluctuating crude oil prices – as well as a floating dollar-franc exchange rate - limited the ability of the firms to adjust end-used prices based on the changing costs of inputs. Requests by the management of Elf-Aquitaine to the state to increase prices for products in June 1972 went unheeded, and although price increases eventually approved by the State, they were inadequate to enable the firm to recoup its increased costs of crude procurement.⁷⁶ This significantly harmed the performance of the refining division of the firm.

The contribution of the system of fixed prices to the difficulties in the domestic refining sector meant Elf-Aquitaine supported the loosening of prices. Indeed, the firms

⁷⁶ SNPA, annual report, FY1973, 3; SNPA, annual report, FY1974, 3.

initially lobbied the Directorate of Hydrocarbons to reform the price-setting system so that adjustments were made on a monthly rather than an annual basis, in order to better reflect the new reality of shifting prices for inputs.⁷⁷ Their support extended to the full removal of price controls in 1985:

"A major event in early 1985 was the removal of price controls, which was announced by the Government at the end of January...We have no objection to this measure, and indeed the entire industry has been calling for it."⁷⁸

Firms preferences towards the relaxation of licensing requirements implemented by Malvy and Madelin were similarly positive.⁷⁹ This was firstly because the loss of mandated market share through the licensing system was balanced against greater control over market share afforded by the greater flexibility to organize refining.⁸⁰ Further, the existing regulatory structure had proven itself under conditions of high prices and supply instability to be a burden, rather than of benefit to the firm.

"The Government is going to have to review this country's now outdated petroleum policy. It may opt for a genuinely protective dirigisme, enabling firms to finance industrial conversion, or alternatively it may opt for a laissez faire policy leaving them to shoulder both the risks, and the opportunities, of achieving this by their own efforts. The main priority is to break out of the existing hybrid system, which is gradually bringing about the demise of refining in France."⁸¹

Secondly, as noted above the domestic market for refined petroleum products

⁷⁷ Gilles Bellec, Director of Hydrocarbons (1984-1989), interview with author, Ministry of Industry, Paris, France, July 18, 2008; Du Rusquec. *Elf-Aquitaine*, annual report, 1973, 4.

⁷⁸ Chairman's Address, Annual General Meeting of Shareholders, Elf-Aquitaine, May 30, 1985.

⁷⁹ Gilles Bellec, Director of Hydrocarbons (1984-1989), interview with author, Ministry of Industry, Paris, France, July 18, 2008.

⁸⁰ Thevenon, "Produits Pétroliers: Importations Plus Faciles."

⁸¹ Chairman's Address, Annual General Meeting of Shareholders, SNEA, May 21, 1981.

was not seen as a growth sector by the management of the Elf-Aquitaine and Total groups, both because of falling demand and because of low expected future margins given overcapacity and the entrance of Middle Eastern producers to the refined products market. The strategies adopted by both firms therefore focused on expanding beyond the French domestic market into Europe, the United States, and the Asia-Pacific, rather than defending market share domestically. Reflecting this, Elf-Aquitaine began to optimize its refining operations across Europe rather than simply France in the early 1980s, with a single program determining how supplies were distributed for the European market as a whole, rather than simply for the French domestic market.⁸²

The transformation of the French institutions of national control was completed through the privatization of Elf-Aquitaine and Total. As is the case with price and the removal of regulatory control over the domestic market, the firms supported the change because of the constraints government ownership placed on their business operations.

The government had less control over Total than Elf-Aquitaine, with a maximum shareholding of thirty-five percent, compared to sixty-seven percent for Elf-Aquitaine. Total was also considered by managers to have more of the characteristics of a private, rather than a state firm, in comparison to Elf-Aquitaine. Total welcomed privatization, as

⁸² Olivier Abadie, Director of Downstream Oil Europe, Cambridge Energy Research Associates, interview with author, Paris, France, July 16, 2008.

is made clear in management's assessment of the significance of the reduction in the government's share of control over the firm, and which is worth citing in full:

"The events of the past year mark the culmination of the transition of Total to a genuinely private, commercial entity as the Company revised its historical links to the French State. Management is fully aware of its responsibilities to the Group's new and enlarged shareholder base and of the need to make an even greater effort to improve performance, communication, and above all, to create value for our shareholders...The transition from a State-controlled to a private commercial entity provides Total with access to a broader international investor base and more financial flexibility, while improving the liquidity of the market for Total's shares."⁸³

The issue of state ownership was more significant for Elf-Aquitaine, given the larger shareholding of the state. Like the Total group, its view on privatization was positive. This was firstly because of constraints the two-thirds government shareholding placed on the firm, but also because the value of firm shares were understood by management to be undervalued relative to competitors because of government shareholdings, a complaint borne out by the valuation of the stock relative to its competitors.⁸⁴ The CEO noted in an interview that Elf was "already an international company confronted by international competition, and we seek the state's help neither financially nor politically. [Privatization] would only mean a greater involvement of private shareholders."⁸⁵

⁸³ Total, annual report 1992, 6-7.

⁸⁴ Jean Du Rusquec, Advisor to the CEO, Total and former member of Ministry of Finance, interview with author, Paris, France, July 23, 2008.

⁸⁵ Petroleum Economist, May 1986, cited in Schmidt, *From State to Market? The Transformation of French Business and Government*, 147.

The support of Elf-Aquitaine for privatization was also driven by the divergence in the interests of the state actors and the firm: the government, through its rights as the largest shareholder in Elf-Aquitaine, actively blocked an acquisition planned by the Elf as part of its strategy of dealing with problems in the domestic refining and distribution market. In 1981 Elf wanted to enter the U.S. market however it was blocked by the Socialist government, which frustrated management.⁸⁶

It is unsurprising, therefore, that the firms responded to the challenges of the nationalization of production and falling refining margins by redeploying firm resources towards greater international exposure, rather than calling for increased protection within the domestic market. Elf's focus outside the French market is laid bare in a 1989 interview with the Elf-Aquitaine CEO Loik Le Floch-Prigent: "The general objective is very clear. Elf is to be one of the world's leading companies in oil and gas. And we will be ready to react to other good opportunities and do even more."⁸⁷ Both companies also sought to develop refining and marketing internationally. The CEO of Elf-Aquitaine, for example, noted that he "thought the company needed to develop its downstream activity, because we were weak in that. Thus we made the Amoco acquisition in the UK, and we

⁸⁶ Jean Du Rusquec, Advisor to the CEO, Total and former member of Ministry of Finance, interview with author, Paris, France, July 23, 2008.

⁸⁷ Petroleum Intelligence Weekly, "Elf Chairman Eyes Profits, Not Sentiments," *Petroleum Intelligence Weekly*, September 30, 1991 1991, 8.

took an interest in the Spanish refining and marketing company Cepsa, initially at 25% and going to 34%.⁸⁸ This strategy recognized that, within the refining sector, Elf remained dependent on sales of petroleum products within France and needed to expand the geographic share of its sales.⁸⁹

3.3 Negotiations with Other Actors

The shift of French firms, and the DGH, towards support for liberalization and privatization mirrored that of other domestic actors both within the state and in Europe. In this sense outcomes are overdetermined; support existed for liberalization across the political spectrum and within the oil firms, and there was little opposition. In general terms parties of the left and right began to pursue economic growth and macroeconomic stability through a shift away from etatism.⁹⁰ Ongoing poor economic performance was important in the initial shift first towards greater state intervention under the government of President Mitterrand and Prime Minister Mauroy government (1981-1984), and then away once again. The French economy, along with the other advanced industrial

⁸⁸ Ibid., 8.

⁸⁹ Staff reporter, "Designer Oil," *The Economist*, January 30 1993, 68.

⁹⁰ The details of this change are described in Schmidt, *From State to Market? The Transformation of French Business and Government*; Levy, "Economic Policy and Policy-Making"; Peter A. Hall, "The Europeanization of Policy-Making," in *Developments in French Politics 2*, ed. Alain Guyomarch and etal (2001); Vivien A. Schmidt, "The Changing Dynamics of State-Society Relations in the Fifth Republic," *West European Politics* 22, no. 4 (1999), 141-165.

economies, performed poorly following the oil price shocks. In response, the Socialist Mitterrand/Mauroy adopted a range of expansionary economic measures, including raising the minimum wage, introducing a range of other social benefits, and nationalizing firms. As a result, government spending increased by some 27.6 percent in 1982.⁹¹

Nationalization was the centerpiece of the increased interventionism. Beginning in 1981 the Socialist government nationalized firms across a wide range of economic sectors determined to be strategic in response to poor economic performance. Some forty-six firms in all were nationalized, representing 15.4 percent of all revenues for French industrial firms in 1980.⁹² In the end the government owned thirteen of the twenty largest French firms, as well as maintaining controlling shares in other firms.⁹³ Nationalizations were carried out across the banking and industrial sectors, and included sectors determined to be 'strategic' to national economic performance in which the goal was partly to reduce dependence on external markets.⁹⁴ Given the existing holdings in the petroleum sector through the Total and Elf-Aquitaine groups, nationalizations were not carried out in the petroleum sector. This makes intuitive sense: petroleum had for many

⁹¹ Schmidt, *From State to Market? The Transformation of French Business and Government*. 107. See also Vivien A. Schmidt, "Business, the State, and the End of Dirigisme," in *Chirac's Challenge: Liberalization, Europeanization, and Malaise in France*, ed. Martin Keeler John & Shain (Houndmills: Macmillan Press, 1996).

⁹² Pascal Dumontier and Claude Laurin, "The Financial Impact of the French Government's Nationalization/Privatization Strategy," *EFMA 2003 Helsinki Meetings* (2003). A succinct review of the technical process behind nationalization can be found on pages 8-9.

⁹³ Schmidt, *From State to Market? The Transformation of French Business and Government*, 116-118.

⁹⁴ *Ibid.*, 98.

years been identified as a strategic sector, with policies designed to increase national control in place, and state holdings justified in these terms. Nationalization was therefore unnecessary.

The government was forced to abandon these measures, however, both because of capital flight, which was threatening French membership of the EMS, and rising inflation. Rather than abandon France's position in the EMS and continue with existing economic policies, Mitterrand made the decision to keep France in European institutions. In doing so it implemented a "Great U-Turn" towards fiscal austerity and deflationary policies, including reducing state subsidies for firms and reducing public spending.⁹⁵ In terms of firm ownership, the process of nationalizations was replaced by the opposite trend: a wave of privatizations, which extended into the petroleum sector. The state initially divested its shares in the firms nationalized over the 1981 to 1983 period, as well as a number of other firms in the banking and insurance sector.⁹⁶ Both Elf-Aquitaine and Total were privatized as part of the shift to reduce direct ownership of firms by the state, and this occurred because, unlike in electricity and natural gas, there was little opposition from state actors, or firms, to oppose this change. Indeed, the firms actively supported

⁹⁵ Ibid., 112.

⁹⁶ On the technical procedures behind nationalization see Michel Berne and Gerard Pogorel, "Privatization Experiences in France," *CESifo Working Paper* (2004).

privatization because of the increased capacity it provided them to raise capital in order to fund expansion internationally, and the Directorate of Hydrocarbons also acquiesced to the change both because of firm support for privatization, and because it did not have the power to veto the proposed privatization given support across the political spectrum for it.⁹⁷

Major IPOs and Sales of Shares by the State			
Year	Industry	Services	Banking & Insurance
1986	Saint-Gobain CGCT, Compagnie Generale d'Electricite	TF1, Havas	Paribas, Compagnie Financiere de Suez, Societe Generale, Credit du Nord, Caisse Nationale de Credit Agricole, BNP, UAP, Societe Lyonnaise de Banque
1987			
1988	Matra		
1993	Rhone-Poulenc		
1994	Elf-Aquitaine, Total		
	SEITA, Pechiney, Usinor-Sacilor		
1995			
1996			AGF
1997	Bull	Air France	
1998	Thomson-CSF		CIC
	Dassault		Credit Lyonnais
1999			
2000	Thomson Multimedia, EADS		
2001			
		Autoroutes du Sud de la France	
2002			
2003	Thomson, Dassault Systems		

Source: Adapted from Berne and Pogorel (2006)

3.4 European Institutions – Policies

By the time European organizations began a concerted push to change French national institutions, therefore, the interests of firms and state actors that previously led them to favor strategic intervention had changed.⁹⁸ This mean that when the European

⁹⁷ Senior policy maker in oil sector, interview with author, Paris, France, August 20, 2008.

⁹⁸ If the answer to the question of whether changes in state actor policy preferences towards ongoing strategic intervention in the petroleum sector represents an independent shift in policy preferences within France itself, as opposed to the influence of European initiatives, lies in identifying whether French political and bureaucratic officials

Commission sought to complete an internal market for goods and services envisioned, as envisioned in the Rome treaties, it found no opposition from the French government to carrying this out in the oil sector. The Commission pursued this mandate vigorously, making recommendations about the French regulatory structure in petroleum specifically in 1987, in order for the French government to be in compliance with the 1986 intergovernmental agreement.

Little direct negotiation took place between the Commission and the French government prior to the 1980s. The main focus of European institutions in the 1970s was tracking the poor performance of the refining sector in member countries because of the potential implications for regional employment and security of supply. On both questions it reached sanguine conclusions: regardless of the poor performance of the sector in the face of falling demand, underutilized capacity, and increasing petroleum product imports from non-member countries, intervention was unwarranted on employment or public security grounds, and “solutions...will have to reflect the traditionally liberal attitude of the Community to trade policy.”⁹⁹

The Commission alluded to two potential justifications for public intervention in

opposed changes proposed by the European Commission, then, the evidence presented here suggests that the convergence of French on European policy in the petroleum sector reflected a shift in state actor preferences that occurred independently of the European initiative to dismantle the *dirigiste* model of French governmental intervention.
⁹⁹ Commission of the European Communities, "The Situation in the Oil-Refining Industry and the Impact of Petroleum Product Imports from Third Countries," ed. Commission of the European Communities (1985), 2

response to the poor performance of the sector. The first was to provide adjustment support for those made unemployed. Employment losses caused by the closing of thirty-five refineries were estimated by the Commission to be approximately 16,000 (although eighty percent of people losing their jobs being either reemployed, or made redundant through early retirement). This meant total employment in the refining industry within member countries fell from 142,000 in 1975 to 126,000 in 1985, a reduction of eleven percent of total employment over the decade. The Commission did not, however, view this as significant enough to warrant recommending public intervention to the Council.¹⁰⁰

The second potential justification for policy intervention lay in ensuring security of supply, however the Community was also sanguine about the implications of falling refinery capacity, and rising imports. It found that the existing closing or mothballing of refineries, coupled with future projections of refinery closures, was unlikely to reach a level which would lead to concern over security of supply in final products derived from petroleum. This assessment was confirmed at meetings of the European Energy Council on 15 March, 20 June and 11 November 1985, where the question of increasing imports of petroleum products from non-Community countries was taken up.¹⁰¹

As a result, the position of the Commission on the problems of the refining

¹⁰⁰ Ibid., 3.

¹⁰¹ Ibid., 12.

sector, like that of the initial response to the price shocks of 1973-4, was to present the harmonization of member countries' policies and completion of the internal market for energy products as the most effective mechanism for managing the problem, as well as the larger issue of ensuring security of supplies for petroleum products. This view was given backing by national governments through the major agreement negotiated between the governments of the member states to complete the internal market first envisioned in the Treaties of Rome. Ensuring security of supply was relegated to a secondary justification for the liberalization of national laws and regulations limiting the free flow of energy products.

"It must be acknowledged that a more integrated energy market is a significant additional factor as regards to the security of supply for all Member States. Greater interconnection of equipment would make it possible to increase both the solidarity between member states and the flexibility of the industry. It would therefore increase the emergency resources available in the event of a crisis and create the possibility of additional trading."¹⁰²

The decision by national governments to complete the internal market gave the opportunity to the Commission to pursue the dismantling of trade and other regulations that acted as obstacles to trade in energy products and competition between firms operation across the energy sector. This implied the abolition, as the Commission asserted, not only of regulations hampering the free circulation of goods and services, but also implied harmonization of competition rules, abolition of subsidies provided to state

¹⁰² ———, "The Internal Energy Market," ed. Commission of the European Communities (1988), 6.

monopolies, and of the laws and regulations governing such firms that impeded competition.

The mandate acquired by the Commission covered the electricity and gas industries, as well as petroleum. The Commission quickly asserted its authority in the petroleum sector. At its request the Council of the European Commission, which included the French Permanent Representative to Brussels Francois Scheer, accepted unanimously that the Commission should draw up a list of the obstacles that existed in national policy blocking the creation of an internal market for energy.¹⁰³ This began the process of liberalizing French oil policy, and hence the dismantling of France's national legal and regulatory barriers to trade.

The Commission opened its assessment of the national changes in legislation required to complete the internal energy market with a quotation taken directly from the 1968 guidelines: "There are still considerable barriers to trade in energy products within the Community. If this state of affairs does not alter and if a common energy market is not achieved in the near future, the degree of integration achieved in this sector may well be jeopardized."¹⁰⁴ This signaled both the lack of progress in moving forward to achieving an internal market in energy since the initial statement, as well as the continuity

¹⁰³ Council of the European Communities, *1171st Meeting of the Council - Energy*, 1171st Meeting, 2 June 1987.

¹⁰⁴ ———, "The Internal Energy Market", 2.

in Commission policy preferences in seeking to achieve this goal.

The decision of those governments to complete the Single European Market (SEM) gave the Community the mandate it required to recommend to the European Council that binding legislation, in the form of regulations and directives, be issued in order to implement an internal energy market across member countries. At the Council of Energy Ministers meeting of June 2, 1987 the ministers of the national governments endorsed the Commission's request to identify obstacles to the completion of the SEM in energy, and then make recommendations to the Council on how to remove these in order to achieve the goal by the 1992 deadline.¹⁰⁵ This mandate was noted in the Commission's subsequent report on internal energy market:

"With the adoption of the Single Act in December 1985 and especially with the recent decision by the European Council to assign the resources needed for the Community to make a success of the Single Act, the way is at last clear for making a reality of the European internal market. Completion of the large market by the end of 1992 has become a key objective and the focal point of the revival of the European Community."¹⁰⁶

The Commission pursued this mandate by issued recommendations for the harmonization of policies that applied first to all member countries. Specifically, it stated that the creation of the SEM by 1992 required that regulations across product specifications for petroleum products that varied across the member states needed to be

¹⁰⁵ Ibid., 2.

¹⁰⁶ Ibid., 2.

harmonized, and pointed to the problems that existed in the national regulatory schemes of individual member states. Unsurprisingly, French national law featured prominently, and the Commission stated they should be removed for France to be in compliance with the intergovernmental agreement reached to form a single market for Europe by 1992.¹⁰⁷

Table: 1988 Commission Recommendations for Changes to French National Law

Regulation	Recommendation for French Law
Restrictions on imports of crude oil and/or petroleum products from certain non-Community countries.	France has limitations on the entry into its territory of crude oil and products imported directly from non-Community countries. The creation of an internal space without frontiers makes it necessary to develop common arrangements and a common policy for trade in oil and petroleum products with non-Community countries. (44)
Obligation to accept crude oil acquired by the State	France [and Spain]...require their oil refiners to accept oil which has been acquired by the State. The policy of state-to-state procurement of oil grew up in the years of the oil crisis as a means of ensuring a country's oil supplies. In the present, and foreseeable, state of the oil market it is no longer warranted." (45)
The obligation to use national-flag shipping for the carriage of crude oil and/or petroleum products by sea	No longer allowed. (45)
Exclusive right of refining	No longer allowed. The adaptation of oil monopolies has so far affected only commercial aspects, in particular the liberalization of trade in refined products between Member States. The monopoly in refining...has remained outside the scope of the various adjustments of monopolies. (46)
Prohibition of trans-frontier deliveries affecting distributors not approved in the country of destination	In these member states legislation relating to oil provides for a special status for importers/wholesale distributors of oil products. (48)
Differences in rules and technical norms applying to petroleum products	Harmonization required.
Obstacles as the result of the existence of oil monopolies	To complete the adaptation of commercial monopolies...import restrictions, import licenses, and price systems and to review certain provisions concerning the monopolies which are at present accepted, exclusive right of refining, exclusive right of marketing national products, and prohibition of cross-frontier deliveries. (54-55)

By the time the Commission made these recommendations, however, the major actors that supported and benefited from the policies of national control were willing to accept European directives in petroleum, as noted above. The decision to abolish the system of fixed prices and licensing that had been at the center of the 1928 system, in the final analysis, were therefore carried out as the codification of a set of regulatory changes

¹⁰⁷ ———, "The Community Oil Market, Its Oil Refining Industry, and the External Trade in Petroleum Products," ed. Commission of the European Communities (1986), 29.

that had already occurred, rather than a new and contentious initiative. The redrawing of the law of 1928 into the 1992 law governing the petroleum sector, and the privatization of the national flag firms that had been at the center of the French strategy, therefore proceeded with little opposition. Rather than attempting to retain articles in the legislation that maintained barriers to market entry designed to support French national firms, or resist directives from the European Commission, therefore, debate within the DGH on the new legislation designed to govern the oil sector focused on more mundane issues of ensuring compatibility with exiting laws, and ensuring consistent use of language.¹⁰⁸

Why was this process so orderly? As I have shown above, this outcome is attributable to the changes in policy strategies of both firms and state actors, neither of whom saw benefit in maintaining strategic intervention. In the case of the firms, the response to the oil shocks of the 1970s and subsequent collapse in demand within France was to seek market share elsewhere, and diversify out of the petroleum sector in the case of Elf-Aquitaine. State ownership of the firms proved a hindrance to these objectives, as did the restrictions on pricing and licensing structure that had given them market share. They therefore welcomed the jettisoning of strategic control, and at times lobbied for it to be moved forward.

¹⁰⁸ Senior policy maker in oil sector, interview with author, Paris, France, August 20, 2008.

For state actors, the cause of the shift of policy strategies was more varied. First, the shift in the structure of the international petroleum market made the existing system of fixed prices untenable, which acted as a shock leading to a review of overall policy. It also directly led to the jettisoning of the fixed-price regime in favor of a floating price regime. The Directorate of Hydrocarbons, which had traditionally championed the interests of the national firms within the system of *dirigisme*, therefore supported the relaxation of prices, in line with the position of Elf and Total. The Ministry of Finance also supported price liberalization as crude prices began to recede, believing this would help control inflation.

These changes directly related to the petroleum sector were added to by the general shift in strategy of state actors towards the question of how best to achieve economic growth and macroeconomic stability. The privatization of Elf-Aquitaine and Total, for example, came about as part of a larger program of privatization, and the entrance of the Chirac government to power in 1986 was followed closely by the beginning of the dismantling of the delegated state monopoly that had played a crucial role in securing market share for the national firms. Finally, European institutions, notably the Directorate General of Competition and the European Commission, played a role in the liberalization of the delegated state monopoly, which had been managed

through the system of licensing.

It is also important to note that there was no opposition to these proposed changes by those who had previously benefited from the institutions of national control. In other words, there were no domestic actors willing to defend the status-quo against the proposed transformation of the policies of national control. Renegotiation of the existing policy therefore led smoothly to its transformation, rather than its adjustment as occurred in the case of Japan and the United States. This also meant that the idea of strategic control, as reflected in these policies, was jettisoned in favor of a new equilibrium focused on Europe as a response to the ongoing reliance on external markets for the supply of petroleum. For France oil became a commodity – certainly one with political implications – but nevertheless a commodity, rather than a strategic good requiring the intervention of the state in order to ensure national control.

4. Europe, Prices and Policy: 2001-2006

As shown above, the idea of strategic intervention was given shape through national policies adopted in France, as in Japan. The policies of both countries shared a common origin in the attempt to regain control over the domestic market from non-national firms, and to extend the control of national-flag firms over reserves of petroleum

located internationally. This strategy enjoyed the support of both state actors and firms, and in both cases they proved remarkably durable.

The common thread of the national petroleum policies of the two countries continued into the 2000s. Japan passed a Basic Law on Energy in 2003, mandating the creation of a *Shin Kokka Enerugii Senryaku*, or ‘New National Energy Strategy,’ every three years, as noted in chapter three. Similarly, the French parliament passed in 2005 a law titled *Stratégie énergétique Nationale*, or ‘National Energy Strategy’ (Law 2005-781), designed to promote energy security of supply, as well as shape markets in order to achieve environmental goals. It had four major goals: 1) controlling energy demand; 2) diversifying fuels; 3) developing energy related research and development; 4) ensuring the stability of energy transmission and storage networks.¹⁰⁹

The crucial difference, however, between the new strategies announced in the French and Japanese energy laws, lay in the rejection of the need for national control as a means to achieve petroleum security of supply in the case of France. Indeed, the commitment to protect the domestic market and promote French exploration and production internationally were absent from the new legislative regime. Further, there was no attempt to regain control over the newly integrated major Total. Indeed, the

¹⁰⁹ M M. Roggenkamp et al., *Energy Law in Europe: National, EU, and International Regulation* (New York: Oxford University Press, 2007), 531.

French government in the 2001-2006 period has continued to reduce its shareholding in energy firms more generally, including in EDF and GdF.

Instead, limiting growth in the demand for energy was named as the first and most important goal in the strategy, with a target established of improving energy intensity (the amount of energy required to produce a unit of GDP) by two percent annually by 2015, and 2.5 percent by 2030. This was to be achieved through a mix of regulations, voluntary commitments and the provision of information to consumers. The second major goal – fuel diversification – was to be achieved through further research into nuclear reactor technologies, and development of renewable energies. France's 2005 energy strategy, therefore, applies a range of policy instruments in order to manage failures in energy markets stemming both from market structure, and from environmental externalities associated with the burning of fossil fuels.

In Japan, as in France, the new energy strategy promoted the ongoing investments in fuels that act as a substitute for petroleum products such as nuclear power. Japan also promoted investment into technologies that could serve to reduce the share of petroleum products in the transportation sector, where they continued to dominate consumption. The most significant difference, however, lay in the reinvigoration of the institutions designed to enhance strategic control over the petroleum supply chain:

national control remained a feature of Japanese policy landscape in the petroleum sector.

This chapter has shown that the crucial difference in the case of France is the shift in policy preferences of both firms, and state actors, for the policy of national control, in contrast to Japan, where firms, and state actors, continued to support these policies. As we shall see in the next chapter on the United States, national control – under the moniker of *Energy Independence* – also remained a feature of U.S. policy despite adjustments to the existing set of policies driven by changes in the international petroleum market.

Chapter Six – The United States

“the interests of the [U.S.] companies were basically identical with the U.S. national interest - ...the measures necessary to assure the United States and its allies a secure source of crude oil at reasonable prices could safely be left to the companies.”

“Multinational Oil Corporations and U.S. Foreign Policy,”
Committee on Foreign Relations, United States Senate,
January 2, 1975, 15.

1. Outline

In this chapter I extend my analysis of policy adjustment and transformation in petroleum markets to the United States. I show that policies promoting strategic intervention were implemented in the United States, as in Japan and France. Further, in common with the case of Japan, and in contrast to France, I find that the changes wrought in the 1970s and 1980s to U.S. petroleum policies represented a case of adjustment rather than transformation; strategic intervention remained a goal of petroleum policies, but the instruments used to pursue this goal were restructured rather than abandoned. I suggest these adjustments were made because of the effects of changes in the structure of the petroleum market on the policy strategies adopted by state actors and firms.

The relationship between state actors and domestic industry in the case of the United States has been more arms length than Japan and France. Unlike in the latter two countries, in which the state played an important role in establishing and building up a

domestic petroleum industry, in the United States policy intervention in the petroleum sector emerged after the industry was already an important part of the industrial landscape. Firms preceded the state, rather than the state creating firms.

As imports overtook exports, however, federal government interest in security of petroleum supplies became a component of state interests; as noted by Katz, “from the very beginning of America’s dependence on oil, concern had been expressed about the consequences if the supply was interrupted.” The existence of domestic resources in the case of the United States meant that the policy focus was not on developing firms capable of competing internationally, however, as French and Japanese decisionmakers were forced to do. Instead U.S. policymakers concentrated on enhancing national control by increasing the ratio of domestic production relative to total consumption.¹¹⁰

The pursuit of greater domestic production was supported by firms. This is notably so for independents – firms that produced the majority of their crude within the continental United States. They lobbied the federal government to introduce policies that promoted domestic production.¹¹¹

¹¹⁰ James Everett Katz, *Congress and National Energy Policy* (New Brunswick, N.J., U.S.A.: Transaction Books, 1984), 12-13.

¹¹¹ The difference in the production profiles of independents and the U.S. majors, and its effect on their policy preferences, is also noted by Milner. Helen V. Milner, *Interests, Institutions, and Information: Domestic Politics and International Relations*, Princeton Paperbacks (Princeton, N.J.: Princeton University Press, 1997), 160.

In this chapter I show that the result of this matching of state actor and industry interests was the imposition of quotas on the import of crude oil, first implemented under the Eisenhower Administration. This policy strategy matched the preferences of both state actors and firms. For the former, a rise in crude oil imports driven by the increase in production in the Middle East was taken as a threat to security of petroleum supplies. For many firms in the U.S. petroleum industry, on the other hand, imports represented a competitive threat. Both sought to limit imports of crude oil, therefore, in the name of enhancing security of petroleum supplies.

Other policies were implemented in the name of national control. First, import restraints were augmented by price controls. These were originally introduced on crude and crude products in order to control inflation, and were matched by price controls across the U.S. economy as a whole. In the case of the petroleum sector, however, controls were retained after others had been abandoned, and were adjusted in order to promote domestic production. Second, regulatory powers retained by the federal government were used to control the exploration and production of crude oil on federal lands, and remained the focus of political battles over the merits of increasing strategic control over petroleum.

Significant changes were made to the policies of strategic intervention between the 1970s and 2000s. Most importantly, trade restrictions promoting domestic production were abandoned, as were price controls. Divisions within Congress, and the division between the executive and legislature in the case of the United States, meant these decisions were fraught; each president considered in this chapter introduced a major policy statement on energy at the start of his tenure, and each was forced to accept a watered down version of his initial proposals following the legislative process within Congress. Despite this, however, national control – under the banner of *energy independence* – remained a component of petroleum policy.

2. Industry Preferences and Policy Strategies

That strategic intervention played a role in U.S. policy setting at all is surprising: of the advanced industrial states the United States is one of the few with significant domestic petroleum resources. Indeed, until 1930 U.S. firms maintained a market share of the world petroleum market of between twenty and thirty percent, and the United States itself was self-sufficient in the supply of petroleum.¹¹²

¹¹² Harold Francis Williamson, *The American Petroleum Industry*, Northwestern University Studies in Business History (Evanston Ill.: Northwestern University Press, 1959), 246, 509.

World Crude Production 1929-1960

(Unit: millions of barrels)

	1929	1937	1949	1960
Indonesia	39.3	56.5	44.9	150.5
Libya & Algeria	0	0	0	67.2
Middle East	42.9	117.5	511.4	1926.4
United States	1007.3	1279.2	1841.9	2574.9
USSR	99.5	193.2	232.2	1080.4
Venezuela	137.5	186.2	482.3	1041.7
Total	1326.5	1832.6	3112.7	6841.1

Source: Cowhey, p. 83

Zone, Qatar and Saudi Arabia

Despite the early dominance of U.S. production in the world oil market, industry support for some form of strategic intervention increased over time. In particular, for industry there was a bifurcation between the integrated oil majors that retained significant international interests, and the independents noted above, which produced crude oil mainly within the United States. These firms were threatened by the rise in cheap exports from the Middle East, providing them with an incentive for seeking protection against imports. This was most notable for the independent producers, which were in direct competition with imports. For the U.S. majors on the other hand, the industrial association they were a member of – the American Petroleum Institute (API) – also supported the quota on imports, although the position of member firms was not uniformly in support of this policy. Following the nationalizations of production in the OPEC countries, access to hydrocarbons upstream became a more important focus. This

made federal licensing over lands with potential petroleum resources an important focus of industry interest.

1.2 State Actor Preferences and Policy Strategies

For state actors, the existence of domestic petroleum resources and strong separation of the executive and legislature made decisionmaking more complex than in the cases of Japan and France.¹¹³ The fragmentation of power between the executive and legislature, in particular, decreased the coherence of decisionmaking in energy policy by increasing the possible number of veto players towards any presidential proposal; each president entered office proposing a comprehensive energy policy, and each was forced to compromise on significant portions of their initial proposal. Further, although each president has typically taken the lead on energy policymaking, there is less continuity given eight year terms, than in the cases of France and Japan, in which the major ministries with competency for energy policy have provided a greater degree policymaking stability across time.

Yet despite these differences in institutions and domestic resources, strategic intervention remained a component of the policy strategies adopted by state actors. In

¹¹³ Richard H. K. Vietor, *Energy Policy in America since 1945 : A Study of Business Government Relations*, Studies in Economic History and Policy (Cambridge ; New York: Cambridge University Press, 1984), 350.

explaining this outcome, I follow Ikenberry by choosing primarily to focus on the presidency.¹¹⁴ I do this for two reasons. First, the most important laws implementing strategic intervention in the case of the United States have been applied through the president, who has been conferred this power by Congress. Under the Trade Agreements Extension Act of 1954, for example, the president was given the power to limit imports in the name of national security. This control was passed to the Department of the Interior (DoI) during the tenure of President Johnson, but returned to the White House with President Nixon.

Second, the framing of petroleum policy as a national security issue gives the president a central role in agenda setting in petroleum policymaking given his mandate to act in the national interest.¹¹⁵ Further, the president has more prosaic reasons for making strategic intervention a component of petroleum policymaking; increasing domestic production has remained popular among the voting population as a solution to volatility in the petroleum sector. This provides the president with an incentive to respond to public concerns by promoting increasing domestic petroleum production.

¹¹⁴ G. John Ikenberry, "Market Solutions for State Problems: The International and Domestic Politics of American Oil Decontrol," *International Organization* 42, no. 1 (1988).

¹¹⁵ Brandice Canes-Wrone, *Who Leads Whom?: Presidents, Policy, and the Public*, Studies in Communication, Media, and Public Opinion (Chicago: University of Chicago Press, 2006), 7. Richard E. Neustadt, *Presidential Power and the Modern Presidents : The Politics of Leadership from Roosevelt to Reagan* (New York: Maxwell Macmillan, 1990). Further, in relation to petroleum policies, the interests of individual congressmen from petroleum producing states tend to map to the policy preferences of industry. Examining the policy preferences of firms through the major industry associations is therefore adequate. See Douglas R. Bohi and Milton Russell, *Limiting Oil Imports : An Economic History and Analysis* (Baltimore: Johns Hopkins University Press, 1978), 108.

1.3 State and Firm Relations

The relationship between the president and the petroleum industry has been more adversarial than that between state actors and firms in the cases of France and Japan, as noted above (although it has by no means been wholly harmonious in these countries either). Firms, for example, have worked to actively shape the policies adopted by the state through Congress, where congressional leaders in states with significant domestic petroleum resources have championed the causes of the industry domestically. The major oil firms have also been targets of presidential criticism during periods of high oil prices.

Yet despite these differences with France and Japan, the argument made in chapter two accurately captures outcomes in the case of the United States. Presidents have continued to remain committed to strategic intervention as a response to the reliance on international markets for the supply of petroleum. For presidents strategic intervention also made sense not only because of fears of supply disruptions, but also because strong public support for energy independence gave them the incentive to continue to pursue such policies.¹¹⁶ Given this support for liberalization of the petroleum sector represented a

¹¹⁶ This was also the case with ethanol, where public support for indigenizing production, coupled with industry

restructuring, rather than a rejection, of the policies of national control. For industry, on the other hand, strategic intervention promoting domestic production helped them attain commercial goals. It is this matching of interests, that meant that increasing domestic production of petroleum remained a feature of policy outcomes in the case of the United States.

As with the other empirical chapters, I begin by describing initial conditions in the U.S. petroleum sector. I then go on to outline changes in strategic intervention over time.

3. Initial Conditions

The early industry within the United States was dominated by John D. Rockefeller's Standard Oil holding company and its subsidiaries. Standard Oil enjoyed ninety percent market share of domestic petroleum products in 1899, and set prices for crude, with its competitors following.¹¹⁷ Standard Oil's grip over the industry did not last, however, for two reasons. First, new fields in Kansas, Oklahoma, California, the Gulf Coast, and elsewhere, reduced barriers to market entry. This is demonstrated by the

support, led to wide-ranging subsidies for agricultural producers of corn.

¹¹⁷ Williamson, *The American Petroleum Industry*, 235.

emergence of new producers. By 1925, for example, Texas Company (5.9%), Sinclair (5%), Gulf (4.8%), Shell-Union (4.4%) and Tidewater (3.4%), which each went on to gain significant shares of the domestic gasoline market, which became the largest market across petroleum products.¹¹⁸ Second, despite this gradual loss of market share, the Standard Oil holding company was ordered dissolved in 1911 by a decision of the Supreme Court, which determined that it had contravened the 1890 Sherman Act on anti-trust.¹¹⁹ The structure of firms in the United States therefore became bifurcated, with a divide between the progeny of Standard Oil, which dominated the early industry and became vertically integrated in the early years of the industry, and the so-called “independents” – firms such as Gulf Oil, Texaco, and Sun Oil – which took advantage of new discoveries in East Texas, Oklahoma and elsewhere to enter the domestic U.S. market, but which maintained limited operations internationally.

Policy in the earliest years of the industry was established in a piecemeal fashion, and was primarily designed to curb over-production. It included both state and federal components. At the state level, policies limiting production through the regulation of drilling and well operation were introduced in oil producing states from 1919, when

¹¹⁸ Norman E. Nordhauser, *The Quest for Stability: Domestic Oil Regulation, 1917-1935*, Modern American History (New York: Garland, 1979), iii.

¹¹⁹ For a review see Nash, *United States Oil Policy 1890-1964* (Pittsburgh: 1968), 14-15.

the Texas Railroad Commission declared wells should be spaced at least forty feet apart.¹²⁰ At the federal level, policy initiatives in the 1920s were of three types. The first promoted voluntary cooperation between firms and the state in order to restrain production. This took the form of the Federal Oil Conservation Board (FOCB), which was created on December 18, 1924 as the key policy body for setting federal oil policy.¹²¹ The second was to adjust the tax regime to assist oil producers. This was done by adjusting depletion allowances to 27.5 percent, which represented a subsidy for oil producers.¹²² Finally, licenses were used to regulate production on federal lands, when an executive order was signed by President William Taft in 1909 setting aside three million acres of public land in California and Wyoming for the federal government.¹²³

Cooperation between government and industry over managing the supply of petroleum was not restricted to the domestic market. State actors also used diplomatic and regulatory instruments to secure access to petroleum supplies in the Middle East and the Dutch East Indies for U.S. firms, which were dominated by Anglo-Persian (later British Petroleum) and Royal Dutch Shell (later Shell). The State Department, for

¹²⁰ Ibid., 15.

¹²¹ Williamson, *The American Petroleum Industry*, 310.

¹²² The depletion allowance is a component of tax law that determines the amount producers of exhaustible resources can deduct from gross income in recognition of the reduction of assets. Setting a higher depletion allowance reduces the amount of income subject to taxation, thereby increasing the incentive to produce. On the FOCB see Nash, *United States Oil Policy 1890-1964*, 87.

¹²³ Ibid., 17.

example, protested the signing of the San Remo Agreement by the United Kingdom and France.¹²⁴ State actors also used domestic regulatory instruments in order to obtain access for firms. In the 1920s, for example, the Department of the Interior used the Mineral Leasing Act to refuse drilling licenses rights to Shell unless the Dutch government gave reciprocal rights to U.S. firms in the Dutch East Indies, from where they had been excluded. In 1928 Shell was recognized as an equal under the act after Jersey Standard subsidiary Koloniale was granted access to the Djambi fields in Central Sumatra.¹²⁵ For state actors, this aggressive international diplomacy was driven partially by fears of falling domestic production. For the U.S. firms that dominated world trade in oil products, on the other hand, gaining a share of growing international crude production was necessary for them to retain their dominant trading position in world markets.¹²⁶

Initial efforts by state and federal governments to regulate domestic production were consolidated in the late 1920s and 1930s. In 1929 President Hoover issued an executive order halting the issuing of new leases for drilling on federal lands. The problem, however, was that oil production from these lands made up only ten percent of

¹²⁴ Stephen J. Randall, *United States Foreign Oil Policy since World War I: For Profits and Security*, 2nd ed. (Montreal: McGill-Queen's University Press, 2005), 17-18.

¹²⁵ *Ibid.*, 29.

¹²⁶ William Stivers, "International Politics and Iraqi Oil, 1918-1928," *The Business History Review* 55, no. 4 (1981).

national production.¹²⁷ At the state level, the Texas Railroad Commission ordered production limited to 750,000 barrels per day within the area of their jurisdiction in August 1930. Their initiative was followed in Oklahoma.¹²⁸ Like the constraints imposed on drilling on federal lands, attempts to restrain production implemented at the state level were bound to fail, however, because of the lack of controls on petroleum flows in and out of oil producing states.

This failure demonstrated that restraining production required placing limits not only on federal lands or within individual states, but also limiting the transportation of petroleum between states and controlling imports. The latter was provided through the 1932 imposition of an import tariff, which was set at twenty-one cents per barrel. It led to an immediate reduction in imports.¹²⁹ Industry supported a tariff on imports of crude in order to prop up domestic production and gain relief from competition from imports.¹³⁰ The former was carried out through the curbing of the transport of oil from state-to-state under Clause 9b of Roosevelt's National Industrial Recovery Act (NIRA), passed as part of the New Deal in June 1933. This was changed to the Interstate Compact to Conserve

¹²⁷ For details see Randall, *United States Foreign Oil Policy since World War I: For Profits and Security*, 100-104.

¹²⁸ Nash, *United States Oil Policy 1890-1964*, 115-117.

¹²⁹ This was a significant amount. Crude prices at the time were between thirty-one cents per barrel (1933) and eighteen cents (1937). Ed Shaffer, *The Oil Import Program of the United States; an Evaluation* (New York, F. A. Praeger, 1968), 10-11.

¹³⁰ Vietor, *Energy Policy in America since 1945: A Study of Business Government Relations*, 92.

Oil and Gas (also known as the “Connally, or Hot Oil Act”) after the Supreme Court struck down NIRA as unconstitutional in 1935. The Connally Act authorized the Department of the Interior to regulate interstate oil shipments, and made it an offense to ignore the state quota settings established by the Texas Railroad Commission.¹³¹ The Connally Act formed the basis of federal regulation of the sector until the outbreak of World War Two.

Authority was centralized in the hands of the government during World War Two, in common with other industrialized countries. In May 1941 President Roosevelt established the Office of the Petroleum Coordinator for National Defense, later renamed the Office of the Petroleum Coordinator for War, and then in December 1942 the Petroleum Administration for War (PAW). It retained statutory authority for coordinating the production, transportation and distribution of petroleum. Pricing was left in the control of the Office of Price Administration.¹³²

PAW was granted the authority to create a public firm through which to directly intervene in the petroleum sector on strategic grounds. The firm was named the

¹³¹ Williamson, *The American Petroleum Industry*, 548-9. Interestingly, the military were disinterested in oil from a security standpoint at this time. The Department of War, for example, did not include oil in its list of strategic materials. The director of the planning branch stated that “as oil is one of these materials for which we consider the domestic supply ample, we have not prepared elaborate plans for restrictive control.” Randall, *United States Foreign Oil Policy since World War I: For Profits and Security*, 82-83.

¹³² Randall, *United States Foreign Oil Policy since World War I: For Profits and Security*, 166-67.

Petroleum Reserves Corporation (PRC), and was created on June 26, 1943. It was tasked with acquiring foreign oil reserves.¹³³ As Randall puts it, the establishment of the PRC was backed by “an important consensus in 1943 among civilian and military policymakers and significant segments of the petroleum industry that vigorous support for American enterprise abroad was essential for private enterprise to retain its foreign concessions, and for the United States to ensure American security and economic vitality in the postwar era.”¹³⁴

Truman nevertheless largely dismantled to wartime controls over the production, distribution and pricing of petroleum following the end of the war.¹³⁵ The wartime experience did leave two lasting institutional legacies, however. First, the Oil and Gas Division was created within the Department of the Interior, with the role of drafting legislation relevant to the petroleum and natural gas sectors.¹³⁶ Second, the National Petroleum Council (NPC), which was established during the war as the main coordinating body between the government and private sector firms, remained in place as

¹³³ Ibid., 172.

¹³⁴ Opposed, however were the independents because the PRC privileged international over domestic oil in policy. See Ibid., 131-2. See also Michael B. Stoff, "The Anglo-American Oil Agreement and the War-Time Search for Foreign Policy," *Business History Review* 55 (1981), 67-8.

¹³⁵ Nash, *United States Oil Policy 1890-1964*, 189-90.

¹³⁶ Ibid., 185.

an advisory body to the Secretary of the Interior. It was made up of business leaders from across the major petroleum producing firms, refiners, trade associations and others.¹³⁷

Despite this retrenchment of policy intervention in the petroleum sector under Truman, the 1950s saw the most significant peacetime increase in government intervention in the sector. This occurred in two ways. First, through the establishment of a quota system over the import of petroleum and petroleum products; and second, the assignation of property rights to the outer continental shelf to the Federal Government through the Outer Continental Shelf Lands Act in May 1953.¹³⁸ Both played an significant role in future debate over national control over petroleum.

The emergence of trade controls as a policy issue emerged in the 1950s because of changes in the structure of the international petroleum market, most notably the increase in production from the Middle East, which caused a significant increase in imports of crude oil into the United States. Imports doubled between 1945 and 1950, caused by the growth in Middle Eastern production, and the push of the U.S. majors into international markets. The United States became a net importer for the first time since WWI in 1948.¹³⁹

¹³⁷ Ibid., 186.

¹³⁸ Vietor, *Energy Policy in America since 1945 : A Study of Business Government Relations*, 18-19.

¹³⁹ Nash, *United States Oil Policy 1890-1964*, 202; Thomas W. Zeiler, "Kennedy, Oil Imports, and the Fair Trade Doctrine," *The Business History Review* 62, no. 2 (1990), 289. Shaffer, *The Oil Import Program of the United States*;

In response to the rise in imports as a share of aggregate petroleum consumption, President Eisenhower set up a Commission on Energy Supplies and Resource Policy in order to study how to shape an energy policy that provided for national defense, economic growth, and security of supplies, on July 30, 1954. It concluded on February 26, 1955 that imports of petroleum should be voluntarily restricted to the same ratio of imports to domestic production recorded in 1954 on national security grounds.¹⁴⁰ The IPAA, along with other industry associations, initiated the process leading to the establishment of quotas on imports in 1957 by petitioning the ODM in 1955 to take formal action on oil imports, using the national security clause in the 1955 Trade Act as justification.¹⁴¹ Later that year the Office of Defense Management (ODM) threatened to recommend to the President that curbs on imports be implemented on national security grounds because of the ongoing growth in imports of crude and residual fuel oil.¹⁴²

The Suez Canal incident of 1956 delayed action by ODM on the question of imports until mid-1957. When it recommended to the president that imports may be a

an Evaluation, 15 has a list of the concessions held by U.S. firms.

¹⁴⁰ Associated Press, "Cabinet to Study US Energy Hoard," *New York Times*, July 31, 1954, Charles E. Egan, "Panel Seeks Curb of Federal Rule for Natural Gas," *New York Times*, February 27, 1955.

¹⁴¹ Vietor, *Energy Policy in America since 1945: A Study of Business Government Relations*, 105. For details of the industry position see page 134.

¹⁴² unknown, "O.D.M Threatens Oil Import Curbs," *New York Times*, September 14, 1955; Staff reporter, "O.D.M Threatens Oil Import Curbs," *New York Times*, September 14, 1955.

threat to national security – the first such action under section seven of the Trade Agreements Extension from 1955 of the Reciprocal Trade Act – the president ordered a study be conducted of these recommendations. Its findings reflected the fact that projected imports stood at 17.4 percent of domestic production, significantly greater than the ten percent from 1954. The ODM report to the president made clear the link drawn between imports and national security concerns:

“The investigation clearly established that the rate of imports could reach a point at which the incentive for exploration and development in this country would be so reduced as to make us dependent on overseas oil supplies to meet our national energy requirement. Further, the investigation gave substantial to a finding that a significant increase in imports...would threaten this impairment in our national security.¹⁴³

On July 29, 1957, President Eisenhower responded by calling for voluntary constraints on imports of twenty percent, which would serve to reduce imports to ten percent of total 1954 consumption – the amount initially identified as the line beyond which U.S. national security was impaired. The voluntary restraints were managed by a newly created Oil Imports Administration (OIA) within the Department of Interior. By February 1958, however, the Administration judged that voluntary import restraints were failing, and increased the sanctions for non-compliance by excluding firms from government purchases of crude and crude products.¹⁴⁴ A mandatory system of import

¹⁴³ Richard E. Mooney, "President Plans Oil Import Study; Sees Peril to Us," *New York Times*, April 26, 1957 1957, unknown, "U.S. Renews Study of Oil Import Curb," *New York Times*, March 7, 1957; Staff reporter, "U.S. Renews Study of Oil Import Curb," *New York Times*, March 7, 1957.

¹⁴⁴ Richard E. Mooney, "New Curb Studied on Imports of Oil," *New York Times*, February 9, 1958; Richard E.

controls was then imposed on March 10, 1959 that required imports of crude and crude products to be equivalent of those of 1957, with import licenses issued by the Secretary of the Interior.¹⁴⁵ The Secretary, in turn, was charged with controlling the issuing of licenses so that imports of petroleum and petroleum products did not exceed a predetermined amount.¹⁴⁶

The IPAA, along with other industry associations, strongly supported the implementation of the quota system in 1957, as well as the shift to mandatory quotas in 1959.¹⁴⁷ Controls were justified in law under the national security provisions of the Trade Agreements Extension Act of 1954. The mix of public and private purpose was made explicit in the statement made by the president in announcing the program:

"The new program is designed to insure a stable, healthy industry in the United States...The basis of the new program, like that for the voluntary program, is the certified requirements of our national security which make it necessary that we preserve to the greatest extent possible a vigorous, healthy petroleum industry in the United States."¹⁴⁸

Domestic firms were split on the merits of the mandatory scheme. The most influential non-governmental organization supporting the change was the Independent Petroleum Association of America (IPAA), as noted above, which argued that increased

Mooney, "Eisenhower Sets Oil Import Curbs," *New York Times*, March 28, 1958.

¹⁴⁵ Felix Beliar Jr., "All Oil Imports under Hard Curb," *New York Times*, March 11, 1959.

¹⁴⁶ Nash, *United States Oil Policy 1890-1964*, 203-06. For a detailed outline of the structure and operation of the program see Vietor, *Energy Policy in America since 1945: A Study of Business Government Relations*, 119-145.

¹⁴⁷ Bohi and Russell, *Limiting Oil Imports: An Economic History and Analysis*, 43, 54.

¹⁴⁸ Cited in *Ibid.*, 67.

imports harmed national security.¹⁴⁹ Consumer groups, on the other hand, opposed import barriers on the principle that they were likely to increase end-user costs.¹⁵⁰

The position of U.S. firms with substantial international reserves was ambivalent. On the one hand, restrictions on imports threatened flexibility by harming the competitiveness of oil produced internationally and imported into the United States. On the other hand, many of these firms continued to hold significant domestic reserves, and therefore stood to gain from the imposition of controls over imports. Further, opposing import quotas was likely to impose political costs by drawing the ire of congressional representatives from oil producing states who were influential across a wide range of regulatory issues associated with energy policy. Given this, the position the integrated U.S. majors eventually came to support the imposition of controls, as reflected in the NPC report of 1966.¹⁵¹

This program of mandatory import quotas was maintained for fourteen years, and remained the centerpiece of the attempt to enhance national control over petroleum resources. Its demise came as a result of a change in market structure – specifically an irreversible fall in U.S. production, followed by the price increases of the 1970s. This left

¹⁴⁹ Staff reporter, "President Decrees Federal Policing of Oil Prices and Orders Curbs on Imports," *Wall Street Journal*, March 11, 1959.

¹⁵⁰ Bohi and Russell, *Limiting Oil Imports: An Economic History and Analysis*, 101.

¹⁵¹ Vietor, *Energy Policy in America since 1945: A Study of Business Government Relations*, 134.

the federal government with the more limited instrument of manipulating the leasing of federal lands in order to boost domestic production.

No significant changes were made through the Kennedy and Johnson Administrations. As Barber notes: "In the 1960s the concerns of a decade earlier about the long-run adequacy of energy supplies for a growing American economy had largely vanished...In this environment it was understandable that little urgency was attached to the formulation of a comprehensive energy policy for the longer term."¹⁵² Under the Kennedy Administration Secretary of the Interior Stewart L. Udall ordered a review of the program, as did the Office of Civil and Defense Mobilization (OCDM).¹⁵³ Although some evidence suggests President Kennedy opposed to the quota system, these reviews did not lead to major changes, in part because Kennedy saw benefit in promoting his broader policy agenda by maintaining existing policy.¹⁵⁴ Under the Johnson Administration no significant changes were made despite a probe held by the Department of the Interior (DOI) into the program, other than decision by Johnson to shift the

¹⁵² William J. Barber, "Studied Inaction in the Kennedy Years," in *Energy Policy in Perspective: Today's Problems, Yesterday's Solutions*, ed. Craufurd D. W. Goodwin (Washington, D.C.: Brookings Institution, 1981), 287.

¹⁵³ Staff reporter, "Agency to Study Impact of Fuel Oil Imports on National Security " *Wall Street Journal*, May 22, 1961.

¹⁵⁴ ———, "Oil Import Quotas Set by President " *Los Angeles Times*, December 1, 1962. For a review of crude oil policies during the Kennedy Administration see Thomas W. Zeiler, "Kennedy, Oil Imports, and the Fair Trade Doctrine." *The Business History Review* 62, no. 2 (1990), 286-310.

responsibility for national oil policy to DoI in order to avoid the appearance of potential conflict of interest given his Texas roots.¹⁵⁵

2.1 Changes in Market Structure

Two changes in market structure in the petroleum market caused adjustments in the policies of strategic intervention in the United States. First, the peaking of U.S. production meant that it became impossible to maintain controls on the importation of crude oil without forcing price rises, given growing domestic demand for petroleum products. Second, as with France and Japan, the oil shocks led state actors to review the existing policy regime because of its effects on the status quo.

2.2 Fall in U.S. Production

The system of quotas was predicated on U.S. production being able to meet demand without causing significant price increases. As the graph below shows, after steep increases in production throughout the beginning and middle of the twentieth

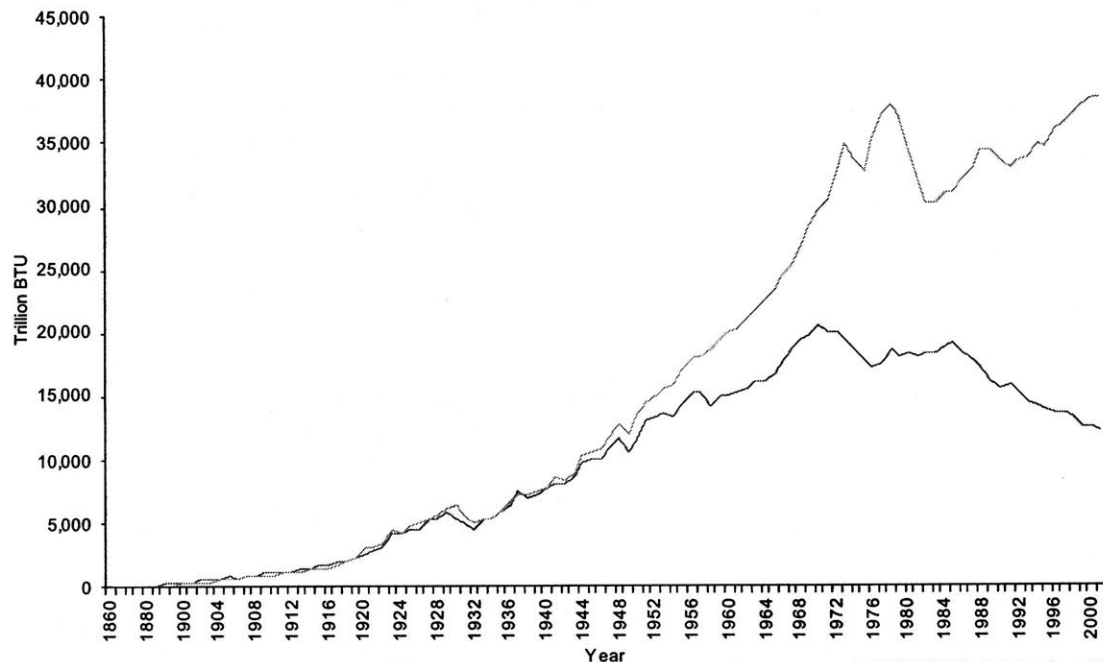
¹⁵⁵ ———, "Dealing with the Oil Lobby," *New York Times*, December 19, 1963. The only other adjustment made was the abolition of import restrictions on heavy oil because of inflationary pressures. See William M. Blair, "Import Curbs Ended on Heavy Fuel Oil" *New York Times*, March 26, 1966. On the Johnson Administration's policies in oil in general see James L. Cochrane, "Energy Policy in the Johnson Administration: Logical Order Versus Economic Pluralism," in *Energy Policy in Perspective: Today's Problems, Yesterday's Solutions*, ed. Craufurd D. W. Goodwin (Washington, D.C.: Brookings Institution, 1981).

century, the production of crude oil peaked in 1970, and then began to decline. This stood in contrast to domestic consumption, which continued to grow significantly over the same period. A gap therefore emerged between consumption, and the capacity of domestic production to provide adequate supplies at reasonable prices. This fall did not mean an immediate decline in U.S. production, which remained substantial as can be seen. Nevertheless, it meant that it became increasingly difficult to maintain restrictions on imports while keeping prices constant.

Reflecting this, in January 1973 – prior to the embargo of April 1973 – President Nixon's Secretary for the Interior, Rogers C.B. Morton, testified that price increases within the United States were likely not only because of changes in the structure of supply internationally as OPEC members asserted control first over pricing, and then ownership over upstream resources, but also because of the inability of domestic production to meet growing demand.¹⁵⁶ This meant that policy adjustment was inevitable, and began with the Nixon Administration, prior to the first oil shock, as described below.

¹⁵⁶ Thomas O'Toole, "Oil Import Rule Change Urged" *Washington Post*, January 11, 1973. Bohi and Vietor make the same point about the depletion of domestic reserves ultimately dooming the system of import quotas. Bohi and Russell, *Limiting Oil Imports: An Economic History and Analysis*, 193-201. See also Ikenberry, "Market Solutions for State Problems: The International and Domestic Politics of American Oil Decontrol," 154. A second effect limit the capacity of U.S. production to make up for shortfalls in supply from other locations, as it did during the Suez Crisis.

U.S. Crude Production and Consumption: 1860-2001



Source: Wright, Gavin, "Energy production, by source: 1800-2001." Table Db155-163, "Energy consumption, by energy source: 1850-2001." Table Db164-171, in *History of the United States, Earliest Times to the Present: Millennial Edition*, edited by Susan B. Carter, Scott Sigmund Gartner, Michael R. Haines, Alan L. Olmstead, Richard Sutch, and Gavin Wright. New York: Cambridge University Press, 2006.

2.3 Effects of Oil Shocks

The second significant change was the oil shocks of 1973-4 and 1978-9. The effects of the oil shocks on the domestic economy was conditioned by the wage and price freezes put into place under the Nixon Administration on August 15, 1971, which were designed to combat inflation. These were gradually loosened for most goods and services by 1973, however price regulations remained in place for both oil and oil products, and became permanent with the passing of the Emergency Petroleum Allocation Act (EPAA)

of 1973. This remained in place until dismantled in 1981 under the Carter Administration, although price ceilings for most products were removed over the 1976 to 1979 period.¹⁵⁷

The general effects of the oil shocks was to worsen an already difficult inflationary environment. Oil import costs, for example, increased from 8.5 billion U.S. dollars in 1973 to 25.2 billion the following year.¹⁵⁸ The effects on the industry, on the other hand, were more diverse because of the price controls, as noted below. The largest U.S. firms with production facilities profited from the increase in crude prices driven by the embargo.

Net Corporate Income of Five Largest U.S. Majors and Independents

	Oct. 1, 1972 - Sept. 30, 1973	Oct. 1, 1973 - Sept. 30, 1974
Total - 5 domestic independents	1377.5	2645.8
Percent Increase over previous year		92
Total - 5 international majors	5397.4	8422.6
Percent Increase over previous year		56

Note:

Independents: Richfield, Philipps Petroleum, Shell Oil (U.S.), Standard Oil (Indiana), Union Oil (Cal.)

Majors: Exxon, Gulf, Mobil, Socal, Texaco

Source: "Multinational Oil Corporations and U.S. Foreign Policy," p. 162.

There was strong support within Congress for maintaining price controls because of the benefits they conferred on users of petroleum products. Dedicated refiners also benefited. For some domestic producers operating in the petroleum sector, on the

¹⁵⁷ Joseph P. Kalt, "The Creation, Growth, and Entrenchment of Special Interests in Oil Price Policy," *Harvard Institution of Economic Research Discussion Paper Series* 939 (1982). See also Ikenberry, "Market Solutions for State Problems: The International and Domestic Politics of American Oil Decontrol."

¹⁵⁸ Subcommittee on Multinational Corporations, "Multinational Oil Corporations and U.S. Foreign Policy," ed. United States Senate Committee on Foreign Relations (U.S. Government Printing Office, 1975).

other hand, the price controls reduced their ability to take advantage of higher crude prices.

As Ikenberry notes, the controls themselves failed to increase the ratio of domestic production to imports, which remained the policy strategy adopted by state actors, and actually had the opposite effect by stimulating demand beyond what it would have been without their imposition. This fact, combined with the inflationary pressures caused by the rise in prices, meant that oil policy inevitably became the subject of renegotiation between state actors and firms.¹⁵⁹ Below I first describe the changes in policy, and then explain how these outcomes were a function of the changing strategies of presidential and firm strategies, but did not reflect a rejection of strategic intervention itself.

2.4 Policy Outcomes

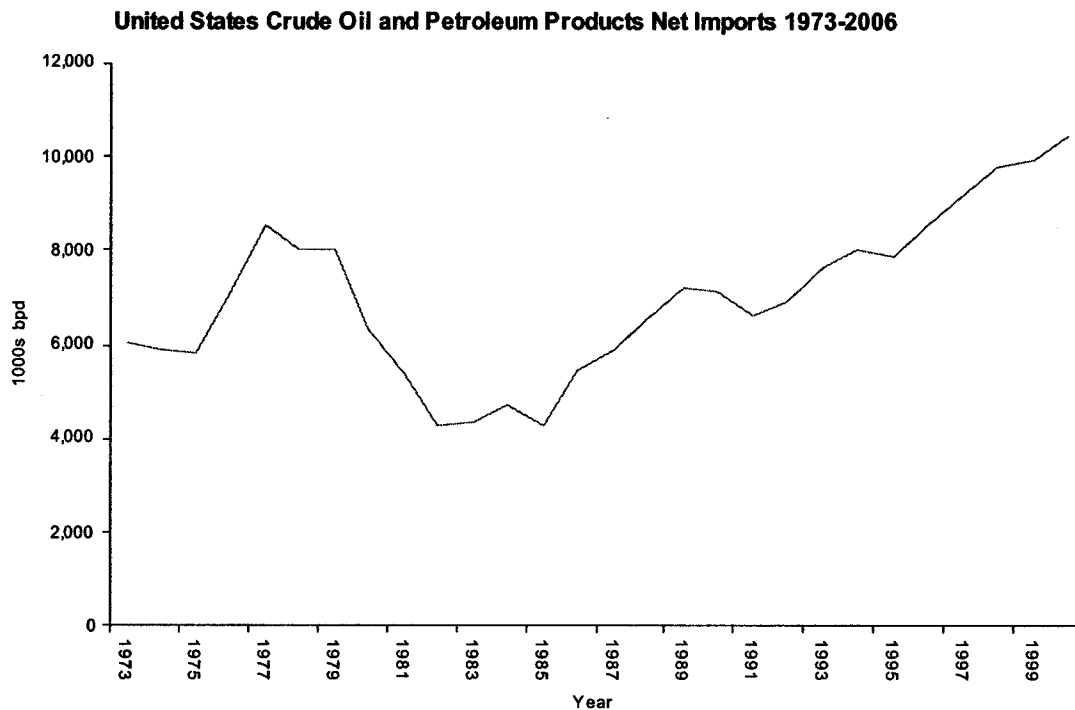
Under the Nixon Administration energy policy was treated as one component of economic policy prior to the first oil shocks. The first phase of Nixon's Economic Stabilization Program froze prices of petroleum products and crude oil for a ninety day period from August 15, 1971, along with wages and prices for other goods. The goal of

¹⁵⁹ Ikenberry, "Market Solutions for State Problems: The International and Domestic Politics of American Oil Decontrol", 164.

the initiative was to restrain inflation, and was enabled by the Economic Stabilization Act. In the case of petroleum, however, prices were not relaxed along with other products, but rather controls remained in place until January 1981 under the provisions of the Emergency Petroleum Allocation Act (EPAA) (enacted in November 1973), and the Energy Policy and Conservation Act (EPCA) of 1975.¹⁶⁰

A second significant change implemented prior to the 1973 oil shock was the restructuring of the mandatory quotas on oil imports to exclude heating and diesel oil, with the goal once again of easing supply constraints that were fueling inflation. This was initially done for a period of four months from January 17, 1973. Mandatory quotas were then replaced with a tariff, creating a system that promoted domestic production over imports as had the system of mandatory quotas imposed by President Eisenhower, but no longer placed an absolute constraint on the amount of crude oil or petroleum products imported into the United States. Imports of both began to increase as a result:

¹⁶⁰ Katz, *Congress and National Energy Policy*, 17-18.



Source: Energy Information Agency data, http://tonto.eia.doe.gov/dnav/pet/pet_move_netl_a_ep00_inl_mblbpd_a.htm

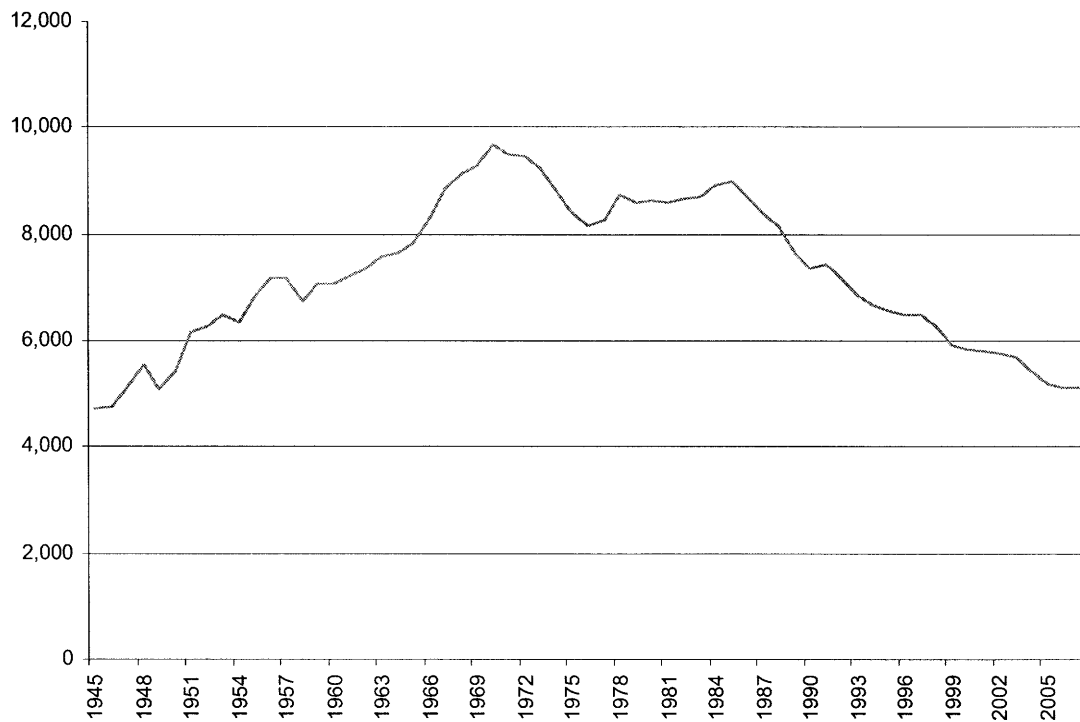
The Arab embargo of October 18, 1973 shifted the focus of energy policy from fighting inflation, towards dealing with the implications of volatility in the petroleum market itself. The most important initiatives undertaken by the Nixon Administration following the OAPEC embargo were announced under the banner of Project Independence, on November 7, 1973. The administration announced that the proposed measures would make the United States self-sufficient in oil by 1980.¹⁶¹

The most important legislative initiative introduced was the EPAA. This introduced a range of policies, however the most important in terms of oil production was

¹⁶¹ Ibid, 20.

the two-tiered pricing system, under which oil prices were divided into two types: “old” and “new” oil. Prices were fixed for “old” oil, while prices for “new” oil – that produced from new wells, or incremental increases above April 1972 production - were allowed to float. This was designed not only to control prices for reasons of inflation, but also to increase the incentives for carrying out exploration and production domestically; while price ceilings on oil produced from old wells served to limit inflation, prices charged for oil from new production were allowed to float, meaning greater profits could be obtained from its sale. This measure was effective in the short-term, arresting the decline in production within the U.S. and increased exploration wells. This is shown below:

U.S. Crude Oil Field Production (Thousand Barrels per Day)



Source: Energy Information Agency

Congressional initiatives were not limited to supporting domestic production. Indeed, a major preoccupation of Congress in the period after the embargo and price rises that came along with it, was to investigate charges of price gouging on the part of U.S. industry. Most famously, the Subcommittee on Multinational Corporations in the Senate Foreign Relations Committee conducted hearings on relations between international oil companies and the Middle Eastern producer countries, and in particular investigated charges that the firms had been involved in establishing a global cartel to limit crude production in order to boost prices. Although outside the bounds of this study, it is also

worth noting that other congressional initiatives focused on reorganizing federal institutions to enable better data gathering, and promoting federal funding of research and development into energy.¹⁶²

The major initiative undertaken during the Ford Administration was the EPCA, although over one thousand bills related to energy were introduced independently into the ninety-fourth Congress that began in January 1975.¹⁶³ President Ford's initial proposal, titled the Energy Independence Act, was designed to boost domestic production and cut imports, as well as establish a strategic petroleum reserve and other measures. The centerpiece of his initiative to increase production was price decontrol, which would increase the incentives for producing within the United States. When the EPCA was finally passed it was substantially changed from the initial Ford proposals, but nevertheless included a number of supply side and other measures designed to increase domestic production. The incentives provided for domestic production were increased by the decision to open lands on the OCS to exploration and production through easing licensing procedures. Imports of crude were also taxed in order to make them

¹⁶² For details see Ibid.; Vietor, *Energy Policy in America since 1945: A Study of Business Government Relations*.

¹⁶³ Katz, *Congress and National Energy Policy*, 59.

comparatively more expensive; at an initial rate of one dollar per barrel in February 1975, and then an additional dollar a barrel in June.¹⁶⁴

The second oil shock led to further changes in petroleum policies. As was the case with the Nixon and Ford Administrations (and those of the Bush Administration, described below) the initial proposal by the president was substantially more ambitious than the eventual legislation that was passed. Nevertheless, strategic intervention remained a component of the final legislation signed into law by President Carter, even after the difficulties in the Congress.

The first initiative of the Carter Administration were implemented through the National Energy Act, signed into law in 1978 by President Carter, which included a mix of both supply and demand side policies. The target of the Carter proposals was reducing U.S. dependence on imported oil - indeed, the Carter Plan measured success by the number of barrels of oil not imported and established a target of cutting the level of 1985 imports from twelve million barrels per day to six million barrels – however the major

¹⁶⁴ This was proposed as a strategy for limiting demand, and as a complement to supply-side measures in achieving the goal of energy independence. Ford also began the process of decontrolling prices on “old” oil in order to cut demand and promote production, and used the Energy Policy and Conservation Act (EPCA) to decontrol prices for petroleum products. See White House, “A Transcript of the State of the Union Message to Congress by President Ford” *New York Times* January 16, 1975; William D. Smith, “Most of Oil Industry Backing Ford’s Plans” *New York Times*, May 29, 1975.

initiatives were in areas outside of conventional oil, focusing on the conservation of energy, and the shift of demand away from oil and gas and towards coal.¹⁶⁵

The second energy plan, proposed by the Carter Administration in 1979, was similarly focused on reducing imports of oil, and included a range of supply and demand side measures. On the supply side, for example, an Synthetic Fuels Corporation (SFC) was created in order to create oil substitutes. Tax and other incentives were also put in place in order to promote the development of oil shale within the United States.

The most significant change implemented under the Carter Administration, however, was the decontrol of prices of domestically produced oil, carried out in 1975 using his authority under the EPCA. Gradual decontrol began on June 15, 1979, with total decontrol planned for September 30, 1981. The goal of the measure was to reduce consumption in order to cut imports. A windfall profits tax was also passed on April 2, 1980 in order to ensure that oil firms did not gain the benefits of domestic price rises, and also provide funding for the SFC.

By the time of the Reagan Administration, therefore, major changes to the policy regime governing the U.S. petroleum sector had already been implemented. The

¹⁶⁵ Institutionally, the major initiative implemented under the Carter Administration was the creation of the Department of Energy, designed to oversee energy policymaking. This followed initiatives by both Presidents Nixon and Ford, who had proposed the creation of a similar organization but had failed to get it through Congress. The National Energy Plan proposed by Carter was a complex set of proposals. For a summary of the major initiatives and their progress through Congress see Katz, *Congress and National Energy Policy*, 102-103.

Reagan Administration was responsible therefore for two changes relevant to the petroleum sector. First, under his administration the date for completing price decontrols, already mandated under the Carter Administration, were brought forward by eight months. Second, in a sign of the ongoing intermittent debates over strategic intervention in the United States, leasing of federal lands and the OCS was loosened.

How, then, can we explain these outcomes? Below I argue that ongoing strategic intervention in the United States, as in the cases of Japan and France, was a function of the policy preferences of both state actors and firms. For firms the benefits were obvious: access to domestic hydrocarbons and increased incentives to produce them. For the president on the other hand, aside from the obvious goal of ensuring economic security, the decision to continue to pursue strategic intervention was driven by the ongoing popularity of energy independence gave the presidents an incentive to implement policies that promoted this goal, even if it was unlikely to be achieved.

2.5 State Actor Policy Preferences

There is considerable evidence to support the proposition that the policy changes implemented in the wake of the oil shocks did not amount to a rejection of strategic intervention. As noted above, President Nixon placed national oil policy back

under the control of the White House soon after entering office, and immediately ordered a review of the import quota program.¹⁶⁶ Nixon's incoming Secretary of the Interior noted following his appointment that he intended to review the program of import quotas as a priority.¹⁶⁷

The Cabinet Task Force on Oil Imports was established on March 25, 1969, and made responsible for reviewing the quotas on oil imports. It was a commission led by the Secretary of Labor, and included the Secretaries of the Treasury, Defense, Interior, Commerce, and the Director of Emergency Preparedness. Observers also attended from the Department of Justice, as well as the Bureau of the Budget, Council of Economic Advisors, Office of Science and Technology, Office of the Special Trade Representative, and Federal Power Commission.¹⁶⁸

Rather than reject strategic intervention, the purpose of the task force was to clarify the meaning of the statutory reference that enabled the quota on oil imports to be put in place.¹⁶⁹ The import quota had initially been justified under the 1954 Trade Agreements Extension Act, as noted above, and later through section 232 of the 1962

¹⁶⁶ Spencer Rich, "Nixon Acts on Oil Trade " *Washington Post* February 21, 1969.

¹⁶⁷ Staff reporter, "U.S. Oil-Import Program to Be Reviewed, Incoming Secretary of Interior Indicates " *Wall Street Journal*, December 19, 1968.

¹⁶⁸ Cabinet Task Force on Oil Import Control, "The Oil Import Question," (Washington, D.C.: Cabinet Task Force on Oil Import Control, 1970), 1.

¹⁶⁹ *Ibid.*, 8.

Trade Expansion Act. The task force was therefore required to examine the question of the relationship between crude imports and national security.

In clarifying the relationship, the task force argued that interruptions to oil supplies did not represent a threat to the operation of U.S. military forces. Instead, supply cutoffs were noted as important because of their potential effect on defense production and the civilian economy.¹⁷⁰ The conclusion it reached confirmed a relationship between crude imports and national security, but argued that the quota system was poorly designed to meet the stated goal of enhancing U.S. security of supply. The problem lay, it concluded, in the fact that the level of imports was arbitrary and was costly to consumers, rather than the fact the goal of national control itself was meaningless.

The task force did not recommend the abandonment of import controls.¹⁷¹ Instead, it recommended replacing quotas with a tariff system.¹⁷² Problems had already emerged with the system of import quotas when the price increases of 1973 functioned to further undermine the existing institutions of strategic intervention. The head of the

¹⁷⁰ Ibid., 30-31.

¹⁷¹ Ibid., 128-131.

¹⁷² Bohi and Russell, *Limiting Oil Imports: An Economic History and Analysis*, 194-5. This conclusion was opposed by the Departments of Interior and Commerce, who opposed it on the grounds that it would be "making us dependent on insecure foreign supplies by discouraging exploration and development." Cabinet Task Force on Oil Import Control, "The Oil Import Question," 343. Around one hundred Congressmen opposed the conclusion, as did the major industry bodies. In the face of this opposition, the recommendations of the committee were ignored, other than the recommendation to create the Oil Policy Committee to make policy in place of the role formerly played by the Secretary of the Interior. Bohi and Russell, *Limiting Oil Imports : An Economic History and Analysis*, 200.

Office of Emergency Preparedness, George A. Lincoln, initially noted that the shift from quota to tariff should be shelved because of instability in the international oil market.¹⁷³

More drastic proposals were advanced for greater strategic intervention outside the White House that were opposed by industry. These targeted production of crude both domestically, with the aim of promoting further development of domestically located resources, and internationally, in order to increase the volume of crude produced by U.S. firms operating outside the continental United States. Adlai Stevenson III, for example, proposed the creation of an Energy Corporation of America, which would retain monopoly power over the development of oil projects on U.S. land, and finance the development and purchasing of oil internationally. An alternative proposal from Senator Henry M. Jackson advocated the creation of a National Energy Production Board, with the power to coordinate regulatory policy in order to promote the development of petroleum resources located within United States territory.

Nixon's initial response following the October embargo was to announce on November 7, 1973 that the U.S. should become energy independent and develop:

"...the potential to meet our own energy needs without depending on any foreign energy sources. Let us pledge that by 1980, under Project Independence we shall be able to meet America's needs from America's own energy resources."¹⁷⁴

¹⁷³ Edwin L. Dale Jr., "U.S. Will Retain Oil Import Quota; Rejects Tariffs," *New York Times*, August 18, 1970.

¹⁷⁴ Cited in Subcommittee on Multinational Corporations, "Multinational Oil Corporations and U.S. Foreign Policy," 151.

The conclusion of the report produced by the Project Independence team was that energy independence for the United States was feasible in the medium term through demand restraint and the stimulation of supply, most importantly through the decontrol of crude oil.

Decontrol was accomplished under the Carter Administration; the inflationary environment facing Nixon meant that price decontrol was politically not feasible. However the Nixon White House continued to argue for the importance of boosting domestic production, and took more limited means as an initial step. As well as introducing the tariff scheme described above in order to promote exploration and production within the United States, it increased leasing in federal lands in the Gulf of Mexico, and made new refineries exempt from paying three-quarters of the tariff on imports for the first five years of operation.¹⁷⁵

Full price decontrol was implemented by the Carter Administration through the 1975 EPCA. The EPCA gave the president the power to set limits on increases in prices of domestic crude to September 30, 1981. Once again the goal was to reduce imports of oil: the White House noted that phased decontrol of prices would reduce the amount of

¹⁷⁵ Thomas O'Toole, "Energy Plan Ends Quotas on Oil Import " *Washington Post*, April 19, 1973.

oil imported in 1980 by 180,000 to 200,000 less than they otherwise would have been.¹⁷⁶

Indeed, during the Carter Administration the goal of this and other policies was explicitly to reduce the consumption of imported oil: the success or failure of policies were measured in terms of millions of barrels of oil per day not imported.¹⁷⁷

To summarize thus far, through the Nixon, Ford, and Carter presidencies, the instruments of strategic intervention were adjusted in ways that reduced policy intervention in the petroleum sector: import quotas changed to tariffs, and were then abolished completely. Price controls were also gradually abolished. By the time of the Reagan presidency, therefore, the major adjustments to U.S. policy had already been made in favor of liberalization. These changes did not occur because of a shift of the policy strategy in favor of a liberal response to the problem of relying on international markets for the supply of petroleum. Instead, the shift took place because of the failure of the existing instruments to achieve the desired goal. Across the three presidencies, national control remained a goal, and was promoted on the supply side. by adjusting the policy instruments used to increase domestic production as a ratio of total domestic consumption.

¹⁷⁶ James L. Cochrane, "Carter Energy Policy and the Ninety-Fifth Congress," in *Energy Policy in Perspective: Today's Problems, Yesterday's Solutions*, ed. Craufurd D. W. Goodwin (Washington D.C.: The Brookings Institution, 1981), 613.

¹⁷⁷ *Ibid.*, 557.

The alternative hypothesis that the policy changes made in the petroleum market were driven by ideational change, and represented a decisive break from strategic intervention rather than an adjustment to changed market conditions, is found with the Reagan Administration. Evidence shows, however, that the Reagan Administrations effect on domestic petroleum policies were limited; the major changes in domestic policies were already in place by the Carter Administration. Further, the collapse in oil prices in the mid-1980s led energy independence to reemerge as a frame through which the Administration promoted further measures to increase domestic production.

Energy policy did not play a significant role in the Reagan-Carter presidential election, as prices were stable and had fallen from their peak of the previous year. A spokesperson of U.S. major Chevron noted that Reagan, as a candidate “promised very little and revealed very little, so it’s a blank page.”¹⁷⁸ Upon entering office the president ordered immediate price decontrol on January 28, 1981, bringing forward the date of determined by the Carter Administration by eight months. In an executive order, President Reagan mandated that all crude and refined petroleum products should be exempted from price and allocation controls implemented under the EPCA, and

¹⁷⁸ *Oil and Gas Journal*, November 10, 1980.

instructed the Secretary of Energy to revoke all regulations affected by the order.¹⁷⁹

Exceptions already granted to controlled oil meant, however, that the amount of crude still subject to price controls immediately prior to the decontrol order coming into effect amounted to approximately fifteen percent of total U.S. crude production.¹⁸⁰

Aside from this, the most significant change to petroleum policies implemented under the Reagan Administration was the relaxation of regulatory controls over the leasing of federal lands. As noted earlier, one instrument through which the federal government exerted influence over production levels within the United States was control over the leasing of land within the continental United States or in the OCS. According to an American Petroleum Institute (API) assessment made in 1980, the federal government had ownership over 775 million acres onshore, and 528 million acres on the OCS. These federal lands, according to the API, accounted for 37 percent of undiscovered oil resources, but were responsible for 16 percent of national production. Further, they also held 80 percent of recoverable reserves of oil shale and 95 percent of tar sands, both forms of unconventional oil. Finally, the API estimated that approximately two-thirds of

¹⁷⁹ *Oil and Gas Journal*, February 2, 1981, 25.

¹⁸⁰ *Oil and Gas Journal*, February 2, 1981, 25.

onshore federal lands faced some kind of regulatory restriction over the exploration for, and development of, crude oil and other hydrocarbons.¹⁸¹

Altering the terms of land leasing on federal onshore lands or the OCS in order to increase domestic production did not require the passing of a new set of laws. Rather, these were covered by the Mineral Leasing Act and the OCS Lands Act, both administered by the Department of the Interior. In 1981 the Reagan Administration announced that it would increase the number and acreage of leases made available under the OCS Lands Act.¹⁸² It also expedited the regulatory procedures covering leasing of onshore federal lands in order to make more land available to firms interested in exploring and producing petroleum products.¹⁸³

The question is how to attribute causation to these changes instituted under the Reagan presidency. On the one hand, as in the case of France, it is clear that a general commitment to liberalization was an important motivation for Reagan's policies in the petroleum sector, as elsewhere. This choice to liberalize formed part of the larger project of increasing the rate of economic growth by removing barriers to production in domestic

¹⁸¹ *Oil and Gas Journal*, November 10, 1980.

¹⁸² *Oil and Gas Journal*, April 20, 1981, 42.

¹⁸³ Other changes to energy policy were also introduced. The windfall profits tax that was enacted under the Carter Administration, along with gradual decontrol of prices, was first reduced, and then repealed under Reagan. Initial changes were made as part of the Economic Recovery Act of 1981, which reduced the tax on revenues secured by firms operating in the petroleum sector secured as a result of price rises under gradual decontrol. *Oil and Gas Journal*, October 19, 1981, 246. The windfall tax was then fully repealed as part of the omnibus trade bill signed by President Reagan in August 1988. *Oil and Gas Journal*, August 29, 1988, 12.

energy industries, as well as an ideological bias that saw deregulating and liberalizing markets as an end in itself, removing the pernicious influence of government over private citizens. When speaking about energy policy before being elected, for example, Reagan criticized President Carter's approach, calling it "an utter fiasco" and stating that his preference was for "removing government obstacles to energy production."¹⁸⁴ He further noted that:

"Currently, U.S. policies are geared towards decreasing demand, regulating markets, and lowering growth. We see the results of these policies in price controls, plans for rationing, energy taxes, withdrawals of lands from mining and petroleum exploration, thoughts of banning weekend driving, and a foreign policy increasing dictated by foreign producers."¹⁸⁵

The Secretary of Energy, James B. Edwards also made an explicit link of the policy strategy of the Reagan Administration to the failed policies of the previous administration, and the importance of free markets:

"[Regulation] has only been an experiment – and it has proved not to be a very good one, especially in the field of energy. The free market allows consumers and the entrepreneur to experiment and to make mistakes. But it doesn't subject the whole country to the alchemy of planners in Washington."¹⁸⁶

Further, in his acceptance speech at the Republican National Convention, Reagan cited economic growth as a key goal of energy liberalization, rather than increasing domestic production, as Carter and previous presidents had done:

"America must get to work producing more energy. The Republican program for solving

¹⁸⁴ *Oil and Gas Journal*, March 31, 1980, 51.

¹⁸⁵ Cited in *Oil and Gas Journal*, March 31, 1980, 51.

¹⁸⁶ Cited in *Oil and Gas Journal*, November 16, 1981.

economic problems is based on growth and productivity. Large amounts of oil and natural gas lay beneath our land and off our shores, untouched because the present administration seems to believe the American people would rather see more regulation, taxes and controls than more energy...Make no mistake. We will not permit the safety of our people or our environment heritage to be jeopardized, but we are going to reaffirm that the economic prosperity of our people is a fundamental part of our environment.”¹⁸⁷

Other evidence supports the importance of economic growth as the motivation for deregulation and liberalization. Soon after the inauguration of the Reagan Administration, Secretary of Energy Edwards noted that the decontrol of prices was designed to “stimulate greater efficiency and productivity in the U.S. economy.”¹⁸⁸ Price decontrol was also offered in the White House Report on the Program for Economic Recovery, issued on February 18th, 1981, as one of the five achievements of the administration as it sought to stimulate economic growth, although it was also noted that price decontrol served to increase dependency on foreign oil, and that removing price controls would reverse the trend towards greater dependency by stimulating domestic production.¹⁸⁹

Yet while officials in the Reagan Administration viewed deregulation and liberalization as important ends in themselves, they also argued that reduced regulatory oversight would be beneficial for increasing petroleum production within the United States. This suggests, in turn, that the goal – increasing domestic production in order to

¹⁸⁷ Ronald Reagan, “Acceptance Speech at the 1980 Republican Convention,” July 17, 1980.

¹⁸⁸ *Oil and Gas Journal*, February 23, 1981, 41.

¹⁸⁹ John T. Woolley and Gerhard Peters, *The American Presidency Project* [online]. Santa Barbara, CA: University of California (hosted), Gerhard Peters (database). Available from World Wide Web: <http://www.presidency.ucsb.edu/ws/?pid=43427>.

enhance security of supply, was not wholly rejected by Reagan Administration officials, but rather that liberalization provided the means for doing so.¹⁹⁰

The dual purpose of the ends to which Reagan's energy policies in the petroleum sector were directed can be seen in the conclusions reached by his preparatory team. Chairman of Reagan's Energy Advisory Task Force and head of the transition team for energy policy Michel Halbouty, for example, linked a future reduction in intervention in energy markets to the long-standing goal of increasing energy self-sufficiency. This points to the ongoing importance of the end of policy: to increase domestic production and therefore strategic control over petroleum:

"If all price controls on oil and natural gas are removed, if punitive and counterproductive controls, regulations, and restraints are eliminated, and if environmental and conservation measures that impede maximum use of our energy resources are realistically eased, I am convinced that within 5 years after these releases have been accomplished, a positive trend will be established that if continued for another decade, will provide the nation with an almost respectable energy self-sufficiency."¹⁹¹

The Reagan Administration also exhibited a renewed commitment to domestic industry as an important component of its petroleum security of supply strategy during the mid-1980s, when petroleum prices fell to their lowest point. The decision of the president to order a policy review on national security grounds in 1986 of the

¹⁹⁰ Robert J. Lieber, "Energy Policy and National Security: Invisible Hand or Guiding Hand?," in *Eagle Defiant: United States Foreign Policy in the 1980s*, ed. Kenneth A. Oye, Robert J. Lieber, and Donald Rothchild (Boston: Little, Brown and Company, 1983), 174; Don E. Kash and Robert W. Rycroft, *U.S. Energy Policy : Crisis and Complacency* (Norman: University of Oklahoma Press, 1984), 260.

¹⁹¹ Cited in *Oil and Gas Journal*, December 15, 1980, 32.

implications of the oil price collapse on the domestic petroleum industry, conducted under Deputy Secretary of the Department of Energy William Martin, demonstrates an ongoing concern in the Administration with the national security implications of levels of domestic production.¹⁹²

The report concluded that the weakness of the domestic industry, and increase in levels of imported oil, represented a national security threat, with Secretary of Energy John S. Herrington concluding “it is clear, based on these findings and this review, that initiatives must be taken to strengthen the U.S. oil and gas industry and to reduce [the] growing dependence on insecure imported oil.”¹⁹³ The report also linked energy security explicitly to the ability of U.S. industry to develop resources domestically: “One crucial ingredient of U.S. energy security is a more competitive domestic oil industry that will explore for and develop U.S. oil reserves.”¹⁹⁴ Herrington further emphasized the importance of domestic industry to energy security in July remarks:

“The crisis in the domestic petroleum industry, an industry that is critical to our energy security, is taking an enormous toll and is creating serious problems for the future. We cannot afford to be complacent, Energy security is a vital part of the foundation on which our foreign and domestic policies – and our economy – rest. As a nation, we must recognize the warning signs and take thoughtful and prudent action that meets our responsibility to consumers, industry, and the nation alike.”¹⁹⁵

¹⁹² *Oil and Gas Journal*, December 15, 1986, 13.

¹⁹³ *Oil and Gas Journal*, March 23, 1987, 13.

¹⁹⁴ *Oil and Gas Journal*, March 23, 1987, 13.

¹⁹⁵ *Oil and Gas Journal*, July 6, 1987, 14.

The secretary refused to countenance a tariff on imported crude and petroleum products, preferring to recommend to the president alternative measures, such as tax changes designed to promote domestic production, including increasing the depletion allowance for producers to 27.5%. The rationale given by Secretary of Energy Herrington in testimony before the Senate was that high energy costs brought about by an import tariff would harm U.S. industrial competitiveness. He also alluded, however, to the problems of exemptions that plagued the system under the previous administrations, and which played a role in the removal of the fee, as well as over-bureaucratization.¹⁹⁶

The policy outcome of the policy review saw the Department of the Interior adjust licensing regulations governing offshore leasing, with the goal of increasing domestic production, and urging Congress to make changes to depletion allowances and approve the plans of the Department of the Interior for offshore leasing and the exploration of the Arctic National Wildlife Refuge (ANWR). Each of these adjustments and proposed adjustments in regulatory instruments were designed to increasing domestic production, as made clear by Secretary of the Interior Don Hodel's comments in a House Committee on the proposed new offshore drilling schedule and issuance of exploration rights to ANWR:

¹⁹⁶ *Oil and Gas Journal*, May 5, 1986, 61.

"We should not sit back and entrust our national destiny to an organization [OPEC] dedicated to the use of oil in a way that whipsaws our economy and undermines our national policies...The psychological effects of this new twist may prove even more detrimental to the U.S.'s long-term security than the earlier embargo."¹⁹⁷

2.5.1 Public Opinion and Presidential Policy Preferences

An important motivation for the president to support policies designed to increase national control over petroleum is the strong public support for energy independence. In other words, even if strategic intervention in the form of increasing the ratio of domestic production to total consumption is no longer an effective response to reliance on external markets for the supply of petroleum, strong public support for energy independence means there are benefits to the president in supporting this position.

Uniform time series data on the popularity of strategic intervention is not available. Nevertheless, there are a wealth of data available that asks, in different ways, about the question of *energy independence* and the utility of increasing domestic production. Although it is impossible to precisely determine how the popularity of energy independence has changed over time because of the different wording of polling questions, taken together the results suggest the popularity of energy independence

¹⁹⁷ *Oil and Gas Journal*, July 6, 1987, 14.

among the public.¹⁹⁸ Given the incentive for presidents to adopt publicly popular policies, it is therefore possible that the ongoing commitment to strategic intervention across time and presidencies is driven by this dynamic.

Following the Iranian Revolution and spike in oil prices, for example, polling indicated that people both felt dependent on external sources of gasoline and oil and supported measures, including increasing domestic drilling, in order to decrease this reliance on external markets. In an ABC news poll taken in November 1978, for example, seventy nine percent of respondents agreed that the United States was dependent on the rest of the world for the supply of gasoline and oil, with sixteen percent agreeing that it was a little dependent. This meant that some ninety five percent of respondents felt dependent on external supply for gasoline and oil. In a survey taken between April 6 and April 15, 1979 respondents were asked whether “too much dependence on foreign oil imports...is a very important reason for the...energy situation. Some ninety one percent of respondents agreed that it was very important or somewhat important. In the same poll eighty-one percent of respondents agreed that the decline in domestic production was either a very important or somewhat important cause.

¹⁹⁸ All data are taken from the Roper Center for Public Opinion.

Public opinion also supported the idea of increasing domestic production across time. In a December 1978 poll, for example, fifty-seven percent of respondents agreed that increasing domestic production was the best response to the problem of growing imports of crude oil, and a further ten percent agreed this should be done in conjunction with increasing conservation measures. Even on the question of price control, some sixty-five percent of respondents to the same survey agreed that price decontrol for domestic oil was reasonable policy response in order to increase domestic production. In a similar poll taken between March 8th and March 12 1979, seventy-six percent of respondents were in favor of increasing production of crude oil on federal lands, with just thirteen percent opposed and eleven percent unsure.

President Carter's proposals of a mix of greater domestic production and the introduction of measures to control demand also met with high levels of support, with eighty-six percent of respondents supporting such policies in order to cut imports of oil by fifty percent by 1990. Indeed, survey data suggests people were willing to pursue the goal of cutting imports even if it meant they incurred increases costs: a poll taken between April 4 and April 5 for example, found that fifty-six percent of respondents agreed with price decontrol if it led to increased production domestically, even in the case

that it led to an increase in the price of gasoline. In contrast, some thirty-eight percent opposed and six percent unsure of how to answer.

Public opinion data suggests that the public continued to support the merits of increasing domestic production even after the price of crude oil began to fall in the 1980s, although this support was tempered by environmental concerns. Once again consistent time series data is not available; however the opinion poll data is suggestive with regard to a variety of policy instruments used to promote domestic production. When asked in April 1986 about the merits of the oil import tax being sought by the IPAA in order to increase domestic production, for example, forty-two percent of respondents thought it was a good idea even if could lead to increased inflation and led to greater unemployment, compared to thirty-six percent who opposed. In October of the same year forty-four percent of respondents supported the tax, against thirty-three percent who opposed.¹⁹⁹

On the question of providing greater tax incentives to oil firms, opinion data suggests that public support was greater. In the wake of the first Gulf War, some fifty-

¹⁹⁹ The question read: "Supporters of an oil import tax say it would be a good idea because it would decrease US (United States) dependence on foreign oil by encouraging energy conservation, oil exploration, and business investment in alternative fuels. Opponents of an oil import tax say it would be a bad idea because it would increase inflation and cause unemployment in industries dependent on oil and petroleum products. Do you think an oil import tax would be a good idea or a bad idea?" Cambridge Reports/ Research International opinion surveys carried out in April and October 1986.

nine percent of respondents supported offering oil firms tax incentives for increasing exploration of oil domestically, against thirty-eight percent who opposed, in order to reduce dependence on foreign oil.²⁰⁰ In a similar question asked on December 1990, fifty percent of respondents were strongly or somewhat in favor of tax incentives for U.S. oil firms in order to reduce imports of oil.²⁰¹ In March 1994 fifty-six percent of respondents favored tax incentives for exploration and development within the United States, with thirty-eight percent opposing.²⁰²

The above data suggests that there is support among the public for policy intervention in order to increase the share of domestic oil as a ratio of total oil consumed within the United States, although data also suggests this is tempered by environmental concerns. This suggests that the president has some incentive to support strategic intervention in the petroleum market, in the form of increasing domestic production.

²⁰⁰ The question read: "(Here are some possible elements of a new national energy policy to promote conservation and reduce our dependence on foreign oil. For each element, please tell me if you would strongly favor it, moderately favor it, moderately oppose it or strongly oppose it.)... Offering oil companies tax incentives to increase their exploration for oil in the U.S. Opinion survey carried out by Penn & Schoen Associates, August 18, 1990-August 19, 1990 and based on telephone interviews with a national adult sample of 677.

²⁰¹ The question read: "(Let me read you some policies the government might try as part of a national energy strategy. For example, here are several things the United States could do to reduce our dependence on oil. Please tell me whether you strongly favor, somewhat favor, somewhat oppose or strongly oppose each one as a method of reducing our dependence on oil. (Rotate questions))... Providing tax breaks to oil companies for the exploration and development of new oil and natural gas wells." Opinion survey by Alliance To Save Energy And Union Of Concerned Scientists, conducted December 8, 1990-December 11, 1990.

²⁰² The question read: "(I'm going to read you some proposals for dealing with the country's energy needs, and I'd like you to tell me whether you generally favor or oppose each one.)... Providing tax incentives to US (United States) oil companies to encourage the exploration and development of new oil and natural gas in the United States." Opinion survey by Cambridge Reports/Research International conducted during March, 1994.

In chapter two I proposed that the position of U.S. industry towards strategic intervention, along with state actor policy preferences, together determine policy outcomes. What then, has been the position of the U.S. petroleum industry towards strategic intervention?

2.6 Firm Policy Preferences

Strategic intervention remained a policy strategy adopted by presidents through the 1970s and 1980s, as described above. The changes in outcomes that took place, therefore, can best be characterized as a restructuring of the instruments of strategic control, rather than an abandonment of it as a goal of national policy. This may have been driven in part by the ongoing popularity of national control – under the rubric of *energy independence* – among the public, giving the president the incentive to respond.

Industry policy preferences focused on strategic intervention in the form of increasing domestic production as a ratio of total consumption. This meant that the preferences of state actors and industry have aligned. This does not mean that U.S. policy is a case of regulatory capture, for two reasons. First, as shown above, strong public support for energy independence, coupled with the need of the president to respond to this public position, meant the president had an incentive to independently support

strategic intervention. Second, the evidence presented below suggests that the U.S. petroleum industry has not received everything that it has demanded in policy terms. Proposals to maintain price controls, for example, were proposed by President Carter despite the opposition of domestic producers. Industry associations have also commonly complained that the president has not provided enough incentive to promote domestic exploration and drilling. Nevertheless, strong ongoing support by industry for strategic intervention has meant that although the degree of presidential support for domestic production of petroleum has varied across time, this has nevertheless remained a component of U.S. policy, even when the president has also focused more on measures designed to reduce consumption, or shift energy demand away from oil and towards other fuels.

In this section I examine the position of the U.S. petroleum industry towards strategic intervention. I find that in contrast to the cases of Japan and France, the position of firms within industry towards the application of particular policy instruments have diverged a number of times because of differences in the structure of firms; the integrated majors have been less supportive of restricting imports, while the independent producers (with few international reserves) supported import quotas and tariffs. Further, the competitiveness of the majors and limits to existing U.S. reserves has meant they are

comparatively less interested in domestic production. This stands in contrast to independent producers, which consistently supported increasing domestic production of crude.

Regardless, I find that industry within the United States has taken positions on the three major policy areas associated with strategic intervention in the petroleum sector: quotas and tariffs, price controls, and federal lands and OCS leasing, that have aimed to stimulate domestic production. Industry has commonly used arguments about the importance of strategic intervention for national security reasons in order to do so. To identify the policy preferences of U.S. industry I use public statements by representatives of the major industry associations. The first, and largest of these, is the American Petroleum Institute (API), which has interests stretching from integrated majors to refiners and independents but most clearly represents the interests of U.S. integrated majors. Prior to the reorganization of the firms in the 1990s these were Standard Oil of New Jersey, Mobil, Shell, Standard Oil of Indiana, Texaco, Gulf and Standard Oil of California.²⁰³ The second industry association is the Independent Petroleum Association of America (IPAA), which represents independent petroleum and natural gas producers.²⁰⁴

²⁰³ Erwin Knoll, "The Oil Lobby Is Not Depleted," *New York Times*, March 8, 1970, 27.

²⁰⁴ Murray Seeger, "The Oilmen and Politics," *Washington Post*, January 17, 1971, 1

For the IPAA the benefits of promoting domestic production are most obvious; given most member firms do not maintain substantial operations internationally, domestic production represents the best way to increase firm size and profits. This means the IPAA was a strong proponent both of increasing the incentives for domestic exploration and production, and also for limiting imports of crude oil. Support for import quotas was less strong in the API, given its most important members maintain significant international reserves of crude. Increasing trade barriers therefore reduced the competitiveness of oil produced internationally relative to that produce within the United States. The association therefore most commonly favored increasing production within the United States through other instruments, such as price decontrol and the relaxation of federal controls over the leasing of lands and the OCS. Although exploration prospects within the United States are lower than before, this position makes sense given that upstream operations are more profitable than refining and marketing petroleum productions, and the effect of the nationalizations of the 1970s in reducing the regions available to U.S. industry to explore for and produce crude oil. Both API and the IPAA supported decontrol of crude oil prices under the Carter Administration, as well as the relaxation of regulations over the licensing of federal lands and OCS under the Reagan Administration.

The API supported increasing domestic production as a share of total U.S. consumption during the Carter Administration. Under Carter the API supported the goal of energy independence, but expressed concern with what it argued was an over-emphasis on synthetic fuels, to the detriment of developing domestic sources of crude oil and natural gas. Its position, therefore, was not that reducing the share of imports was a goal that was not useful, but rather that policies designed to achieve this goal were unlikely without increasing the incentives to increase the production of fossil fuels.

On the question of trade instruments, first addressed by the Nixon Administration as noted above, the industry opposed the recommendations of the Nixon Administration task force and supported ongoing quotas. It did so by arguing that a shift to tariffs from quotas would harm the industry and U.S. self-sufficiency. Independent research suggested that it would cost the industry \$1.5 billion dollars by 1973, and the IPAA used its own modeling to argue that under the projected price reductions caused by shifting from quotas to tariffs, independent producers would be wiped out by 1975.²⁰⁵ In testimony at a Senate Interior Subcommittee the chairman of the API, Robert E. Mead, similarly argued it was a “dangerous assumption” that foreign oil would continue to be available at reasonable prices. John Swearingen, the chairman of the board of Standard

²⁰⁵ William D. Smith, "Oil Industry Praises Directive by Nixon," *New York Times*, February 21, 1970; Edwin L. Dale Jr., "A Cut in Crude Oil Price Viewed as Bar to Independents' Drilling," *New York Times*, February 6, 1970.

Oil (Indiana) echoed this sentiment, arguing that the over-reliance on foreign producers constituted a national security threat because of their unstable politics, and that the quota system should therefore be maintained.²⁰⁶ The president of the API also linked quotas to national security in a hearing of the House Ways and Means Committee:

"National security remains the cornerstone for oil import controls...This is no time for us to lessen the importance of national security as the governing standard for oil import policies."²⁰⁷

On the question of price controls, representatives of the industry associations similarly argued controls should be removed in order to increase the incentives for domestic production. The IPAA supported price control as included in the EPCA of 1975, and argued in response to the first Carter Plan in 1978 that price decontrol should be brought forward to 1979, rather than delayed.²⁰⁸ In a report produced in response to the second Carter National Energy Plan the API similarly argued that: "'For the next two decades the President's program gambles too much on synthetics without giving enough attention to far more dependable 20th century energy prospects: oil, natural gas, coal, and nuclear power.'" The API concluded that the best way to go about increasing the production of crude within the United States was by price decontrol, which would increase domestic prices, and therefore the incentives for firms to carry out exploration

²⁰⁶ Associated Press, "Quota Is Backed on Import of Oil," *New York Times*, March 17, 1970.

²⁰⁷ Ibid.

²⁰⁸ Staff reporter, "IPAA Urged to Step up Controls Fight," *Oil & Gas Journal*, May 29, 1978.

work within the United States.²⁰⁹ In a 1979 interview following the April announcement of President Carter to carry out price decontrol, the head of the API, Charles De Bona, argued that price decontrol would lead to increased prices and therefore profits for firms, but that these extra profits would allow oil firms to invest more in domestic exploration and production. He noted that API estimates showed that price decontrol would lead to an extra 1.5-2 million barrels a day of crude production by the middle of the 1980s, and praised President Carter for making the decision to implement the policy:

"Decontrol, separating this from the whole question of taxation, represented a courageous act on the part of the President to decide to move in that direction and I certainly would not quibble over the precise details. It deals forthrightly with the decontrol problem. It deals with it in a phased way, but it is reasonably equitable. And it meets the problem in a reasonably prompt way."²¹⁰

On the third question of opening federal lands to exploration and production, both organizations consistently argued that imports should be slowed through the relaxation of regulations governing federal lands and the OCS. The president of API argued in early 1979 just prior to the price spike associated with the Iranian Revolution,

²⁰⁹ Neil Bunis, "The Oil Industry in Transition," *Oil & Gas Journal*, November 8, 1982.. See also Cochrane, "Carter Energy Policy and the Ninety-Fifth Congress," 592; J.P. Smith, "Oil Firms Seen Winners in Carter's Energy Plan," *Washington Post*, April 23, 1977.

²¹⁰ *Oil and Gas Journal*, April 16, 1979. In noting its support for price decontrol, the IPAA also suggested that price decontrol would lead to two million barrels per day of extra production within a decade. See *Oil and Gas Journal*, February 26, 1979.

for example, that "at a time when -- even with the assistance of North Slope oil -- we are importing more than 40% of our crude supplies, we cannot refuse to use the potential reserves of domestic energy that are waiting to be withdrawn from public lands."²¹¹ The API recognized that U.S. production was likely to continue to decline because of the fall in the reserve base, and did not argue that increasing the incentives to produce within the United States was likely to reverse the long-term decline in U.S. production. Instead, it argued for deregulatory measures in the shape of price decontrol and increased leasing of federal lands and OCS, where the bulk of the remainder of potential reserves was determined to exist. The API made this argument using the merits of arresting the rate of import growth relative to total consumption in the national interest of the United States.²¹² Unsurprisingly, given its commitment to reduced regulation over federal lands, the API supported the election of Reagan. API President Charles J. DiBona noted at the annual API meeting of 1980 that they were meeting in "a new political climate for the nation."²¹³ With regard to the leasing plan proposed by the DoI, with the API President Charles J. DiBona noted that "without any question, this industry endorses the secretary's direction on OCS leasing and views it as a significant improvement over the past."²¹⁴

²¹¹ Staff reporter, "U.S. Oil Groups Intensify Blasts at Land Withdrawals," *Oil & Gas Journal*, February 19, 1979.

²¹² ———, "Dibona: Decontrol Could Buoy U.S. Oil," *Oil & Gas Journal*, April 16, 1979.

²¹³ *Oil and Gas Journal*, November 17, 1980.

²¹⁴ *Oil and Gas Journal*, August 3, 1981.

At the annual conference of the API in 1981 the spokesperson from Shell, Robert H. Nanz, similarly argued that significant amounts of oil and other resources lay under some, 1.77 billion acres of on shore and offshore lands over which the federal government retained mineral rights. Further, Nanz noted that exploration and development was totally or partially restricted across two-thirds of federal onshore lands, and that of eighty offshore basins about fifty remained partially or totally unexplored.²¹⁵

2.7 Summary

Not all of the positions of the domestic oil industry were achieved in legislation. On oil price decontrol they were certainly successful in seeing their preferred outcome realized in policy. Similarly, on the question of leasing of federal lands and the OCS was expanded under the Reagan Administration, as well as under President Carter (although the extent of the policy support for domestic production was judged inadequate by the industry associations). On other issues, however, industry positions were not realized. It consistently failed to open the Arctic Natural Wildlife Reserve (ANWR) to oil and gas exploration, for example, and also saw the Energy Security Corporation introduced as the major initiative under the second Carter National Energy Plan, despite the fact that it

²¹⁵ *Oil and Gas Journal*, November 16, 1981, 30.

promised to shift demand away from oil, and also suffered from the imposition of a windfall profits tax despite achieving the goal of price decontrol which was widely opposed by the industry.²¹⁶

Nevertheless, the fact that strategic intervention, in the form of increasing the incentives for domestic exploration and drilling, remained in the interest of domestic industry, coupled with the support for such policies by the White House, meant that it remained a component of U.S. petroleum policies. The abolition of trade restraints and price controls are best understood, therefore as restructuring of the policy instruments used to pursue national control, rather than a rejection of strategic intervention itself. This is further evidenced by the fact that the adjustment of leasing over federal lands and OCS continued to be a component of national policy debate over petroleum policy under the rubric of energy independence, although the willingness of the White House and Congress to pursue this strategy was tempered by public support for domestic drilling to be balanced by environmental considerations. It is little surprise then, that increased oil prices saw debate over the merits of strategic intervention reemerge, as described below.

²¹⁶ *Oil and Gas Journal*, July 23, 1979.

4. *High Prices and Domestic Production (2000 -)*

Energy policy played an important role in the electoral race between George W. Bush and Al Gore. Bush's proposal during the election included a range of measures including allowing drilling across eight percent of the ANWR in order to "decrease US dependence on foreign oil imports." This followed the agreement within the Republican Party generally to the idea of increasing domestic production of oil, gas and coal.²¹⁷ Gore's position also supported measures to increase domestic production of oil and gas, although he opposed the development of ANWR, and the domestic production of fossil fuels was given far less emphasis than renewable energies.²¹⁸

Bush's Secretary of Energy Spencer Abraham reiterated the commitment of the United States to increasing domestic production after the new president took office, noting that increasing imports of crude were harming the domestic U.S. economy. President Bush also tasked the new Vice President Dick Cheney to head a Cabinet Task Force, including the Secretaries of Treasury, Energy, Commerce, Interior, Transport, and Agriculture, to draft a national energy strategy.²¹⁹ The emphasis of the president on domestic production was echoed in the first bill put to Congress on energy policy. The

²¹⁷ Staff reporter, "Energy a Hot-Button Issue; in Us Presidential Election Campaign," *Oil and Gas Journal*, October 9, 2000, 20; Staff reporter, "GOP Platform Calls for Strong Us Energy Policy," *Oil and Gas Journal*, August 14, 2000.

²¹⁸ Staff reporter, "Bush, Gore Highlight Energy Strategies in Debate," *Oil and Gas Journal*, October 9, 2000.

²¹⁹ ———, "U.S. Oil and Gas Industry Has High Expectations from Bush Administration on Energy Issues," *Oil and Gas Journal*, February 12, 2001, 66.

bill was submitted by Senators Frank Murkowski (R-Ala) and John Breaux (D-La), and had the stated goal of lowering U.S. dependence on foreign oil to less than percent by 2011, from current the fifty-six percent it stood at in 2001. A variety of measures were proposed to accomplish this, including allowing exploration and production work to be carried out in ANWR, allowing so-called Risk-in-Kind for producers on federal lands, enabling them to pay royalties in oil, which could then be put in the Strategic Petroleum Reserve. The bill also proposed that royalty payments be stopped during low oil price periods, and the placement of a three dollars per barrel tax credit for production from marginal wells. Unsurprisingly, the API agreed that increasing domestic production was a useful goal to achieve, and praised the bill.²²⁰ The position of the Democratic Party in Congress was also supportive of increased domestic production. In a bill prepared by congressional Democrats prior to the release of the White House's Task Force report, the Democrats announced their opposition to drilling in ANWR, but supported the idea of increasing tax benefits for independent producers of oil and gas.²²¹

The final task force report was released on May 17, 2001. It proposed a range of measures to increase domestic production, including subsidies for enhanced oil recovery technologies, improved conditions for deepwater and marginal production royalties, and a

²²⁰ _____, "Industry Praises Murkowski's Omnibus Energy Bill " *Oil and Gas Journal*, March 5, 2001, 40.

²²¹ _____, "House Democrats Unveil Their Own Energy Plan," *Oil and Gas Journal*, May 21, 2001, 40.

review of federal laws governing exploration and production on the OCS and coastal zone.²²² The progress of the parts of the proposal that required legislative action in Congress was cut short, however, because of the attacks of September 11, 2001.

When the House passed a bill the following year, it included measures to increase domestic production through tax incentives, including drilling ANWR, which was the centerpiece the initial Bush proposal.²²³ The Secretary of Energy, Spencer Abraham, emphasized the importance of reducing imports of crude oil, and boosting domestic production as one instrument for promoting this:

"We are committed to ensuring that America's energy needs are not held hostage by politically unstable foreign suppliers. We are taking the necessary steps to encourage increased domestic production, while protecting the environment and diversifying our sources of energy..."As our economy expands, however, demand for energy will increase, and our dependence on foreign suppliers will continue to rise. We are committed to protecting our economic wellbeing and our national security through an emphasis on energy efficiency and conservation to reduce energy consumption, continued reliance on the efficiency of the free market, diversification of foreign suppliers, increased domestic production, and emergency preparedness for potential supply disruptions."²²⁴

In his State of the Union address of 2003 President Bush also reiterated his support for increasing domestic production of oil in order to "promote energy independence for our country."²²⁵ Both the House and the Senate took up the energy debate once again in 2003. In June 2004 the House passed once again the energy

²²² ———, "Energy Policy to Dominate Us Political Agenda," *Oil and Gas Journal*, May 28, 2001, 20.

²²³ ———, "Senate Bill Deemed Interim Step for Comprehensive Us Energy Policy," *Oil and Gas Journal*, May 6, 2002, 33.

²²⁴ ———, "U.S. Officials: Policy Should Promote Secure Oil Supplies," *Oil and Gas Journal*, July 1, 2002.

²²⁵ ———, "White House, Congress to Push Energy Agenda This Year," *Oil and Gas Journal*, February 10, 2003, 24.

legislation HR 4503 that had failed to reach a vote in the Senate. It was the fourth time that the House passed comprehensive energy legislation, and, as noted earlier, followed the proposals of the Bush Administration in seeking to increase domestic production.²²⁶ In the Senate the bill stalled over the treatment of an issue unrelated to the problem of domestic production – liabilities for water contamination from the gasoline additive methyl tertiary butyl. The Senate was therefore unable to pass a bill by the end of 2003.²²⁷

This does not mean there was no consensus on the issue of domestic imports. A separate amendment passed in 2003, for example, required the president to report annually to the chamber the degree of U.S. dependence on foreign oil, and also to report how it intended to reduce oil imports by 2013.²²⁸ The failure of the Senate to pass legislation reflected instead an inability to compromise over environmental issues, rather than a lack of consensus over the issue of domestic production.

The successful passage of energy legislation through both houses was finally achieved in 2005, in the second term of the Bush Administration, when both chambers passed legislation and went to conference. Reflecting the consensus that increasing domestic production and reducing imports of oil, both versions of the bill promoted

²²⁶ Maureen Lorenzetti, "Us House Repasses Energy Legislation," *Oil and Gas Journal*, June 21, 2004.

²²⁷ ———, "Senate GOP Leaders Affirm Energy Bill Dead for the Year," *Oil and Gas Journal*, December 1, 2003.

²²⁸ Staff reporter, "U.S. Senate Resumes Energy Debate in July," *Oil and Gas Journal* 2003.

domestic production as a method of reducing oil imports, with the justification for doing so given on energy security of supply grounds, although there were differences between the two. The House version of the bill, which was originally passed in April 2003, earlier than that of the Senate, included measures to boost domestic production, including a measure to increase incentives to produce if the price of oil fell below eighteen dollars per barrel. This recognized the higher costs of production within the U.S. relative to international production, meaning that incentives needed to be put in place to stop domestic production falling when prices were reduced. It also included credits for the production of non-conventional oil.²²⁹

The IPAA, reflecting the strong focus of its membership on domestic production, argued that increasing domestic production best served U.S. interests in the name of energy security of supply:

"IPAA would also suggest that Congress consider legislation that would provide the president with the authority to determine if the nation has reached an energy peril point. If such a determination were made, energy project permitting would be streamlined to assure that all substantive environmental analyses would be conducted, but most procedural requirements would be limited. This would assure that environmentally sound permits would be developed, but opportunities to litigate over procedural processes would be curtailed."²³⁰

Passage of the House bill preceded that of the Senate. The Senate bill, like that of the House, had a wide range of provisions designed to lessen imports, as noted above.

²²⁹ Maureen Lorenzetti, "U.S. Congress Pushes through Sweeping Energy Bill," *Oil and Gas Journal*, April 14, 2003.

²³⁰ ———, "U.S. Energy Bill Faces Tough Sledding Amid Federal Budget Woes, Scandals," *Oil and Gas Journal*, February 9, 2004.

Its interest in doing so was made clear by the passing by a 99-1 majority of an amendment requiring the White House to inform the Congress annually about changes in U.S. foreign oil dependence, and how imports could be lowered by 2013.²³¹ There was less of an emphasis in the Senate, however on promoting domestic production as a means to lowering domestic production. Unlike in the House, for example, where a separate bill was passed allowing exploratory drilling in part of ANWR, the Senate Bill did not include such provisions. It did, however, allow for accelerating the assigning of leases for drilling on federal land and producing an inventory of the Outer Continental Shelf (OCS) in the Gulf of Mexico. In response to the passing of the bill, Senate Republican from California and Chairman of the Resources Committee noted that the bill:

"brings Americans one step closer to affordable energy and moves us farther from unreliable, expensive foreign energy...Developing countries such as China have begun to seek international energy sources in order to fuel their growing economies. This should serve as a wake up call for the United States to get as serious about energy supplies."²³²

Both the API and IPPA were supportive of the Senate bill, Reflecting their broader membership, the API focused on the loosening of environmental regulations associated with gasoline. The IPAA, on the other hand, was far more explicit in its support for the measures designed to boost domestic production:

"Domestic oil and gas producers have identified three broad policy solutions that could

²³¹ Staff reporter, "Us Senate Resumes Energy Debate in July."

²³² Nick Snow, "Us Senate Passes Comprehensive Energy Bill," *Oil and Gas Journal*, July 4, 2005.

help domestic production: increased access to non-park, non-wilderness federal lands, encouraging new capital to flow to the industry, and protecting the industry from unnecessary regulations...All three of these policy issues are addressed, in part, by the Senate energy bill."²³³

In conference the bills were reconciled in August 2005 with the provisions to boost domestic production were maintained. The signing of the legislation by President Bush in 2005 marked the end of a four year process from the initial proposal of the Bush Administration through to passage of the Senate and the House and into law.

The passage of the 2005 legislation was not the end of the legislative efforts in the energy sector undertaken during the Bush Administration. Driven by increasing prices for oil and natural gas, President Bush announced an “advanced energy initiative” in his State of the Union Address of 2006. Once again, the focus of the proposals, as explained by Energy Secretary Samuel W Bodman, was to reduce the levels of imported oil and natural gas.²³⁴ President Bush also noted in late November 2006 that: “Dependency on foreign oil is a national security and economic security problem, and it’s a problem that requires bipartisan cooperation.” It was complemented by the passing into law in December 2006 of a law expanding the amount of OCS available for drilling, and which was expected by Senate Energy and Natural Resources Chairman Pete V. Domenici of New Mexico, to bring an extra 1.26 billion barrels of oil to the market.

²³³ Ibid.

²³⁴ ———, “Bodman Repeats Support for Anwr Leasing, Ocs Access,” *Oil and Gas Journal*, April 10, 2006.

4. Conclusion

Policies in the petroleum sector were restructured in the United States during the period covered by this study. This adjustment was caused by two significant changes in the structure of the petroleum market. First, the peaking of U.S. production, coupled with ongoing increases in domestic demand for crude oil and petroleum products, meant that the trade quotas placed on imports were no longer viable. Second, the oil shocks led to price increases and further fueled the inflationary problems already present in the U.S. economy. As a result state actors – specifically the White House – reviewed petroleum policies.

Institutional differences between the United States, Japan, and France meant that there was less continuity between presidencies in policy terms; each president put forward a new set of proposals focused on the energy sector, including petroleum, and each was forced to bargain with congressional interests in order to pass their preferred policies.

Yet despite this comparative lack of continuity, strategic intervention remained a component of presidential policy preferences across the presidencies examined in this study. This can be explained not only by the need for the president to take a position on

problems associated with market volatility in the petroleum sector, but also because strategic intervention, under the rubric of energy independence, remained publicly popular. This gave subsequent presidents an incentive to respond to the problem of relying on the international market for the supply of petroleum by proposing to increase domestic production as a share of total consumption.

Support for strategic intervention was not only a component of presidential policy, but was also supported by domestic industry. In particular, independent firms with a majority of domestic production lobbied to increase the incentives for exploration and production of crude oil within the continental United States and on the OCS in order to become more competitive. This meant these firms supported price decontrol, and also the opening of federal lands for drilling. Their ability to achieve these preferred policy outcomes varied from president to president, however in each case strategic intervention remained a component of policy outcomes. This was also the case under conditions of high-prices from 2001-2006.

Chapter Seven – Restatement of Findings, and Discussion of Theoretical and Policy Implications

1. Restatement of Findings

1.1 Findings

In the 1980s and the 1990s a wave of liberalization and privatization swept across the political economies of the advanced industrialized states. Governments in these countries reduced and restructured policy instruments that had been applied in the name of a variety of public policy goals, and increasingly relied on markets to allocate resources.

Despite this the oil sector appeared insulated from this set of changes. Citing the dangers of remaining reliant on sources of foreign oil, for example, president George W. Bush proposed policies designed to increase U.S. oil production as a ratio of total domestic consumption in the name of energy independence. As crude oil prices increased in the early 2000s Japanese policymakers also reenergized policies supporting national-flag oil companies with the stated goal of increasing their control over the petroleum supply chain. This suggested a willingness not only to actively intervene in the markets for oil and oil products, but a distrust of diversified markets and non-national firms to ensure the supply of what remains perceived as a strategic resource.

In this study I developed and implemented a strategy for determining the extent to which these policies – which I refer to as *strategic intervention* (SI) – continue to be implemented in the advanced industrial states, and the extent to which we have seen variation in their application across time. This allowed me to explore the central questions addressed in the study: why and do policies designed to enhance national control over oil continue to be applied when they stand at odds with the convergence on liberal forms of economic governance in the 1980s and 1990s focusing on national non-discrimination, and also ignore changes in the international oil market that have significantly reduced the risk of oil supply interruptions? And what can these changes tell us about the causes of liberal convergence in the political economies of the advanced industrial states more generally, and the conditions under which we are likely to see its reversal?

My findings show that the oil sector was not immune from the broad trend towards liberalization and privatization. In each of the countries I examined in the study – Japan, France and the United States, I found that policies of national control were retrenched and restructured in the 1980s and the 1990s. This change was truly revolutionary. Since 1934, with the exception of the postwar Occupation, Japan maintained a robust set of policies designed to protect national oil companies in the

domestic refining and distribution market and promote their attempts to explore for, develop and produce crude internationally. These policies suggested an unwillingness to trust a reliance on the international oil market to ensure the stable supply of petroleum. Instead, national oil companies, over which policymakers retained regulatory control, were identified as more trusted as agents of the government as it sought to ensure supply of what was defined as a strategic good.

Yet beginning in 1986 Japanese policymakers appeared ready to reject the utility of these policies and embrace diversified sellers and buyers trading oil and oil products in the international petroleum market as the best solution for ensuring security of supplies. As documented in chapter four, beginning in 1986 Japanese regulations controlling trade in oil and oil products were gradually weakening, and from 1996 they were abolished. This unified domestic prices for oil and oil products to the international market for the first time in the post-war era, and removed all support for domestic refining firms. The result was widespread mergers across the sector as Japanese firms attempted to become more competitive in the international market.

Support for Japanese oil companies operating internationally was similarly reduced and restructured to make it more market conforming. The major public firm used to provide subsidies and low interest loans to private sector companies with interests

in the exploration, development, and production of oil fields internationally was abolished. The new body created in its place was designed to manage Japan's strategic stockpile of oil and oil products, and unwind government holdings in upstream enterprises over a ten year period before being disbanded.

France, like Japan, maintained a comprehensive set of policies designed to increase control by national oil companies over the production of oil internationally, and increase their share of the refining and distribution of oil products domestically. The first national oil company was established in 1924, and in 1928 a law was established giving the state the sole right to import oil and oil products, which it then delegated to national oil firms. Prices for oil and oil products were also fixed higher than the international price in order to increase the incentives to refine products at home.

Beginning in 1982 these policies were completely dismantled. Price controls were first loosened and then discarded. The system of import licensing designed to increase the market share of the national oil firms was first relaxed by granting licenses to a wider range of firms in order to increase competitiveness in the industry, and then abolished. The domestic law governing the oil sector no longer aimed to increase the share of the national oil firms in refining and distribution, but instead relied on strategic petroleum stockpiling managed through the European stockpiling system to insure

against potential instability in petroleum supplies. Finally, the firms themselves were privatized along with other state-owned companies, with the state even relinquishing its golden share, through which it maintained the ability to veto foreign purchase of the national firms.

Oil policies in the United States were never as stable as in France and Japan. Policies vacillated between promoting domestic industry for reasons of national security, and punishing firms for their manipulation of their market power in order to increase profits. Nevertheless, policies promoting national control by increasing domestic production, which necessarily implied supporting domestic industry, were a significant feature of U.S. policy since at least 1957 when voluntary import controls were implemented under the Eisenhower Administration. Later price controls originally introduced for inflationary reasons under the Nixon Administration in 1971 were adapted to increase the production of oil within the United States for reasons of increasing *energy independence*.

Although policies of strategic intervention were less stable in the case of the United States than in France and Japan, the trend in their application followed the same path. Mandatory quotas on oil imports were transformed into tariffs in 1974, and then abolished. Prices were also liberalized by 1981, linking the U.S. and international

markets for crude once again.

Policy changes therefore appear to confirm the convergence on liberal forms of economic governance in the advanced industrialized states. Even in the case of oil, which for 80 years was treated as a strategic resource requiring significant intervention by the state in order to ensure security of oil supplies, policies were retrenched and restructured, leaving flows of oil and oil products increasingly determined by the market. This retrenchment and restructuring suggested in turn that policymakers across these countries had embraced diversified buyers and sellers operating in the international market as the best way of ensuring security of supplies, as opposed to increasing the share of the market supplied by firms over which the government maintained regulatory control.

These changes in the policies governing the oil sectors of Japan, France, and the United States, not only accorded with the broad transformation of forms of governance across the advanced industrialized states. They also comported with changes in the structure of the international oil market that served to reduce the risks of interruptions of supply, as described in chapter three. To recapitulate, the nationalizations of oil production by many of the governments in OPEC that began in the 1970s not only had the effect of transferring ownership of the major centers of crude oil production outside the United States from international oil companies to national governments, but also

separated ownership of production of crude oil from ownership over the majority of the refining and distribution infrastructure. Coupled with the rise in production outside the OPEC region this created an integrated market for crude oil, replacing a system in which non-U.S. production was largely managed by an oligopoly centered on the major integrated oil firms.¹ These changes also reduced the likelihood of supply disruptions in oil.

Yet despite these changes, my findings recorded a reassertion of the policies of strategic intervention in the cases of Japan and the United States, but not in the case of France. In the former countries these policies were reenergized after this period of retrenchment and restructuring. In the case of Japan a national target for strategic intervention was reestablished; after a target was abolished in 2001 it was determined that the equivalent of 40 percent of crude oil should be held in the form of equity oil by Japanese firms operating in the upstream of the oil sector. This justified an increase in the application of a range of policies designed to enhance national control over oil. Similarly, in the United States trade quotas, followed by tariffs, had been a significant component of policies designed to enhance national control over the production of crude, but there was no effort to reintroduce them under conditions of high oil prices. Instead, policy focused

¹ For a summary of this arrangement prior to the 1970s see John Malcolm Blair, *The Control of Oil* (New York: Pantheon Books, 1976).

on easing licensing for exploration and production on federal lands and the outer continental shelf in the name of energy independence. In France, in contrast to Japan and the United States, a range of policies were introduced in response to increased oil prices. However policies did not seek to increase national control over the oil supply chain.

1.2 Argument

In the study I argued that the decision to jettison, or retain strategic intervention as one component of policy can best be explained by the interests and policy preferences of two sets of actors: domestic firms operating in the oil sector, and political and bureaucratic actors within the state with interests in oil policy. I further argued that the ongoing application of policies of strategic intervention in the cases of Japan and the United States, and their rejection in the case of France, reflected changes in the preferences of these actors over policy outcomes as they responded to shifts in the structure of the international oil market. If strategic intervention remained in the interests of these actors following these shifts in market structure, I argue, they successfully implemented these policies, while bargaining with one another and other societal and actors within the state, over the particular instruments of strategic intervention to be used.

In seeking to explain decisions to retain or jettison policies of national control I

focused on the political actors evidence suggested were most influential in shaping oil policies across time. I also documented how other actors within the domestic political economies of the countries examined in this study influenced the particular instruments chosen in order to intervene. In Japan the most important actor within the state was MITI (later METI), which retained authority over long-run policy planning in the oil sector in the period under examination, and domestic oil firms. MITI's ability to dominate oil policy historically stems from its organizational mission as the line ministry in charge of industrial policy, as well as the fact that the revenues it used to shape outcomes in the oil sector were obtained from dedicated taxes on oil imports, meaning the Ministry of Finance was less interested in limiting spending in the sector for fiscal reasons than in other sectors of the economy. I found that political representatives also influenced policy outcomes intermittently, as documented in chapter four, however their influence was limited to responding to particular events. In the long-run, I found that within the state it was MITI that was the most important in shaping outcomes.

I also found that the interests of Japanese oil firms were important, despite them being weak and fragmented. They were important, I argued, because strategic intervention could only be accomplished through national firms, which made their interests, and preferences over policy outcomes, an important component of policy.

In the case of France, the Ministry of Industry was central to policymaking in the oil sector, and was interested in promoting national oil firms within its regulatory purview, as with Japan. The Ministry of Finance maintained control over price-setting meaning that its interests were also important. I found that the interests of both were met through strategic intervention prior to the 1970s. For the Ministry of Industry, as with MITI, the national oil firms were its clients. This meant it had an organizational mission of supporting these firms against competition from international oil firms through the use of trade and other regulatory instruments. For the Ministry of Finance also, fixed prices set above international rates were useful because they reduced the burden of the firms on the state.

The crucial difference between the cases of France and Japan was the competitiveness of the firms themselves. In contrast to the weak and non-integrated Japanese firms, Total and Elf-Aquitaine grew increasingly competitive internationally both by expanding their refinery operations outside France into the United States and across Europe, and by increasing the number of countries in which they explored for and produced oil. This trend began in the 1960s but was significantly affected by the changes in the structure of the international oil market in the 1970s; nationalization led the management of both firms to seek new oil fields internationally, and stagnant demand for

oil products within France led them to invest in new refineries in Eastern Europe and elsewhere. The French market, and the protection afforded to them by the state, therefore became less important to the national oil firms, and their preferences towards policies of protection and state control shifted as a result.

The most important actor within the state in the case of the United States is the president, who has played a more significant role in oil policy setting than the bureaucratic analogues of MITI in Japan and the MoI in France: the departments of energy and interior. Every president since Nixon promised a comprehensive set of proposals designed to manage problems in the energy sector upon entering office. The significance of the oil sector, in particular, to the interests of the president stems from its important foreign policy dimension, and the fact that oil price volatility has an effect on economic performance. This makes the issue salient, and gives the president an interest in designing policy in the oil sector that responds to voter concerns. Defining presidential interests in oil in this way, in particular, solves the puzzle of why subsequent presidents have proposed strategic intervention, under the moniker of *energy independence*, regardless of their political party or region of origin. Voter preferences over policy outcomes have consistently supported increasing domestic production as a share of total oil consumption, although this is tempered by environmental concerns.

Firms operating in the oil sector within the United States, on the other hand, were categorized into two types. The first, the progeny of Standard Oil, emerged as large, vertically-integrated oil firms with significant holdings of oil internationally. The second, the independents represented by the Independent Petroleum Association of America (IPAA), represents smaller firms within the United States that produce almost 70 percent of domestic oil. As with the French firms Total and Elf-Aquitaine, the larger vertically-integrated producers, have relatively less interest in increasing production with the United States (other than in the Arctic National Wildlife Reserve, or ANWR) while the smaller producers focused on domestic U.S. production have consistently advocated increasing domestic production through the use of trade barriers, or the opening of federal lands or the Outer Continental Shelf to greater drilling.

1.3 Alternative Explanations

It is this combination of interests, I argue, and the way their preferred policies were affected by shifts in the structure of the international oil market, that best explains outcomes of liberal convergence and partial divergence in the cases examined in this study. Further, my framework provides a better explanation of outcomes than alternative explanations of liberal convergence that focus on processes of global competition,

technological innovation, or learning, for two reasons: first, because it recognizes that while particular policy instruments of strategic control became untenable because of changes in the international oil market, *domestic actors retained the capacity to shape new combinations of policy* in seeking their interests; and second, because it recognizes that *multiple actors with interests that did not necessarily align were important in shaping outcomes*.

In the case of oil, for example, I find that changes in the structure of the international oil market served to make the market more competitive, and were a significant cause of policy change by making some policies redundant that had been implemented in the name of strategic intervention. In the case of France, for example, fixed prices became untenable following the nationalizations of the 1970s in the Middle East as price inputs became variable while outputs remained fixed, which exposed firms to significant losses. Similarly, in Japan the increase in production of non-OPEC countries, and consequent loss of market power of OPEC, led the international oil market to become competitive, as demonstrated by rapidly falling prices in the early 1980s. These changes in turn served to destroy the system of fiscal incentives used to support Japanese firms' operations in the upstream.

I also find, however, that these changes did not make domestic actors irrelevant.

Instead, they demonstrated the capacity to restructure policies in seeking to further their interests. In other words, rather than simply being forced to retrench existing policies promoting strategic intervention because of the effects changes in the international oil market, domestic actors were able to restructure these policies, and to do so in ways that did not comport with a convergence on liberal market outcomes.

The empirical chapters also demonstrate this was a contested process. Firms and political and bureaucratic actors within the state were obliged to restructure existing policies in response to the effects of changes in the structure of the international oil market. They were also forced to bargain with one another as they sought to shape the particular portfolio of instruments implemented, as well as other domestic actors within interests in policy outcomes.

Poor economic performance increased the interests of major consumers of energy in reducing the costs of inputs in all three cases, for example. Further, this support for lowering domestic prices and inflation was an important goal of political representatives seeking to improve economic performance. In the case of France, for example, Finance Minister Bregovoy supported price decontrol, in addition to the French national oil companies Elf-Aquitaine and Total, because he determined that falling oil prices in the international market could contribute to lowering inflation within

the domestic economy, which was a major goal of the political leadership in the early and mid-1980s. In the case of the restructuring of Japanese policies in the upstream also, supporters of the abolition of JNOC within the Koizumi Administration were not focused primarily on its failures in achieving its mission, but rather had a preference for reducing government intervention in markets across all sectors of the economy through the abolition of special government bodies. Supporters of continued strategic intervention within METI, as well as firms, were therefore forced to negotiate not only with one another, but also with these other actors as they pursued they sought to maintain the provision of state subsidies for Japanese firms operating in the upstream.

The existence of multiple actors in Japan, France, and the United States, each of whom sought to shape policy outcomes to match their own interests, also suggests that arguments about liberal convergence that focus on processes of learning and emulation are at best incomplete. My findings suggest that while actors learn from policy failures, and adapt their preferred policies to changes in the international market, there is no guarantee that they will all seek to adapt their preferred policies in the same way as they seek to pursue their interests. Indeed, there is no guarantee that the fundamental interests of domestic actors will overlap at all.

This implies that arguments that focus on emulation as an explanation for liberal

convergence are only sufficient to explain outcomes in technocratic policy issues that have limited distributional implications, because policy outcomes are more likely to be determined by a small number of actors insulated from broader societal forces.² In cases, such as the one examined here, however, emulation can only be one component of a broader explanation of the causes of liberal convergence and divergence as they must also take into account the interests and preferences of multiple actors, the causes of changes in actor preferences over policy outcomes, and how and why they win out over one another in policy battles that ensue.

2. Implications

2.1 Political Economy of Liberal Convergence and Divergence

The economic problems that beset the advanced industrial states in 2007 raised fears that domestic interest groups would take advantage of the disarray in financial markets and poor performance in real economies to successfully lobby for an increase in trade protection. Elisa Gamberoni and Richard Newfarmer noted in a World Bank report, for example, that 47 new trade restrictions were introduced in 17 of the G-20 countries between November 2009 and March 2009, arguing this represented a trend towards

² For an example of this type of argument see Sarah M. Brooks, "When Does Diffusion Matter? Explaining the Spread of Structural Pension Reforms across Nations," *Journal of Politics* 69, no. 3 (2007).

protectionism and away from economic openness.³

The increase in oil prices that occurred in the early 2000s represents an analytic analogue to these economic problems: it undermined the existing policy regime and changed distributional circumstances for domestic actors, providing a motive as well as an opportunity for groups with interests in altering the status quo to lobby for policy change. My findings present two lessons about the conditions under which this is likely to occur. First, the study confirms that economic nationalism is not vanquished amongst the advanced industrial economies. In the oil sector the convergence on liberal market outcomes was not only imperfect (although the retrenchment and restructuring of government regulation of the sector was certainly deep), but was also reversed in the cases of Japan and the United States.

Further, my findings suggest that liberal economic convergence cannot be ascribed to a set of processes over which domestic actors had no control, or a process of diffusion in which they uniformly learned that the mechanism of the market was a more effective instrument through which to pursue their interests. Instead, I find that while each of these processes played a role in shaping policy, the outcomes described in this

³ Elisa Gamberoni and Richard Newfarmer, "Trade Protection: Incipient but Worrisome Trends," *Trade Notes*, No. 37 (Washington D.C.: World Bank International Trade Department, 2009).

study involved bargaining between multiple actors who retained the capacity to act, and did so in the pursuit of interests that did not always coincide. The convergence on liberal outcomes in oil markets in the 1980s and 1990s was above all else, therefore, a *contested* process, and the reversal of policies in Japan and the United States was similarly contested. By extension, in other sectors ongoing liberalization is unlikely to match the interests of all economic actors, suggesting the potential for a reversal in liberal economic outcomes if they are able to successfully lobby to have their interests represented in policy.

Second, although the reassertion of policies of strategic intervention under conditions of high prices suggests that a broader reversal in the trend towards liberal convergence is possible, policies in the wake of the 2001 price rises were a not mirror image of those used prior to the liberalization and privatization of oil markets in the 1980s and 1990s. This partial reversal of policies can be attributed to the causes and effects of the liberalization and privatization process itself.⁴ In the case of France, for example, protectionism was abolished not because of pressures from the European Community, but because these policies no longer met the interests of the very firms they

⁴ Another reason might be that diversification away from oil throughout the 1980s and 1990s meant the economic, and political, impact of the oil price rises was less significant than during the oil shocks, decreasing the salience of oil as a political issue.

were designed to help. As described in chapter five, asset diversification and internationalization in Elf-Aquitaine and Total began in the 1960s, and was accelerated significantly by the shocks of the 1970s. This meant that even under conditions of high prices there was no demand from the firms for the protection of the state; even if the Directorate General of Hydrocarbons was still interested in providing such support it therefore lacked a client through which to supply it. Further, these policy preferences were not undermined by the change in distributional circumstances driven by the increase in oil prices in the 2000s. There was no-one therefore interested in demanding, or supplying, protection in the name of national control.

In the case of Japan policies were reversed, but only partially. Subsidies for exploration and production by national flag firms were increased in the upstream, but in the refining and distribution sector trade barriers were not increased. Instead, firms focused on moving upstream and on increasing sales of refined products internationally; that is, on market-based rather than non-market based strategies to deal with the shift in market structure. This stood in stark contrast to their response to the oil shocks, when they lobbied for ongoing protection.⁵

⁵ An alternative explanation might be that the firms did not consider seeking protection as they thought regulators would not be receptive. Against this hypothesis is the fact that METI was willing to promote firm activities upstream, suggested there may be some willingness to support firms domestically against international competition in refining and distribution.

The answer to this lack of demand for protection from firms lies in the effects of liberalization on firms' preferred policies. Weak and fragmented prior to liberalization, these firms were forced to merge with one another through the 1980s and 1990s and reduce refinery capacity, as described in chapter four. This made them more competitive on world markets in terms of refined products, although they remained uncompetitive relative to the integrated oil firms that dominated production outside national oil companies because of a lack of crude reserves held internationally. It made sense, therefore, for these firms to seek support in order to move upstream in the search for profits and increased competitiveness, rather than attempt to return to the failed growth strategy of the pre-1980s. Increased subsidies, but no return to protection through erecting trade barriers was the result.

Extending these findings to the political economies of the advanced industrialized states, and the propensity for greater protection more generally, this suggests that demands for protection will be shaped by the effects of the era of liberalization and privatization in the 1980s and 1990s on the policy preferences of domestic actors. For firms that have shifted to become highly integrated into global supply chains for the manufacture of goods, for example, renewed demands for trade protection make little sense. For unskilled labor in the advanced industrialized states, on

the other hand, liberalization and privatization did little to further their interests, or their ability to compete internationally through their labor power. Their demands for greater protection are unlikely to be disarmed, therefore, by the changes wrought in the 1980s and 1990s. What remains an open question is whether political representatives will see their interests in supplying this protection.

Understanding the propensity for reversals in liberal market outcomes, ultimately requires us, therefore, to understand how the process itself shifted the preferences of domestic actors towards different policy outcomes, and whether exogenous shocks such as the recent economic crisis affect distributional circumstances so as to change the preferences of these groups once again.

2.2 International Relations of Resource Nationalism

A second set of implications concern resource nationalism and its consequences for international relations. Government intervention in oil markets is significant firstly because of its distributive effects: if governments in the major petroleum consuming states intervene directly in petroleum markets this leads to domestic transfers of wealth from consumers to producers. Policies designed to 'lock-in' oil supplies can also have important distributional effects internationally as side-payments by one government to

another in the form of military arms, public infrastructure, or other forms of support are used as inducements in seeking to secure national firms' access to reserves upstream. This can have distributive effects within oil producing countries, either amplifying or mitigating the effects of the reliance on resources for the majority of state revenues common in these countries.

There are a second set of problems associated with governmental intervention in oil markets, however. The rise of new industrial powers in the international system – most notably China and India – introduces the possibility growing demand will lead to a secular increase in oil prices over the long-run as demand from consumers within these countries for oil products continues to outstrip the capacity of producers to meet these needs while keeping prices constant. More importantly, some analysts have pointed out that resource nationalism in these new major oil importing states could lead to militarized disputes as each seeks to secure oil through national control, including using military means.⁶

My findings suggest, however, that policymakers can be more sanguine in their assessment of the likely implications of resource nationalism on the propensity for

⁶ Michael T. Klare, *Resource Wars: The New Landscape of Global Conflict*, 1st ed. (New York: Metropolitan Books, 2001); Kent E. Calder, *Pacific Defense: Arms, Energy, and America's Future in Asia*, 1st ed. (New York: W. Morrow, 1996).

conflict between the major oil importing states, for two reasons. First, throughout the study I show that national policy has not only been a function of the interests and preferences of state actors, but rather firms have played an important role in shaping policy outcomes. This suggests that there is no need to assume, a priori, that governments are driving policy. Rather, by showing that intervention is a function of the marrying of public and private interest, I suggest that the constellation of interests driving policy outcomes in the oil sector belies the utility of using the usefulness of state actor model when seeking to understand the causes, and implications of strategic intervention. If policies of strategic intervention in the case of China are primarily driven by commercial interests, for example, it is unlikely that decisionmakers within the state will be willing to use military force in the pursuit of these policies.

Second, as the French and US cases show, even when strategic intervention is in the interests of decisionmakers within the state, firm success increases the tension between the state as principal, and firm as agent, of national policy. As sales and investments grow internationally, firms are less likely to do the bidding of the governments that protect them, and are also less likely to demand protection. In the long-run, this should lead to a reduction in state intervention in oil markets on behalf of national firms, rather than its increase, as firms become more competitive.

Finally, it is worth noting that none of these findings suggest that oil is just another commodity, like wheat or coal. National ownership of crude in most of the major oil producing countries, and the limited reserves that exist in non-OPEC areas, mean that governments in both consuming and producing states will continue to be involved in the oil sector. Even if we need not fear militarized disputes between the major oil consuming countries, state-supported competition between firms based in these countries is likely to be an enduring feature of oil markets so long as domestic actors continue to see it in their interests.

Selected Bibliography

Periodicals

Asahi Shinbun

Le Figaro

Le Monde

New York Times

Nihon Keizai Shinbun

Oil and Gas Journal

Petroleum Economist

Wall Street Journal

Washington Post

Yomiuri Shinbun

Secondary Sources

Adelman, Morris A. "The Clumsy Cartel." Cambridge, MA: Massachusetts Institute of Technology, 1979.

———. "World Oil: Ten Years after The "Energy Crisis"." Cambridge, MA: Massachusetts Institute of Technology, 1984.

———. "Scarcity and World Oil Prices." *The Review of Economics and Statistics* 68, no. 3 (1986): 387-97.

———. *The World Oil Market to 1970*. Cambridge, Mass.: Massachusetts Institute of Technology Center for Energy Policy Research, 1988.

Adelman, Morris A. "Mineral Depletion, with Special Reference to Petroleum." *The Review of Economics and Statistics* 72, no. 1 (1990): 1-10.

Adelman, Morris Albert. *The Economics of Petroleum Supply: Papers by M.A. Adelman, 1962-1993*. Cambridge, Mass.: MIT Press, 1993.

———. *The Genie out of the Bottle : World Oil since 1970*. Cambridge, Mass.: MIT Press, 1995.

Aldrich, John H., John L. Sullivan, and Eugene Borgida. "Foreign Affairs and Issue

- Voting: Do Presidential Candidates "Waltz before a Blind Audience?" *American Political Science Review* 83, no. 1 (1989): 123-41.
- Alhajji, A. F., and David Huettnner. "OPEC and Other Commodity Cartels: A Comparison." *Energy Policy* 28, no. 15 (2000): 1151-64.
- Alt, James E., Fredrik Carlsen, Per Heum, and Kare Johansen. "Asset Specificity and the Political Behavior of Firms: Lobbying for Subsidies in Norway." *International Organization* 53, no. 1 (1999): 99-116.
- American Petroleum Institute. *American Petroleum Industry; a Survey of the Present Position of the Petroleum Industry and Its Outlook toward the Future*. New York, N.Y.: American Petroleum Institute, 1935.
- . *Petroleum; the Story of an American Industry*. New York, 1949.
- Andersen, Svein S. "EU Energy Policy: Interest Interaction and Supranational Authority." *ARENA Working Papers* WP 00/5 (2000): 1-23.
- Anderson, Mark W. "Regulatory Policy toward Domestic Crude Oil Production." *Policy Sciences* 12 (1980): 245-64.
- Avant, Deborah D. *The Market for Force: The Consequences of Privatizing Security*. Cambridge: Cambridge University Press, 2005.
- Bacon, Raymond Foss, and William A. Hamor. *The American Petroleum Industry*. 1st ed. New York: McGraw-Hill, 1916.
- Bahgat, Gawdat. *American Oil Diplomacy in the Persian Gulf and the Caspian Sea*. Gainesville: University Press of Florida, 2003.
- Barber, William J. "The Eisenhower Energy Policy: Reluctant Intervention." In *Energy Policy in Perspective : Today's Problems, Yesterday's Solutions*, edited by Craufurd D. W. Goodwin, xx, 728. Washington, D.C.: Brookings Institution, 1981.
- . "Studied Inaction in the Kennedy Years." In *Energy Policy in Perspective : Today's Problems, Yesterday's Solutions*, edited by Craufurd D. W. Goodwin, 287-336. Washington, D.C.: Brookings Institution, 1981.
- Barsky, Robert B., and Lutz Kilian. "Oil and the Macroeconomy since the 1970s." *The Journal of Economic Perspectives* 18, no. 4 (2004): 115-34.
- Beach, Derek. *The Dynamics of European Integration : Why and When EU Institutions Matter*. Basingstoke New York: Palgrave Macmillan, 2005.
- Bennett, Colin J. "What Is Policy Convergence and What Causes It?" *British Journal of Political Science* 21, no. 2 (1991): 215-33.
- Berger, Suzanne. "Globalization and Politics." *Annual Review of Political Science* 3 (2000): 43-62.
- Berger, Suzanne, and Ronald Dore. *National Diversity and Global Capitalism*, Cornell

- Studies in Political Economy. Ithaca, N.Y.: Cornell University Press, 1996.
- Berkma, Pelin, Sam Ouliaris, and Hossein Samiei. "The Structure of the Oil Market and Causes of High Prices." New York: International Monetary Fund, 2005.
- Berne, Michel, and Gerard Pogorel. "Privatization Experiences in France." *CESifo Working Paper* (2004).
- Blair, John Malcolm. *The Control of Oil*. New York: Pantheon Books, 1976.
- Bohi, Douglas R., and Milton Russell. *Limiting Oil Imports : An Economic History and Analysis*. Baltimore: Johns Hopkins University Press, 1978.
- Bohi, Douglas R., Michael A. Toman, and Margaret A. Walls. *The Economics of Energy Security*. Boston: Kluwer Academic Publishers, 1996.
- Boix, Carles. "Privatizing the Public Business Sector in the Eighties: Economic Performance, Partisan Responses and Divided Governments." *British Journal of Political Science* 27 (1997): 473-96.
- Brooks, Sarah M. "Interdependent and Domestic Foundations of Policy Change: The Diffusion of Pension Privatization around the World." *International Studies Quarterly* 49 (2005): 273-94.
- . "When Does Diffusion Matter? Explaining the Spread of Structural Pension Reforms across Nations." *Journal of Politics* 69, no. 3 (2007): 701-15.
- . *Social Protection and the Market in Latin America*. Cambridge: Cambridge University Press, 2009.
- Burrows, James C., and Thomas A. Domencich. *An Analysis of the United States Oil Import Quota*, Studies in Business, Industry, and Technology. Lexington, Mass.,: Heath Lexington Books, 1970.
- Cabinet Task Force on Oil Import Control. "The Oil Import Question." Washington, D.C.: Cabinet Task Force on Oil Import Control, 1970.
- Calder, Kent E. *Pacific Defense : Arms, Energy, and America's Future in Asia*. 1st ed. New York: W. Morrow, 1996.
- Campbell, John L., and Ove K. Pedersen. "The Rise of Neoliberalism and Institutional Analysis." In *The Rise of Neoliberalism and Institutional Analysis*, edited by John L. Campbell and Ove K. Pedersen. Princeton: Princeton University Press, 2001.
- Canes-Wrone, Brandice. *Who Leads Whom? : Presidents, Policy, and the Public*, Studies in Communication, Media, and Public Opinion. Chicago: University of Chicago Press, 2006.
- Canes-Wrone, Brandice, and Kenneth W. Shotts. "The Conditional Nature of Presidential Responsiveness of Public Opinion." *American Journal of Political Science* 48, no. 4 (2004): 690-706.
- Ching, Chih Chen. "Crude Oil Prices and the Postwar Japanese Refining Industry."

- Doctor of Philosophy, Massachusetts Institute of Technology, 1967.
- Cohen, Jeffrey E. "Presidential Rhetoric and the Public Agenda." *American Journal of Political Science* 39, no. 1 (1995): 87-107.
- Cordesman, Anthony H., and Khalid R. Al-Rodhan. *The Global Oil Market : Risks and Uncertainties*, Significant Issues Series, V. 28, No. 1. Washington, D.C.: CSIS Press, 2006.
- Cowhey, Peter F. *The Problems of Plenty : Energy Policy and International Politics, Science, Technology, and the Changing World Order*. Berkeley: University of California Press, 1985.
- Crouch, Colin, and Wolfgang Streeck. "Introduction: The Future of Capitalist Diversity." In *Political Economy of Modern Capitalism : Mapping Convergence and Diversity*, edited by Colin Crouch and Wolfgang Streeck, 1-18. London ; Thousand Oaks, Calif.: Sage, 1997.
- Culpepper, Pepper D. "Capitalism, Coordination, and Economic Exchange: The French Political Economy since 1985." In *Changing France: The Politics That Markets Make*, edited by Peter A. Hall and Bruno Palier Pepper D. Culpepper, 29-49. New York: Palgrave Macmillan, 2006.
- Dafer, Ray. "World Oil Production and Security of Supplies." *International Security* 4, no. 3 (1979): 154-76.
- Dahl, Carol, and Mine Yücel. "Testing Alternative Hypotheses of Oil Producer Behavior." *The Energy Journal* 12, no. 4 (1991): 117-38.
- Dam, Kenneth W. "Implementation of Import Quotas." *Journal of Law and Economics* 14, no. 1 (1971): 1-60.
- Davis, David Howard. *Energy Politics*. 3rd ed. New York: St. Martin's Press, 1982.
- Davis, Jerome D. *The Changing World of Oil : An Analysis of Corporate Change and Adaptation*. Aldershot, England ; Burlington, VT: Ashgate Pub., 2006.
- de Carmoy, Guy. "The New French Energy Policy." *Energy Policy* (1982): 181-88.
- Devarajan, Shantayanan, and Anthony C. Fisher. "Hotelling's "Economics of Exhaustible Resources": Fifty Years Later." *Journal of Economic Literature* 19, no. 1 (1981): 65-73.
- Dumontier, Pascal, and Claude Laurin. "The Financial Impact of the French Government's Nationalization/Privatization Strategy." *EFMA 2003 Helsinki Meetings* (2003).
- Edwards III, George C., William Mitchell, and Reed Welch. "Explaining Presidential Approval: The Significance of Issue Salience." *American Journal of Political Science* 39, no. 1 (1995): 108-34.
- El-Agraa, Ali. M., and Yao Suhu. "National Versus Supranational Interests and the Problem of Establishing an Effective EC Energy Policy." *Journal of Common*

Market Studies 22, no. 4 (1984): 333-49.

Feigenbaum, Harvey B. "Review: Public Enterprise in Comparative Perspective." *Comparative Politics* 15, no. 1 (1982): 101-22.

———. *The Politics of Public Enterprise : Oil and the French State*. Princeton, N.J.: Princeton University Press, 1985.

———. "States, Markets and the Politics of Energy." *Polity* 20, no. 1 (1987): 167-78.

Finon, Dominique. "French Energy Policy: The Effectiveness and Limitations of Colbertism." In *European Energy Policies in a Changing Environment*, edited by Francis (ed.) McGowan, 21-56, 1996.

Fitzgerald, Edward Peter. "France's Middle Eastern Ambitions, the Sykes-Picot Negotiations, and the Oil Fields of Mosul, 1915-1918." *The Journal of Modern History* 66, no. 4 (1994): 697-725.

Foreign Policy Research Institute. *Oil Diplomacy : The Atlantic Nations in the Oil Crisis of 1978-79*. Philadelphia, PA.: Foreign Policy Research Institute, 1980.

Frank, Helmut Jack. *Crude Oil Prices in the Middle East; a Study in Oligopolistic Price Behavior*, Praeger Special Studies in International Economics and Development. New York,: Praeger, 1966.

Fusaro, Peter C. "The Future of Oil: Geopolitical Lynchpin or Common Commodity?" In *Global Markets and National Interests : The New Geopolitics of Energy, Capital, and Information*, edited by Lincoln Palmer Bloomfield, xiii, 250. Washington, D.C.: CSIS Press, 2002.

Garrett, Geoffrey, and Barry R. Weingast. "Ideas, Interests and Institutions." In *Ideas and Foreign Policy : Beliefs, Institutions, and Political Change*, edited by Judith Goldstein and Robert O. Keohane, 173-206. Ithaca: Cornell University Press, 1993.

Gately, Dermot. "A Ten-Year Retrospective: Opec and the World Oil Market." *Journal of Economic Literature* 22, no. 3 (1984): 1100-14.

———. "Strategies for Opec's Pricing and Output Decisions." *Energy Journal* 16, no. 3 (1995): 1-38.

Ghosh, Arabinda. *Competition and Diversification in the United States Petroleum Industry*. Westport, Conn.: Quorum Books, 1985.

Giraud, Andre L. "Energy in France." *Annual Review of Energy* 8 (1983): 165-91.

Gray, Lewis Cecil. "Rent under the Assumption of Exhaustibility." *The Quarterly Journal of Economics* 28, no. 3 (1914): 466-89.

Grayson, Leslie E. *National Oil Companies*. Chichester: John Wiley and Sons, 1981.

- Greenberger, Martin. *Caught Unawares : The Energy Decade in Retrospect*. Cambridge, MA: Ballinger Pub. Co., 1983.
- Guyomarch, Alain. "The Europeanization of Policy-Making." In *Developments in French Politics 2*, edited by Alain Guyomarch and etal, 116-36, 2001.
- Hacker, Jacob S. "Privatizing Risk without Privatizing the Welfare State: The Hidden Politics of Social Policy Retrenchment in the United States." *American Political Science Review* 98, no. 2 (2004): 243-60.
- . "Policy Drift: The Hidden Politics of U.S. Welfare State Retrenchment." In *Beyond Continuity : Institutional Change in Advanced Political Economies*, edited by Wolfgang Streeck and Kathleen Ann Thelen, 40-82. Oxford ; New York: Oxford University Press, 2005.
- Hall, Peter A. "Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain." *Comparative Politics* 25, no. 3 (1993): 275-96.
- . "The Europeanization of Policy-Making." In *Developments in French Politics 2*, edited by Alain Guyomarch and etal, 172-90, 2001.
- Hall, Peter A., and David W. Soskice. *Varieties of Capitalism : The Institutional Foundations of Comparative Advantage*. Oxford England ; New York: Oxford University Press, 2001.
- Hamilton, James D. "Oil and the Macroeconomy since World War II" *The Journal of Political Economy* 91, no. 2 (1983): 228-48.
- Hancke, Bob. *Large Firms and Institutional Change : Industrial Renewal and Economic Restructuring in France*. Oxford ; New York: Oxford University Press, 2002.
- Heichel, Stephan, Jessica Pape, and Thomas Sommerer. "Is There Convergence in Convergence Research? An Overview of Empirical Studies on Policy Convergence." *Journal of European Public Policy* 12, no. 5 (2005): 817-40.
- Hein, Laura Elizabeth. *Fueling Growth : The Energy Revolution and Economic Policy in Postwar Japan*. Cambridge, Mass.: Council on East Asian Studies Harvard University : Distributed by Harvard University Press, 1990.
- Heredia, Blanca, and Ben Ross Schneider. "The Political Economy of Administrative Reform in Developing Countries." In *Reinventing Leviathan: The Politics of Administrative Reform*, 2003.
- Hillman, Arye L. "Declining Industries and Political-Support Protectionist Motives." *American Economic Review* 72, no. 5 (1982): 1180-87.
- Hiscox, Michael J. "Commerce, Coalitions, and Factor Mobility: Evidence from Congressional Votes on Trade Legislation." *American Political Science Review* 96, no. 3 (2002): 593-608.
- Hollingsworth, J. Rogers, Philippe C. Schmitter, and Wolfgang Streeck. *Governing Capitalist Economies : Performance and Control of Economic Sectors*. New York: Oxford University Press, 1994.

- Horsnell, Paul, and Robert Mabro. *Oil Markets and Prices : The Brent Market and the Formation of World Oil Prices*. Oxford: Published by the Oxford University Press for the Oxford Institute for Energy Studies, 1993.
- Hotelling, Harold "The Economics of Exhaustible Resources." *The Journal of Political Economy* 39, no. 2 (1931): 137-75.
- Huntington, Hillard G. "Oil Price Forecasting in the 1980s: What Went Wrong?" *Energy Journal* 15, no. 2 (1994): 1-23.
- Iguchi, Tosuke [The History of Industrial Development in Japan: Petroleum]. *Nihon Sangyo Hattatsushi: Sekiyu*. Tokyo: Gendai Nihon Sangyo Hattatsushi Kenkyukai, 1963.
- Ikenberry, G. John. "The Irony of State Strength: Comparative Responses to the Oil Shocks in the 1970s." *International Organization* 40, no. 1 (1986): 105-37.
- . *Reasons of State : Oil Politics and the Capacities of American Government*, Cornell Studies in Political Economy. Ithaca: Cornell University Press, 1988.
- . "Market Solutions for State Problems: The International and Domestic Politics of American Oil Decontrol." *International Organization* 42, no. 1 (1988): 151-77.
- Iwao, Nakatani, and Hiroko Ōta. *Keizai Kaikaku No Bijon: Hiraiwa Ripōtō Wo Koete [a Vision of Economic Reform: Beyond the Hiraiwa Report]*. Tokyo: Tōyō Keizai Shinpōsha, 1994.
- John Keeler & Shain, Martin, ed. *Chirac's Challenge: Liberalization, Europeanization, and Malaise in France*. Houndmills: Macmillan Press, 1996.
- Johnson, Chalmers A. *MITI and the Japanese Miracle : The Growth of Industrial Policy, 1925-1975*. Stanford, Calif.: Stanford University Press, 1982.
- Jones, Donald W., Paul N. Leiby, and Inja K. Paik. "Oil Price Shocks and the Macroeconomy: What Has Been Learned since 1996." *The Energy Journal* 25, no. 2 (2004): 1-32.
- Joskow, Paul J. "U.S. Energy Policy During the 1990s." (2001).
- Kash, Don E., and Robert W. Rycroft. *U.S. Energy Policy: Crisis and Complacency*. 1st ed. Norman: University of Oklahoma Press, 1984.
- Katz, James Everett. *Congress and National Energy Policy*. New Brunswick, N.J., U.S.A.: Transaction Books, 1984.
- Kaufman, Burton I. "Oil and Antitrust: The Oil Cartel Case and the Cold War." *The Business History Review* 51, no. 1 (1977): 35-56.
- Kaufmann, R. K., S. Dees, P. Karadeloglou, and M. Sanchez. "Does OPEC Matter? An Econometric Analysis of Oil Prices." *The Energy Journal* 25, no. 4 (2004): 67-90.
- Keohane, Robert O., and Helen V. Milner. *Internationalization and Domestic Politics*,

- Cambridge Studies in Comparative Politics. Cambridge England ; New York, NY: Cambridge University Press, 1996.
- Kerr, Clark. *The Future of Industrial Societies ; Convergence or Continuing Diversity?* Cambridge, Mass.: Harvard University Press, 1983.
- Kitschelt, Herbert, Peter Lange, Gary Marks, and John D. Stephens. "Convergence and Divergence in Advanced Capitalist Democracies." In *Continuity and Change in Contemporary Capitalism*, edited by Herbert Kitschelt, Peter Lange, Gary Marks and John D. Stephens, 427-60. Cambridge, UK ; New York, NY: Cambridge University Press, 1999.
- Klare, Michael T. *Resource Wars: The New Landscape of Global Conflict*. 1st ed. New York: Metropolitan Books, 2001.
- Knill, Christoph. "Introduction: Cross-National Policy Convergence: Concepts, Approaches and Explanatory Factors." *Journal of European Public Policy* 12, no. 5 (2005): 764-74.
- Knill, Christoph, and Katharina Holzinger. "Causes and Consequences of Cross-National Policy Convergence." *Journal of European Public Policy* 12, no. 5 (2005): 775-96.
- Kohl, Wilfrid L. *After the Second Oil Crisis : Energy Policies in Europe, America, and Japan*. Lexington, Mass.: Lexington Books, 1982.
- Krasner, Stephen D. *Defending the National Interest : Raw Materials Investments and U.S. Foreign Policy*. Princeton, N.J.: Princeton University Press, 1978.
- Levy, Gilles Pierre. "Relationship between Governments and Oil Firms." *Journal of Energy and Natural Resources* 2, no. 9 (1982).
- Levy, Jonah D. "Economic Policy and Policy-Making." In *Developments in French Politics* 3, edited by Alistair Cole, Patrick Le Gales and Jonah D. Levy, 170-94. Houndmills, Basingstoke, Hampshire; New York: Palgrave Macmillan, 2005.
- . *The State after Statism : New State Activities in the Age of Liberalization*. Cambridge, Mass.: Harvard University Press, 2006.
- Lieber, Robert J. "Energy Policies of the Fifth Republic: Autonomy Versus Constraint." In *The Fifth Republic at Twenty*, edited by William G. Andrews and Stanley Hoffmann, 1981.
- . "Energy Policy and National Security: Invisible Hand or Guidling Hand?" In *Eagle Defiant: United States Foreign Policy in the 1980s*, edited by Kenneth A. Oye, Robert J. Lieber and Donald Rothchild, 167-90. Boston: Little, Brown and Company, 1983.
- . "Energy Policy and National Security: Invisible Hand or Guidling Hand?" In *Eagle Resurgent: The Reagan Era in American Foreign Policy*, edited by Kenneth A. Oye, Robert J. Lieber and Donald Rothchild, 167-92. Boston: Little, Brown and Company, 1987.
- Lindberg, Leon N. *The Energy Syndrome : Comparing National Responses to the Energy*

- Crisis*. Lexington, Mass.: Lexington Books, 1977.
- Loriaux, Michael Maurice. *France after Hegemony : International Change and Financial Reform*, Cornell Studies in Political Economy. Ithaca: Cornell University Press, 1991.
- Lucas, N. J. D. *Energy in France : Planning, Politics, and Policy*. London: Europa Publications for the David Davies Memorial Institute of International Studies, 1979.
- M. Roggenkamp, M. C. Redgwell, I Del Guayo, and A. (eds.) Ronne. *Energy Law in Europe: National, EU and International Regulation*. New York: Oxford University Press, 2007.
- Mabro, Robert. *OPEC and the World Oil Market : The Genesis of the 1986 Price Crisis*. Oxford: Oxford University Press for the Oxford Institute for Energy Studies, 1986.
- . "Opec Behavior 1960-1988: A Review of the Literature." *Journal of Energy Literature* (1988): 3-27.
- . *OPEC's Production Policies : How Do They Work?, Why Don't They Work?* Oxford: Oxford Institute for Energy Studies, 1989.
- Matlary, Janne Haaland. *Energy Policy in the European Union*. New York: St. Martin's Press, 1997.
- Maull, Hanns. "Oil and Influence: The Oil Weapon Examined." In *Economic Issues and National Security*, edited by Klaus and Trager Knorr, Frank N., 259-88. Kansas: Regents Press of Kansas, 1977.
- May, Peter J. "Policy Learning and Failure." *Journal of Public Policy* 12, no. 4 (1992): 331-54.
- McGowan, Francis. "The Single Energy Market and Energy Policy: Conflicting Agendas?" *Energy Policy* (1989): 547-53.
- Mendershausen, Horst. *Coping with the Oil Crisis : French and German Experiences*. Baltimore: Johns Hopkins University Press, 1976.
- Meritet, Sophie. "French Perspectives in the Emerging European Union Energy Policy." *Energy Policy* 35 (2007): 4767-71.
- Meseguer, Covadonga. "What Role for Learning? The Diffusion of Privatization in Oecd and Latin American Countries." *Journal of Public Policy* 24, no. 3 (2004): 299-325.
- Milner, Helen V. *Resisting Protectionism : Global Industries and the Politics of International Trade*. Princeton, N.J.: Princeton University Press, 1988.
- . "Trading Places: Industries for Free Trade." *World Politics* 40, no. 3 (1988): 350-76.

- . *Interests, Institutions, and Information : Domestic Politics and International Relations*, Princeton Paperbacks. Princeton, N.J.: Princeton University Press, 1997.
- Moravcsik, Andrew. *The Choice for Europe : Social Purpose and State Power from Messina to Maastricht*, Cornell Studies in Political Economy. Ithaca, N.Y.: Cornell University Press, 1998.
- Morse, Edward L. *Foreign Policy and Interdependence in Gaullist France*. Princeton, N.J.: Princeton University Press, 1973.
- Morse, Ronald A. "Introduction: Japan's Energy Policies and Options." In *The Politics of Japan's Energy Strategy : Resources-Diplomacy-Security*, edited by Ronald A. Morse, 1-14. Berkeley: Institute of East Asian Studies University of California, 1981.
- Moss, David A. *When All Else Fails : Government as the Ultimate Risk Manager*. Cambridge, Mass.: Harvard University Press, 2002.
- Nash, G.D. *United States Oil Policy 1890-1964*. Pittsburgh, 1968.
- Neustadt, Richard E. *Presidential Power and the Modern Presidents : The Politics of Leadership from Roosevelt to Reagan*. New York: Maxwell Macmillan, 1990.
- Nordhauser, Norman E. *The Quest for Stability : Domestic Oil Regulation, 1917-1935*, Modern American History. New York: Garland, 1979.
- Noreng, Oystein. *Crude Power: Politics and the Oil Market*. London ; New York, NY: I.B. Tauris, 2002.
- Nowell, Gregory P. *Mercantile States and the World Oil Cartel, 1900-1939*, Cornell Studies in Political Economy. Ithaca, N.Y.: Cornell University Press, 1994.
- Oyama, Kosuke. "The Policymaking Process Behind Petroleum Industry Regulatory Reform." In *Is Japan Really Changing Its Ways? : Regulatory Reform and the Japanese Economy*, edited by Lonny E. Carlile and Mark Tilton, 142-62. Washington, D.C.: Brookings Institution Press, 1998.
- Padgett, Stephen. "The Single European Energy Market: The Politics of Realization." *Journal of Common Market Studies* 30, no. 1 (1992): 53-75.
- Page, Benjamin I., and Robert Y. Shapiro. "Effects of Public Opinion on Policy." *American Political Science Review* 77, no. 1 (1983): 175-90.
- Parra, Francisco R. "OPEC and the Price of Oil in 1993." *The Energy Journal* 15, no. 1 (1994): 17-26.
- . *Oil Politics : A Modern History of Petroleum*. London ; New York: I.B. Tauris, 2004.
- Pierson, Paul. *Dismantling the Welfare State? : Reagan, Thatcher, and the Politics of Retrenchment*, Cambridge Studies in Comparative Politics. Cambridge, England ; New York: Cambridge University Press, 1994.

- , ed. *The New Politics of the Welfare State*. Oxford: Oxford University Press, 2001.
- Pollio, Gerald, and Koichi Uchida. "Management Background, Corporate Governance and Industrial Restructuring: The Japanese Upstream Petroleum Industry." *Energy Policy* 27 (1999): 813-32.
- Randall, Stephen J. *United States Foreign Oil Policy since World War I : For Profits and Security*. 2nd ed. Montreal: McGill-Queen's University Press, 2005.
- Rogowski, Ronald. "Political Cleavages and Changing Exposure to Trade." *American Political Science Review* 81, no. 4 (1987): 1121-37.
- Rosecrance, Richard. *The Rise of the Trading State: Commerce and Conquest in the Modern World*. New York: Basic Books, 1986.
- Ruggie, John Gerard. "International Regimes, Transactions, and Change: Embedded Liberalism in the Postwar Economic Order." *International Organization* 36, no. 2 (1982): 379-415.
- Saad, Farid Wadie. "France and Oil: A Contemporary Economic Study." Massachusetts Institute of Technology Thesis 1969 Ph D, Massachusetts Institute of Technology, 1969.
- Samuels, Richard J. *The Business of the Japanese State: Energy Markets in Comparative and Historical Perspective*, Cornell Studies in Political Economy. Ithaca: Cornell University Press, 1987.
- Schmidt, Vivien A. *From State to Market? The Transformation of French Business and Government*. New York: Cambridge University Press, 1996.
- . "Loosening the Ties That Bind: The Impact of European Integration on French Government and Its Relationship with Business." *Journal of Common Market Studies* 34, no. 2 (1996): 223-54.
- Schneider, Steven A. *The Oil Price Revolution*. Baltimore: Johns Hopkins University Press, 1983.
- Searight, Amy E. "MITI and Multilateralism: The Evolution of Japan's Trade Policy in the GATT Regime." Pao Alto: Stanford University, 1999.
- Shaffer, Ed. *The Oil Import Program of the United States; an Evaluation*, Praeger Special Studies in International Economics and Development. New York,: F. A. Praeger, 1968.
- Simmons, Beth, A., Frank Dobbin, and Geoffrey Garrett. "Introduction: The International Diffusion of Liberalism." *International Organization* 60, no. Fall (2006): 781-810.
- Simmons, Beth A., and Zachary Elkins. "The Globalization of Liberalization: Policy Diffusion in the International Political Economy." *American Political Science Review* 98, no. 1 (2004): 171-89.

- Smith, James L. "Inscrutable Opec? Behavioral Tests of the Cartel Hypothesis." *The Energy Journal* 26, no. 1 (2005): 51-83.
- Smith, Mitchell P. *States of Liberalization: Redefining the Public Sector in Integrated Europe*, 2005.
- Soederberg, Susanne, Georg Menz, and Philip G. Cerny. *Internalizing Globalization : The Rise of Neoliberalism and the Decline of National Varieties of Capitalism*. Basingstoke UK ; New York: Palgrave Macmillan, 2005.
- Stagliano, Vito. *A Policy of Discontent : The Making of a National Energy Strategy*. Tulsa, OK: Pennwell Corp., 2001.
- Stevens, Paul. "A Survey of Structural Change in the International Oil Industry 1945-1984." In *The Changing Structure of the World Oil Industry*, edited by David Hawdon, 112. London ; Dover, N.H.: Croom Helm, 1985.
- . "Understanding the Oil Industry: Economics as a Help or Hindrance." *The Energy Journal* 16, no. 3 (1995): 125-37.
- Stoff, Michael B. . *Oil, War and American Security: The Search for a National Policy on Foreign Oil 1941-1947*. London, 1980.
- Streeck, Wolfgang, and Kathleen Ann Thelen. *Beyond Continuity : Institutional Change in Advanced Political Economies*. Oxford ; New York: Oxford University Press, 2005.
- Taylor-Gooby, Peter, ed. *New Risks, New Welfare: The Transformation of the European Welfare State*. Oxford: Oxford University Press, 2004.
- Tetreault, Mary Ann. *Revolution in the World Petroleum Market*. Westport, Conn.: Quorum Books, 1985.
- Tietenberg, Thomas H. *Energy Planning and Policy : The Political Economy of Project Independence*. Lexington, Mass.: Lexington Books, 1976.
- Toichi, Tsutomu. "OPEC Export Refineries and the Implications for Japan's Petroleum Policy." Cambridge, MA: MIT, 1985.
- Turner, Louis. *Oil Companies in the International System*. 3rd ed. Winchester, Mass.: Allen & Unwin, 1983.
- VanDoren, Peter. *Politics, Markets, and Congressional Policy Choices*. Ann Arbor: University of Michigan Press, 1991.
- Venn, Fiona. *Oil Diplomacy in the Twentieth Century*. New York: St. Martin's Press, 1986.
- Verleger, Philip K. *Adjusting to Volatile Energy Prices*. Washington, DC: Institute for International Economics, 1993.

- Vernon, Raymond. *Two Hungry Giants : The United States and Japan in the Quest for Oil and Ores*. Cambridge, Mass.: Harvard University Press, 1983.
- Veron, Nicholas. *Farewell National Champions*. Edited by Bruegel, Bruegel Policy Brief. Brussels: Bruegel, 2006.
- Vietor, Richard H. K. *Energy Policy in America since 1945 : A Study of Business Government Relations*, Studies in Economic History and Policy. Cambridge ; New York: Cambridge University Press, 1984.
- Weyland, Kurt. "The Diffusion of Innovations: How Cognitive Heuristics Shaped Bolivia's Pension Reform." *Comparative Politics* (2005).
- . "Theories of Policy Diffusion: Lessons from Latin American Pension Reform." *World Politics* 57, no. 2 (2005): 262-95.
- Whitford, Andrew B. "Competing Explanations for Bureaucratic Preferences." *Journal of Theoretical Politics* 19, no. 3 (2007): 219-47.
- Williamson, Harold Francis. *The American Petroleum Industry*, Northwestern University Studies in Business History. Evanston Ill.: Northwestern University Press, 1959.
- Wilson III, Ernest J. "World Politics and International Energy Markets." *International Organization* 41, no. 1 (1987).
- Yamamura, Kozo, and Wolfgang Streeck. *The End of Diversity? : Prospects for German and Japanese Capitalism*, Cornell Studies in Political Economy. Ithaca: Cornell University Press, 2003.
- Yergin, Daniel. *The Prize : The Epic Quest for Oil, Money, and Power*. New York: Simon and Schuster, 1991.
- Zeiler, Thomas W. "Kennedy, Oil Imports, and the Fair Trade Doctrine." *The Business History Review* 62, no. 2 (1990): 286-310.
- Zysman, John. *Political Strategies for Industrial Order: State, Market, and Industry in France*. Berkeley: University of California Press, 1977.
- . *Governments, Markets, and Growth: Financial Systems and the Politics of Industrial Change*. Ithaca: Cornell University Press, 1983.

Interview Subjects

Japan

Mitsuo Arai
Committee Member
Petroleum Council (2000-2007)

Hiroyuki Fukano
Director of Upstream Division (1998-2000)
Ministry of Economy Trade and Industry

Nobuo Hata
General Manager
Planning and General Coordination Department
Petroleum Association of Japan

Akira Ishii
Chief Economist
Japan Oil, Gas and Metals National Corporation

Kazutomo Irie
Petroleum Division (1985-6)
Ministry of Economy Trade and Industry

Kazuo Kawahara
Director
Petroleum Association of Japan

Takeo Kikkawa
Committee Member
Petroleum Council

Nobuyori Kodaira
Director
Petroleum Planning Division (1995-6)
Administrative Vice Minister
Agency for Natural Resources and Energy (2004-2006)
Ministry of Economy Trade and Industry

Hiroshi Kubota
Deputy Director General
Oil and Gas Project Development Group
Japan Oil, Gas and Metals National Corporation

Kentaro Morita
Deputy Director
Upstream Division (2000-2002)
Ministry of Economy Trade and Industry

Masahisa Naito
Director
Petroleum Planning Division (1985-6)
Ministry of Economy Trade and Industry

Taro Shoji
General Manager
Planning and Research Department
Japan Petroleum Development Association

Shigeru Sudo
Former General Manager
Planning and General Coordination Department
Petroleum Association of Japan

Katsuhiko Suetsugu
Member
Petroleum Council
Ministry of Economy Trade and Industry

Toshiaki Tanaka
Exploration and Production Division
Mitsubishi Oil

Tsutomu Toichi
Managing Director
Institute of Energy Economics Japan

France

Olivier Abadie
Director, Downstream Oil Europe
Cambridge Energy Research Associates

Olivier Appert
Director of Hydrocarbons (1989-1993)
Ministry of Industry

Gilles Bellec
Director of Hydrocarbons (1984-1989)
Ministry of Industry

Rene Chappaz
Chief Executive Officer
Total USA

Bertrand Deroubaix
Vice President
Strategy and Business Intelligence Division
Total

Dominique Finon
Senior Research Fellow
French National Center of Scientific Research

Xavier Preel,
Vice President
Strategy and Business Intelligence Division
Total

Jean du Rusquec
Advisor to the CEO
Total

United States

Charlie Cooke
former Professional Staff Member
United States House Committee on Science and Technology

Maureen Lorenzetti
former Editor in Charge
Energy and Commodities
Reuters

Bob McNally
Advisor (2001-2003)
National Security Council and National Economic Council

Peter Van Doren
Senior Fellow
Cato Institute