

AN APPLICATION OF RATIONAL CHOICE THEORY
TO PETROLEUM POLICIES
IN CANADA, BRITAIN, AND NORWAY

MIRIAM EDWARDS

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Miriam Edwards

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ABSTRACT

The purpose of this dissertation is to demonstrate the applicability of rational choice theory to a comparative analysis of petroleum policies in Canada, the United Kingdom, and Norway. It is assumed that the development of an economically promising resource, such as petroleum, would be amenable to analysis from an economic viewpoint, and that government initiatives in this area might reveal the essential economic interests of the state. If governments are assumed to have similar economic and political objectives (i.e., to attain and retain public office, and to acquire the greatest revenues possible from the exploitation of a depleting natural resource), then it is to be expected that the petroleum policy outputs in various states should be similar. Such differences as do exist should be amenable to explanation by examining the differences in the political constraints and economic situations of the states in question.

This study proposes to model petroleum policy in four areas: state participation, pricing, depletion (including exploration and production policies), and fiscal arrangements, based on the assumptions central to rational choice theory. A comparison of policy outputs in the three case states will illustrate the usefulness of the rational choice approach to comparative policy analysis.

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CHAPTER ONE

RATIONAL CHOICE THEORY AND PETROLEUM POLICY

This dissertation proposes to apply rational choice theory to an examination of petroleum policies in three cases: Canada, Britain, and Norway. The purpose of the study is twofold: firstly, to demonstrate the usefulness of rational choice theory to the comparison of policy output in general; and secondly, to illustrate the similarities and dissimilarities in petroleum policies implemented by various governments within the three case states under examination. There has been no previous comparative study of the development of petroleum policy covering these three cases and the application of rational choice theory within a comparative framework is exceedingly rare.

The thesis comprises six chapters: the first is devoted to rational choice theory and its application to the research project; and the second summarises the historical development of petroleum policies in each of the three case states. With this theoretical and historical information, more detailed analysis of petroleum policy outputs is then undertaken in four chapters dedicated to the main aspects of petroleum policy: state participation, pricing, depletion, and the fiscal regime. While this research neither claims to exhaust all theoretical implications in each of the policy areas nor to describe the minute detail of each aspect of policy development, the usefulness of rational choice theory to studies such as these is demonstrated. The thesis illustrates both the objectives and mechanisms of petroleum policies in the cases examined and points out opportunities for further analysis.

The purpose of this initial chapter is to examine the economic theory of politics, commonly referred to as rational choice or public choice theory, and to demonstrate its applicability to an analysis of petroleum policies. It is assumed that the development of an economically promising resource, such as petroleum, would be amenable to analysis from an economic viewpoint, and that government initiatives in this area might reveal some essential economic interests of the state. Rational choice studies of political action to date have principally focused on constitutional rules, voting theory, bureaucratic behaviour, and the optimality of welfare economics while largely ignoring the policy output of governments and their implications for the validity of the approach. This study treats the development of petroleum resources as the provision of a public good, and models petroleum policy in four areas: state participation, pricing, depletion (including both exploration and production), and fiscal arrangements, based on the assumptions central to rational choice theory.

The effort will be undertaken in four sections. A brief introduction to selected theories of the state will provide some background within which the reader may place the economic theory of the state, outlined in very general terms. Rational choice theory more specifically, and the positive literature which is associated with it, will then be reviewed in some detail in order to demonstrate the way in which the theory has been applied to date. A discussion of public goods will follow within which it will be demonstrated that the development of petroleum resources may appropriately be considered in this manner. Finally, models of petroleum policy in the four areas mentioned above, participation, pricing, depletion, and fiscal arrangements, will be generated using the assumptions

central to rational choice theory. These model policies will then be tested in later chapters against the actual policies implemented in Canada, the United Kingdom, and Norway over the time period 1973 to the present.

In short, this chapter will provide the theoretical framework within which petroleum policies in the three cases will be examined. A deductive approach is adopted with the description of models of petroleum policies being one of the principal efforts to be undertaken from the perspective of political economics. The degree to which petroleum policies differ and the extent to which the policies fit the models should indicate to some degree the applicability of this theoretical approach to the analysis of policy output. In this way, it is believed that the research will contribute positively to political science.

1. SELECTED THEORIES OF THE STATE

At the most basic level, theories of the state may be broadly divided into two categories: those based upon organic conceptions of the collectivity and those based upon individualistic conceptions of the polity. An organic conception of the state implies a view of the collectivity as behaving as an individual might, with interests and motivations uniquely its own, differentiated from those of its constituent members. The realisation of the collective will in all forms^{of} government action and organisation is implicit; individual members of society are in fact parts of this larger whole and subordinate their private interests to the collective cause whenever necessary. Absolute monarchy or fascism might be considered as the

embodiment of this organic conception of the state and it is therefore of little relevance to the study of modern democratic theory.

If the purely organic conception of the state is put to one side, there remain two main types of state theories: those which hold that the state is dominated by one group, excluding the interests of individuals outwith that dominant group; and those in which the state is assumed to be responsive to pressures from all individuals and groups within it. The state in both of these conceptions is an administrative convenience which can be modified as the functions required of it change over time; a facility within which individuals attempt to, first and foremost, realise their own objectives. The collectivist theory of the state assumes that the apparatus of government will become the mechanism by which the dominant group or class will secure its position in society, often utilising the coercive powers of the state as the means by which the other classes may be kept in their relative positions. The individualistic perspective, on the other hand, espouses the position that the collectivity is seen as an organisational form adopted to facilitate the achievement of individual interests. Individuals associate in society to exchange goods and services, and to provide for collective goods when market mechanisms prove unsatisfactory. The most celebrated modern example of a collectivist conception of the state lies in Marxist theory, while individualistic assumptions have spawned another extremely popular conception of collective activity, the liberal theory of pluralism.

The Marxist theory of the state emphasises historical materialism and class relations. The state is seen as the dependent variable manipulated by the dominant economic class in each

historical epoch, rather than as a collection of institutions established and operated by individuals with competing interests. The government becomes a tool for the further oppression of the working class by the bourgeoisie in capitalist society, the "executive committee of the bourgeoisie" as Marx terms it. Furthermore, the government becomes fiscally dependent upon the profits of capital in its taxation relations which make it impossible for the capitalist state to pursue policies antagonistic to the interests of the capitalist class. Parliamentary forms of government only serve to temporarily perpetuate the myth of democracy in contemporary society, while the capitalist system will begin to decay as a result of its own inherent flaws: the market's concentration of capital in large industrial monopolies, and crises associated with overproduction and static markets which will only temporarily be allayed by imperialism. This inherent systemic decadence coupled with the self-consciousness aroused in the working class as a result of its impoverished condition will make the timing ripe for the revolution of the proletariat. Once true communism is established, classes will no longer exist and the state as this instrument of bourgeois oppression will wither away as its functions, the preservation of the dominant class and the perpetuation of false consciousness, become redundant.

Marx's theory assumes the rational pursuit of self-interest on the part of individuals within each economic class in capitalist society; but as Olson points out in The Logic of Collective Action¹, herein lies its inconsistency. Marx asserts that economic self-interest on the part of individual workers will encourage the emergence of the self-consciousness of the proletariat as a subservient class. This self-consciousness, born of economic self-

interest, will provoke the working class into revolt as its natural collective interest surfaces. This revolution along with the decay of capitalism itself will assure the success of the establishment of the classless society. Olson's critique centres on his proposition that the rational individual has no obvious economic incentive to take individual action to realise the interests of his class, and that therefore the emergence of a comprehensive class interest will not prove sufficient provocation for the unified action of all members within the socio-economic group. Even if class consciousness emerges, each individual within the class will, assuming economic self-interest, find it to his advantage if other members in the class produce the required class action from which he will necessarily benefit in any case. The flaw which Olson perceives is the inability of Marxist theory to take seriously the problem of collective action.

The analogy of strike-breaking may provide an appropriate example of this free-rider problem. It may well be in the individual interest of each union worker to strike collectively with his fellow union members against his employer for a higher wage, but it is only in the solidarity of collective action that the strike becomes effective. If one or several union members break the strike in order to secure food for their families or other individual benefits, the strike has no meaning. The employer does not lose the labour which is the only threat the union collective can assert. The strike-breakers can be said to be "free-riding" on the collective solidarity of the union, accepting the benefits that the union offered when the individual costs were not high, but opting out of the collectivity in the hopes of reaping a larger individual reward. "It is natural then that the 'Marxian' revolutions that have taken place have been brought about by small conspiratorial elites that took advantage of

weak governments during periods of social disorganisation. It was not Marx, but Lenin and Trotsky, who provided the theory for this sort of revolution...."² Olson simply asserts that the lack of economic incentives to class action is the lacuna in Marxist theory, given its basic premiss of economic self-interest in capitalist society. In the Marxist view, the state may be seen as a mechanism for the expression of the bourgeois class' self-interest and domination, and in that sense, it may be viewed collectively. However, that the self-interest that Marx suggests will provoke the working class into unified revolution seems questionable to Olson, and consequently he implies that the collective view of the state must also come into question if the premiss of economically self-interested individuals is to be asserted.

Liberal theories of the state are concerned with an individualist perception of society. For example, pluralism "...is the political philosophy which argues that private associations of all kinds and especially labour unions, churches, and cooperatives, should have a larger constitutional role in society, and that the state should not have an unlimited control over the plurality of the private associations."³ Pluralists develop their position from an assertion of the advantages of voluntary association of self-interested individuals, and suggest that the "pluralist sphere" between the individual and the state should be as free from state interference as possible. It is in voluntary associations of all kinds that individuals have their greatest opportunity for influencing government policy and thus furthering their own interests, and the state itself becomes an agency of coordinating these various interests, with legislation reflecting a social consensus of sorts. The corporate state is a development of the

pluralist society and is allegedly based on a hierarchy of competing interest and pressure groups and other non-voluntary forms of representation. Fascist and social catholic corporatists have argued that legislators would be more representative of society if they were chosen from these groups rather than often arbitrarily defined geographical constituencies.

Neo-pluralists are distinguished from classical pluralists by their argument in favour of an increasing role for government in the "pluralist sphere", asserting that "...an advanced technological society cannot be run without an extended role for the state and without moving towards ever more sophisticated types of policy-making machinery, many of them far removed from the fairly simple models of representative government."⁴ On the other hand, neo-conservative thinkers criticise the pluralist position from the opposite point of view: that pluralism fosters the growth of the state, the erosion of market forces by which individual interests can best be realised, and the replacement of legitimate government activity by sophisticated forms of interest bargaining. It is not entirely clear from which point of view the criticism can appropriately be made, as it is not entirely clear exactly how pluralists conceive of the state. Their principal concern appears to be the process of politics rather than the apparatus within which individual and collective objectives are realised.

Both these conceptions of society rely fundamentally on the self-interested action of individuals, yet they result in quite different views of the actual and legitimate function of the state. The current economic view of political activity, rational choice

theory, also commences with the premiss of self-interested individualism, but arrives at a third conception of proper state activity.

Economic theory is developed from the axioms that individuals are self-interested and that a scarcity of resources necessitates trade and exchange between them. The principle of self-interest in micro-economic theory asserts that individuals will enter into trade relationships when, by definition, they see advantage in the exchange. In other words, people will not freely trade of their goods and services unless the bargain benefits them in some tangible way. The private market provides a coercion-free environment in which various individuals with various resources can enter into such trade relationships, each transaction representing benefits to both parties to the exchange. Although the market process itself is coercively supported in the sense that it is based on legally enforced property rights, rules of contract, and so on, its principal functions of allocation of resources, production and exchange are voluntary. In this sense, the private market is considered to be the free market.

In his Economic Theory of Democracy⁵, Downs suggested that traditional economic theory treated government as a disturbing influence upon the beneficial exchanges in the private economy. Government was viewed as a single agent rather than a collection of agencies, the function of which was to maximise social welfare in the absence of the private market's ability to do so (its primary objective being the maximisation of individual welfare through the process of private exchange). As the private market was seen simply as an organisational method of coordinating the exchange of the different resources and interests of individual economic actors, its

proper sphere of activity was seen as excluding issues of interest to the collectivity. The role of the state was to establish the rules of law by which social interaction would be regulated and to provide the means by which the collectivity could benefit from the coordinated provision of what would later be termed public goods. Classical economists therefore viewed the role of the state in an extremely limited way, because they were more concerned about its potential to disrupt the market economy.

Later thought on this issue concerned the question of social welfare itself, and (leaving aside the unresolved debate on the meaning of social welfare) the extent of the state's responsibility to secure some measure of this welfare, however defined, for the benefit of the collectivity. In this debate, the principal concern became the appropriate extent, in principle, of state activity in the provision of social welfare and the efficient fulfilment of this function rather than the realities of government activity. It was assumed that governments were composed of citizens whose only interests lay in the security of collective welfare, regardless of the inherent contradiction of this assumption with the principal economic axiom of individual self interest. In Downs' opinion, it was this failure to consider the motivation of government officials in the terms of self-interested individuals which was the flaw in the classical normative economic schools. "[The] premiss that governments act to maximise social welfare means, in essence, that the men who run it are perfect altruists in so far as their productive actions are concerned."⁶ Clearly the assumption that the government actually does secure the collective good simply because it ought to do so spurred Downs' strict analysis of democratic practice from the economic axioms of self-interest and the value of exchange.

His Economic Theory of Democracy remains a classic in the field. The implications of these two economic principles, individual self-interest and the value of exchange, should be examined as they form the basis upon which rests rational choice theory and literature.

Individualism may be viewed as a normative or methodological concept, and sometimes the two are confused. Normative individualism is concerned with the proper organisation of society in order best to realise the interests of the individual. "Individualism as an analytical method suggests simply that all theorising, all analysis, is resolved finally into considerations faced by the individual person as decision-maker."⁷ Methodological individualism suggests that the fundamental unit in the analysis of human behaviour must be the individual actor. It does not necessarily imply economic rationality, but economic rationality implies methodological individualism.

Economic theory assumes that individuals are rational, which is to say that they can ordinally perceive their interests and actually make choices based upon the possible realisation of their preferred objectives. Rationality concerns the individual's ability to act in his self-interest. In part, these interests will be realised in voluntary market exchanges initiated by individuals with other self-interested individuals, but individual objectives also initiate collective action. The market is the principal means by which individuals transform their interests into realised goals in the processes of pricing, supply quantities, and the subsequent allocation of private resources.

Not all benefits which individuals seek, however, can be provided by the market; hence the need for government. A group of individuals may share a common interest and perceive a better chance

of realising that interest if it acts in unison. This is the basic assumption of social contract theories: that governments are set up by self-interested individuals who perceive the advantages of the social contract and act together to realise its benefits which, in turn, accrue to each of them individually. It is thus apparent that rational men pursuing their disparate individual goals can and do realise the utility of collective action. Social contract theory is the most striking example of normative individualism. By contrast the economic analysis of political activity is based on methodological individualism. The former generates statements about what ought to be the case whereas the latter produces empirical generalisations.

The value of exchange is often expressed as economic utility -- individuals will always attempt to maximise their benefits and minimise the costs necessary to realise those benefits. Costs and benefits are broadly defined, but the most common means by which individual utility is measured is in terms of revealed preferences, in other words, the actual choices which individuals make. The assumption is that individuals will make choices which maximise the chances of realising their preferences whenever possible, while at the same time minimising the possible frustration of their objectives. In each market transaction, for example, both parties are attempting to realise the best possible deal for themselves which ensures that the exchange, provided it is non-coercive, is preferred and freely chosen by both.

Maximising utility is therefore the individual's objective in private transactions, but it is also the case that people will attempt to maximise personal utility in collective associations. However, the benefits of collective activity must be obvious,

otherwise individual participation in associations may have to be coerced. The realisation of collective goods is the reason why associations are formed in the first place. If the provision of a collective benefit is not obvious to the self-interested members of the collectivity, they will attempt to mitigate their costs of participation, even withdraw from participation altogether, in order to attempt to realise some of the collective benefit without incurring any of the individual costs.

This is the free-rider problem of collective action which was alluded to earlier. "The problem with coordinated or collective action, however, is that once the good is optimally supplied, the person then has an incentive to become a free-rider -- to stop producing his share so as not to incur any costs -- unless he is somehow coerced into fulfilling his obligation."⁸ Solutions to the problem may be found in three types of collective organisation: an anarchic situation in which no monopoly of coercive power is granted, a strong leadership (leviathan) in which all coercive power is vested, or the development of norms for the collectivity and some form of self-policing to ensure their enforcement.⁹

2. RATIONAL CHOICE THEORY

Public choice can be defined as the economic study of non-market decisionmaking, or simply the application of economics to political science. The subject matter of public choice is that of political science: the theory of the state, voting rules, voter behaviour, party politics, the bureaucracy, and so on. The methodology of public

choice is that of economics, however. The basic behavioural postulate of public choice, as for economics, is that man is an egoistic, rational, utility maximiser.¹⁰

Public or rational choice theory utilises a deductive method, often in mathematical form, to develop theories concerning political processes and structures which may be open to empirical investigation. It has been applied to the supply of and demand for collective goods, the influence of party competition for votes on government policy, and the behaviour of bureaucratic organisations. There is one notable collection of studies of policy output and behaviour in organisations, Loehr and Sandler's Public Goods and Public Policy¹¹. While much of the positive literature is implicitly in the contractarian tradition, its wide application to a variety of political activities illustrates the usefulness, and some would argue the validity, of the theory.

Rational choice makes several basic assumptions about the individual. "Individual adults, whether private citizens, elected officials or appointed officials of some governments, are assumed to prefer more rather than less of some good or service in order to satisfy their preferences."¹² This proposition of utility maximisation is qualified by two further assumptions: that individuals do not have perfect knowledge of alternatives available to them, and that their preferences can be reordered at different times. They can and do make choices based on considerations of short and longer term utility, and on whether choices are made at the expense of other alternatives. "Individuals are presumed to be rational decision makers when they select the alternative they most

prefer."¹³ Finally, not all individuals have the same scale of preferences nor the same trade-off values between available alternatives.

A very influential embodiment of rational choice principles and methods is found in game theory. "The game" is a mathematical simulation of human behaviour, proposing logical relationships of individual objectives, behaviour, and the game outcome. A strategy represents the way in which a player will act to maximise his utility.

Using the word "game" as a generic term for all abstractions from (conflictual) social interactions, the theory of games is a theory of abstract social interaction. John von Neumann and Osker Morgenstern, the main developers of the theory, describe a game as the totality of the rules that describe it.... The main activity is, of course, the adoption of states of society...which are in turn individual evaluations of concrete outcomes... The main product of the theory about this activity is, therefore, an explanation of payoff configurations.¹⁴

Central to many games is the postulate of a maximin strategy: it is assumed that players will choose the strategy in which the worst possible game outcome is the most utile for them as individuals.¹⁵ In other words, individuals will generally attempt to maximise their personal utility while minimising their personal costs in any game situation. Rawls relies heavily on this postulate in his Theory of Justice¹⁶, which is the most celebrated contemporary example of social contractarian theory.

There are all manner of games representing social interaction. Zero-sum games are games in which the interests of the individual players are in direct opposition such that if one player wins, the other, by definition, loses. Non-zero-sum games are games in which the players share some common interests, and bargaining processes become a significant part of each player's strategy.

Couples is a three-person game about choosing sides, the very essence of political activity. Tallyrand is a five-person game along the same lines. Time-Out is a game in which n-persons play, and players have options to stop the game in order to assess their strategy, and so on.¹⁷ There are two well known non zero-sum games which relate particularly well to later discussions of petroleum policies: Chicken and the Prisoners' Dilemma.

Chicken takes its name from the game of challenge played between two automobile drivers when they drive a collision course with each other, each one hoping the other will swerve away at the last moment. If both continue their course of destruction, the ultimate catastrophe of a collision results -- the worst possible outcome for both players. If they both avoid collision, they both lose face but preserve their lives -- the second best outcome for both. If one player swerves while the other continues his course, the former loses esteem for being the "chicken", while the latter gains points for his courage. This game is represented in the matrix below, where higher numerical values reflect better individual outcomes, and player A's payoffs are listed first for each scenario:

		swerve	B	continue
	swerve		3,3	2,4
A				
	continue		4,2	1,1

Chicken-like games are often evident in situations of adversarial conflict where the competitors are evenly matched.

The most popular and well known game, however, is the Prisoners' Dilemma, a two-person game in which two prisoners who have committed a crime together are offered, individually, incentives to confess. The two prisoners are isolated from each other, and if they both remain silent, they will both receive a short remand period. If one confesses and the other stays silent, the one who confesses will be freed and the silent partner will receive the total prison sentence of thirty years. If they both confess, they will both receive sentences of fifteen years. Clearly, it is in the interests of both prisoners to remain silent, and if a cooperative strategy could be arranged, this is no doubt what they would do. However, both will confess in the belief that no matter what the other does (confess or remain silent), they will not receive the maximum penalty, and may escape without penalty if the other prisoner remains silent.

The paradox of the Prisoners' Dilemma is that self-interested reasoning in this situation will result in a non-optimal outcome. A diagram may usefully illustrate the point, where once again higher numerical values represent better individual outcomes and A's payoffs are listed first for each outcome:

	silence	B	confession
silence	3,3		1,4
A			
confession	4,1		2,2

The Prisoners' Dilemma illustrates the free-rider problem in a concrete way. Both prisoners have the incentive to free ride on the other's silence by letting the other pay the full cost of the crime in serving the full thirty year sentence. Neither prisoner has a private incentive to produce the collective good of silence, even though if they jointly do so, they will both gain. Sen and Hirsch suggest that it is possible to escape the Prisoners' Dilemma "...by responsible behaviour based on an altruistic morality"¹⁸, a normative attempt at mitigating the stark realities of rational choice applications. Another escape from the Prisoners' Dilemma is to play an infinite number of these games, where neither prisoner knows which game will be the last. In this supergame model, the best strategy for each player is to follow the other player's moves, rewarding him for cooperation with cooperation and punishing him for defection with defection. Variations of Prisoners' Dilemma games have been applied to such diverse topics as the question of disarmament and analyses of Hobbes' state of nature. However, the most typical use of the Prisoners' Dilemma in rational choice literature is its exemplification (in n-person application) of the free-rider problem in the provision of public goods.

Rational choice assumptions about goods and services are based upon the proposition that individuals have diverse values for different goods and services. The provision of goods and services to individual consumers may vary along several dimensions: excludability, jointness of supply, and indivisibility, all of which contribute to their respective degrees of "privateness" or "publicness". Excludability refers to the cost of excluding potential users from consumption or enjoyment of the good. For example, a lighthouse is a non-excludable good in that its beacon cannot be exclusively offered to certain ships which pass by the shore, and not to others. Jointness of supply (i.e., jointness of production) concerns the degree to which a given good or service can be supplied by individual producers or is more efficiently provided collectively. An example of a jointly supplied good would be clean air. Finally, the degree to which the good remains available to potential consumers once others have used or enjoyed it is referred to as its indivisibility. Public parks are none the less available to potential consumers no matter how many previous consumers have enjoyed them. Purely private goods are perfectly excludable, not jointly supplied, and perfectly divisible while purely public goods are non-excludable, jointly supplied, and indivisible. In practice, goods and services span the spectrum from purely private goods right through various degrees of privateness and publicness to purely public goods.

These various goods and services are provided through two principal institutions: the market and the government. Both the private and the public sectors have advantages and disadvantages in their respective provision of goods and services. "The market can work reasonably well in providing the desired amount of those goods

and services which are easily packageable, readily divisible and offer the potential consumer some choice in consumption."¹⁹ In these cases, the role of government is limited to that of a neutral referee of the private economy, enforcing the rules of free market exchange while disputes are resolved by the legal and judicial systems. The market will not readily provide goods and services which are non-excludable, jointly supplied, and indivisible -- in other words, collective goods. Because of the tendency of rational individuals to attempt to avoid the joint provision of such goods and services (the free-rider problem already referred to), government is necessary to coerce individuals, by means of taxation or sanctions of some kind, to contribute toward the provision of such collective goods. In these cases, the price mechanism does not operate to signal adjustments of the supply of public goods. Instead, consumer preferences are reflected by the democratic exercise of the vote and by other means of political participation.

Government, from the rational choice perspective, is not therefore seen as an end in itself. Rather, it is a facility which is judged according to its capacity to provide desired collective goods and services at minimal costs to individual members of society. "Various means exist within democratic governments for the articulation of the preferences of individual citizens. Voting, petitioning, lobbying, complaining, demonstrating and other forms of political participation are avenues open in various degrees within governmental institutional arrangements. Such means of participation, as well as migration to capture a different mix of market and collective-consumption goods provided in another community, are inherently costly for an individual to pursue."²⁰ Thus the value of democratic government is explicitly recognised:

private exchange is best facilitated by the free market economy, and public exchange (votes and taxes for public goods) is best served by the democratic organisation and operation of government.

Much of the rational choice literature concerns the cost/benefit analysis of political activity in various forms, and a good example is Hirschman's Exit, Voice and Loyalty²¹. In this study, Hirschman outlines the private market responses of exit (non-consumption or a move to another product) and voice (complaint), and applies these market responses to the political realm. Exit in politics is the concept of voting with the feet, the option of individual citizens to move themselves physically into a different polity so as to enjoy a different range of both private and public goods. Political exit assumes (often unrealistically) full mobility and full knowledge on the part of the individual as to both his present and future communities' provision of desired goods and services. In addition, exit in political terms tends to be viewed undesirably, and is spoken of in the language of desertion, defection, and treason. A much more acceptable and easily employed expression of an undesirable state of affairs lies in political voice. Voice is the political activity undertaken by individual citizens with a view to improving the present polity. It is expressed by voting, political party participation, demonstrations, and all manner of legal and illegal political activity directed at articulating principally dissatisfaction, but also satisfaction, with the system. Hirschman asserts that exit represents the typical economic mechanism by which consumers express dissatisfaction, while voice is the principal method used in the political world. Loyalty, to a product/firm or to a political party/state, is the moderating factor which, to greater

and lesser degrees, inhibits both exit and voice. Hirschman's effort is an interesting and provocative juxtapositioning of market and non-market mechanisms.

Another well known application of normative rational choice theory is in welfare economics, especially in Pareto optimality. "The Pareto criterion states that economic welfare can be said to have increased when one or more members of the group concerned are better off and no one is worse off."²² The economic welfare of the community is consequently thought to be at an optimal level when it is no longer possible to improve the welfare of any individual member of the collectivity without reducing the utility of one or more other members. The Pareto optimum is not a moral standard of economic welfare, but a criterion of efficiency and utility in the allocation of resources. Consequently, any given allocation of resources may be optimal in the Paretian sense while remaining completely unacceptable from a moral point of view. For example, a situation in which the rich become marginally richer while the poor remain at the same level of economic welfare may satisfy the Pareto criterion, but many members of society would argue that it is not just or fair that improvements in economic welfare be limited to the rich. This difficulty has led rational choice theorists to develop other criteria of social welfare.

The Bergson-Samuelson social welfare function postulates that collective welfare is a mathematical function of all the variables that might affect it -- these variables being the preferences and utility orderings of each individual member in the relevant social group. In consequence, its optimal achievement is possible only if the independent variables (the individual members' utilities) are correctly identified and accounted for. "[The] Bergson-Samuelson SWF

must be defined over cardinal, interpersonally comparable individual utility indexes or their equivalent, if a single socially preferred allocation is to be determined. The next question is how these cardinal utilities are to be measured and what form is [the welfare function] to take."²³ Arrow developed the Bergson-Samuelson social welfare function further by suggesting that the collective choice rule which specifies utility orderings for society is the social welfare function. Arrow deduced four seemingly innocuous conditions which the SWF must satisfy in order to satisfy the criteria of minimal rationality and legitimacy: unrestricted domain, the weak Paretian criterion, independence of irrelevant alternatives, and non-dictatorship. He then proceeded to prove mathematically that no one SWF could simultaneously satisfy those conditions.²⁴ The extensive literature on social welfare functions and Paretian optimality demonstrates a normative application of rational choice principles and methods to social welfare evaluation.

Positive public choice theory focuses on political processes and the structures of government. As mentioned previously, the primary objective of government activity is the provision of public goods and services which are not optimally produced by the private market. Democratic methods are assumed to most accurately reflect, in the public sector, the consumer sovereignty and competitive efficiency associated with market processes. Democracy is not, therefore, seen as a normative objective, but rather as the most efficient process of coordinating the various individual interests relating to the provision of collective goods and services. In Schumpeter's definition: "...the democratic method is that institutional

arrangement for arriving at political decisions in which individuals acquire power to decide by means of a competitive struggle for the people's vote."²⁵

Given the economic premises of rational choice thought, the necessary outcome of the democratic process is the functioning of government as the monopoly provider of public goods. However, the economic axiom of individual self-interest applies equally to public as to private individuals, and therefore the actions of government can be assumed to reflect the personal interests of the politicians and officials elected and appointed to serve in a public capacity.

In Albert Breton's (1977) theory of representative democracy, the government is the party in control of the legislature.... The governing party has an objective function, which includes the probability of being reelected, but also can include 'variables' such as personal pecuniary gains, personal power, [the individual politician's] own image in history, [and so on].... To achieve these goals the governing party takes advantage of its position as monopoly supplier of certain highly desired public goods, e.g., defence, police and fire protection, highways.²⁶

Rational choice theorists do not assume that public officials will necessarily act in the collective interest. Rather, they will behave in accordance with their personal interests which will include, first and foremost, the desire to be reelected. Politicians are viewed as political entrepreneurs, anxious to capture public office by uniting with other like-minded individuals in coalitions of political interests known as political parties. The parties then propose platforms of policies which they hope will appeal to a broad

spectrum of voters in the election campaign, with the objective of forming the next government. Votes are exchanged for packages of public goods and services presented in party platforms, and, through whatever collective choice rule is constitutionally accepted, the government is elected. Its action, or inaction as the case may be, in terms of implementing its campaign promises will reflect its security in office, and as the next election approaches it will take measures to improve its public image.

Neither Downs in his Economic Theory of Democracy²⁷ nor Breton in The Economic Theory of Representative Government²⁸ offered empirical evidence for their propositions concerning the economic analysis of politics, but much of the more recent positive rational choice literature indicates that research is consistent with their hypotheses²⁹. Frey and Lau employed the variables of popularity and ideology to illustrate that incumbent parties seek to maximise their utility. They found that high government popularity allowed for pursuit of ideological goals, while low popularity led to abandonment of ideology in favour of short-term policy manipulation. Landes and Posner showed that, in the U.S.A., legislation is preferentially supplied by governments to groups that outbid rival seekers of favours in terms of campaign contributions, votes, implicit promises of future favours, and even bribes.

For the purposes of this thesis, applications of rational choice to more specific questions of collective choice and political behaviour shall be examined. The collective choice rule most often employed in the selection of government is that of majority rule. This rule, according to Sen, satisfies the Pareto principle in addition to Arrow's conditions of social welfare functions³⁰. However, other collective choice rules have been analysed by public

choice theorists as well: the plurality rule, the Condorcet criterion, the Borda count, exhaustive voting, and approval voting³¹. Buchanan and Tullock³² examined the question of collective choice from the process of constitutional design through to interest/pressure group activity in modern democracies. Wicksell³³ has challenged the appropriateness of the majority rule for certain types of collective decisions, suggesting that public expenditures be subject to a unanimity rule. Mueller took this idea a step further by suggesting that "...the collective choice process is confronted with two fundamentally different types of collective decisions to resolve, corresponding to the distinction between allocation and redistribution decisions.... The inherent differences between the underlying characteristics of these two types of decision suggests that they be treated separately conceptually, and as a practical matter that they be resolved by separate and different collective decision processes."³⁴ He proposes that a unanimity rule be used for allocative decisions, and that a majority rule be employed to make redistributive decisions.

A large body of rational choice literature is concerned with the optimality of various electoral mechanisms; for example, the effects on party numbers and voting outcomes as a result of proportional representation as opposed to plurality rules³⁵. Electoral campaigns also lend themselves readily to rational choice analysis. Hotelling developed a spatial model of two-party democracy which fits in well with the premises of rational choice, in which left and right political extremes are driven towards the centre in order to maximise votes. The assumption is that the frequency of voter preferences is

symmetrical and unimodal, a bell curve, and that consequently the utility maximising politician and/or party will attempt to capture modal popularity³⁶.

The free-rider problem of collective action has been applied to the efforts of individual voters to inform themselves during campaigns, and it has been suggested that there is little incentive for the individual voter to incur the costs of gathering political information, and indeed to vote at all when the benefits are not immediately apparent to him. The question of why citizens vote at all is one which troubles public choice theorists. The closeness of the race between the candidates or parties and the opportunity costs of voting are obvious contributing factors, but Ashenfelter and Kelly suggest that a sense of duty or obligation (Hirschman's loyalty?) is a prime motive for voting, with the variables of the greatest quantitative impact being education and indecision³⁷. Finally, on the issue of elections, Tufte postulated and quantified a definite electoral/economic cycle in which growth in the GNP, the reduction of unemployment rates, and increases in real disposable per capita income are cyclically related to elections in both the United States and in twenty-one of twenty-seven democracies examined³⁸. Tufte suggests that if voters made the connection between the electoral and economic cycles, their voting decisions would be strongly influenced, and he recommends the desynchronisation of the economic and electoral calendars along with public exposure to the political manipulation of the economy.

Rational choice theory also offers analyses of fiscal arrangements in federal states. "Since federalism, prima facie, disperses at least some authority between national and regional units of government, we would therefore expect performance in the provision of goods and services to be higher under federal than under unitary systems of government, other things being equal."³⁹ Oates⁴⁰ examined the relative strengths of highly centralised and decentralised states, concluding that from an economic point of view, federalism represents the optimal form of government. The debate on fiscal federalism is thus focused on the appropriate degree of decentralisation of a particular public sector. Perfect correspondence, i.e. the case when the jurisdiction that provides the public good corresponds exactly to the community of individuals who consume the good, is the ideal federal arrangement in terms of the provision of public goods. The more centralised a state, the less likely is the occurrence of perfect correspondence and the greater the potential for conflict between governmental levels; although in federal constitutions, different levels of government with specific areas of exclusive jurisdiction make possible the optimal provision of collective goods in various regions of the state.

Public expenditure has also been analysed by rational choice theorists. In the theory of public expenditure developed from economic principles, taxes are seen as the price paid for the provision of collective goods. "In barest essence the argument is that since demands of different individuals for a collective good are complementary rather than competitive, we can add the willingness to pay of different individuals and if the aggregate sum exceeds the costs, the good is worth producing. For all quantities for which

this is true, there exists a tax policy which would collect levels of taxes sufficient to cover marginal costs, and still leave all citizens satisfied."⁴¹ The growth of public spending is consequently explained by a burgeoning demand on the part of members of societies for goods and services to be collectively provided by governments. Increasingly affluent voters are more and more prepared to support public expenditures⁴², and it may be expected that in times of economic recession, the demand for public goods will fall and public expenditures will come under increasing criticism. Taxation policies will vary according to the state of the economy which, in turn, influences public support for the government and demand for its provision of collective goods.

Related to the question of public expenditure is the behaviour of the government bureaucracy in its roles as allocator and consumer of government revenues.

Because the personnel of government, as well as the individual citizen, are assumed to act, within the limits of imperfect information, on the basis of their own interests, public choice analysts view governmental institutions and public offices as merely sets of often rival collective facilities and offices for the pursuit of collective as well as individual interests. It does not assume, as does much conventional writing, that elected officials ... are omnipotent and thus have the capacity and authority to establish the preferred states of affairs for their citizenry.⁴³

The use of rational choice principles in an analysis of bureaucratic behaviour is an extremely valuable application of this theory. "Once the government ... decide[s] what government outputs are to be provided and in what quantities, they must actually be bought. Although some government outputs are bought directly from private industry, most government funds are channelled through a public bureaucracy."⁴⁴ Downs suggested that the non-market nature of bureaucratic production meant that it would necessarily be activity-orientated rather than output-orientated. As bureaucratic budgets are defined by activities, Niskanen⁴⁵ developed a theory of bureaucratic behaviour centred on the principle of budget maximisation through increased bureaucratic activity as the primary objective of the utility-maximising bureaucrat.

Bureaucracies have a single sponsor in that the legislature is the sole provider of funds through the budget and the bureaucracy is the sole provider of almost all public goods. There is therefore a bilateral monopoly. "The usual reason for granting a bureau a monopoly on the provision of a given service is to avoid wasteful duplication ... [but] the monopoly nature of most bureaus also frees them from competitive pressure to be efficient, and denies the funding agency an alternative source of information by which to gauge the efficiency of monopolist bureaus...."⁴⁶ The inability of the sponsor to monitor the efficiency of bureaucratic output implies that bureaus can focus upon activity, rather than output, as a primary means of justifying budgetary expansion. Consequently, bureaucratic agents will perceive their maximum utility in the continuing expansion of their budget, which, it is presumed, justifies the continuing monopoly position of the bureau, enhances the salaries and personal prestige of the bureaucrats, and even expands their base of

power and influence. Increases in bureaucratic activity become the justification for budget increases, and consequently an expansionary cycle of budget increases and activity increases is established, without any relation to efficiency of production, which in turn further consolidates the bilateral monopoly relationship of the bureau and its sponsor. Niskanen recommends the replacement of the present bureaucratic system of public goods provision with a more competitive bureaucracy which may, he acknowledges, appear less orderly, but which would also be less oppressive, less political, and more efficient than the present structure. He also suggests economic incentives be implemented to reward senior bureaucrats for efficiency by inducing them to maximise the difference between their budgets and the minimum total costs of the service provided -- a kind of modified profit scheme in which they might have a personal stake.⁴⁷ He concludes that "[the] superior performance of market institutions is not due to their use of better or more analysis.... The primary differences in the performance of difference organisations are due, rather, to differences in their structure and the incentives of their managers."⁴⁸

This argument illustrates a general point made by Bosanquet. He notes that rational choice theory has become strongly associated with the New Right, although its original proponents, Downs and Breton, could hardly be considered a priori right-wing thinkers. "Nearly all the main practitioners are of the liberal school, and their findings have been used to support the crusade against big government.... Lately there has been a major shift in the direction of interest from the demand side of the political market to the supply side. The main

interest was once in how voters and parties make choices about public goods; now it is the economics of bureaucracy, and in the supply-driven momentum to the growth of government spending."⁴⁹

This survey of the literature shows that there are many applications of both normative and positive rational choice theory. Several of these applications are directly relevant to the formulation and implementation of petroleum policies, but the area of public choice most relevant to policy output studies is that of public goods theory.

3. PUBLIC GOODS

A. Public Goods Theory

Public goods theory is one aspect of rational choice thought which, according to Hanson, has not been utilised to its full extent in political analysis. It has most frequently been used to illustrate the functions of collective organisations rather than to analyse policy output. "The abstract nature of public goods makes it difficult for political analysts to incorporate it into their research repertoire without investing time and effort in understanding the economic principles behind the concept."⁵⁰ The result is that most positive rational choice efforts have concentrated on coalition theory, electoral competition, and the paradox of voting.

Pure public or collective or social goods are those goods and services characterised by non-excludability, jointness of supply and indivisibility. In other words, their provision cannot exclude certain members of the collectivity from consumption, they are not

produced by the private market but are produced collectively, and they are non-packageable, which is to say that their provision is in its entirety -- the good cannot be consumed in part. "The distinguishing characteristic of these goods is not only that they can be consumed by everyone, but that there is no escape from consuming them unless one were to leave the community in which they are provided."⁵¹ Public goods can in some cases be thought of by certain members of the society as public evils. The provision of nuclear defence capabilities, for example, may be thought by certain individuals within the state to be a public good while others consider it a public evil. Just as there may be free-riders on collective goods, there may also be forced-riders, as Loehr and Sandler term them⁵². The point is that once provided, no matter whether viewed positively or negatively by various individuals, public goods become available to all members of the collective group.

Private goods in contrast are excludable, privately supplied, and divisible. Consumption by one person necessarily excludes the simultaneous consumption of the particular good by another person, they are privately supplied and demanded via the market exchange economy, and they are by definition packageable. As mentioned earlier, there is a broad spectrum of degrees of "privateness" and "publicness" in goods and services, but usually goods are thought of as public if they are jointly supplied and if it is not cost-effective to exclude some people from their consumption.

While private goods are provided by the market, public goods are supplied by the collective organisation responsible which, in the case of public policy, is the government. Because individual members of society are rationally self-interested, they will attempt to free-ride on the collective provision of public goods. The state

therefore assumes a degree of coercive power in the form of taxation or other sanctions in order to secure the contribution of all members to the provision of the collective good. The free-rider problem of collective action manifests itself in all manner of individual behaviour, a good example being the almost universal attempts to evade taxes on the part of most citizens in most modern democracies.

The normative debate on public goods provision concerns whether particular goods and services ought to be provided publicly. "[Public goods] are not susceptible to market allocation in the traditional economic sense because they cannot easily be distributed according to the ways in which people can contribute resources towards their costs. The solutions to this problem of traditional market failure are political...."⁵³ The problem of public goods is one aspect of a wider debate on market failure, and it should be remembered that the publicness of a good to be provided is not the only reason for government intervention. There is a much wider debate to be had about the public provision of goods and services. "Among the positive issues that underlie the normative debate ... are (1) whether private market alternatives to public provision are impossible, impractical, merely costly or simply unwanted; (2) why the market solution is unsatisfactory to members of the group and to society as a whole; and (3) the identity of the group of beneficiaries."⁵⁴ Policy studies begin with an analysis of the first of these issues: the various reasons why the private market cannot, does not, or should not provide certain types of collective goods and services.

Market failure is a concept which refers to a number of situations in which the private market will not allocate resources in the way in which an ideal mechanism would. Sources of market failure

include not only the non-excludability of collective goods, but also decreasing costs, externalities, non-marketability, and uncertainty⁵⁵. The situation of decreasing costs refers to the emergence of a few large-scale (monopoly-like) producers. Often in these cases, the industry in question is taken into public ownership: price and production levels are set differently than they would be by the private monopolist, usually at levels sufficient to more than satisfy marginal costs. The problem of externalities becomes manifest when one individual's consumption or use of a given good directly affects, whether positively or negatively, other individuals. The most common example of an obvious externality is pollution. In this case, governments are often required to regulate the use of the externality-producing activity in such a way as to mitigate its negative effects upon those who do not benefit from it. Non-marketability refers to the market situation where individuals wish to exchange, but find that appropriate markets simply do not exist. An example might be the establishment of broadcasting networks in the far reaches of northern Canada. In cases such as these, governments usually establish public corporations to service these markets which would not yield a return sufficient to encourage private investment. Uncertainty results from a lack of information regarding future circumstances, and consequently inhibits private market investment in certain activities. Governments often become involved in insuring against risks in areas such as the provision of public health care insurance and so on. In all of these cases of market failure, the state may be required to provide for a public good or service which is desired by the collectivity, but is not adequately, if at all, provided by the market exchange economy.

However, market failure by itself is not necessarily the only reason for government intervention. Socialist governments intervene to override private markets because of ideological hostility to private market provision as such, rather than to ameliorate a situation of market failure. In cases of collectively-owned resources, the assumption made by socialists is that the private market cannot be trusted to develop optimally and produce the good for the benefit of the collectivity as a whole. Private industry, it is argued, acts on the basis of self-interest, and the establishment of state corporations in strategic sectors of the economy indicates the belief that only through public participation will collective interests be realised. In these circumstances, rational choice theorists suggest that "[g]overnment is also a major producer of externalities."⁵⁶

The policy instruments which governments employ to mitigate the effects of market failures are the provision of public goods (financed by taxes levied on members of the collectivity), the fiscal system (the imposition of taxes and subsidies), and the legal system (the regulation of social and economic activities).⁵⁷ Robinson cautions that if government is to improve upon market performance, it must: (1) be able to forecast the difference in outcomes between intervention and the maintenance of the status quo, and that this difference must be positive; (2) formulate the national interest objectives to reflect society's preferences; (3) develop workable policies in the national interest thus defined; and (4) be willing to subordinate its own interests to the national interest in order to implement effectively the desired policies.⁵⁸

To summarise, the theory of public goods is based on the economic assumptions of rational, self-interested individuals and the value of exchange. It will be in the interests of individuals to unite to provide collectively for goods which have individual utility but which are not provided by the private market, goods which have higher degrees of non-excludability and indivisibility and which lend themselves to collective supply. Because of the free rider tendency, collective organisations are granted by their members certain powers of coercion to assure the contribution of all members towards the provision of the collective benefit. This is the case with government. The state is viewed in rational choice theory as a collective organisation, the primary function of which is to provide desired social goods and services to its members. Politicians are political entrepreneurs who compete for the opportunity to provide public goods at a profit by forming coalitions which we term political parties. Parties offer packages of policies which they hope will appeal to a broad spectrum of voters in the effort to trade votes for public goods; but once in office, they will be faced with a whole range of opportunities and demands for the provision of public goods both consistent with and outwith their electoral platforms. The actual public goods and services the government chooses to supply are reflected in the public policies it initiates. In this way, public goods theory may be applied directly to the analysis of government petroleum policy.

B. Petroleum and Public Goods

Buchanan asserts that the highly restrictive classical definition of pure public goods, that is total non-excludability, does not apply to most public goods because they tend to share a degree of non-

excludability⁵⁹. Partial non-excludability is acknowledged when it is assumed that there is a specified and identifiable group within society which will be the beneficiaries of a specific policy measure. The origin of the collective good thus becomes the focus of defining its publicness.

The Marshallian theory of the joint supply of public goods makes clear the case for examining petroleum policy in this way.

For the Marshallian theory the jointness of supply arises because of the technological conditions of producing, not because of the technological conditions of consuming, as in the [classical] public goods case. However, as we shall demonstrate, the results that emerge from analysis are identical in the two models.

His classical example involved the joint supply of meat and leather, to which he added wool and mutton, wheat and straw.... The producer or supplier of bullocks simultaneously meets two separate demands, that for meat and that for leather or hides. These final products, desired by different demanders, are jointly supplied in the process of breeding ... steers....

Concentration on the Marshallian theory of joint supply allows several features of the public goods problem to be clarified.... [A]ny good or service can be treated as a purely public good, provided that it is organised through an institutional structure embodying the extreme publicness features.⁶⁰

Marshall made two points about the production of goods which are relevant to the discussion of petroleum resources and public goods. Firstly, he postulated that the concept of jointness of supply is

produced by the technology of production, rather than conditions of consumption. In this way, Buchanan argued, any good or service which is produced collectively may be considered as a pure public good as long as it is organised through a public institutional structure. Marshall's second point focused on the technology of production in a different sense: more than one good may be produced simultaneously in a single productive endeavor.

The development of petroleum resources may be considered in this way. As a natural resource, petroleum (crude oil and natural gas) is generally owned by the collectivity and the state administers its exploration, production, and sale. Its exploitation is organised and regulated by public institutions with the presumption that collective benefits will accrue to the owners of the resource, the public. However, petroleum exploitation yields necessarily two types of product: the private good of petroleum, which may or may not be sold on the private market at a regulated or non-regulated price; and the collective good of the opportunity of increased state revenues which would accrue to the government by virtue of its ownership of the resource and the taxation or levy imposed on resultant revenues. This revenue is produced by private and public companies operating under the policies determined by the state. Once produced it is, in a rather complicated sense, necessarily available for the benefit of the collectivity; i.e., it is non-excludable. These additional revenues directly benefit every taxpayer in the state by reducing their respective tax burdens in real terms.

Collective ownership of petroleum resources is generally justified in terms of its strategic and economic importance to the state as a whole. The socialist assumption is that the people should exercise collective control over its exploitation in order to

maximise the benefits, while at the same time minimising negative externalities which might seriously damage the performance of the economy in other sectors. Because of its strategic importance, petroleum exploitation must not be left to the self-interested determination of private companies in pursuit of maximum profit. However, even if socialist antipathy toward private market exploitation of important resources is rejected, aspects of market failure may justify state intervention on other grounds.

In the case of the private production of petroleum, state intervention in the form of public participation via the establishment of a national petroleum company has frequently been justified in the terms of decreasing costs. A few large multinational corporations dominated the international petroleum market prior to the OPEC pricing revolution of 1973/74; since then, there has been a different form of oligopoly through OPEC which continued until very recently. Many governments with petroleum resources have set up public petroleum corporations in order to influence the development and trade of those resources in addition to securing information useful to the optimal development of petroleum policy in other areas. This has been the case in all three of the countries under study: Canada, the United Kingdom, and Norway. Government ownership and control of natural resource exploitation through direct industrial participation has been a common and widely acceptable mechanism employed by states in the attempt to mitigate problems arising from the domination of the international petroleum market by an oligopoly.

Another area of government policy which concerns petroleum as a private good is the establishment of prices for the product. As a natural resource, petroleum pricing may be, but is not necessarily,

subject to government controls. Governments may choose to allow the price of petroleum produced within their territories to fluctuate along with the international price level, or they may find greater utility in determining a price below international levels in order to secure certain benefits for the consumers of the product. Conversely, a price set above the international level may be useful in the encouragement of conservation of the resource. Pricing policy of the private product is sometimes justified in the socialist terms of the necessity of collective ownership, but there are obvious external effects on the economy resultant from various petroleum price levels which may also be of concern to governments. For example: large influxes of revenues into the producing economy as a result of high prices may have serious inflationary effects; as the major source of energy, petroleum prices affect the performance of virtually all other sectors of the economy; petroleum prices influence the value of the currency, the balance of payments, the prices and economic competitiveness of other fuel sources, to mention but a few external effects. In short, concerns over economic and fiscal destabilisation which might result from different price levels are of major importance to the governments of petroleum-producing states.

On the question of the collective benefits which derive from petroleum exploitation are several issues of crucial interest to the analysis of government policy in this field. Firstly, exploration and production policies, commonly referred to as depletion policies, can have major impact upon both the public goods aspect of petroleum exploitation and the market failures of external economic and fiscal effects. The public good of increased or decreased opportunities to derive state revenues from exploitation, both in the short and longer

terms, is directly related to the rate of extraction of the resource simply because tax revenue depends, in part, on the rate of extraction. Positive and negative externalities arising from petroleum exploitation can also be modified to a certain degree by enhancing or restricting rates of exploration and production. Consequently, depletion policy is an extremely important mechanism by which governments control the impact of petroleum development and revenues derived from it.

Secondly, the fiscal arrangements concerning petroleum exploitation yield tremendous financial resources to governments, and the manipulation of the fiscal regime in addition to the disposal of these revenues must necessarily indicate government assumptions of economic utility. The fiscal arrangements include taxes levied by governments both as owners of the resource (royalties), and for shares of the profit accruing from the production of the private good. Economic incentives and disincentives to invest in the industry and all manner of acquisition and disposal of government petroleum revenues are of interest in this policy area. Economic development programs based on petroleum revenues are also of considerable importance and depend on the successful capture of economic rent by the fiscal regime. Government efforts in these financial areas must be directed toward leaving the private industry sufficient economic incentive (profit) to continue investing in petroleum development while simultaneously obtaining for collective benefit the maximum possible revenues from the exploitation of its natural resource.

Looking at the exploitation of petroleum as the provision of a public good and as the management of market failures is therefore justified on several counts. Firstly, public policy in general may

usefully be analysed using the concept of "public good" defined in its broadest sense. Secondly, petroleum exploitation yields two types of goods in the Marshallian sense of joint production: the private product of petroleum and the collective good of increased government ^{revenues.} There are also the positive and negative externalities of petroleum exploitation which have economic and fiscal implications for the state. These result in policies such as government ownership and control of the industry itself, regulation or non-regulation of petroleum pricing, depletion policy, and the fiscal policies. This study therefore proposes to examine petroleum policy outputs in each of these areas. The next task is to outline what types of policies in these four areas might be expected if it is assumed that governments are indeed economic utility maximisers, constrained in their activity by public opinion and regular elections.

4. MODELS OF PETROLEUM POLICY

Theorists use models to identify general principles of interaction, empirically observable in the real world. Models should test the validity of these principles and suggest modifications to them in the light of evidence gathered by empirical research. The evidence may also challenge the validity of the models themselves and the assumptions on which they are based. Consequently, modelling may be seen to comprise three distinct aspects: the generation of general principles, analysis in the light of empirical evidence, and conclusions. "Assumptions may or may not be 'descriptive' or 'realistic', as these words are ordinarily used. In many cases the 'unrealism' of assumptions causes the models to be rejected before

the conclusions are examined and tested. Fundamentally, the only test for 'realism' of assumptions lies in the applicability of the conclusions [to the real world]."⁶¹

In attempting to model petroleum policies in rational choice terms, the basic assumptions employed will be those of economic rationality, self-interested individuals, and the perceived value of exchange, which have led to the view of government as a collective organisation for the provision of public goods. Rational choice assumptions concerning the fundamental interests of political actors and bureaucrats will be presumed to dominate government action. Petroleum exploitation is assumed to provide both private and public goods, and incidentally to produce externalities. In the light of these assumptions, government policies will be examined in four main areas of interest: government participation in the industry, pricing policy, depletion policy, and fiscal arrangements.

It is further assumed that both the private industry and the public have interests in the exploitation of petroleum which do not always correspond with those of the government. The oil companies, it is assumed, are intrinsically interested in reaping the maximum economic benefit, both in the short and medium term, from the production of petroleum. Consequently, the strategic interests of the private firms in the petroleum industry must be minimal government interference. Broadly speaking, they will seek to minimise government participation in the industry, favour pricing regulations which maximise company profits, oppose depletion policy, and propose fiscal arrangements of minimal taxation and maximum exploration and production incentives. However, there may be conflicts of interest between the major multinational corporations and those of the independent and/or domestic firms.

One further assumption should be noted concerning the concept of the public interest. The public interest may have two meanings -- that which is in the interest of, i.e., to the benefit of, the collectivity, or the degree of interest expressed in public opinion or manifestations of public concern. The former conception of public interest may appear to be paramount in the government's setting of priorities in petroleum policies but, according to rational choice theory, the latter may be more significant, especially as an election approaches. The public may, of course, be largely indifferent to specific policy measures although the measures undoubtedly affect various interests including petroleum producers, consumers, and the electorate, to name but a few. Public opinion may favour state participation in the industry to prevent major oil companies alone reaping the rewards of production and charging high prices for the product. Indeed, the public is likely to have a keen interest in the lowest possible prices and neither depletion policy nor the specifics of the fiscal regime is likely to be of great concern to the majority of voters. A significant degree of public interest is probable in such matters as the government's management of external effects on the balance of trade, the value of the currency, and its use of revenues which accrue from petroleum production. Government policy in each of the four specialised areas is therefore influenced to greater and lesser degrees, depending upon proximity to the next election and realistic policy alternatives, by the interests of both the private industry and by the public.

These assumptions suggest both likely state objectives and the mechanisms employed to realise those objectives with regard to a rapidly-depletable and financially valuable natural resource. The rational choice perspective on government and political behaviour

will be used to assess the similarities and dissimilarities in policy measures taken by the three case states, Canada, the United Kingdom, and Norway. If public choice assumptions about economic rationality are correct, petroleum policies in the three case countries will be broadly similar because all actors involved will be pursuing the maximisation of self-interest in each state and each situation; the independent variable remains the resource itself. Such differences as do occur should be the result of varying political situations and should be able to be accommodated within the theory.

A. State Participation in the Industry

"Because of the shortages that have occurred in petroleum products and the sharply rising energy price levels since 1972, consumers are unhappy with various segments of the energy industry. Given this general dissatisfaction, political appeals for increased regulation and even public ownership are more frequently voiced and welcomed by an irate public."⁶² Prior to the OPEC price crisis of 1973, the public perception of the oil industry was that of dominance by the major multinational petroleum companies, the seven sisters. Since OPEC asserted its power as the cartel-like organisation of the non-communist world's largest petroleum exporting governments, its control of the international market has, until recently, been the focus of public concern. In both periods, there seemed to be a large body of public support for state intervention in the petroleum industry in order to control externalities associated with oligopolistic control of a major energy industry.

The public demand for greater government participation in the development of state petroleum resources, however, does not distinguish too precisely between the concepts of ownership and

control. Governments can participate in the petroleum industry by buying equity in existing petroleum companies, as did the British government with British Petroleum (then Anglo-Persian) in the First World War when the First Lord of the Admiralty, Winston Churchill, wished to secure petroleum supplies for naval use.⁶³ By assuming a 51% ownership of BP, the government gained access to petroleum supplies in the case of a shortage, yet did not attempt to control the firm's activities when they were unrelated to military security. Obviously, government ownership can be extended by outright nationalisation of all petroleum companies operating within the state's territories. Alternatively a national petroleum company may be established with participation rights in all petroleum activity undertaken within the state's boundaries. Neither of these exercises in government ownership, however, guarantees government control over the industry. Control is exercised and maintained principally through the regulations which govern all aspects of petroleum activity within the state. The implementation of petroleum policies at all stages of exploration, development, production, and marketing is a more precise indicator of government control over petroleum resources.

In short, there appear to be three major policy options which could be pursued by producer governments in the field of participation in the petroleum industry, all of which could secure a degree of stability and control in an oligopolistic petroleum market. In the first case, state ownership may be limited to the resource itself and control will thus be exercised only through the regulation of production and the imposition of taxes. In other words, the private industry can be left to produce the resource according to government regulations formulated with stability of price and

security of supply as the principal objectives. If the private market option is rejected as insufficiently secure, nationalisation measures may be introduced and these may vary from military state holding through to outright government ownership. Finally, governments could choose to establish national petroleum companies.

It should, however, be emphasised that "[e]conomic nationalism is not a costless indulgence."⁶⁴ There are compelling reasons for governments to participate directly in the petroleum industry, some of which have already been outlined in the discussion of market failure. Other advantages offered by direct government participation in the industry are related to the information gained which is useful to the formulation of energy policy. Equity ownership is a less noticeable form of participation and it may afford less effective control than the creation of a state petroleum company. On the other hand, outright nationalisation of an entire industry is a politically charged action which provokes a high degree of uncertainty in the given market. Public petroleum corporations offer the advantages of high public profile and direct industrial participation which can be highly effective in terms of policy implementation. In addition, depending on the scope of their mandate, public petroleum corporations can also directly influence production and pricing levels in ways less obvious to the public than government direction provided that they are granted either participation or buying-in rights in the state's oil fields.

Rational choice theory would predict that state participation in the petroleum industry will be increased in response to strategic concerns (as was the case with the British government in the First World War), public pressures for increased state presence in the industry, or when the government wishes to secure more information

regarding the actual state of the industry in order to shape its policies and capture the greatest benefits possible from the exploitation of the resource. If public opinion is not favourably disposed toward explicit government efforts in the direction of nationalisation, state ownership and control will be exerted through increased regulation in other areas of petroleum policy or in equity ownership. However, if the issue of collective ownership and control of the petroleum industry has become a public concern, it is likely that participation will be more direct and will take the form of the establishment of a state petroleum company.

Bearing this in mind, it is possible that the interests of political actors can best be served with any of the three policy options, depending on the public climate at a given time and the proximity to the next election. However, a budget-maximising bureaucracy is far more likely to be disposed toward the establishment of a public petroleum corporation with a wide range of responsibilities in terms of the maximisation of bureaucratic activity which that option affords. On the other hand, the private petroleum industry would not support the establishment of a public corporation, wishing to retain its monopoly on industrial information and thus secure for itself the most important consultative role in policy formulation. Within the industry, the major multinational oil companies could be expected consistently to resist the establishment of national petroleum companies, while smaller independent companies might favour their creation if their mandate included the encouragement of independent activity as, for example, in participation agreements. The public's concerns would likely focus on the insecurities associated with oligopolistic petroleum price and supply, and in times of uncertainty in the international petroleum

market, public opinion will favour the immediate establishment of state petroleum corporations with broad control over the industry. In periods of relative stability, the interest of the public is less likely to focus on state corporations.

State participation in the petroleum industry is less important in terms of government control than public policy concerning petroleum resource development. Rational choice theory suggests that government control in any given jurisdiction will be augmented when that policy area exhibits a lacuna of state control or potential for further state utility as a result of increased control. State participation in the petroleum industry is generally associated with public ownership, but effective control is expressed by the breadth and detail of regulations affecting the development of petroleum resources.

B. Pricing Policy

The supply and demand for goods and services exchanged in the private market are determined by price. In the case of public goods, no such price mechanism operates in the allocation of resources; rather, programs of public goods are selected through elections and the selection of a government.

However, in the case of petroleum, two types of goods are produced in the exploitation of the resource -- both the private good of the petroleum product and the collective good of increased government revenues. In addition there are the externalities associated with each. Since the OPEC-induced price shocks of the 1970s, pricing policies for the private product have come to be of great concern to governments of producing countries. There appear to be two main pricing policy options: determination by the

international market, or determination by government through various mechanisms such as the establishment of price schedules or via public corporation activity.

The decision of states to allow the price of petroleum produced by private and public firms within their territories to fluctuate along with the international market indicated until recently a willingness to allow OPEC initiatives to determine the price of petroleum. Government regulation of prices, on the other hand, demands evaluation and decision regarding the relative utility of a price set below the international market value (a benefit to consumers) or above the international market value (a benefit to producers). Lower prices automatically lower reserve standings, as the economic cost of developing any geological prospect determines the viability of petroleum production, and vice versa for higher prices. Various price levels also affect the world petroleum market itself, the value of the producing country's currency, and production costs elsewhere in the economy. Price levels can be established by government determination of schedules or more implicitly by the activities of a public petroleum corporation, if it is given the responsibility for purchasing and distributing a large proportion of petroleum production within state territories.

Price regulation, or non-regulation as the case may be, therefore indicates how the government wishes to control the price of the petroleum and which group it wishes to benefit. It must also be remembered that price levels may be more subtly controlled through production levels -- increased production (supply) will depress the market price of the product, while production cutbacks will lead to price appreciation if products cannot be purchased elsewhere.



The utility-maximising government would be concerned with the pricing of its petroleum resources on four fronts: firstly, with the economic and fiscal effects of various price levels on the economy as a whole, the domestic currency, and the international petroleum marketplace which in turn affects acceptable price levels within the state; secondly, with regard to the implications various price levels will have for the development of its resources; thirdly, with the revenues it can realise at differing price levels; and fourthly, with the effect of government-determined price levels and their external effects on its electoral popularity. It would be expected that secure governments would be more likely to set prices at high levels in order to realise maximum development and financial potential within the period of their office, while insecure governments would be more favourably disposed to lower price levels in order to boost electoral support. It could well be that pricing policies may be related to the electoral cycle. Governments which do not directly set the price of petroleum products may implicitly and consciously be doing so in their depletion policies, while governments truly uninvolved in price setting are illustrating their faith in the optimal allocation of resources by the international petroleum market.

Politicians may favour any of the policy options depending upon the conditions in which the decision has to be made. If an election is approaching, concerns which focus on satisfying consumer demands for the lowest possible price are likely to be foremost in the minds of political actors, and this may conflict with bureaucratic interests in maximising budgets and policy control which indicate disposition towards price schedules or public corporation determination. The private petroleum industry could be expected to

favour price levels which would increase its profit and provide incentives to explore for and extract petroleum. Here again the major companies and the independents may differ in their interests. It might be expected that the industry as a whole would favour the international market determination of price, but in fact it may desire government control over prices in periods of international price decline to mitigate investment uncertainty. It is unlikely that in any situation the private industry would be supportive of a pricing scheme in which domestic prices are held below international levels, as the opportunity costs both in terms of immediate profit and incentive to invest would appear unreasonable. The public would likely favour any policy which minimises the consumer price of fuels, regardless of longer term effects on output or security of supply.

C. Depletion Policy

Depletion policies are an extremely important indicator of the way in which a government views the value of petroleum and the length of time it expects to have the resource at its disposal. Slower rates of depletion indicate a concern for conservation, while policies which encourage rapid exploration and maximum production imply urgent need on the part of the government for immediate benefits, or perhaps indicate an optimism with regard to geological and technological prospects.

Government control of depletion of the resource is related both to price, as illustrated in the discussion of pricing policy, and to the assumption that the private industry's discount rate may be higher than the social discount rate.⁶⁵ That is to say that petroleum companies may not have the same appreciation for the value of the resource as do governments, and that

consequently they will produce the resource at maximum levels without due regard to social interests in conservation, the socio-economic impact of rapid development, and increasing scarcity. Governments are better able to view the development of petroleum resources within an overall energy strategy and, having the regulatory control over the production of the resource, can use that control to moderate the depletion rate. If governments are indeed the omniscient and altruistic organisations assumed by old-fashioned welfare economists, operating to maximise social welfare, depletion rates more conservative than those desired by the industry would be typical of all governments.

A modified price appreciation model demonstrates the assumptions underlying depletion policy. "[The] net present value maximising oil producer is interested in two things: prospective net price appreciation [P] which is the return on oil kept in the ground, and the return he can expect to earn on other investments [I]. If P is greater than I, ... oil will tend to be held in the ground so that planned output programmes will tend to be reduced. If P is less than I, output will tend to be increased."⁶⁶

If we accept the premises of rational choice theory, it seems obvious that this model of oil producer behaviour could apply equally well to both private oil companies in individual fields as to governments evaluating the entire petroleum resource situation within their jurisdiction. In this way, the implementation or avoidance of depletion control indicates the ways in which the government views the prospects for price appreciation of the resource in relation to other investments it can make more immediately. Governments which allow rapid rates of depletion may be assuming the greater utility of having cash resources immediately at their disposal, which would not

be surprising given the short time horizons of each term of office. In these cases, governments may be expected to have higher discount rates than those of the private industry, which, it is assumed, wishes to be operating profitably for much longer than a four or five year period. Governments with more conservative depletion rates may be assuming greater utility to result from the slower development of the resource. This could arise as a result of a variety of considerations -- perhaps such governments do not suffer from immediate financial constraints, or perhaps the social and economic impact of rapid petroleum development and the ensuing flood of capital into the economy would pose severe management problems for them.

Depletion policy can indicate these various orderings of utility for any given government, but it must be remembered that depletion policy can be implemented in two principal ways: through regulation of production levels and also through the regulation of exploration activity. The means by which various governments choose to regulate depletion may also indicate something of their interests in terms of their desire to be seen as controlling the pace of either exploration or production, and/or the difficulty they associate with each task.

In terms of major policy options, governments could choose to disregard depletion policy altogether, leaving production levels to the private industry and assuming efficient investment in future energy sources as a result. On the other hand, depletion policies, as mentioned, can be implemented effectively either through licensing mechanisms which allow for exploration, or through production controls on petroleum development. Furthermore, licensing for exploration leases can be undertaken in two principal ways: either

through the discretionary allocation of licences by the bureaucracy, or by competitive auction for leases in which private companies make bids for exploration territories.

While politicians may be indifferent to the actual means by which exploration licences are allocated, bureaucrats and petroleum companies would have keen interests in which type of scheme is employed. Bureaucrats could be expected to favour the discretionary allocation of licences. Many petroleum companies could take the same view because leases are more expensive if auctioned. On the other hand, the competitive auction of exploratory leases does yield higher levels of government revenues in most cases and might therefore be preferred by politicians and members of the public.

From the government point of view, production control may or may not be an attractive policy option, depending upon public opinion and the efficacy with which exploration control may be employed to control resource depletion. Once again, particular methods of production control may be of little interest to political actors, while the bureaucracy could be expected to favour whichever method would provide it with maximum discretionary influence in policy implementation. However, production control in general would not be in the industry's interest in that various investments require certain paces of development to maintain their economic viability, and individual companies tend to balance the entirety of their various fields' production against losses in individual exploratory or productive efforts. The less government involvement in these decisions, the better from the company point of view. The public may be interested in production levels in terms of longer term security of supply and revenue income from petroleum production. It might

favour production control over exploration control simply because the former more explicitly attempts to control the pace of resource depletion.

D. The Fiscal Regime

Fiscal arrangements concerning the exploitation of petroleum and the ways in which governments employ the revenues which accrue to them indicate the economic interests of the state. If governments are assumed to be economically rational, then royalty levels and taxation policies will be designed so as to capture the maximum economic rent from the exploitation of the resource while leaving the private industry sufficient incentive in the terms of profit to continue developing the resource. The fiscal regime will also be designed to encourage the production of marginal developments, while reaping a larger proportion of economic rent from more profitable fields. Modifications to the royalty and taxation system will be expected to follow every major increase and/or decrease in the price of petroleum, whether the price is regulated by the government itself or follows the international market. It would also be expected that the private industry has its greatest influence in the design of government policy in this area, being the sole authority on its own measure of sufficient return on investment and the monopolist of the technology of petroleum development. Industry associations will likely focus the bulk of their activities on this area of petroleum policy, and with some degree of success.

The fiscal regime can be designed along three broad lines: taxation on corporate profits only (the free market option), resource rent taxation, and taxation combined with incentives. Taxation on corporate profits alone would imply that the development of petroleum

resources is similar to any other industrial activity and has no strategic importance, minimal external economic effects, and neutral fiscal impact. This system was employed only in the very earliest days of petroleum exploration and production in Canada, and never in the United Kingdom or Norway. Resource rent taxation would comprise taxation on corporate profits in addition to a single resource rent tax (a royalty) designed to capture maximum economic rent for the owners of the resource from those who are developing it while still leaving to the latter sufficient incentive for investment. The advantages of this scheme are associated with its simplicity and efficacy in capturing economic rent, while the disadvantages might be thought to be in its inflexibility in terms of encouraging marginal developments. Taxation combined with incentives overcomes the difficulty with resource rent taxation in that it allows for the development of an often complicated scheme of various taxes and incentives, the objectives of which are to capture maximum economic rent, leave sufficient incentive to investors, and encourage the development of marginal prospects.

None of the actors interested in petroleum activity today seriously advocate taxation on corporate profits only, as all recognise its strategic and economic importance. However, between the latter two policy options there remains considerable disagreement as to the relative advantages of resource rent taxation and taxation combined with incentives. Right-wing political actors tend to favour the resource rent option as being less interventionist, while left-wing politicians advocate the taxation/incentives scheme.

Bureaucrats would likely be interested in more administratively complicated taxation and incentive schemes, and the industry as a whole might prefer less complicated resource rent taxation, although

smaller independent companies may be favourably disposed towards taxation combined with incentives. The public can be assumed to be relatively indifferent to the fiscal arrangements if satisfied that the latter capture a fair proportion of economic rent for the development of the resource and are not inhibiting further investment.

This theoretical discussion is completely by-passed by the fact that in the three countries to be examined, taxation and incentive schemes are employed. Interests consequently tend to be articulated in terms of less taxation and/or more incentives (or vice-versa) with regard to specific aspects of the fiscal regime. Again, the interests of the political actors in these specific debates will reflect concerns about the impact on public opinion and proximity to the next election. Bureaucrats will be concerned with enhancing administrative programs while the industry may varyingly support or criticise specific programs in relation to its interests of maximum corporate profit and incentive to invest. In terms of specific fiscal arrangements, the public is unlikely to be interested.

The investment of government revenues from petroleum production is likely to take two forms: the amelioration of current financial problems such as burgeoning deficits; or, and only if the first is not an immediate issue, the investment of these resources in economic development schemes to benefit the society in the longer-term. Governments with severe financial concerns will not engage in policy plans concerning economic development schemes, although they may engage in the rhetoric of public discussion of the idea. It would be expected that in these cases, rapid rates of depletion, high prices, and taxes would all contribute to the government's management of the immediate problem, while issues of the long term are dismissed.

Governments less constrained by immediate financial concerns are more likely to develop strategies for investment of petroleum revenues and will probably control the flow of petrodollars into their economies much more carefully through conservative depletion rates possibly combined with lower taxation and price levels.

CONCLUSION

These four areas of petroleum policy concern both the private product of petroleum resource exploitation and the collective benefits (and costs) resulting from that production. If the rational choice premises concerning rationality, utility-maximisation, and government behaviour in the provision of public goods all hold true, the empirical evidence should suggest a strong similarity in the basic petroleum policies of the three case countries to be examined. Whatever dissimilarities appear between the cases and the models should be explicable within the theoretical terms of the principles of rational choice. It is also to be expected that the interests of the private petroleum industry, the voting public, and indeed the various bureaucratic structures of government involved with the design and implementation of petroleum policies may be conflicting. These various interests will influence the policy outcomes to greater and lesser degrees, depending on the relative bargaining strength of the various interests, the area of policy concerned, the timing of the next election, and international market conditions.

SUMMARY OF THE ARGUMENT

Rational choice theory, the application of economic principles and methodology to the study of politics, has a broad application in all areas of both political philosophy and political science. To date, the literature generated in this field has concentrated on the social contract and social welfare from the normative point of view, and electoral systems, political campaigns/parties, voting techniques/behaviour, and the bureaucracy in positive studies.

This research proposes to apply rational choice principles to an analysis of petroleum policy outputs in three quite different states: Canada, the United Kingdom, and Norway. In terms of resource situation and historical development of petroleum policy, Norway and Britain are constitutionally similar states with Canada providing a contrast. Although Canada and the U.K. share the British parliamentary tradition, Canada is the sole federal state among the three. The choice of these three countries therefore permits an examination of petroleum policy in democracies with different constitutional rules.

By employing the theory of public goods, models of petroleum policies in four areas have been suggested which will be tested against the policies implemented in the case countries. The relative influences of the international petroleum market, proximity of elections, industrial and public concerns about petroleum policies all should be illuminated by an examination of policy outputs with a view to explaining similarities and variations between the behaviour of the governments and the policy options predicted by rational choice theory. It is argued that the empirical evidence gathered will illuminate to some degree the usefulness of the rational choice approach to comparative studies of policy output.

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CHAPTER TWO

A SURVEY OF PETROLEUM POLICIES:

OPEC, CANADA, THE UNITED KINGDOM, AND NORWAY

This chapter describes the OPEC oil price crises of 1973/74 and 1979/80 in some detail and outlines the chronological development of petroleum policies in the three countries under examination: Canada, the United Kingdom, and Norway. Under the pressures of world petroleum market conditions, all three states modified the principal aspects of their petroleum policies. It is therefore necessary to include an overview of OPEC initiatives in addition to the historical development of petroleum policies in the three states. The objective is to highlight major petroleum policy developments in these countries from 1960 to the present in order to provide a perspective from which the petroleum policies in each of the three case states may be examined.

1. OPEC AND THE INTERNATIONAL PRICE OF OIL

OPEC's sudden domination of the world petroleum market in the 1970s and 1980s had major impact on the economies of the western industrialised nations. The shocks of the oil crises of 1973/74 and 1979/80 brought to light the western world's reliance on OPEC oil and therefore its strategic vulnerability. Although OPEC has had difficulty in defending its price level since 1983, it is still the major supplier of crude to the western world, and as such continues to wield considerable power. The development of non-OPEC resources,

such as North Sea oil, has been timely both from an economic and a strategic point of view; but it is unlikely that such development would have proceeded as rapidly had it not been for the actions of OPEC producers in the 70s.

Prior to 1960, the Organisation of Petroleum Exporting Countries did not exist. The oil industry had been developed and maintained in the major producing countries of the Middle East by a relatively small number of U.S. and European-based multinational oil companies with long histories of exploration and production. Concessions were granted to these companies in which the country with the petroleum resources gave the oil companies the right to search for and develop oil reserves in their territories. The concession agreements were advantageous to both parties: the host country had its resources developed at no expense, gaining revenues in the process, and the oil company acquired reserves of petroleum which it could exploit at will.

The concession system made the holder the sole arbiter of the volume and nature of the investment in the host country, the choice of areas for exploration, the determination of exploration plans, the development of oilfields, the production levels, the size of the necessary production facilities, exploration and transportation capacities, etc. In practical terms, this deprived the state of the right to interfere in any of these vital matters and limited its role merely to that of collecting taxes, so that the relationship between the concessionary company and the state was purely fiscal.¹

In other words, the concession system gave the oil companies free rein to explore for and develop petroleum resources in the host countries of the Middle East and Northern Africa, their only responsibility being the payment of royalties and/or taxes to the owners of the resource as production ensued. The interests of the oil companies themselves were entrepreneurial: rapid development of resources to satisfy a burgeoning world demand with relatively little concern for the environmental or social costs associated with such development. The host countries, on the other hand, were the passive collectors of revenue resultant from such production. In short, the companies could freely develop and sell Middle East and North African oil.

The creation of OPEC was a reaction against this control which the oil companies exercised without great regard for the interests of the host countries². By the late 1950s, two factors were contributing to the major oil companies' decline of power in the world oil market: the rise of independent producers and the marketing of Soviet crude. In order to become more competitive, the majors unilaterally cut the price of Middle East crude in 1959. Consequently, the ^{revenue} shares of the host countries were proportionately reduced, and they were powerless to influence the decision. In response, representatives of the leading Middle Eastern oil producing countries -- Iraq, Iran, Saudi Arabia, and Kuwait -- and Venezuela, met in Baghdad in September 1960. OPEC was formed at this meeting; its objective was to put an end to further price reductions by the oil companies. Later membership came to include Qatar (1961), Indonesia (1962), Libya (1962), Abu Dhabi (1967), Algeria (1969), Nigeria (1971), Ecuador (1975), and Gabon (1975)³.

OPEC's actions in the 1960s focused primarily on asserting the host countries' sovereignty over their natural resources by insisting that oil price cuts or amendments be made in consultation with the producing countries' governments. It failed to restore prices to pre-1960 levels, but achieved a price freeze in its early years and managed to establish the producer governments as consultative partners in the determination of oil prices. OPEC emphasised the exhaustible nature of petroleum resources and introduced the economic and social development requirements of the host countries as valid considerations in long-term petroleum development and pricing policies. Taxes and royalties were paid on a "posted price" of oil, a tax reference price determined by the companies in consultation with OPEC, which added an element of stability to the world market. Any market price reductions were undertaken at the company's expense and thus were relatively limited in scope and duration, with the net producing government share of approximately 56% of the posted price remaining constant despite spot market fluctuations. Thus, the oil market throughout the 1960s was relatively stable and the real price of Persian Gulf crude actually fell over the decade⁴. The oil companies continued to control the level of output but the host countries appeared satisfied with a consistent share of revenues.

However, as early as 1968 OPEC was asserting the principle of government participation as fundamental in the case of states which chose neither nationalisation nor direct investment in the exploitation of their natural resources⁵. Although OPEC's direct actions during this period were confined to participation in the pricing scheme through the proportional taxation of posted prices, its sphere of interest and activity was much broader than that, as was later demonstrated.

In 1970, Libya demonstrated what would occur when the host country asserted its sovereignty over its petroleum resources. The concessionary companies were underpricing easily transported Libyan crude, despite the protests of Ghadaffi who came to power in 1969, after the closure of the trans-arabian pipeline restricted supplies. After unsuccessful negotiations, the Libyan government issued instructions to many of the independent operators within its territories to cut back production rates by up to 30%.⁶ The result was that the companies, not acting in concert, accepted a price increase of 30 cents per barrel, and the Libyan government achieved an upward tax correction of 5%, from 50% to 55% of the posted price. As well, the Libyans had introduced the concept of annual price increases of 2 cents per barrel for a five year period.⁷ It was the first time that a host country had exercised direct control over production and pricing.

At the OPEC conference in Caracas in December 1970, the Organisation passed the following resolutions: to undertake negotiations with the oil companies to secure an upward amendment of tax ratios in line with the Libyan settlement, to effect a substantial increase in posted prices to reflect market increases, to delete all discounts and price rebates enjoyed by the companies, and to revise the price differentials between varieties of their crudes. These resolutions led to the negotiation and conclusion of the Teheran and Tripoli Agreements of February and April 1971. In Teheran, the Gulf producers negotiated with the companies and succeeded in outlining a five-year pricing scheme in which the price of oil was to increase 2.5% per annum with the tax component of the posted price increasing from 56% to 61%.⁸ The Tripoli Agreement was similarly concluded between the North African producing countries and

the companies operating there. The result of these agreements was the direct participation of the OPEC governments in the pricing of oil in their territories and an increase in their revenue shares from the exploitation of those resources.

The Teheran and Tripoli Agreements were out of date by 1973 when market prices were well above the posted price of approximately \$3.00 per barrel. The governments' shares were a constant percentage of the posted price, protecting them in the case of a price drop but excluding them from gains in the case of a price increase. Thus the companies were reaping all the benefits of an increased market price resulting from the increased world demand, especially in the industrialised countries of the U.S., Japan, and Western Europe whose economies were expanding rapidly in 1973. In the autumn of 1973, negotiations between the companies and OPEC resumed, but broke down when the companies refused an adjustment of a higher government percentage share per barrel designed to siphon off their windfall profits.

Faced with the companies' refusal, OPEC Gulf members met in Kuwait on October 16, 1973 where they announced unilateral price setting of their oil. The posted price for Saudi Arabian light oil, the marker crude, was increased to \$5.12 per barrel⁹, which represented a 70% mark-up. On the following day, the Organisation of Arab Petroleum Exporting Countries (OAPEC) resolved to impose an embargo, aimed principally at the U.S., on the countries supporting Israel in the ongoing October War. The shortage, both perceived and actual, meant that realised prices were running at as much as three times the recently increased posted price. In December, OPEC increased the posted price of Arabian light to \$11.65 per barrel effective January 1, 1974¹⁰. The price increase boosted the

producing governments' share to approximately \$7.00 per barrel. Since the end of 1973, OPEC ^{has} remained the sole price administrator of petroleum produced in member countries (when it succeeded in maintaining cartel discipline) without challenge or retaliation on the part of the oil industry or the consuming countries.

However, pricing was not the only area in which OPEC was testing its strength. In the early 1970s the principle of government participation, endorsed by OPEC in 1968, stimulated nationalisation activities in member countries. By March 1972, the principle of equity ownership was accepted by the companies. By December of the same year, agreements were concluded in Saudi Arabia, Qatar, and Abu Dhabi which gave the host countries 25% ownership of production operations and included a gradual escalation to 51% ownership by 1983¹¹. In June 1973 Libya nationalised Bunker Hunt, an independent petroleum company, and acquired 51% of the Occidental Oasis group in August. In September, Libya nationalised 51% of the remaining foreign petroleum assets in the country. The major petroleum companies attempted to retaliate by boycotting Libyan crude, but demand was too great and supply was too short. The growing force of nationalism "...eventually led to complete government control, either by legislated nationalisation, as in Iraq, Algeria, Venezuela, and Libya, or, as in other producing countries, by government participation in the concession ... which led later to complete government takeover of the oil operations in return for guaranteeing the companies certain quantities of crude oil at a small price advantage..."¹² By the mid-1970s, OPEC had asserted its dominance in both the pricing and the production activities of the oil industry operating within its states. In other words, the petroleum resources and revenues were now largely controlled by the producer

governments, and this control would be used to further their own interests as opposed to the interests of the multinational oil companies or those of the consuming countries. This development made OPEC the dominant force in the international petroleum market, controlling the bulk of the free world's reserves and productive capacity.

After the price revolution of 1973/74, OPEC became more conservative in its pricing policies. In the September 1975 meeting in Vienna, the posted price was increased to \$11.46 per barrel. In December of the following year, the Doha meeting produced a two-tier pricing system in which Saudi Arabia and the United Arab Emirates increased their crude prices 5% while the other members increased their prices 10% to be followed by another 5% in six months. However, the two-tiered system was so difficult to manage that prices were re-unified at the Stockholm meeting in July 1977. Saudi Arabia and the UAE agreed to a further 5% increase while the others lowered their prices 5%. The price for the Arabian light marker crude then stood at \$12.70 per barrel¹³.

In Abu Dhabi in 1979, OPEC agreed to undertake quarterly increases to achieve an average increase of 10% over the year. However, by February the impact of the Iranian Revolution was felt on the world market when spot prices reached \$23 per barrel against a marker crude level of \$13.34 for that quarter. A consultative meeting of OPEC in late March increased the price to the fourth quarter level, \$14.54 for Arabian light, which resulted in an annual average increase of 12.5%. The principal outcome of the meeting was the concept of a floor price under which no OPEC member would sell;

but surcharges and other sales taxes could allow for any individual member to attain any price which the market would bear above the floor price¹⁴.

By June 1979, as a result of fears of oil shortages, spot sale prices were running at \$40.00 per barrel against the \$14.54 OPEC price. An OPEC meeting of that month in Geneva moved the marker crude price up to \$18.00 per barrel and the newly admitted surcharge principle was limited to \$2.00 per barrel¹⁵. Thus, a ceiling price for OPEC crude accompanied the floor price in an effort to stabilise the volatile market. These initiatives illustrate OPEC's attempts to harness a very insecure market without imposing production quotas on its members. Just prior to the OPEC conference in Caracas in December 1979, Saudi Arabia retroactively increased the price of its marker crude by \$6.00 per barrel to \$24.00 from November 1. In January 1980, the market price was increased to \$26.00 per barrel, and again in mid-May to \$28.00 effective retroactively to April 1. It remained at that level until it was increased to \$32.00 in January 1981. The following January it rose again to \$34.00 where it remained until the pricing problems of early 1983¹⁶.

The 1979/80 price shock had numerous effects on the world petroleum market which resulted in a major decline in OPEC's control over it in the early 1980s. Firstly, the dramatic price increases of the second oil crisis, as it came to be known, resulted in strong efforts on the part of consuming countries to increase domestic supplies and conserve energy. The encouragement of domestic production and substitute products were undertaken in order to reduce dependence upon OPEC oil. These efforts in the areas of substitution and conservation have led to structural changes in the world oil market and set in motion trends which are not easily halted, much

less reversed. Of a more transient nature are the effects of the world-wide economic recession of the early 1980s which has also contributed to a decline in the demand for oil. Many economists argue that this recession is a result of the latest increase in energy costs which the western economies were unprepared to sustain, and that OPEC's price hawkishness may have done the Organisation very serious long term damage. OPEC production was 30.7 million barrels per day in 1979 which accounted for approximately 60% of free world production; by 1982 it had fallen to less than 19 million barrels per day, representing less than 50% of free world production¹⁷. By 1987, production levels had dropped to between 15.9 and 17.1 million barrels per day. In addition, free world production in non-OPEC countries increased throughout the late 1970s and early 1980s. Some observers suggested that a price decline was just as likely as a price increase over the next few years¹⁸, and this in fact proved to be the case.

OPEC called a special consultative meeting in March 1982 at which a production ceiling of 17.5 million barrels per day was set; it was the first time the Organisation had called upon its members to limit supply in order to defend the posted price¹⁹. After two days of talks, the July meeting was suspended indefinitely as a result of angry exchanges between Iran and Saudi Arabia over production quotas, the Saudis having assumed the position of "swing producer". By virtue of their vast productive capacity (11 million barrels per day), the Saudis would increase and decrease their production as necessary in order to maintain OPEC price levels and were therefore not constrained by production quotas like the other OPEC members. The December meeting was once again geared towards the preservation of the \$34.00 marker price which was to become effective in January,

but disciplinary measures were not forthcoming and members continued to discount their crudes and sell above their quota levels. Finally, on March 14 1983, the marker price was reduced by \$5.00 per barrel to \$29.00 and production quotas totalling 17.5 million barrels per day were again imposed²⁰.

Throughout 1984, prices remained soft and OPEC cut its production ceiling at the October meeting to 16 million barrels per day, although it remained committed to maintaining the \$29 price. Norway reduced the official price of its petroleum by \$1.35 per barrel²¹ in order to reconcile the official rate with what was actually being realised in the market, and it rapidly became apparent that a price war between the North Sea and OPEC producers was in the offing. In January 1985, Norway eliminated its official pricing structure altogether, acknowledging the supremacy of the spot market in the situation of over-supply and further increasing pressure on OPEC prices²². Saudi Arabia announced its intention to increase its production and negotiate prices related to the spot market. By December, Sheik Yamani was predicting petroleum prices below \$20 per barrel if both OPEC and non-OPEC producers did not cooperate to limit supplies and support the price. North Sea crude prices fell to \$18 per barrel in late January 1986. The price continued to slide throughout the spring, finally bottoming out in April when prices fell below \$10 per barrel after OPEC's failure to reach an agreement in March. It rallied to \$14 in May, and fell again below \$10 per barrel at the end of July before recovering over the rest of the year. By mid-1987 there was talk of permanent recovery as the price hovered near \$20 per barrel, but discord between OPEC members at the December meeting shook confidence and the price fell to the \$17-18 per barrel range.

To conclude, OPEC's formation and its rise to dominance over the world petroleum market were the direct result of the producer governments' attempts to assert control over the pricing and production of petroleum resources within their territories. Through its efforts in the 1970s, OPEC succeeded in assuming control over petroleum production in member countries and establishing a "political" price for its petroleum which was largely unrelated to the cost of production. In response to this success, consuming countries endeavored to boost domestic and alternate supplies and to encourage conservation as oil became an increasingly valuable commodity. Prior to 1973, energy policy in general, and petroleum policy more specifically, was largely ignored by the consuming countries, but it has become a major concern for both consuming and producing countries since then. States with petroleum resources concentrated on control over domestic production and on maintaining an increasing government share in the increasing revenues. This is the environment in which the major initiatives in the petroleum policies of Canada, the United Kingdom, and Norway were implemented.

2. CANADIAN PETROLEUM POLICY

The exploitation of natural resources in Canada is greatly complicated by the federal nature of the Canadian state with its constitutionally defined division of powers. Section 91 of the Canada Act 1867 describes the federal government's jurisdiction which includes the administration of interprovincial and international trade and commerce, taxation and the like; while sections 92 and 109 give the provinces ownership and control of all natural resources

located within their respective territories, including those subsurface. Despite this explicit division of powers, the federal government reserved to itself control of the Prairie provinces' natural resources until 1930, although the provinces were established in 1870 (Manitoba) and 1905 (Alberta and Saskatchewan). This reservation was made under the peace, order, and good government clause of section 91 and marks the beginning of a continuing struggle between the federal and various provincial governments (principally Alberta, Saskatchewan, Newfoundland, and Nova Scotia) over the actual ownership and control of petroleum resources, their pricing, and marketing.

The first petroleum discovery made in what is now Alberta occurred when a Canadian Pacific Railway crew was drilling for water near Alderson in 1883; its disappointing find proved to be natural gas²³. Alberta's oil era began in earnest with the major Turner Valley condensate strike in 1914. Petroleum development, production, pricing, and marketing was entirely in the hands of private companies until the federal government relinquished its control over natural resources in the Natural Resources Act, 1930. In the following year, the province introduced royalties on petroleum production for the first time²⁴. The Alberta government was to receive 5% of petroleum production in like or kind, but it did not involve itself in the legislation of prices or production controls. Major oil discoveries followed, with the late 1940s and early 1950s proving an especially fruitful era of exploration. An interprovincial pipeline was constructed in the early 1950s to transport domestic crude as far east as Sarnia, Ontario, although the bulk of crude supplies in eastern Canada were supplied by imports.

In the latter part of the 1950s, controversy developed around the question of Canadian petroleum exports to the United States. Transportation costs added such a substantial amount to the cost of oil and natural gas delivered to eastern Canada that many western Canadian producers were able to sell greater quantities of their product south of the border at considerably lower prices. The newly elected Conservative government under John Diefenbaker struck a Royal Commission on Energy²⁵, known as the Borden Commission after its chairman, Henry Borden, the objective of which was to examine petroleum supply and demand within the country with a view to discerning the national interest in this area. It recommended that a National Energy Board to monitor Canadian petroleum imports and exports should be established, that Canada export all surplus natural gas, and that Montreal and points eastward should be designated as an import market for crude. Domestic production would be consumed in the west and excess supplies could be exported to the U.S.

As a consequence of the Borden Commission's findings, the Diefenbaker government set up the National Oil Policy (NOP)²⁶, which was announced on February 1, 1961. It was the first comprehensive petroleum policy put in place in Canada, and its principal effect was to divide the Canadian petroleum market into two halves along the Ottawa Valley line. The western market would be served by the more expensive domestic oil, while eastern Canada (the region of greater population and consumption) would be reserved as an import market. The interprovincial pipeline would not be extended beyond Sarnia, Ontario, and all surplus petroleum production would be exported to the U.S. under the control of the newly established National Energy Board, set up in 1959. In fact, the NOP provided some protection for the domestic oil industry in that it reserved a market for domestic

production regardless of its ability to compete with less expensive imports. This remained the principal development in petroleum policy until the first OPEC oil price crisis of 1973 forced the government to modify its policy.

The Middle East oil crisis had less impact in Canada because the country was self-sufficient in oil at the time -- imports and exports were approximately equal. However, it focused public attention on the finite nature of petroleum resources as it coincided with a reappraisal of Canadian reserves which indicated they were not as extensive as previously assumed²⁷. Moreover, a disruption in foreign supply greatly affected the large import-consuming eastern Canadian market, making domestic production more attractive in terms of price.

There had been some adjustment of the federal government's export policy in February 1973 when limits were set on crude oil exports as supplies tightened up in the face of increasing demand. A policy statement, An Energy Policy for Canada²⁸, was published on Dominion Day (July 1). Its original draft recommended the establishment of a state corporation to negotiate directly with the oil producing nations regarding the price of Canadian imports, but this suggestion was eliminated in cabinet²⁹. The resultant sixty-page statement committed the government to the pursuit of adequate supplies at reasonable prices, national security, the export of surplus energy supplies, and the encouragement of energy resource development. The statement also discussed the concept of economic rent from resource development as opposed to profit on investment. However, it did not suggest any immediate policy changes and failed to anticipate the crisis precipitated by the burgeoning price and supply problem.

The July policy statement was completely out of date within two months. In September, Prime Minister Trudeau announced the introduction of an oil export tax at a rate of 40 cents per barrel, and the government's intention to consult the provinces on the extension of the interprovincial pipeline to Montreal³⁰. A voluntary price freeze at \$3.40 per barrel up to the end of January was requested of the industry. By this action, the Prime Minister foreshadowed a major policy change which occurred later in the year. The NOP was to be abandoned.

In December, Prime Minister Trudeau announced further steps to be taken in the development of the Liberal government's energy policy³¹. The price freeze was extended until the spring of 1974, the pipeline would be extended to Montreal, the NOP was formally eliminated, and a national oil company was planned. The export tax was increased in December to \$1.91 per barrel, and to \$2.22 in January 1974, and to \$6.60 for February and March³²; the revenues accruing from the export tax were shared with the provinces as had been agreed in December.

However, the prospect of increased taxation on the natural resources of the provinces of Alberta and Saskatchewan by a federal export tax drew a strong response from those provincial governments. In October 1973, Premier Lougheed of the Conservative government of Alberta announced that royalties within the province would rise along with the international price. "The province's primary objective was evidently to force Ottawa to withdraw its export levy by squeezing the industry."³³

The federal-provincial First Ministers' Conference on Energy³⁴ was held January 22-23, 1974, at which federal Energy Minister Macdonald introduced a scheme for establishing a single Canadian

price for oil below the international level. The wellhead price in Alberta would be increased from \$4.04 per barrel to \$6.05, and the \$2.01 increase would be used by the federal government to subsidise the more expensive imports coming into the eastern market. The provincial premiers were hesitant about this plan, but the conclusion of the Conference saw the federal government planning to subsidise eastern import consumption with revenues from the increased export tax from February through April, 1974, during which time a permanent single-price formula was to be sought.

The tension continued between the federal and producing provinces' governments and the "general assertiveness of the producing provinces ... provoked centralising moves by Ottawa, including the enactment of the sweeping Petroleum Administration Act of 1974, a bill granting federal officials broad power over the pricing of oil in Canada."³⁵ In addition, in the May 1974 budget, provincial royalties became non-deductible for the purposes of federal corporate income tax. The petroleum industry, caught in the middle of the federal/provincial dispute, responded by slowing down its exploration activities within Canada. "There resulted a sharp decline in drilling activity and a much-publicised movement of drilling rigs from Canada to the United States. Shortly thereafter, important tax and royalty concessions by both levels of government led to record levels of drilling activity."³⁶ These developments were to be repeated in detail in the 1980/81 federal/provincial resource dispute.

The period from 1974-79 marked a rapid increase in activity on the part of the federal government in the area of petroleum policy. Petro-Canada, the national petroleum corporation, was established by an act of Parliament passed on July 30, 1975³⁷, and commenced

operations in January of 1976. Its corporate objectives were to explore for, produce, import, transport, distribute and refine all kinds of hydrocarbons, in addition to investing in related ventures and research and development projects. Through these activities, the Canadian government would be participating directly in the petroleum sector, acquiring revenues additional to taxes, and exerting some influence on the direction of exploration and industry investment. Finally, the national petroleum company was to provide the federal government with a "window on the industry" which would assist the government in planning further policy developments. Petro-Canada immediately assumed control of the federal government's interests in Panarctic Oils and Syncrude Limited, and would undertake further acquisitions to increase Canadian ownership in the industry later on.

The next major policy statement was An Energy Strategy for Canadians--Policies for Self-Reliance³⁸, published in 1976, introducing the federal government's new petroleum objective of self-reliance. The document distinguished between energy self-reliance (security of domestic production and supply) and self-sufficiency (the satisfaction of domestic demand entirely from domestic production), noting that the latter would not be realised within the next ten to fifteen years, but that self-reliance was an achievable goal within the decade. In order to secure this objective, the government proposed nine major policies including appropriate energy pricing, energy conservation, increased exploration and development, emergency preparedness, greater Canadian participation and control, and the like. Its targets were to move domestic oil prices towards world levels, to reduce the average rate of growth of energy use in Canada to less than 3.5% per annum over the next ten years, to reduce Canadian net dependence on imports in 1985 to less than one-third of

total demand, to maintain self-reliance in natural gas, and to double exploration in the frontier areas of Canada over the next three years. The government reaffirmed its commitment to the single-pricing policy for crude oil in Canada. It also acknowledged that the 1974 fiscal arrangements had left the petroleum industry with inadequate cash flow. The federal tax system would be restructured towards investment, and a producer netback (profit or return) at the then current price of \$7.95 per barrel might range from \$1.79 to \$3.98.

Two years later the federal government published Energy Futures for Canadians³⁹. The 1978 report concluded that a National Energy Program was required which would alter patterns of energy supply and use, re-organise institutions and regulations, adjust policies concerning prices, fiscal arrangements, finance, investment, ownership and control, and public participation. Targets included further reductions in the growth rate of energy demand, increased Canadian oil and natural gas production, and increased energy shares of primary demand for electricity and renewables.

In May 1979, the Liberal Party, led by Pierre Trudeau, was defeated after eleven years in office and a minority Conservative government under Prime Minister Joe Clark assumed power. The call for a new comprehensive energy policy was repeated in a policy statement made by the new government in late 1979: Background to a New Energy Strategy⁴⁰. It was produced after the initial effects of the Iranian shortage and subsequent price increases were evident, and reiterated many of the policy proposals outlined in the Energy Futures report. However, the Clark government was defeated on its first budget vote held on December 13, which included an energy package in which the price of domestic oil would be increased (but

not to world levels), a new revenue tax would be introduced on petroleum production to capture roughly 50% of the incremental revenues, and an excise tax of 15 cents per gallon on gasoline would become effective immediately. The Liberals resumed office under Prime Minister Pierre Trudeau on February 18, 1980, and introduced the National Energy Program, 1980⁴¹ (NEP) on October 28.

The NEP espoused three objectives: security of supply, opportunity for Canadians, and fairness in pricing and revenue sharing. Security of supply was to be advanced by the introduction of incentives to consumers to conserve energy along with encouragement to the industry to explore for petroleum on federal territories. Opportunity for Canadians would be augmented by a Canadianisation programme to discourage high levels of foreign ownership in the petroleum industry active within Canada. Fairness in pricing and revenue sharing would be introduced by the implementation of federally-determined price schedules and petroleum taxes.

The main provisions of the new energy policy were pricing schedules of gradual increases in both oil and natural gas prices through 1990, a new array of taxes designed to capture a large proportion of the economic rent resultant from the recent price increases in the world market, and programs to increase Canadian ownership and provide incentives for exploration and development on Canada Lands, those territories and waters under exclusive federal jurisdiction. The new taxes included the Petroleum and Gas Revenue Tax (PGRT), the Natural Gas and Gas Liquids Tax (NGGLT), both designed to capture the maximum possible economic rent from petroleum production, the Petroleum Compensation Charge (PCC) which would provide the funds for subsidy of eastern oil imports, and the

Canadian Ownership Special Charge (COSC) which would provide a fund from which Petro-Canada could draw to make acquisitions of foreign firms in order to increase Canadian ownership and control of the industry. Petro-Canada was also granted an automatic and retroactive 25% participation ("back-in") right on Canada Lands exploration projects, which embraced the Yukon and Northwest Territories and offshore areas, all areas of increasing exploration interest. Increased Canadian ownership and control would be further assured by the establishment of a Canadian Ownership Rate (COR) to assess acceptable levels of Canadian control in petroleum firms (and subsequent eligibility for the Petroleum Incentives Program [PIP]), and the activities of the Foreign Investment Review Agency (FIRA), both of which created considerable tension in Canadian -- American relations at the time.

The response of the Alberta government was immediate and it had the support of the petroleum industry. Premier Lougheed suggested production cutbacks in three stages between March and September 1981 to total a shortfall of 180,000 barrels of oil per dayⁱⁿ order to increase eastern Canadian dependence on imports⁴². Imported oil then cost approximately \$30.00 per barrel as opposed to a domestic price of \$13.81. The average royalty rate was increased to 43% of production value. Once again the federal and provincial governments found it necessary to engage in extremely difficult negotiations as drilling rigs moved to the U.S., which had responded to the Iranian crisis by deregulating oil prices altogether. By September 1981, an accord was reached in the Energy Pricing and Taxation Agreement⁴³ which revised the pricing schedules for petroleum through 1986,

introduced an Incremental Oil Revenue Tax (a windfall profits tax to accrue to the federal government), and established the Alberta Petroleum Incentives Program. The National Energy Program was updated in May 1982⁴⁴, with a reduction of the PGRT and a suspension of the IORT in the face of falling demand and spot prices. In June 1983 the EPTA's pricing schedules were also revised downward in response to the falling world price, although the domestic price was still held below the international level.

In September 1984, the Conservative Party under Brian Mulroney attained a huge majority in the federal election after campaigning on improved relations with the provinces and, of particular interest in the west, on a platform committed to the abolition of the NEP and the revocation of subsequent agreements. The Atlantic Accord⁴⁵, a petroleum revenue-sharing arrangement between the federal government and the province of Newfoundland, was signed on February 11, 1985 in anticipation of eventual production offshore. On March 28, 1985, The Western Accord⁴⁶ was announced: an agreement on energy policy had been reached between the governments of Canada, Alberta, British Columbia, and Saskatchewan. The central points of the new policy included the abolition of the NEP by the elimination of its taxes and incentive programs and by the deregulation^{of} Canadian petroleum prices. Royalties would remain a feature of the fiscal regime, as would corporate income tax at both the federal and provincial levels, but all other petroleum taxes were to be phased out over short periods of time. Oil price deregulation was rapidly followed by the deregulation of natural gas prices, although it must be mentioned that these initiatives took place in the period of rapid decline in petroleum prices, creating some concern on the part of small producers. The principal objectives^{of} the Western Accord were a

simplification of the petroleum taxation system and an attempt to return pricing policies and investment decisions to market determination.

The Canadian government introduced its major petroleum policy initiatives immediately after the two oil pricing crises of 1973/74 and 1979/80, and again after the international market conditions altered substantially in the early 1980s. Both levels of government have been principally concerned with control over natural resources and the acquisition of large economic rents from petroleum pricing and production. Consequently, bitter disputes between provincial and federal governments ensued both in 1974 and 1980. Major petroleum policy statements followed major changes in market conditions occurring after the two OPEC price increases in the 70s and the price fall in the early 1980s. Modifications to policy initiatives, however, seem to have been made in response to domestic political and economic forces. For example, the implementation of the NEP was more directly related to changes in the international petroleum market while the activities of both the provincial governments and the petroleum industry were instrumental in the various agreements and amendments which modified the original policy.

3. BRITISH PETROLEUM POLICY

Petroleum policy in the United Kingdom is less complicated than in Canada principally because the U.K. is a unitary state. Ownership of mineral oil resources was vested in the Crown in 1934⁴⁷, and Parliament has sole responsibility for the development and administration of petroleum policy.

The origins of the industry were modest. Petroleum and bituminous seepages were recorded in the Lancashire area as early as 1667 and a shale oil industry was active in the Lothian region of Scotland into the twentieth century. The original products of these enterprises were paraffin and lamp oil, and legislation was enacted as early as 1862 to regulate petroleum matters.⁴⁸ However, the first serious involvement of the British government in the petroleum industry occurred in 1914 when Winston Churchill, then First Lord of the Admiralty, acquired a 51% state holding in Anglo-Persian Oil (now British Petroleum) in order to secure supplies for the Royal Navy in the First World War. Onshore discoveries of small gas and oil fields began in the 1930s, but these finds were relatively insignificant. Energy policy in Britain after the Second World War focused primarily on the protection of the coal industry from competition with other fuels, including oil.

In the early post-war years the objective was to expand coal output; subsequently, the more limited aim of avoiding a rapid decline in the industry took over. Such policies were evidently not very successful since, despite a costly protective barrier which was constructed around coal, there was a very sharp fall in consumption, output, and employment from the mid-1950s onwards -- mainly because of competition from lower-priced oil.⁴⁹

However, on August 14, 1959, the Slochteren gas field was discovered in a geological formation which extended from the Netherlands out into the North Sea. Interest in North Sea petroleum potential spurred the British government to ratify the Geneva

Convention Continental Shelf Agreement in 1964, and the way was cleared for exploration licences to be awarded within the U.K. area of the North Sea.

The first period of U.K. petroleum policy, from the passage of the Continental Shelf Act in 1964⁵⁰ to the tabling of the July 1974 White Paper on petroleum policy⁵¹, was marked by government efforts to stimulate exploration activity, to achieve rapid natural gas output and to bring into production such oilfields as might prove commercial as quickly as possible. "The rapid exploitation policy was instituted in the mid-1960s when interest lay mainly in the potentially gas-bearing areas of the southern North Sea, but ... it was decided in 1968 that essentially the same policy should be applied as exploration efforts concentrated on the search for oil in the northern North Sea."⁵²

Initial policy efforts on the part of the British government concerned the means by which licences to explore for petroleum in U.K. waters should be awarded. A discretionary system of granting exploration licences was thought to be the most advantageous, as opposed to one in which companies bid in an auction for areas they presumed to be of greater potential. An auction for licences is generally assumed to be the best means of securing the largest economic rent from production rights, but the discretionary system was more compatible, it was believed, with the government's desire for speed in exploration and extraction and for substantial British participation. In addition, "...both the Treasury and the then Ministry of Power relied on the cooperation of Shell and BP, which favoured discretionary allocation over auction."⁵³ The costs to

private petroleum companies of obtaining licences would be substantially less expensive if administratively awarded than if competitively obtained in private bids or public auction.

In 1964, Frederick Erroll, Conservative Minister of Power, outlined loose guidelines to be used in the award of licences. The considerations included:

First, the need to encourage the most rapid and thorough exploration and economical exploitation of petroleum resources on the Continental Shelf.

Second, the requirement that the applicant for a licence shall be incorporated in the United Kingdom and the profits of the operation shall be taxable here. Thirdly, in cases where the applicant is a foreign-owned concern, how far British oil companies receive equitable treatment in that country.

Fourthly, we shall look at the programme of work of the applicant and also at the ability and resources to implement it. Fifthly, we shall look at the contribution the applicant has already made and is making towards the development of resources of our Continental Shelf and the development of our fuel economy generally.⁵⁴

Exploration licences were issued for three years, while production licences were awarded for an initial period of six years on payment of \$15,000 per block, and subsequent annual payments of differing amounts up to a total of \$175,000.⁵⁵ After the first six years of a production licence, a certain portion of it (generally half) was returned to the state with the rest of the lease being extended for up to forty years at the licensee's discretion⁵⁶. Licensees were forbidden to assign their awards to others without

Ministerial approval; this provision was designed to prevent the emergence of a market in licences⁵⁷. The principal fiscal arrangements originally included a 12.5% ad valorem royalty on production which was part of the licence agreement, and normal British corporation tax at 52% of company profits⁵⁸.

"The first allocation of offshore leases in 1964 was hurried through by the Conservative government so that it could be completed between the passage of the Continental Shelf Act and the impending general election."⁵⁹ Sixty-one companies applied for 400 of the 960 blocks on offer, and fifty-one were awarded leases. Thirty-two thousand square miles of exploration territory was leased, principally in the southern half of the North Sea, and offshore drilling commenced almost immediately. Discoveries from this licensing round included BP's West Sole gas field in 1965, which came into production in 1967, as well as other natural gas finds in 1966.

The general election held in October 1964 produced a new Labour administration which instituted an immediate policy review. The focus of the review was both the method of licence allocation and the extent to which government participation was desirable. Both the Norwegians and the Dutch were awarding licences by administrative discretion, and this may have influenced the conclusion of the policy review. No change to the method was proposed, although additional award considerations were suggested concerning the ability of the applicant to contribute positively to the British economy especially in terms of employment, industry, and the balance-of-payments benefits. In addition, proposals for facilitating public sector participation would be favourably regarded. The second round of licence awards followed in 1965, and was subject to these new considerations.

With regard to government participation, the Labour government passed the Gas Act 1965⁶⁰, employing a very strict interpretation of the Continental Shelf Act in order to establish the Gas Council (which became the British Gas Corporation in 1972) in a position of monopsonist for gas produced in British territories. "[The] companies were effectively denied the opportunity to sell their production to anyone other than the Gas Council.... Thus, a state monopsonist became the instrument of [economic] rent collection [after the government realised it had not captured maximum revenues through the allocation of licences]."61

The third round of licensing awards in 1970 was subject to more firmly entrenched considerations of public enterprise participation. Blocks in the Irish Sea would be allocated only under the stringent criterion that the Gas Council or the National Coal Board should participate directly in projects. Once again, the Minister of Power expressed preference for North Sea applications involving the BGC, the NCB or other British institutions. The licences covered 8,000 square miles principally in the northern North Sea, a new area of interest after 1969 as a result of the major Norwegian oil discovery in the Ekofisk field and the Montrose find in U.K. waters. Oil prospects off the Scottish coast of the North Sea looked very promising, and many of the companies which had been active in the southern North Sea gas finds had been disappointed by the limited return they had received on their investment⁶². The Gas Council, as monopsonist, had set artificially low prices for natural gas in an effort to pass on some benefit to domestic consumers, thus limiting the profit companies could make. The government gave no indication that fiscal arrangements would change dramatically; consequently, large northern North Sea discoveries would be marginally profitable

at early 1970s world oil prices. Third round exploration ventures yielded the BP Forties discovery (November, 1970), which was not announced as commercially viable until December, 1971, and was the first British North Sea oil produced, coming onstream in 1975.

The fourth licensing round in 1971 included a limited experiment with the auction method of allocation: tenders were submitted for 15 of the 286 blocks on offer. The considerations governing discretionary awards remained similar, but conditions were also laid out for the submission of tenders, including a 20% deposit to be submitted with the bid itself⁶³. The Secretary of State had virtually unlimited power to reject any tender submitted, and, unless specifically requested to do so, did not have to inform the applicant of the reason for rejection, although in principle the highest offer would win the award. The 15 blocks auctioned yielded \$90 million, with the highest bid being made by Shell and Esso -- \$50 million for Block 211/21 (the two wells drilled on the block failed). The total area licensed in the fourth round was 24,000 square miles, and drilling in these areas produced a strike ratio of one well in every four drilled.

By the mid-1970s the advent of the so-called energy 'crisis' and a realisation that Britain had access to large quantities of offshore [petroleum] had placed the North Sea in the forefront of policy The 'crisis' encouraged the belief that there are massive problems in the energy market which require detailed government intervention and the discovery of substantial British [petroleum] reserves ... [and] opened up a new freedom to 'plan' the country's energy future and, indeed, its economic future.⁶⁴

The First Report of the House of Commons Public Accounts Committee, North Sea Oil and Gas⁶⁵, was tabled in 1973, and it generated an extensive public debate on the issue of North Sea oil taxation. Prior to 1973, taxes on North Sea production had been limited to royalties imposed by conditions in licence agreements and a corporation tax of 52%. As international petroleum prices increased rapidly in the latter part of 1973, the realisation grew that substantial economic rent would remain with the producing companies unless the North Sea fiscal regime was modified immediately.

The Conservative government was defeated by the Labour Party in March 1974, and by July, the new administration produced a White Paper entitled United Kingdom Offshore Oil and Gas Policy⁶⁶ (Cmnd.5696). In this policy statement, the British government proposed the establishment of a state oil corporation, a special tax regime for petroleum (including a new Petroleum Revenue Tax), and commitment to the principle of production control in the national interest. This statement marked the first time that explicit depletion control was suggested in British petroleum policy.

Although it remained committed to building up production as rapidly as possible, the government wanted to take the necessary powers to regulate North Sea petroleum depletion if and when necessary. Several factors contributed to the change in philosophy regarding depletion policy. Price expectations in the early 1970s had changed dramatically, and indefinite oil prices rises appeared a possibility. This contributed to the idea that oil not produced would appreciate in value more rapidly than investments made from proceeds of production. In addition, U.K. reserves looked much larger than originally estimated and the government believed it was

not necessary to provide incentives to companies to produce oil, as had been the case with natural gas. It has been suggested that the government decided to allow high volumes of gas to be produced in order to compensate the companies for having to sell to the BGC at less than the market price.⁶⁷

On December 6, 1974, as a result of growing concerns on the part of the industry, the Secretary of State for Energy, Mr. Eric Varley, introduced a series of principles to the House of Commons which would guide the Department's administration of depletion controls if these proved necessary (later known as the Varley guidelines)⁶⁸.

Legislation was to be introduced shortly (the Petroleum and Submarine Pipelines Act 1975) which would further define the government's powers in this area, but for the moment Varley wished to calm the concerns of the industry that investment undertaken to date would not be suddenly subject to onerous production controls. The Varley guidelines assured the petroleum industry that discoveries made under existing licenses would not be subject to production controls before 1982, or four years after the onset of production, whichever was later; and that whatever controls proved necessary would not be imposed without consultation and with notice having been given to the companies involved. Shortly thereafter, two significant pieces of petroleum legislation were enacted: the Petroleum and Submarine Pipelines Act 1975⁶⁹ and the Oil Taxation Act 1975⁷⁰.

The Petroleum and Submarine Pipelines Act (PSPA) gave the U.K. Secretary of State for Energy the broad legislative powers necessary for the regulation of depletion rates if it was thought to be in the national interest or during a national emergency. Under the PSPA, oil companies would have to submit to the Secretary programmes specifying their capital investment plans and maximum/minimum

production rates for proposed projects. The Secretary could reject these programmes on the grounds that they were contrary to 'good oilfield practice' or not in the national interest; producers then would have to modify their programmes and resubmit them. The Secretary was obliged to give notice to companies whose production exceeded or was below the accepted limits, but the details of limitation notices (maximum and minimum production rates, notice periods, etc.) remained at the Minister's discretion. "Subsequently [to the original programme] he can modify the plans originally approved upwards ('national emergency') or downwards ('national interest') with limits and on notice which he determines, but must reveal to producers in advance."⁷¹ In effect, this gives the Secretary of State for Energy complete discretion over production and capital investment programs in the North Sea. Oil companies were assured that the Varley guidelines were operative, and in fact the sole actions by the Secretary of State under this legislation into the 1980s were to limit the flaring of natural gas in the North Sea and to announce potential restrictions on the pace of development of some fields⁷².

In addition, the PSPA set up the British National Oil Corporation (BNOC) and the National Oil Account (NOA), a new fund controlled by the Secretary of State for Energy, which would provide BNOC's capital. Several policy suggestions on this front preceded the actual creation of BNOC. The original idea was to create a state oil company using the government's share in BP, and Conservative attempts to amend the Act focused on establishing a U.K. Oil Conservation Authority with broad regulatory powers over depletion. Both these suggestions were rejected in favour of the establishment of a public oil corporation which would be responsible for providing

the government with policy advice and increasing the state's presence in North Sea operations⁷³. BNOG was given an automatic right to purchase, at market value, 51% of oil produced from discoveries made in fields licensed in the first four rounds; and from the fifth round in 1976, BNOG became a 51% participant in all awards, carrying 51% of the exploration risks as well. The state oil corporation could also exercise depletion control either by reserving its petroleum resources to develop in the national interest or by controlling the disposal of its own oil. Royalties on petroleum production were to be funnelled into the National Oil Account from which BNOG could draw for its operating capital. The NOA was examined annually by the Auditor General, and in 1977-78 a controversy arose over the fact that the control of the NOA by the Secretary of State for Energy made BNOG ultimately dependent upon the Secretary, not Parliament, for its funding⁷⁴. The Public Accounts Committee 1978 Report recommended restoring full Parliamentary control over BNOG financing.

The Oil Taxation Act 1975 (OTA) set up the fiscal regime under which petroleum production was to be taxed. Natural gas had been produced since 1967 and was subject to the 12.5% royalty and the 52% corporation tax, as mentioned previously, but initial North Sea oil production was coming onstream in 1975 and a taxation regime geared to the capture of the maximum economic rent possible had to be put in place. In fact, by the end of 1976, seven North Sea fields were producing 20 million tons of oil per annum, amounting to one-quarter of total British demand⁷⁵. The OTA established the Petroleum Revenue Tax (PRT) at a rate of 45% on specially determined taxable profits from each producing field. It was calculated after deducting allowable losses and, where applicable, the revenue equivalent of a production allowance. The PRT would be levied each six months, and

was due four months after the completion of each taxable period. It would be deductible for the purposes of calculating corporation tax, but its principal aim was to capture the bulk of the economic rent due to the rapid increase in oil prices in 1973/74. A safeguard was set up to protect more marginal fields against PRT making the projects uneconomic -- fields with an annual profit of less than 30% of the capital expenditure to develop would be exempt from the tax. It should be noted that the rate of the PRT was increased to 60% in 1979, 70% in 1980, and 75% at the end of 1982; while the capital and recurrent exploration deductions fell in 1979 to 135% from the original 175%⁷⁶. Under the Oil Taxation Act and prior to the upward revisions of the PRT and the world price of oil, the Exchequer was expecting receipts of \$11 billion to 1980, and \$7.7 billion per annum thereafter, with the government receiving approximately 70% of net company revenues from production from fields up to the fourth round, and approximately 85% for fifth and subsequent round fields⁷⁷. After the passage of the Oil Taxation Act, the government revenue share would include licence fees, state participation benefits through BGC and BNOC, royalties, PRT, and corporation tax. Natural gas production after 1975 was subject to this new fiscal regime as well.

Another significant piece of petroleum legislation was introduced the following year. In 1976, the Energy Act⁷⁸ was passed by the British government and it further contributed to the government's ability to control North Sea depletion. The Act gave the Secretary of State for Energy emergency powers to demand that companies such as BP, Esso (U.K.), and Shell (U.K.) land their North Sea production in Britain alone, further securing British supplies from British reserves when necessary.

The fifth licensing round occurred in late 1976 with 51% of all awards secured for BNOC or BGC. Amoco had resisted negotiation of BNOC's 51% stake in production from rounds 1-4, and was excluded from a fifth round award.⁷⁹ The sixth licensing round was held in 1978, and companies had to compete to give BNOC equity interest of greater than 51%, carry BNOC's interest, and give it options to purchase or sell oil in order to be competitive in the awards⁸⁰.

In 1978 the government produced another White Paper on petroleum: The Challenge of North Sea Oil⁸¹, which addressed the growing controversy over the disposal of North Sea revenues. Debate on this issue was carried on amid the waning strength of Scottish nationalism preceding the devolution referendum, but the success of the Scottish Nationalist Party with the "It's Scotland's Oil" campaign was a recent memory⁸². The policy statement rejected the concept of a discrete petroleum fund, but the Scottish Development Agency was introduced in this statement. The following March marked the failure of the devolution referendum in Scotland.

In May 1979, the Conservative government under Margaret Thatcher entered office. It announced a "policy of increasing private sector participation in [BNOC's] offshore assets together with several changes designed to reduce the privileged position and quasi-governmental role of [the corporation]...."⁸³ By late 1982, the government was planning to denationalise Britoil, the exploration/production arm of BNOC, effectively limiting BNOC's function to the establishment of a price for North Sea oil through the purchase of 51% of the crude produced in the North Sea and its re-sale on the world market. After a public controversy over BNOC losses on these operations, early in 1985 the government announced the abolishment of BNOC, although a newly established Oil and

Pipelines Agency would assume oil and pipeline regulatory responsibilities⁸⁴. The government wished to retain control over North Sea oil in emergency situations and thus did not dispose of its shares in North Sea production, which interests are now the responsibility of OPA as well. Shortly thereafter, the government announced its intention to privatise the British Gas Corporation, which occurred in 1986⁸⁵. The government also sold its remaining shareholding in British Petroleum in 1987, although the issue coincided with the market collapse of October and was deemed a financial and political failure⁸⁶.

Regarding licensing, the new administration announced that during the seventh round of awards to be held in 1981, about twenty of the ninety blocks on offer would be sold on application for approximately \$10 million each (about a tenth in real terms of what Shell and Esso paid in the highest bid in 1971). The eighth round awards were made in mid-1983, with fifteen blocks auctioned and the rest were allocated by administrative discretion. The auction part of the licence awards yielded \$55 million in bids,^{an} \wedge unfavourable comparison with the other part auction of the fourth round in 1971, which netted \$90 million for fifteen blocks. In the ninth round in January 1985, 13 of the 15 blocks on offer were auctioned raising a total of \$135 million. The tenth round was awarded in May 1987 without an auction component. It would appear that the award of licences by auction has been shelved in the current environment of depressed international oil prices.

The Conservative government also altered the petroleum fiscal regime. In July 1979, the new administration passed its first Finance Act, in which PRT rates were increased to 60%, and again in the 1980 Budget PRT was boosted to 70%. In November 1980, the

Chancellor announced major forthcoming changes to the North Sea fiscal regime in the 1981 Budget, and invited suggestions for alternative taxation schemes which would maintain the current government share of revenues while still encouraging investment⁸⁷. Both the United Kingdom Offshore Operators Association (UKOOA) and the British Independent Operators' Association (BRINDEX) submitted proposals, as did the Institute for Fiscal Studies⁸⁸. Their respective suggestions were taken into account (from the associations, suggestions to modify PRT; from the IFA, a suggestions for a simplified resource rent tax), but the government retained its original proposals.

In 1981 the Conservative administration introduced another tax on North Sea production, the Supplementary Petroleum Duty (SPD)⁸⁹. SPD was to apply for taxation assessment periods over 1981 and the first half of 1982, but was later extended to the end of 1982. The tax was levied at 20% of gross profits (which approximates gross revenue) ^{less costs} with a deductible allowance very like the PRT oil allowance. It was to be collected before PRT and corporation tax and was to be deductible for the purposes of both of them. As with the introduction of the PRT, the SPD was designed to capture the new windfall profits which potentially would have accrued to companies after the 1979/80 world oil price increases. The PRT was also made more severe in this Act, with deductible allowances modified negatively.

The responses to these initiatives were critical from both academic specialists and industrial interests, with various publications reasserting alternative methods of taxing petroleum production as more useful. Members of UKOOA threatened to boycott the next leasing round. "The ending of SPD, and its replacement by a

higher rate of PRT in the March 1982 budget, was probably a recognition of the criticisms, encouraged by falling oil prices."⁹⁰ In the 1983 budget, further incremental changes were introduced into the fiscal regime, the key features of which were royalty exemption on certain new fields, a doubling of the oil allowance on those fields, and all exploration expenditure was to become immediately deductible for the purposes of calculating PRT. The 1984 Budget introduced a phased-in reduction of corporation tax from the original 52% to 35% with reduced allowances over the next two years. Other incremental forms of fiscal relief were introduced in the government's annual budgets including the relaxation of PRT ring fence rules (1987). However, the fundamental aspects of the taxation scheme have remained intact despite these modifications made necessary by the changing world market situation.

In conclusion, unlike Canadian policy, British petroleum policy has not focused on either the establishment of an appropriate price for production or the distribution of resultant revenue. The principal debates have been about the most efficient method of issuing licences and about the establishment of a fiscal regime which would capture maximum economic rent while allowing for sufficient return on high cost investment to keep North Sea development attractive. However, there are broad similarities in both the timing and the aspects of policy initiatives. Both states responded to the OPEC prices crises with major policy initiatives which were subsequently modified as international and domestic influences necessitated. The taxation regimes after 1980/81 correspond quite well: both include royalties and a corporation tax in addition to taxes designed to capture economic rent (windfall profits taxes -- the PGRT/PRT and the IORT/SPD). Also, both governments established a

national oil corporation with roughly similar objectives in the mid-1970s, and both national corporations came under increasing criticism in the early 1980s.

4. NORWEGIAN PETROLEUM POLICY

It might be expected that Norwegian petroleum policy⁹¹ would be quite similar to British policy, given the identical geographical situations of the resource and the financial constraints associated with its development. However, Norway has approximately one-half of the North Sea petroleum resources and only one-tenth the population of the United Kingdom. The Norwegian state has quite different requirements and concerns from those of the British government with regard to the development of its petroleum reserves. Consequently, it has assumed a much more conservative depletion policy than has Britain, although other aspects of the two petroleum policies are indeed similar.

The initial legislation passed in Norway regarding North Sea resources was the Royal Decree of May 31, 1963⁹², in which the seabed and subsoil in Norwegian territories was declared to be subject to Norwegian sovereignty. The Crown assumed the right to issue regulations regarding the exploration for and exploitation of submarine natural resources in June of 1965, opening the way for North Sea activity to commence.

While Britain's objective was rapid exploitation, Norwegian governments from the beginning adopted a so-called 'go-slow' policy. This does not appear to

mean that there were government-imposed restrictions on the depletion rates of fields already discovered: the go-slow took the form of limiting the issue of licences. In other words it was a policy of not allowing too many discoveries to be made.⁹³

Because seventy percent of Norway's primary energy consumption was satisfied by its abundant sources of hydro-electricity, and partially due to the popular mistrust of large foreign investment, the Norwegian government could afford to take its time in formulating policies which would achieve maximum economic benefit with the minimum of social disruption. Given the size of the Norwegian economy, significant problems of revenue absorption could be avoided, it was hoped, if the exploitation process was held back.

On April 9, 1965, a Royal Decree was issued regarding the issue of exploration licences.⁹⁴ The Norwegian Ministry of Industry was to vet carefully all applicants for licences and to grant awards on technical and commercial grounds; the commercial grounds concerned willingness on the part of the applicants to form consortia with Norwegian companies. In the first round of licensing in 1965, only 78 blocks were licensed in the Norwegian sector compared with 348 in the first round of British awards, although the Norwegian blocks are roughly twice the size of the British⁹⁵. The second round of licensing occurred in 1969 and introduced the option of state participation. Only 14 blocks were then issued, twelve of which involved a level of state participation varying from 5 to 40%⁹⁶. The Ministry of Industry proposed in 1971 that these participation rights be vested in a 100% state controlled joint stock company, and the proposal was unanimously accepted by the Storting, the Norwegian

Parliament, in June 1972. Statoil was thus established and was to operate under normal Norwegian corporate law, but its functions were those of a state corporation: to manage the government's participation agreements, to expand state activities into the downstream sector, to take a major operating role in licences north of 62°N, to conserve petroleum resources, and to cooperate with Norwegian industry to build up an integrated petroleum sector. "Statoil was deliberately created as a mechanism to ensure optimal control of the accumulation process in the oil and gas-regulated sector because it gave the state a significant degree of fiscal autonomy, because it was the most effective way to draw revenues from oil directly into the state treasury, and mostly because the state could get away with it."⁹⁷

The Norwegian Petroleum Directorate (NPD) was set up on April 1, 1973 in order to assume the normal regulatory functions of the state in this policy area and to enforce legislation applying to all companies in the sector, including Statoil⁹⁸. However, the NPD had a weak position relative to Statoil; its lack of resources and inability to control not only the multinationals operating in the Norwegian North Sea, but Statoil itself, led to a certain amount of criticism of both the NPD and Statoil in the later 1970s.

Production began in the Ekofisk field in 1971, and was initially subject to a sliding scale royalty (as per the licensing agreements) and Norwegian corporation tax. A sliding scale of royalties is one in which the percentage of production value payable to the owner of the resource (the royalty) increases as the volume produced increases. For some older Norwegian fields, a flat 10% royalty applied, but the sliding scale royalties were calculated on percentages ranging from 8% to 16% for the fields with the lowest to

the highest average daily production⁹⁹. Norwegian corporate tax comprised three main taxes: a federal tax of 26.5% on corporate profits, a municipality tax of 24.3% on corporate profits, and a withholding tax of 24.3% on distributed dividends¹⁰⁰.

In the spring of 1973, the Norwegian Ministries of Industry and Finance both produced policy statements concerning Norwegian petroleum activity, which eventually resulted in the production of a government White Paper on the role of petroleum activity in the Norwegian society (No.25).¹⁰¹ In this policy statement, the government suggested that annual production levels of 70 to 90 million tonnes of oil equivalent would represent the rate of depletion assumed beneficial in the Norwegian setting, and suggested that prices should follow the international market. Taxation was to be reviewed with a view to capturing a larger share of the rapidly increasing economic rent from petroleum production, as the international price had increased so rapidly¹⁰².

The Norwegian Special Tax (ST) was introduced in the Odelsting Proposition No. 26¹⁰³, passed in February 1975. The ST approximates an excess profits tax in that it is levied at a rate of 25% on the same profits as are the Norwegian corporate taxes. It is assessed on company profits rather than on a field production basis, like the British PRT, but "extraneous losses ... cannot be offset against the profits of Continental Shelf operations and since capital allowances may not be claimed until the asset is brought into 'ordinary use' ST assessment is effectively on a field by field basis."¹⁰⁴ Using various model fields and computer analyses, Robinson and Morgan estimated that at 1977 prices and taxes, the Norwegian and British fiscal regimes would yield roughly similar percentage government revenue shares.

The go-slow depletion policy remained intact throughout the 1970s. Per Kleppe, Minister of Finance stated in an interview that

As long as some of Norway's petroleum reserves remain below the North Sea, our assets are probably fairly well placed. A gradual rise in the relative price of petroleum would represent interest earned on these untouched assets. Reasoning along these lines, this kind of investment compares favourably with financial investment abroad.¹⁰⁵

As it was, in 1977 Norway's Prime Minister in a Newsweek interview said that 40-50% of the state's oil revenue was being invested outside the country as the economy simply could not absorb the capital generated from petroleum production¹⁰⁶.

The third licensing round awards were made in November of 1974, and only 8 blocks were offered. Statoil won 50% or more participation in all of the five licences awarded, and full operator's rights for one field¹⁰⁷. The fourth round was to have been held in late 1977, but a major blow-out in the Ekofisk field provoked an extended public discussion on the dangers of offshore production in terms of safety and environmental hazards. However, the licensing award was delayed only until 1978 and marked an increasing role for Statoil. Provisions were made for the gradual take-over of all Norwegian oil production by increasing the percentage of Statoil's participation in the awards and by setting five-year limits on the licences awarded to other companies¹⁰⁸.

By the late 1970s, however, tension was growing between Statoil and Norwegian private interests in the petroleum sector, and between Statoil and the NPD. Norwegian companies felt that Statoil was

edging them out of opportunities in which the public corporation was supposed to be assisting them, and the NPD had become completely overshadowed by Statoil. Two means of inhibiting Statoil's growing dominance of the petroleum sector were discussed: removing its functions as state revenue collector, and awarding more concessions to private companies¹⁰⁹.

In 1980, the government produced a White Paper on the activity on the Norwegian continental shelf in which its depletion policy was reaffirmed and a taxation review was suggested¹¹⁰. In February, petroleum companies and other interested parties were invited to submit proposals for a change in tax arrangements. The modified proposals boosted the average tax rate on Norwegian production from 69.2% to 81.8% primarily through an increase in the Special Tax to 35%¹¹¹.

The Labour government fell in 1981 and was replaced by a Conservative coalition which acted immediately upon the concerns regarding Statoil. Only one month after the election, the new Prime Minister, Kaare Willoch, "...announced that his government intended to promote greater participation in oil by private Norwegian oil companies."¹¹² In January 1982, the Storting reversed the previous government's decision to give Statoil 50% interest in all licence awards, although this decision was later reversed as well.

The fiscal regime remained intact until July 1986, when the Norwegian government announced substantial relief for new discoveries and some relaxation for fields already under production¹¹³. Royalty rates were reduced to zero on future developments, and the ST rate was reduced to 30%. In addition, the newly elected Labour government announced a reduction of Norwegian oil exports late in 1986 in an

attempt to support the international price of oil¹¹⁴. The Norwegian government encouraged Britain to adopt a similar posture, but such overtures were immediately rejected by the Conservative government.

The principal difference between British and Norwegian petroleum policies is in the area of depletion. Due to completely different economic and energy requirements, the Norwegian government has been able to put in place a very conservative depletion policy which does not limit production in any way, but limits discoveries by awarding exploration licences in small numbers and infrequently. Fiscally, the arrangements in both countries appeared to yield equivalent government revenue shares at least until the late 1970s, and both governments follow the international market in determining prices.

CONCLUSION

This brief survey of petroleum policies in Canada, the United Kingdom, and Norway has shown that in many respects, petroleum fiscal policies appear to be surprisingly similar despite differences in states, governments, and resource situations. All three states introduced major petroleum policies after the first OPEC price crisis, all of which concerned the encouragement of resource development and the capture of maximum economic rent for the state. All three states established national petroleum companies in the 1970s, the principal functions of which were to increase state presence and augment government information on petroleum activities. However, there are certain obvious differences in the priorities and emphases of petroleum policy as well, especially in the areas of pricing and depletion policies. The Canadian policy of government-

determined petroleum prices varies markedly with the policies implemented in Britain and Norway and illustrates certain political constraints on the federal government which do not exist in the other cases. Norway is the only state in which a conservative depletion policy was espoused, pointing out a significantly different economic situation from the other two states.

The similarities in fiscal regimes as well as the differences in pricing and depletion policies may possibly be accounted for by an economic view of state behaviour which describes political and social, as well as economic, objectives of states in relation to economic principles. Furthermore, there is great scope for additional research on more detailed questions of petroleum policies within the framework of rational choice theory.

For example, taking the three countries examined, a comparison between the investment policies of Alberta (although not examined in any detail in this dissertation) and Norway may be made with those of the Canadian and British governments. Alberta and Norway might have assumed strikingly similar positions regarding the long-term investment of their petroleum revenues. However, the Albertan government invested its petroleum revenues in the Alberta Heritage Trust Fund while the Norwegian attitude favoured a slower depletion rate combined with investment abroad. Both positions can be contrasted with the financial and political necessities faced by the two larger states, Canada and the United Kingdom. Both of these governments are constrained in the development of their depletion/investment policies by significantly larger populations, and thus significantly greater social welfare obligations, in relation to the resource potential. Both have larger economies as well, which are capable of absorbing (and indeed in need of) the

enormous revenues generated by petroleum production. A comparison of the Scottish Nationalist movement and western Canadian separatism in the 1970s might also be fruitfully pursued within rational choice terms. In both countries, separatist movements increased their activities coincidentally with the increasing value of petroleum resources they believed to be their own. Detailed examination of these and similar topics is outwith the scope of this dissertation, but could be taken up by students of rational choice theory in further efforts to clarify the politics surrounding petroleum resource development.

Many such other comparisons are made possible if the various aspects of petroleum policy -- government participation, pricing, depletion, and fiscal arrangements -- are examined in the light of some guiding hypotheses regarding the economic behaviour of states. A more detailed analysis of policy developments in each of the three case countries will be undertaken by comparing policies in each of the major fields with the models of petroleum policies generated from rational choice theory in Chapter 1.

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CHAPTER THREE

STATE PARTICIPATION

Since the first OPEC crisis in 1973, state participation in petroleum producing countries has become the norm, not the exception. The consumer countries were made acutely aware of the value of secure petroleum supplies and the short-term inelasticity of demand for the product. Both producer and consumer states rapidly developed an interest in petroleum affairs if only to secure immediate objectives. Producer governments also turned their attention to the appropriate means of direct state participation in petroleum activities undertaken within their territories. As petroleum is, in most instances, a national natural resource, increased state participation was to be expected once oil became a political issue in the early 1970s. Prior to that time, there had been general satisfaction on the part of consumer states with the supply and price of the product as provided by the international petroleum industry. The assertion of sovereign control of petroleum in the OPEC states initiated similar responses on the parts of producer governments around the world. Direct state participation by OPEC countries had a domino effect -- a series of producer governments more or less followed suit.

State control over petroleum activities takes many forms. Governments introduce regulations over industrial activity to secure fiscal and other objectives. However, numerous producer governments have taken the step of acquiring an equity stake or nationalising the petroleum industry on the assumption that the privately-owned

petroleum industry does not operate in the best interests of the government or the citizens, and that private ownership must be replaced by active state participation.

The readily identifiable imperfections of the petroleum market -- decreasing costs, public goods, and uncertainty -- encourage government action on several fronts. Oligopolistic domination first by the multinationals and then by OPEC highlighted the problem of decreasing costs. The nature of petroleum exploitation -- the costs and expertise involved -- have encouraged the emergence of several integrated multinational companies whose dominance has been replaced by the assertion of OPEC sovereignty over petroleum in those states. Government action in both producer and consumer states might be deemed necessary to protect consumers from the unchallenged dominance of these groups. Additionally, in producing countries, petroleum resources are now generally owned by the public and their exploitation is controlled by the government. Production of petroleum therefore necessarily yields two types of good: the private good of petroleum and the public good of the opportunity of increased revenues accruing to the government. Thus government policies should be directed towards maximising the public good viz. revenues, which could have the effect of market distortion. Producer governments wishing to exploit petroleum resources in a conservative manner may have to mitigate the effects of investment uncertainties caused by this policy. Many of the problems for producers and consumers associated with imperfections in the petroleum market can be dealt with effectively through the implementation of production, pricing, and taxation policies on the part of producer and consumer states.

However, there are other reasons why governments may wish to participate directly in the exploitation and production of natural resources. In socialist states, ideological hostility toward a free market system, even if regulated, may be a motive. Nationalisation of strategic industries may be seen as the only effective means of ensuring the development of a natural resource in the public interest simply because it is assumed that private industry will pursue short-term profit maximisation regardless of other social and political considerations. In capitalist states, the public might favour a tangible government presence in the petroleum industry, not merely to deal with the specific problems mentioned above, but also as an assertion of public sovereignty over resource development. In these cases, the public may not distinguish too clearly between control exercised through, on the one hand, various production, pricing, and taxation policies and, on the other hand, direct state participation, whether or not the means of participation actually yields any greater control over the industry than other regulations.

Governments have basically four options, assuming that a total lack of regulation is unacceptable. The regulated market option would introduce effective policies concerning production, pricing, and taxation in order to secure adequate government revenue, supply of the product, and appropriate financial return to the owners of the resource. If effective regulation of the petroleum industry was the only issue, it is doubtful that many non-socialist states would go beyond the regulated market option. However, if broader political factors are being considered by producer governments, there is a whole spectrum of options for state participation ranging from simple equity ownership in private petroleum companies through the establishment of public petroleum corporations to outright

nationalisation of the entire industry. The majority of western producer states have chosen to establish public petroleum companies to secure "the public interest" in petroleum development.

The advantages and disadvantages of each of the three options concerning state participation are obvious. Outright nationalisation embodies the greatest amount of state involvement over resource development. It is, however, difficult for the state to acquire sufficient information and expertise to make the most of its control. Furthermore, complete nationalisation of an industry is not popular in most western democracies where there is an evident and strong attachment to the market system. Modern democracies have experienced continuous tension in public opinion between state intervention and individual freedom and responsibility. The establishment of public corporations in the petroleum sector is a tangible demonstration of state ownership over the resource. The mandate of the corporation can be flexible, allowing for an augmentation or diminution of the corporation's involvement in production, pricing, refining, marketing, and rent collection as the international petroleum market and domestic political factors change. However, the more effective the public corporation is, the more government relations with the existing petroleum companies will be strained. Additionally, the flexibility of the public firm's mandate may create additional uncertainties in the petroleum market. Finally, equity ownership could allow the government to exercise a degree of control over company activities consistent with its share of ownership without necessarily alienating the industry. In other words, equity ownership could bring almost the same advantages without some of the attendant disadvantages of outright nationalisation.

Given the basic assumptions of rational choice theory -- that governments will be primarily concerned with maintaining office and acquiring sufficient revenues to assist them in that endeavor -- several expectations regarding state participation follow. It would be expected that direct state participation in the petroleum sector would be augmented in response to strategic concerns regarding supply, public demand for an increased state role in the development of a national resource, and when information for the appropriate design of policy in other petroleum areas, for example regarding the taxation regime, is lacking. The converse of this hypothesis would also be expected, i.e., that when such pressures diminish in relative importance on the public agenda, state participation would similarly assume less importance as well.

However, rational choice theory likewise indicates that the interests of the bureaucracy may not correspond exactly with the interests of the *politicians* or of the public; therefore, policy options which maximise bureaucratic control are expected to be those favoured by the administration. Bureaucrats might be expected to exercise influence in favour of the maintenance of such participation policy as exists in the face of decreased interest in the issue on the part of the public or government. Public opinion may move against direct state involvement in the petroleum sector when supply is secure and prices satisfactory, and likewise, once information sufficient for the formulation of petroleum policies is gained, politicians may lose interest in direct state participation. In this case, bureaucratic interests in preserving their spheres of activity and influence may stem the tide against direct state participation in the short term.

Governments of the right would normally be expected to stand against direct state participation in favour of developing policies in other areas to regulate market activities. Governments of the left would be expected to favour nationalisation measures depending on their degree of socialist commitment, although leaders on both sides of the ideological spectrum may have interests which vary dramatically from those in the rank and file of the party. However, an extrapolation of rational choice principles would indicate that governments of any political persuasion would be more influenced by vote-capturing possibilities than ideology. An application of rational choice theory to the issue of state participation would lead to the expectation that the popularity of the policy would be the prime determinant of its introduction, followed by the potential revenue lost or gained in its implementation, and finally the ideological considerations.

Different parties in office would therefore not necessarily support different participation policies. If state participation is an important issue supported by the public, any government, no matter what its ideological position, would support policies maintaining or expanding state participation. When public opinion is less concerned with state participation, ideological differences in party positions on the issue will be more evident. When public opinion becomes hostile towards state participation, governments will take steps to reduce or eliminate state participation. Thus the prime determinants of the implementation of a participation policy must be the prevailing conditions (supply, price, nationalistic, and ideological considerations) and public opinion, not necessarily the ideological position of the party in power.

The public's interest in direct state participation in the petroleum industry is likely to increase at times of crises in supply and price, and will lessen as the crisis passes. In states where governments have regulated various industries by mechanisms other than nationalisation, public opinion will swing against direct state participation once the crisis has passed. In states where democratic socialist policies have more influence, public pressure might be exerted to decrease the importance or role of the participatory mechanism, but will probably not prove as dramatic a reversal as would be expected in a less interventionist state.

The private petroleum industry would be expected to assume a hostile stance towards state participation for several reasons. Firstly, participation marks an expansion of government control which would impinge upon its freedom of decision-making and the possibility of maximum financial gain. Secondly, direct participation must eventually result in the private industry's loss of its monopoly over crucial information regarding matters such as reserve standings, production potential, and marketing opportunities. Thirdly, participation might result in more effective policy-making in other areas including exploration, production, pricing, and fiscal arrangements. In fact, the threat of nationalisation may in itself go far to encourage the responsible behaviour of the private industry. Regardless, it would be expected that the private industry would lobby against any form of direct state participation and would be opposed to it once such a policy was implemented.

It must be remembered that governments have an entire spectrum of participation policies at their disposal, but the creation of public petroleum corporations has been the option of state participation most often chosen by producer governments in the last fifteen years.

By 1960 Government [petroleum] companies numbered seventeen but by 1970 there were thirty-three such companies and [by 1981 there were] in excess of fifty. In addition we should have regard to the twelve or so companies -- principally European and Japanese -- which operate on a similar basis to private companies but are at least partly owned or controlled by their respective governments. Thus in all, there are nearly seventy Government or Government controlled oil companies and it seems the end is not in sight...¹

Both producer and consumer states have chosen, for different reasons, to establish national petroleum companies. Public petroleum corporations in producer states have been primarily concerned with exploitation, pricing, and marketing control. In these cases, the underlying rationale is the assumption that private petroleum companies will not consider the political and social impact of resource development in their investment and production decisions and will be exploiting petroleum solely to secure their own immediate gain. By establishing a state petroleum company, the government shifts the balance of power away from the private industry in this arena and demonstrates its commitment to the proper regulation of the development of the nation's resource. In consumer states, the principal consideration has been to secure short and longer term

supplies; many consuming nations have set up petroleum corporations with a mandate for negotiating purchasing agreements with producers. National security has been the motive behind the establishment of public petroleum corporations in these states. There may be overlapping considerations in states which have both producer and consumer interests, but the emphasis placed on the various functions performed by such public firms gives an indication of the priorities of governments.

The three states under consideration in this study each established public petroleum corporations to facilitate the direct participation of the state in petroleum activities. These agents of the government were meant to advance government policy objectives through their choice of activities, to engage in transactions with private sector firms in promoting these activities, and to provide the government with information of importance to policy-making. The relationship of a public petroleum corporation to both government and to private industry is of great importance to the fulfilment of its mandate. Public petroleum corporations are readily criticised for operating like private firms, but without the private industry's profit-motive -- i.e., they have conflicting objectives: national versus corporate objectives. Their national objectives are those established by the government of the day, and these are likely to place political and social priorities above economic ones. Corporate objectives would focus on financial criteria of viability and return on investments. Public corporations may fulfil neither set of objectives and thus alienate both the government, to which they are accountable, as well as the private industry, with which they deal in day-to-day operations.

Given the difficulties associated with public corporations, there must be political reasons beyond the realisation of national or corporate objectives which justify their creation and operations. "...[N]ational oil companies have been established to deal with specific economic, political, and social issues.... In fact, direct intervention is more costly than indirect regulation. One must understand that NOCs cannot be launched, nor survive, nor prosper without consistent and sizeable government assistance."² Given the assumptions of rational choice theory, it seems realistic to argue that one of the primary purposes served by public petroleum corporations is the appeasement of public opinion. This chapter proposes to examine the state participation policies and the public petroleum corporations in Canada, Britain, and Norway with a view to illuminating the rationale behind the introduction of these policies and relating this information to the arguments generated from rational choice theory.

1. PETRO-CANADA

There are a plethora of crown corporations in Canada which have been created for a variety of reasons. Because of the vast size of the country and the remoteness of many of its smaller settlements, many transport and communication links have been secured by public corporations whose functions include providing services for these areas at a financial loss. Market failures have led to public expectations of governmental intervention in markets thus affected. There are also crown corporations which are granted monopoly control over a given service or product and provide it at minimal cost to the

public, possibly securing a profit for the government in some instances. Clearly, economic viability is not the sole criterion upon which crown corporations are established, yet it certainly appears to be the principal avenue for criticism of the performance of such public companies.

Virtually all of the producing provinces and a good many of the consuming provinces have established crown corporations in the energy industries including the Alberta Energy Company, Saskatchewan Oil Company, Ontario Hydro, and the Newfoundland and Labrador Hydro Corporation among others. Some of these firms obviously perform functions as the sole producer and marketer of natural resources owned by the provinces concerned. Others have been set up as players of similar status to private firms and the governments responsible have typically taken an equity share in these companies to secure a certain return to the province for the development of the resource. Crown corporations are familiar in the Canadian context and the public accepts, by and large, the legitimacy of governments taking a direct role in certain industries for a variety of reasons. However, the establishment of Petro-Canada, the federal crown petroleum company, provoked an intense debate which, more than a decade after the fact, has not yet completely subsided.

The Trudeau Liberals were returned to power as a minority government in 1972. One of their first initiatives was a policy review in the energy field, and the publication of An Energy Policy for Canada--Phase 1³ in July 1973 was the culmination of that effort. The question of the viability of a national petroleum corporation had been under official consideration for some time, and it was in this policy statement that it was first raised as a concrete possibility. Pratt notes that as early as 1971, the Department of Energy, Mines

and Resources (EMR) commissioned the American consultant firm of Arthur D. Little to prepare a report on national oil companies⁴. Its author was Wilbert Hopper, appointed Assistant Deputy Minister in the federal department of Energy, Mines, and Resources in 1974, and shortly thereafter made the first President and Chairman of Petro-Canada. According to Pratt, Hopper was very suspicious of the possibility of marrying both the national and the corporate interests of a national petroleum company in one entity.

Donald Macdonald, Minister of EMR in the 1972 government, had suggested prior to the tabling of the July policy statement the establishment of a federal petroleum company in order to engage effectively in petroleum trade with other producer and consumer nations⁵. His original intention was to establish a national petroleum trading company in order to weaken the control over supply and price held by the major multinational corporations, but this proposal was rejected by the Trudeau cabinet. It has been suggested that many of Macdonald's cabinet colleagues were concerned about the criticism which such a policy might provoke from the business community, and that the necessity of taking such a step was not evident.

In the July statement, the advantages and disadvantages of a national petroleum company were publicly discussed.

A 'national petroleum company' (NPC) would provide a vehicle by which the government could seek to obtain better knowledge of the domestic and international petroleum industries thereby providing legislators with more valid law-making insights. An NPC could act to stimulate regional development in specific areas of Canada. It could serve as a centre for

Canadian research... It could play a role in determining the criteria on which the government might base its policies regarding economic rent collection.⁶

Points raised in the discussion were that such an endeavor would prove uneconomic, and that the benefits of state participation in the industry could be achieved by means already at the disposal of the government (i.e., "there is no discernable void to be filled in Canada by the formation of a national petroleum company"⁷). Furthermore, it was suggested that such activity could discourage foreign investment, "thus initiating a slowdown of investment in Canada's oil and gas industry which could result in an eventual overall net cost to the Canadian taxpayer or energy consumer..."⁸, although the high level of foreign investment is disparagingly discussed on the following page of the document.

However, the developments in the Middle East and the price of imported oil in the autumn of that year quickly overshadowed the July statement; the government rapidly implemented various strategies on several fronts to cope with the changing situation. The petroleum industry was requested to freeze prices, an export tax was levied on supplies destined for the U.S., and the establishment of a national petroleum company was proposed⁹. The public agenda was dominated by the energy issue -- security of supply and a stable and reasonable price were the public's, and therefore the government's, immediate concerns. The rapidly escalating cost of imported oil which supplied all of eastern Canada's requirements and the security of that imported supply necessitated an immediate redesign of the National Oil Policy.

Although Canada was technically self-sufficient¹⁰ in petroleum at the time of the 1973 crisis, she was still heavily reliant on previously cheaper imports for the satisfaction of the large market in the central and eastern provinces. As mentioned in the discussion of the National Oil Policy (NOP) in Chapter 2, the Canadian petroleum market had been divided into two sectors in 1961: the western half was supplied with more expensive domestic production and the eastern half was reserved for less expensive imports. The events of 1973 led to an immediate reevaluation of this policy resulting in the demise of the NOP and a rethinking of pricing and marketing strategies for domestic production. The concern with supply was exacerbated by the National Energy Board's pessimistic forecasts of petroleum reserves and future demand published in October 1974¹¹, in which the immediate reduction and eventual elimination of oil exports to the U.S. was recommended. Where three years earlier, the Canadian Energy Minister Joe Green had been publicly proclaiming that Canada's petroleum reserves would last centuries¹², there was now very public anxiety about whether there would be sufficient petroleum to last the next decade or two. Clearly the government and the Canadian public had been knowingly or unknowingly misinformed about the extent of Canadian petroleum reserves which further emphasised the insecurity of petroleum supply and information.

Concern over security of supply and the government's need to acquire accurate information about the nation's petroleum resources led to the re-examination of the crown corporation option. A state petroleum corporation might effectively manage petroleum trade with other state corporations in the market, but it might also prove a source of invaluable information through its participation in joint ventures with private firms. "The definition of Canadian energy

resources was important (1) to assure adequate supplies for Canadian requirements; (2) to permit the development of policies concerning the rate of use of Canadian resources for domestic and export markets; and (3) to establish appropriate policies for the collection of economic rent."¹³ In addition, a public petroleum company could be used by the government to explore the viability of high-risk ventures such as offshore exploration and oil sands development which might not attract the investment of private industry because of the long lead time and front-loading of investment in such ventures. As Minister Macdonald said in March 1975, "The Government does not feel assured that the private sector can be relied upon to mobilise all of the enormous amounts of capital which will be required to secure energy development consonant with Canadian needs over the long term."¹⁴

The Trudeau Liberals had managed to secure only 109 seats in the 1972 federal election, with the Conservatives capturing 107, the New Democratic Party (N.D.P.) 31, and the Social Credit (SC) 14. The N.D.P. had the capacity to ensure the government's survival or failure, and its energy position was quite clear. It favoured the protection of Canadian consumers in the form of a legislated price for Canadian oil and the creation of a crown petroleum corporation to participate directly in exploration, production, and marketing operations¹⁵. Many Liberals agreed with the N.D.P. position, and it is widely thought that Trudeau's energy policy statement of December 6, 1973¹⁶ was a product of the N.D.P.'s power in the de facto Liberal-NDP coalition government. Prior to this statement, the N.D.P. had "threatened to defeat the Liberals unless the Cabinet agreed to make certain specific commitments on energy issues: the list included a single oil price for Canadian consumers, the creation

of a national oil company, the guaranteed extension of the interprovincial pipeline into the Montreal area and accelerated exploitation of the tar sands."¹⁷ The Liberal cabinet had already discussed all of these policy options, and accepted the N.D.P. recommendations after some debate on the pipeline extension. As mentioned, the creation of a national petroleum corporation had been brought up earlier in the year by Minister Macdonald and had been shelved at the time. Although the N.D.P. wielded an obvious degree of influence over the timing and implementation of these policies, the international situation was equally important. To credit the N.D.P., as some observers have done, as the catalyst of this change in Canadian petroleum policy would be as incorrect as suggesting that it was solely a Liberal initiative or that the developments in the international marketplace were the only concern of the government. It must be said that none of these policy options had been outwith the consideration of the minority Liberal government in the months prior to the Prime Minister's statement.

The publicly-stated reasons for the creation of Petro-Canada were security of supply and the government's need for information, but the political reality was that the Canadian public was greatly concerned about petroleum price and supply, and that the promise of the establishment of a public petroleum corporation secured N.D.P. support for a minority government anxious to retain power. The OPEC crisis further encouraged a change in energy policy, but it was not until the Liberals were returned with a majority government in 1974 that they implemented the Petro-Canada legislation. This could indicate that a majority Liberal government, if elected in 1972, might also have pushed through similar legislation without the demands of the N.D.P. Additionally, despite the N.D.P. threat of

withdrawal of support, the minority Liberal government did not pass legislation to create a public petroleum corporation immediately, indicating that there were concerns other than for N.D.P. support which were equally or possibly more important to the government. In other words, the attribution of the creation of Petro-Canada to pressure exerted by the N.D.P. late in 1973 is an incomplete explanation. There were also uncertainties regarding the international petroleum market and pressures from the petroleum industry which might have induced the government to delay the implementation of its participation policy.

The initial draft of the Petro-Canada legislation was given first reading in the House of Commons in May, 1974, a few days before the Trudeau government was defeated on its budget proposals. Donald Macdonald was once again appointed Minister of Energy, Mines and Resources after the return of a majority Liberal government in July, and the Petro-Canada legislation was re-introduced as Bill C-8 in October. Pratt suggests that the initial decision in 1973 must "be interpreted, first, as a strategy by bureaucratic actors to extend their control and influence over the energy sector and to expand their departmental influence and, second, as a political decision timed by a minority government to shore up its hold on office."¹⁸ Once the policy option of creating a national oil company had been considered by the government, the bureaucracy concerned would probably have favoured the implementation of such a policy, although evidence supporting this assumption is hard to find. The creation of a national oil company would mean increased bureaucratic activity and power, as the Department of Energy, Mines and Resources would be involved in both drafting the legislation and staffing the

corporation. It would also increase the Department's access to information useful in preparing future policy changes and as ammunition in future confrontations with various political actors.

The debate on the second reading of the Petro-Canada Act began in the spring of 1975. The Conservatives had been soundly defeated in the July 1974 election principally because of the stand of their leader, Robert Stanfield, in favour of wage and price controls. The Liberals opposed this policy in the election campaign, although they introduced wage and price controls in 1975 in any event. However, the Conservatives continued to fight the Petro-Canada issue as a matter of principle. The Conservative Party felt it had to distance itself from the Liberals and return to its ideological roots in order to provide a real alternative for the Canadian electorate. Its opposition to the creation of a crown petroleum corporation was based on the principle that government interference in the market should be as limited as possible. Furthermore, the Conservatives argued that the implementation of an interventionist policy would prove costly and the objectives of secure supplies and access to information could be achieved through other policy instruments.

The Conservative government of Alberta under Premier Peter Lougheed was adamantly opposed to the creation of a national petroleum company for reasons additional to those espoused by the federal Conservative Party¹⁹. Alberta was concerned that Petro-Canada could be employed by the federal government to wrest both economic rent and industrial activity away from the province. If the corporation behaved like any other petroleum company, there would be little reason for concern and there were possible benefits to the province associated with its creation. Petro-Canada could be a means of obtaining federal government commitment to high risk petroleum

ventures in the province such as the development of oil sands plants. However, the Alberta government was initially concerned that the national petroleum company could be used as a weapon against the rising economic influence of the province and would impinge upon its jurisdiction over natural resources within its boundaries.

Albertan members of the federal Conservative caucus were particularly critical of the proposed policy. Joe Clark, later leader of the party and Conservative Prime Minister in 1979, argued that the creation of Petro-Canada was an encroachment by the federal government on the constitutional responsibility of the provinces for natural resource development. "It [the federal government] wants power. It is prepared to extend its influence and its activities by intruding upon the jurisdiction of the provinces, by moving into the private sector whatever the cost."²⁰ As early as November 1976, Clark was claiming that if the Conservatives won the next federal election, they would "wind down Petro-Canada and sell it either in whole or in pieces, as part of a broader policy of trying to minimise the proportion of gross national product spent by government."²¹ His continued opposition to Petro-Canada later in the decade would plague the Conservative party and contribute to its exclusion from power in the general election of 1980.

The N.D.P. also criticised Petro-Canada as it was originally conceived. To the N.D.P., the proposed national oil company represented a mere technical instrument, not the challenge to private industry for which they had hoped. Private petroleum companies would maintain the same degree of freedom in terms of decision-making and would simply consider the public corporation as yet another player in the Canadian petroleum market, not a mechanism by which strategic policy could be imposed. Statements in defence of Petro-Canada made

by various Ministers of EMR and company directors have supported this view over the years. "The Government has said that Petro-Can does not represent a step towards nationalisation and that the private companies should consider its creation as a governmental initiative favouring private enterprise in Canada."²² Liberal governmental spokesmen also took pains at the time of the Petro-Canada debate to hold out "...the spectre of what the industry would face if the New Democratic Party wins the next legislative elections."²³

Bill C-8, An Act to Establish a National Petroleum Company, was passed on July 10, 1975 by a vote of 112 to 65. The mandate of the new company, as outlined in section six of the Act, was rather broad:

(1) to undertake exploration and development of hydrocarbons and other types of fuel or energy; (2) to undertake research and development relating to energy; (3) to import, produce, transport, distribute, refine, and market hydrocarbons of all descriptions; (4) to produce, distribute, transport, and market other fuels and energy; and (5) to engage or invest in ventures and enterprises related to the exploration, production, importation, distribution, refining, and marketing of fuel, energy and related sources.²⁴

In addition to this set of responsibilities, the government wished to emphasise the role Petro-Canada would play in the exploration of Canada's frontiers for hydrocarbon potential by more detailed measures. The legislation allowed Petro-Canada to assume the government's 45% interest in Panarctic Oils Ltd., which was actively engaged in petroleum exploration in the Arctic, and other such joint ventures would be pursued by Petro-Canada whenever

possible. Later projects in which Petro-Canada became involved included the Polar Gas Project, the development of a transportation system to move Arctic gas to markets, and the Syncrude project in which oil sands were being refined and processed into synthetic oils. Once the crown corporation had sufficient expertise and capital, it would carry out research and exploration on its own initiative in ventures that otherwise would not attract the investment of private firms. In consequence, Petro-Canada was not assumed to have the corporate objective of other petroleum firms -- i.e., the maximisation of profit. It was to operate in the national interest, almost regardless of the cost, and the national interest as determined by the Liberal government in the mid-1970s concerned the accurate assessment of petroleum reserves, conventional and otherwise, in the state. Petro-Canada was clearly to perform functions which would contribute to the security of Canadian petroleum supplies, and an important element of this was its exploration role.

This is not to say that Petro-Canada had a free purse and no concern for capital accumulation in its early years. It was attempting to develop a cash flow which would support both a substantial exploration and a research commitment. In 1976 Petro-Canada purchased Atlantic Richfield, thus acquiring considerable petroleum industry expertise. The cost of the take-over was \$340 million, of which \$239 million was financed by the issue of debentures to the Royal Bank, and the remainder by the issue of ordinary shares to the Crown²⁵. The objective of the purchase was the acquisition of operating capability in terms of management and personnel. In 1978-79, it acquired Pacific Petroleum Ltd., further enhancing its operating capacity. This acquisition was extremely

controversial both because of the cost (\$1.3 billion) and because Pacific had an extensive retail distribution network²⁶. Retail activities were not mentioned in Petro-Canada's original mandate. However, in these and later acquisitions, Petro-Canada was also contributing to the reduction of the level of foreign ownership in the Canadian petroleum industry, a role which would assume greater importance after the introduction of the National Energy Program in 1980.

"As Petro-Canada was being conceived, foreign controlled companies accounted for over 90% of the petroleum production in Canada (the percentage was even higher in crude oil, but lower in the case of natural gas...). Of the fully integrated firms, virtually 100% were foreign controlled since almost all the refining and marketing capacity in Canada was under foreign control."²⁷ The issue of foreign control over the Canadian petroleum industry had also come on the political agenda after the events of 1973. The Foreign Investment Review Act²⁸ created an agency whereby the level of foreign control in any given industry would be monitored and controlled if necessary by the Foreign Investment Review Agency (FIRA).

The information function Petro-Canada was to perform as a "window-on-the-industry" for the federal government was also of some importance once the company was firmly established. The crown corporation, involved in day-to-day petroleum business, was supposed to yield valuable information concerning other policy areas such as depletion policy (the ascertainment of reliable information about reserves so as to develop and market the resource responsibly) and fiscal measures (to capture the maximum economic rent from the

industry). However, Wilbert Hopper, Petro-Canada's chief executive, has noted that information thus acquired has not always been used, or used to best advantage.

You can't communicate if nobody wants to listen and different ministers listen to different degrees.

Ministers listen to a lot of people. They listen to Imperial Oil and to Shell and Gulf and Mobil, who all come to see them. Those guys probably see the minister more than I do.... I've had different ministers and some don't wish to exercise 'a view through the window' as we see it. Or we may tell them and they'll not listen, or they may disagree....

The same is true with deputy ministers. Some deputies want to hold the cards very close to their vests, and are not awfully concerned about what I have to say... Others are more open....

So, to begin with, it's an uneven course. In addition, I have to say that I'm not the only one in this company who communicates his views in Ottawa. There are a number of people who do. There's not just one conduit.²⁹

In essence, the degree to which the government exploits Petro-Canada's unique position within the industry as a source of otherwise confidential information depends entirely on the political and bureaucratic actors involved. Information supplied by Petro-Canada had to compete with that given by private firms and the industrial associations as well, all of whom are attempting to gain ministerial and bureaucratic attention. The advantage to the government which Petro-Canada has provided in terms of information is uncertain, although this function was one of the two emphasised at the time of the initial Petro-Canada debate.

Ministers and deputy ministers have taken advantage of Petro-Canada's various roles or not at their discretion, but another aspect of the relationship should be emphasised. The government, as sole shareholder in the firm, exercises a great deal of control over the management of the corporation. Firstly, the Cabinet is responsible for the appointment of Petro-Canada's Board of Directors which in turn selects the President and Chairman with cabinet approval. Thus government control over senior management posts is assured. In addition, Section 7(2) of the Petro-Canada Act requires the company to comply with such policy directives as the government may issue from time to time. Section 7(3) requires the annual capital budget to be submitted to the Minister to obtain cabinet approval. In addition, the fact that Petro-Canada is a crown corporation means that it is subjected to greater public scrutiny in the media than any private petroleum company, and is expected to be more forthcoming in giving detailed responses to queries than its private counterparts.³⁰

Petro-Canada has no power of its own to regulate or influence private activity by any means other than its own operations. In short, Petro-Canada is not a regulatory body. It is a state corporation which can operate in the same way as a private firm in the petroleum industry, within the terms of the policy objectives outlined by the government of the day. Petro-Canada is subject to the same taxation as other petroleum companies except in the case of the Petroleum and Gas Revenue Tax (PGRT) introduced in the National Energy Program 1980. In this instance, Petro-Canada was excluded from paying the tax because the funds thereby gained were employed to encourage Canadian participation in frontier ventures through the

Petroleum Incentives Program (PIP). For Petro-Canada to pay PGRT and receive PIP payments would be meaningless as it already received capital injections from the government for exploration purposes.

Capital injections received by Petro-Canada from the government amounted to \$380 million per annum until 1984³¹. The company has also had the right of borrowing \$760 million from the government in addition to whatever loans it could secure from private sources. By 1984, Petro-Canada was a large, integrated petroleum company on equal footing with many of the multinationals. The government had a burgeoning deficit problem and suggested eliminating the capital injections. Petro-Canada's President, Wilbert Hopper, responded by telling the federal government that if the cash injections were stopped, Petro-Canada would cease its operations as a policy instrument which indeed has appeared to be the case³².

These financial advantages were but one source of strain on Petro-Canada's relations with private petroleum firms in the early years of its operations. In addition, the federal government revised the Crown land regulations in 1977³³ which had been criticised as not protecting Canada's long term interests. The net result of the changes gave Petro-Canada a preferential position on Canada Lands (territories and waters over which the federal government has jurisdiction).

The original federal regime introduced in 1964³⁴ had granted uncontrolled entry into exploration leases on federal territories on a first-come, first-served basis of application with a minimal work requirement. The permit gave the *lessee* the right to a production lease, which imposed a royalty rate of 5% for the first three years and 10% thereafter, with the Cabinet having the power to reduce this

royalty rate. The result was that by 1972, approximately 85% of Canada's continental shelf was covered by permits held by the major multinational oil companies with minimal exploitation obligations³⁵.

In a statement made on May 19, 1976, EMR Minister Alastair Gillespie announced a proposal for a Petroleum and Natural Gas Act to amend the federal fiscal regime, along with new Canada Oil and Gas Land Regulations³⁶. The bill received first reading in December 1977, but it lapsed and was not re-introduced. However, in the 1977 amendment to the Canada Lands regulations, Petro-Canada was given the right to select, for oil exploration, up to 25% of existing and future Crown lands for a period of seven years. In addition, the crown corporation was given a "back-in" option on leases already held by other firms. If significant discoveries had not been made by the leaseholder in the first twelve year period, Petro-Canada could take up 25% of the original lease. This retroactive imposition of state participation in the Canada Lands was not appreciated by the petroleum industry which claimed that it amounted to expropriation without compensation.

In under four years, Petro-Canada became the second largest producer of natural gas and the seventh largest producer of oil in Canada³⁷. Its assets totalled approximately \$2.1 billion, and it was ranked as the sixth largest oil company operating in Canada and the largest Canadian petroleum company. Petro-Canada was outstandingly successful in terms of growth, yet criticism of the corporation continued from both the private industry and the federal Conservative party. In the election campaign of 1979, Joe Clark, Conservative leader, pledged to dismantle or privatise Petro-Canada if elected. In consequence, when the Conservatives formed a minority government after the general election of May 22, 1979, the future of Petro-

Canada was in doubt. However, the Conservative leadership had not recognised the popularity of the national petroleum company. A Gallup Poll taken in August 1979 revealed that Canadians rejected the Clark government's proposals to privatise Petro-Canada by a majority of two to one³⁸. Later in the year, the Conservative Energy Minister changed his position to a review of Petro-Canada's assets with a view to maintaining some and privatising others. Despite this backtracking, Prime Minister Clark denied any shift in policy.

A task force to examine options for privatisation was set up and it reported to the government in mid-October 1979³⁹. It proposed to divide Petro-Canada's functions and assets into two separate bodies: Petro-Canada Exploration Inc. would become a major Canadian petroleum company retaining approximately 97% of current assets; and a much more limited government agency would retain responsibility for trade with other state-owned petroleum companies, research and development, and high-risk exploration ventures. The task force further recommended a gift of \$100 worth of Petro-Canada Exploration shares to each citizen with the option of selling them after six months. Individuals would be limited to a total of 1% interest in the company and "eligible" institutions 3%. The estimated total cost of this scheme to transfer Petro-Canada to the Canadian public was \$3.8 billion. "For the Conservative Finance Minister John Crosbie, no contemplation [of the plan] was required -- the report that was the subject of much hilarity among Petro-Canada management was dismissed out of hand."⁴⁰

The Conservatives' policy regarding Petro-Canada was reworked and finally appeared after the defeat of the government in December on its budget. The "Program for a Strengthened Petro-Canada"⁴¹ received little public comment at the time of its publication, but it

marked an impressive rhetorical shift for the Conservatives. From the previous position of denunciation of the principles on which it was based, the Conservative Party was now suggesting Petro-Canada become 'the best and the biggest energy resource company in Canada'. The document suggested the acceleration of Petro-Canada's growth by giving it access to non-investment capital, the removal of budgetary and operating constraints to allow for effective operation, and increased Canadian ownership and control in the Canadian petroleum industry by giving Canadians an opportunity to invest in Petro-Canada. The new improved Petro-Canada would be a mixed enterprise with 70% of its shares being privately owned (50% gifted, 20% sold) with the government retaining a 30% controlling interest and control over appointments to the Board of Directors. It was too little, too late. The new policy proposal received scant public comment, probably as it was published during an election campaign in which the public seemed opposed to any sort of privatisation of Petro-Canada. The public agenda was again dominated by the issue of petroleum prices once again as a result of the Iranian revolution and the second major acceleration of international petroleum prices.

The national oil company was not an interventionist whim; it was a government response to the demands of the electorate. Amazingly, the Tories never analysed the situation in this way. In particular, they never realised the powerful reinforcing effect that the second OPEC crisis in 1979 would have on the electorate's desire for an energy security blanket.⁴²

However, the Canadian public was not entirely united on the issue of Petro-Canada. As might have been expected, citizens in the producing provinces in the west were in favour of the privatisation of the national petroleum company, but did not have the electoral weight of the heavily populated east where Petro-Canada was highly regarded as symbolic of Canadian natural resource ownership. The Conservatives relied too heavily on their support in the western provinces on this issue and did not take a balanced view of the state of public opinion expressed in the federal election.

The Liberal party was once again returned to office with a clear majority under Pierre Trudeau in February, 1980. The new government was committed to a new energy policy, including a revised pricing policy to meet Canadian needs and a strengthened and expanded role for Petro-Canada. The government's National Energy Program (NEP) of October 28⁴³ put into effect the Liberals' objective of "Canadianising" the petroleum industry, partly through discrimination in favour of Canadian owned and controlled firms in Petroleum Incentive payments for exploration on the Canada Lands, and partly through a fund to be used by Petro-Canada to make further acquisitions of foreign-owned firms. The Canadian Ownership Special Account was funded from a levy on all petroleum consumption in Canada and this account in turn funded Petro-Canada's post-NEP acquisitions. In February 1981, Petro-Canada made its first acquisition under the new arrangements, purchasing Petrofina Canada Inc. for \$1.19 billion⁴⁴. This acquisition continued to plague the current Conservative government under Prime Minister Brian Mulroney elected in September 1984. The Auditor General, Kenneth Dye, has, for the

last several years, been unsuccessful in gaining access to information which will prove whether or not the Canadian public paid a greatly inflated price for the Petrofina assets.

In addition to the acquisition role, Petro-Canada's rights in the Canada Lands were altered in the Canada Oil and Gas Act 1981⁴⁵. In this Act, Petro-Canada's previous back-in rights were dropped in favour of a carried interest of 25% in every lease on Canada Lands. The "carried interest" concept means that the lessee must carry the interest of Petro-Canada, i.e. must be entirely responsible for all exploration costs until economically viable production is proven. At this stage, Petro-Canada can exercise its 25% interest, assuming its share of both expenses and profits. This policy change allowed Petro-Canada the option of participation after the initial exploratory work had been completed at the expense of the private lessees, whereas the previous back-in right automatically granted the interest along with the financial responsibilities attached to it. This was intended to secure an increased government share of economic rent and increased control over the potential depletion of federal resources.

This policy, and indeed the entire "Canadianisation" thrust of the NEP, created considerable difficulties in Canadian/American relations⁴⁶. Both the U.S. government and American business had persistently objected to the role of the Foreign Investment Review Agency (FIRA) since its creation in 1973, and the NEP's discrimination against foreign firms coupled with the carried interest provision on the Canada Lands further increased tension between the two governments. The Reagan administration was in its early days, and although relations had never been better after the Canadian assistance to American hostages escaping Iran in 1979, the

NEP quickly provoked a hostile reaction south of the border.

Diplomatic channels were used to voice criticism of the government's discriminatory actions against American firms, and mechanisms of economic retaliation were considered within the Commerce Department and the Office of the U.S. Trade Representative⁴⁷. Although the Canadian government did not then revoke the offensive aspects of the NEP, it agreed that similar legislation would not be extended to other sectors of the economy. In May of the following year, the government further agreed to pay compensation to firms affected by the modified Petro-Canada back-in provision.

The reaction of the Canadian petroleum industry to the NEP was no less immediate and extremely hostile. Although the intention of the new policy was to favour the smaller, independent Canadian companies, the harsher fiscal regime introduced in the NEP made cash flow reductions inevitable. The Independent Petroleum Association of Canada (IPAC), placed advertisements in newspapers across the country denouncing the NEP. As a result of this action, Petro-Canada withdrew its membership from IPAC and for three years remained outside the petroleum associations⁴⁸. In 1984 it joined the Canadian Petroleum Association (CPA), but by that time its policy role had been greatly reduced and the hostility of the petroleum community towards the company had waned.

Criticism regarding Petro-Canada's independence from the government came from other quarters. It has been suggested that the crown corporation moved further and further from its original mandate in its 1980s acquisitions, all of which concerned "downstream" (refining and marketing) assets. After the 1981 Petrofina

takeover, Petro-Canada went on to purchase BP Refining and Marketing Canada in 1983, and the downstream assets of Gulf Canada in 1985. By focusing on acquisitions at the downstream end of the business, the Canadian public was paying for Petro-Canada to acquire a large market share in the often unprofitable sector of the industry and for increasing its public presence. Some critics were more cynical in their view of the company's motives, ascribing to it ambitions of monopoly control in the retail end of the Canadian petroleum market. Even Petro-Canada's President admitted that the corporation does not serve any national purpose in the retail sector⁴⁹. However, such exposure certainly benefited Petro-Canada's public relations if only by keeping its name and logo ever present to the Canadian public. Financially, Petro-Canada was criticised as well, both for employing accounting practices different from those used by other petroleum companies and which are alleged to have led to an inflation of company profits⁵⁰. Finally, Petro-Canada's management was accused of paying some executives salaries greater than those approved by cabinet⁵¹.

In the federal election of September 1984, the Conservative Party under Brian Mulroney was returned to power with an overwhelming parliamentary majority. Although antagonism toward Petro-Canada remained, the Tories were clearly concerned to tread carefully on the issue of Petro-Canada, having learned a difficult lesson in 1980. They replaced most of the corporation's Board, and imposed a new mandate -- to operate commercially with the emphasis on profitability and to maximise the financial return to the government. Petro-Canada was no longer to be regarded as a policy instrument, yet the government reserved to itself the right to direct the company's activities in the national interest when necessary⁵². The \$210

million that had been earmarked for Petro-Canada's use in 1985 was cut off, and an additional \$38 million in dividends were to be extracted in 1986 by the government. Petro-Canada was no longer viewed as a threat by the industry, and remained a symbol of national pride in the minds of many Canadians.

In early 1986, there were rumours in Calgary, the Canadian petroleum capital, regarding the possible privatisation of the company which were fuelled by Energy Minister Carney's visit to Europe in the spring of that year. In February, she examined models of privatisation of other public petroleum companies in Britain (Britoil) and France (Elf Aquitaine and CFP). However, with international oil prices collapsing, it seemed unlikely that in the near future the government's investment of over \$3.6 billion in the company could be realised by privatisation or any liquidation of assets. Despite this, discussion of Petro-Canada's imminent privatisation emerged once again in late 1987, although specific details had not yet been finalised.

Petrocan suggests that psychology can overcome the most distressing economics. Despite every adverse argument one can marshal, the company survives and grows because it remains an important symbol for Canadians. Even Bill Hopper can only look on in amazement. 'We get shit publicity', he says, 'but gee, are we popular!'⁵³

The creation and history of Petro-Canada appears to indicate that it was primarily a political device used by succeeding Liberal governments to bolster public perception of national control over petroleum resources. It was created in the aftermath of the first

OPEC crisis when the Canadian public had been shocked both by international events and by the downward revision of Canadian reserve estimates. Although Petro-Canada's mandate emphasised its exploratory role in order to secure Canadian supplies, the company purchased, at a substantial cost to the Canadian taxpayer, most of its petroleum reserves in its 1970s acquisitions. Its post-NEP activities focused on further acquisitions in the downstream sector which had little connection to its original corporate purpose, and these again were subsidised by the public via the Canadian Ownership Charge. Despite continual criticism of its performance from the financial sector and the private petroleum industry, Petro-Canada remains one of the most popular of Canadian Crown corporations. Attempts to dismantle it in the face of overwhelming public support for its maintenance have proved disastrous for the Conservative party, and in the initial climate of international oil price depression, it seemed privatisation would elude the present Conservative administration as well. Although the controversy surrounding Petro-Canada has waned considerably and it no longer performs any direct policy functions, it remains a popular symbol of the desire for Canadian control over Canadian resources. Nonetheless, public interest in security of petroleum supply and price has likewise waned in the current environment, and the question of Petro-Canada's privatisation has once more emerged. If the Canadian government is truly interested in disposing of the national petroleum company, it seems an opportune period in which to do so.

2. THE BRITISH NATIONAL OIL CORPORATION

Public ownership in the British oil industry began in 1914 when Winston Churchill, then First Lord of the Admiralty, acquired a 51% state holding in the largest British petroleum company, Anglo-Persian, now British Petroleum. This action was taken to secure oil supplies in the First World War, which was of the utmost importance to naval operations. Although the British government never attempted to exert pressure on BP in order to influence North Sea developments, the holding was maintained until 1987 and was justified on the grounds of security of supply. However, the events of 1973 proved that the government's equity control of BP was insufficient to secure the company's cooperation in landing its petroleum supplies in Britain in emergency situations. The company continued to operate on the basis of its previous contractual agreements despite pressure from the government to redirect its supplies to the U.K. Consequently Britain suffered from the supply shortage and price increases much like any other large consuming nation in 1973-74.

Shortly thereafter, the British National Oil Corporation (BNOC) was created by the newly elected Labour administration to complement the activities of the long-established British Gas Corporation (BGC). Both these national petroleum companies have been privatised in recent years, but their creation, mandates, and eventual demise tell much of the dominant interests of the various governments responsible for the development of North Sea petroleum.

Government activity in energy industries was familiar to the British public of the 1960s and 1970s. After World War I, the British coal industry was in a state of disarray (depressed demand,

fragmented ownership, strained labour relations) and government intervention followed in the 1930s. The government's involvement began with the determination of price and output quotas in order to stabilise the market, and by 1938 it had acquired powers to reorganise the industry entirely⁵⁴. In 1942, the government declared its sovereignty over coal deposits and the industry as a whole was nationalised by a new Labour government in 1947.

The domestic gas industry was also under government control from the early nineteenth century when "town gas" was produced from a carbonisation process of different types of coal. Local monopolies over the process grew up and were eventually controlled by legislation, but the post-war Labour government nationalised the gas industry in 1948, setting up the Gas Council at the same time⁵⁵. The Gas Council was to oversee the operations of the local gas boards.

As for petroleum, the Petroleum (Production) Act of 1934⁵⁶ had secured Crown ownership of all onshore petroleum deposits, and the ratification in 1964 of the United Nations' Continental Shelf Convention vested all rights to British offshore reserves in the Crown. In the Continental Shelf Act⁵⁷ of the same year, the British government extended its licensing authority to the offshore with the aim of establishing an attractive regime to secure exploration of the North Sea potential. The Act received Royal Assent on April 15, 1964 and within one month the government placed the proposed licensing regulations before Parliament. By May 15, the government had invited applications for 960 exploration blocks by July 25⁵⁸. The Conservative government was most anxious to determine the extent of Britain's offshore petroleum resources.

In the general election held in October of the same year, the Labour Party came to power and immediately suggested that there should be a greater British share in the licences than the 23% which British companies had acquired in the first licensing round. In particular, the Labour government considered that the nationalised industries, the Gas Council and the National Coal Board, should play a greater role in the development of national petroleum resources.

In 1965, the government passed the Gas Act⁵⁹ which granted monopsony powers to the Gas Council. It was to be the sole purchaser and distributor of North Sea gas, thus maintaining its control over the British gas industry as a whole. The intention of the government was to capture the maximum economic rent realised from North Sea gas production. If the petroleum companies were allowed to compete for the domestic gas market, secure a market share, and sell North Sea gas at competitive rates, in the long term they could acquire substantial economic returns. This was, in part, because the companies had been granted exploration and production licences so freely and at low cost while the government was actively encouraging North Sea exploration. In setting up the Gas Council as monopsonist, the government intended to sell North Sea gas to the British consumer at a low price so that, in effect, such economic rents as would result from North Sea gas production would be passed on to the consumer or acquired by the Gas Council on behalf of the government. The Department of Energy was to be the sole arbiter of what constituted a 'reasonable' price for gas sales to the Gas Council. A price of 2.3 cents per therm was established for North Sea gas which was only one-third the price of an equivalent heating value of oil, with limited provision for escalation. The one-third price ratio was

retained throughout the decade⁶⁰. By 1977, gas cost 5 cents per therm, while oil was 24 cents per therm, and in 1981 gas cost 21 cents per therm while oil cost 62 cents per therm.

This policy resulted in a shift of exploration activity away from the southern North Sea Basin (primarily an area of gas reserves) to the northern North Sea Basin (where the potential for oil was much greater)⁶¹. With the likelihood of increased gas prices marginal at best, most petroleum companies rapidly moved their activity into the more promising oil sector in the late 1960s despite the high costs of exploration and production in relation to the current international price for oil. In the longer term, this might have proved beneficial to the rapid development of Britain's oil resources, but it was not an intended consequence of the original GC policy. Gas exploration remained depressed throughout the 1970s as a result of the Gas Council monopsony and of the increasing financial potential of oil production after the first OPEC price increases.

The other consequence of the Gas Council monopsony was distortion in the demand side of the gas market. As gas remained very inexpensive in relation to oil, demand increased while exploration and development declined. In this regard, the Gas Council was having a much greater influence on the development of gas potential and the depletion of gas reserves than the government had perhaps intended. The advantage of the policy was supposed to be the benefit to the gas consumer, but several authors suggest that much of the economic rent was consumed by inefficiency in the operations of the British Gas Company itself (BGC, as the Gas Council was renamed in 1972). "It is no criticism of the Gas Council, which merely operated within ground-rules laid down by governments, to say that the price it paid for natural gas was so low that it lacked any

proper standard of efficiency.... What would otherwise have been rent in private corporations appears to have been translated in whole or in part into organisational slack in a nationalised corporation."⁶² In 1977, BGC reported a profit of \$55 million per annum, but critics of its accounting methods suggested a more likely figure should have been \$3.5 billion⁶³. Robinson notes that "it is probable that the lack of competitive pressure on BGC inflated its costs so that its profits turned out to be small relative to the rent available from North Sea gas."⁶⁴

By 1980, concern arose within the BGC over the potential gas shortage which might result in the late 1980s and 1990s as a result of the exploration hiatus of the 1970s. In addition, the newly elected Conservative government had pledged itself to privatisation or at the very least, increased competition in the gas industry. As a result, BGC began to offer higher prices for gas to producers in the early 1980s, restimulating interest in the southern basin in the process. However, in 1982, the government passed the Oil and Gas (Enterprise) Act⁶⁵ which allowed gas producers to sell reserves not already committed by the BGC to any other potential purchasers. The procedure for making such sales was cumbersome and such direct sales had not occurred by 1985⁶⁶; however, the possibility of competition had clearly contributed to a change in attitude both within and in relation to the BGC.

However, in the early 1980s as the government was attempting to reduce the dominance of BGC in the gas market, the corporation was simultaneously attempting to adapt to future potential competition while strongly resisting government initiatives to change its mandate. Conflict arose between BGC, the government, and the oil companies. "[I]t is entirely understandable that attempts to reduce

BGC's market power by the two Thatcher administrations since 1979 should have been resisted by the Corporation...."⁶⁷ BGC had, through government policy, developed control over British gas development from exploration through pricing and marketing. It would have been indeed unusual for the corporation *quietly* to accept the demise of its power. Nonetheless, the government's commitment to privatisation prevailed and in 1985, the government announced its intention to privatise BGC⁶⁸. The issue of BGC shares was made extremely public through an aggressive advertising campaign which contributed greatly to the success of the share flotation in late 1986. The Treasury received approximately £6 billion from the issue. The government's commitment to privatisation was initially ideological in inspiration, but the financial rewards associated with its implementation in the case of the BGC must have contributed to the zeal with which the policy was pursued in other nationalised industries.

The national petroleum company, the British National Oil Corporation, was created much later than the Gas Council, had a different mandate, and was privatised before the BGC. Although not established until 1975, the government was considering the possibility of a public petroleum corporation as early as the mid-60s. In 1966 and 1967, the Labour Party Fuel Study Group conducted a review of U.K. Continental Shelf policy which resulted in a recommendation that a National Hydrocarbons Corporation be established. This corporation would "assume sole responsibility for exploration and development in all the offshore areas not retained by existing licensees."⁶⁹ For existing licences, the national corporation would takeover the petroleum interests of the National Coal Board and the Gas Council. Krapels suggests that the proposal was not adopted at the time "because the oil prospects were still so

uncertain, and the establishment of a state company might have caused some private firms to turn away from the British North Sea. There was also the fear that such an action might have adverse effects on British oil interests abroad."⁷⁰ The government concentrated instead on licensing arrangements and, prior to the second round in 1969, announced its preference in granting licence awards to groups collaborating with the national fuel companies.

The establishment of a national oil company was not seriously proposed again until the return to power of a Labour administration in the spring of 1974. In the aftermath of the first OPEC crisis, Prime Minister Wilson wished to pursue the same objectives as his predecessor, Mr. Heath, in terms of securing supply, increasing government revenues as prices rose, and achieving a greater degree of government control over the North Sea petroleum industry. However, the Conservatives had been reluctant to secure these objectives via extensions of the public sector, preferring a reform of the taxation system as proposed in the First Report of the Public Accounts Committee⁷¹. The Labour party, on the other hand, advocated nationalisation of the North Sea petroleum industry as the most effective means of securing public control over development and a fair share of the profits.

The Labour Party election manifesto expressed Labour's determination to ensure not only that the North Sea and Celtic Sea oil and gas resources are in full public ownership, but that the operation of getting and distributing them is under full government control with majority public participation. The Government have also made it

clear that it is their intention to ensure that as a result of the exploitation of these resources maximum benefit is conferred on the community...⁷²

In the aftermath of the 1973-74 OPEC crisis, with the British public clearly concerned about petroleum supply and price, the time seemed ripe for a dramatic change in participation policy. The Labour government's White Paper of July 1974 entitled United Kingdom Oil and Gas Policy⁷³ described in detail the means by which the new administration proposed to fulfil its campaign promise of majority public participation in the petroleum industry.

The government intended to act on five fronts⁷⁴. Firstly, a new Finance Bill would be introduced which would place an additional tax on profits made from Continental Shelf petroleum production. Secondly, a condition of all future licences would be that majority participation be granted to the state, should the state so require, in all fields discovered under those licences. Thirdly, the government intended to invite private petroleum companies to submit their views on the appropriate means of implementing state participation. Fourthly, the government would establish the British National Oil Corporation (BNOC) to exercise its participatory rights. Finally, the government would extend its powers in relation to production and pipeline controls. The establishment of a national petroleum corporation was to be part of a larger reorganisation of the regulation of North Sea activities and the means by which the government, along with new taxation arrangements, intended to capture its share of profits. Interestingly, the establishment of BNOC was legislated in the Petroleum and Submarine Pipelines Act 1975⁷⁵, in which the government also assumed far-reaching powers over petroleum

production and pipeline development. It is clear that BNOC was but one initiative among several by which the Labour government was to establish maximum control over petroleum development.

The government's view on the concept of state participation in the petroleum industry was defended by Energy Minister Varley in the debate on the Petroleum and Submarine Pipelines Act. In this statement, Minister Varley also implied that the decision to create the BNOC was partly influenced by similar policy developments in other states, such as the establishment of Norway's Statoil and Petro-Canada.

The oil offshore is already the property of the nation.... But as soon as the oil is produced by a licensee, it becomes his own property, and the nation has no further title to it. Except for the United States, every major oil and gas producing nation has taken participation in the producing industry. I am not referring only to the OPEC countries, but also to Norway, Canada, Australia, New Zealand, and all the EEC members with substantial oil and gas prospects.... We believe that participation is the best way of ensuring that the nation shares fully in the benefits of North Sea oil. Participation gives the nation a direct title to the oil produced. It creates a partnership between the people of this country and the oil companies. Further, only through participation can the nation acquire its own direct knowledge of, and capability in, oil and gas production.⁷⁶

Through the British National Oil Corporation, the British government acquired a direct share of the oil production from its North Sea reserves to dispose of at its pleasure. This was intended

to contribute to the security of national petroleum supplies and to acquire for the Exchequer certain revenues which might otherwise have accrued to the petroleum companies. Finally, the government was clearly interested in developing its knowledge of and operating capacity in the petroleum industry in order to help formulate and implement policies to stimulate activity while gaining an appropriate share of the revenues for the state. Direct participation through a national petroleum corporation had been the mechanism by which other states in similar situations had chosen to achieve these objectives, and the British government saw no reason why it should not follow suit.

The security of supply and revenue objectives BNOC would theoretically achieve might well have been accomplished via other policy mechanisms, and Krapels argues that "there is little or no information pertaining to North Sea oilfield development that the Government does not get, or could not get if so desired. The existence of BNOC has no effect on the volume or kind of data the Government can request."⁷⁷ The Conservative Party agreed with the Labour government on the desirability of all three objectives and with the means by which the government proposed to achieve the first two. After the publication of the Public Accounts Committee Report, there was interparty agreement on the need to implement a special petroleum tax of some description so as to secure for the nation a larger share of petroleum revenues. Government regulation of the petroleum industry was not at issue either, although the Conservatives appeared concerned that retrospective changes in licensing and production arrangements might be viewed by the industry as a unilateral abrogation of rights without compensation. The two parties disagreed on the details of policy designed to achieve these

first two objectives, but it was only on the issue of a public petroleum corporation that the Conservatives criticised the government's general position which, they argued, would result in unnecessary bureaucratic expansion. Patrick Jenkin, Conservative Energy spokesman, said that "...majority state participation is no more than the ugly unacceptable face of Socialism."⁷⁸ In essence, the concept of participation as defined by the Labour Party was unattractive from the Conservative point of view. Whatever benefits might accrue from direct participation by BNOC could be more easily and less disruptively pursued by the reform of taxation and depletion policies.

In his challenge to the proposed legislation, Jenkin recommended the establishment of a regulatory agency such as the Alberta Energy Conservation Board which performs both a regulatory and an information function for the government and the public⁷⁹. The advantage of this type of regulatory instrument was its relative independence from direct government control. The Opposition argued that BNOC itself would increase the uncertainty in the petroleum market and possibly be plagued by bureaucratic inefficiency. In addition, direct participation might be viewed by the petroleum industry as expropriation without compensation. Furthermore, the National Oil Account from which BNOC was to be funded would siphon off monies that would otherwise go to the Treasury. In short, the creation of BNOC was an unnecessary policy risk and the exact role the company would play was ill-defined. Despite Conservative objections to this and other aspects of the bill, the second reading vote passed by 286 to 258 votes. Hann suggests that "the debate over the establishment of BNOC suggest that BNOC was not intended to be a means to an end but more likely, an end in itself...."⁸⁰

The British National Oil Corporation was thus established in Part 1 of the Petroleum and Submarine Pipelines Act 1975 and commenced operations on January 1, 1976⁸¹. Government control over the company was to be exercised through its role as the Crown's agent in the petroleum industry and by various other administrative and financial means of control. The Secretary of State for Energy was responsible for the appointment of its Board members (including two civil servants), had to approve the corporation's business, and could give specific directives to the company which it was obliged to follow. The finances of the company were likewise under ministerial control. The National Oil Account, from which BNOC would derive its capital, was also established in the Act. This Account was to be funded by the state's income from oil and gas royalties and licence fees and was to be examined annually by the Comptroller and Auditor General. BNOC was additionally given an initial debt ceiling of \$1.3 billion which could be increased up to \$2 billion with ministerial approval. Funds could be borrowed from the government or from other sources if approved by the Secretary of Energy. Finally, BNOC was exempted from the payment of Petroleum Revenue Tax (PRT), introduced in the Oil Tax Act 1975⁸². As was the case with Petro-Canada, payment of such a tax would have taken money from one hand only to give it back with the other -- with BNOC paying tax to the government only to receive its capital from the same source. BNOC was also given the petroleum assets of the National Coal Board petroleum subsidiary, and it could be issued with exploration and production licences at any time by the government in the national interest.

In short, the government had complete control over the policy, administration, and financial development of BNOC. Despite this, the corporation was expected to function much along the lines of a

private integrated oil company. It was "[to combine] its functions as an instrument of national policy, a commercial enterprise and an advisor to Government."⁸³ The means by which it was to do so was through direct participation in North Sea petroleum activity. This participation was a required condition of the licences granted from the fifth round of exploration licensing onwards, from which point BNOG was to have a 51% participatory right in all potentially commercial fields. BNOG did not become a majority shareholder in the licences via this participatory right; rather, it acquired the right of access to 51% of the petroleum at the market price and carried its share of the exploration expenses. The government wished to secure its access to petroleum supplies from North Sea production and develop the future role of BNOG. Thus, BNOG's majority participation in all licences issued became a feature which the petroleum industry had to accept if it wished to apply for exploration licences from 1977 onwards.

However, the arrangement of BNOG participation in licences issued in the first through fourth rounds proved slightly difficult. Production was already underway in several fields and BNOG's retroactive assumption of a majority share in production could have posed severe problems for the government in its relations with the petroleum industry and the governments in which the headquarters of the petroleum companies were based, principally the United States.

It was decided early on not to make such participation a legal requirement, and it was soon apparent that those North Sea firms which had marketing operations in the UK would not sell BNOG an equity share in their existing licences voluntarily. Many were of the opinion that it made little sense to

make BNOC an equity partner in the licences of Shell, Esso, BP, and the other major UK refiners because BNOC would have to sell the oil right back to them if British oil were to be used for the British market....

Negotiations with the major companies eventually led to a compromise: BNOC would be given an option to purchase 51% of their North Sea oil, but it would be obliged under most circumstances to re-sell the oil to the same firm at the same price.⁸⁴

The excepted circumstance would be in the case of a national emergency as defined by the government. The guiding principle of the negotiations was that individual petroleum companies should be made neither better nor worse off by agreeing to BNOC participation. Furthermore, the government wished to secure a seat and a vote for BNOC on the operating committees of the fields already under licence to gain access to the information it required both for itself and for BNOC to perform effectively.

Negotiations began in 1975 and the only company which did not conclude a satisfactory arrangement with BNOC by the following year was Amoco, which was subsequently excluded from any fifth round licence awards⁸⁵. In July 1976, BP, BNOC, and the Secretary of State for Energy signed an agreement whereby BP, in which company the government still had an equity share, accepted the principle of BNOC participation and further agreed to train BNOC staff in its refining and marketing operations⁸⁶. This settlement put considerable pressure on other North Sea operators to reach agreements with BNOC, and by 1977, agreements had been made with all companies concerned. BNOC's participation in North Sea petroleum was assured for the time being. The Chairman of Shell Transport and Trading explained the

companies' change of heart by saying that "...now that BNOC is in existence we may as well try to keep it on the right lines."⁸⁷

There were obviously other incentives to cooperate as well, as Amoco's experience aptly illustrated.

The result was three different types of participation arrangements for the public corporation. Firstly, BNOC acquired equity participation as a result of its receipt of National Coal Board interests and through its purchase of Burmah Oil in 1976. Secondly, BNOC had unrestricted right of access to 51% of the oil produced in a number of fields which it purchased at market price and disposed of at will. Thirdly, BNOC had restricted access to 51% of petroleum production from fields controlled by the oil companies with major refining interests in the UK; in these cases, BNOC was required to sell back its oil to the same companies at the price of purchase, except in emergency situations. "[I]n the next few years BNOC, by virtue of its equity share in several fields, will acquire over 150,000 barrels per day of its own oil; 400,000 barrels per day of unrestricted option oil which will increase in later years...; and, if the Government chooses to take its royalty payments in oil rather than in cash, 300,000 barrels per day of royalty oil. In total, BNOC might have 850,000 barrels per day to dispose of by 1980."⁸⁸ BNOC was expected to control 1 million barrels per day by 1981, representing almost 40% of British North Sea production. In emergency situations BNOC would have rights to the restricted option oil, greatly increasing its ability to secure state supplies as the major oil trader of North Sea production.

In the fifth round of licensing BNOc paid its share of exploration expenses on its own insistence⁸⁹ and became able to exercise an option to withdraw from participation at any future point. BNOc would retain the right to re-enter by paying costs and interest thereon from the point of its opting out.

In the advent to the sixth licensing round in 1978, the government introduced a new feature in BNOc's participation right. It would henceforth be on a carried interest basis -- the private company would be responsible for the entirety of exploration expenses until BNOc chose to exercise its participation option. In addition, companies were invited to bid for licences offering BNOc at least 51% BNOc participation. The response of the petroleum industry was to send a delegation of protest to the Department of Energy in June, "insisting that the government's policy was so obstructionist that the whole North Sea program was being bogged down disastrously. Amid threats to boycott the new round altogether, they objected strongly to proposals to give the best blocks to BNOc, to the government's suggestions that the oil companies carry all the government's oil exploration costs, and that they give to BNOc more than the statutory 51% equity stake in new blocks."⁹⁰ Despite these protestations, the Sixth Round proceeded on schedule. In addition to the industry's complaints, the Public Accounts Committee had earlier in the year called for tighter control of BNOc's finances, arguing that Parliamentary rather than Departmental control through the National Oil Account was the appropriate means of monitoring the corporation's development.⁹¹

The Conservative government elected in 1979 heralded a major change in the status of BNOc. As early as July 26, the new Energy Secretary, David Howell, announced in the House of Commons that

BNOC's exemption from PRT and its 'first option' in farm-in arrangements were to be ended⁹². However, the corporation's access to participation oil was to remain a feature despite the new administration's inclination to introduce private capital into BNOC in some way. Perhaps of greatest importance, "[t]he conflict of interest that the oil industry felt was caused by BNOC being at once partner, competitor, and advisor to Government has also terminated. BNOC is to cease its functions as advisor to Government and the Department of Energy is to be strengthened to assume this role itself."⁹³ BNOC's privileged position in licence awards was to be eliminated and its future participation would be via negotiation rather than at the minimum level of 51%. In the seventh round in 1980, BNOC's participation reverted to an arrangement similar to the negotiations of licences awarded in rounds one through four. "With BNOC having to pay market price for its participation petroleum, it is clear that the primary interest of the present British Government is in controlling the destination of the oil, rather than in enjoying the economic benefit that hopefully comes from owning a true equity share in an oilfield."⁹⁴

Although these changes appeared to be substantial, it must be remembered that the Conservative party came to power pledged to dismantle BNOC altogether as part of its larger commitment to reduce state intervention in the economy. Hann suggests that the "complexities of the financial structure of BNOC, the substantial efforts made by Lord Kearton (the first Chairman of BNOC) to make it as difficult as possible to break up the Corporation and the new 'appreciation' of the value of BNOC revenue to the incoming Administration, resulted in government procrastination and ambiguity with regard to BNOC."⁹⁵ Grayson also suggests that the root of the

new Conservative appreciation for BNOC lay in its financial performance. "Through BNOC, the government was sitting on a large pool of oil -- and -- thanks to OPEC and its increased oil prices -- the government found its hands on a profitable enterprise. During 1979, BNOC made a pre-tax profit of [\$158 million]...."⁹⁶ Hann further notes that the Conservative government was prepared to use BNOC's oil trading capacity to support the price of North Sea oil on several occasions since the beginning of 1983⁹⁷.

The government continued to make changes in BNOC, although not in the direction of complete privatisation. The Oil and Gas (Enterprise) Act 1982⁹⁸ provided the government with powers to split BNOC into two organisations, one of which would be sold to the public in a share offer. Britoil would comprise BNOC's upstream (exploration and production) interests and 51% of its shares were offered to the public on the Stock Exchange in late 1982. In this legislation, BGC was likewise split into two organisations, with its upstream interests being transferred into a company called Enterprise Oil which was similarly traded on the stock market. The government retained a shareholding of 49% in Britoil, but, as in the case of its shareholding in BP, it would not be used to further government policies. The intention was that Britoil have identical status to any other privately-owned petroleum company operating in the British North Sea. BNOC would be retained solely as the government's trader of participation oil, receiving royalty oil and purchasing option oil at market price to dispose of profitably. The government was clearly intending to use BNOC as the means of securing petroleum supplies in the national interest when necessary, but the company was to justify its existence outside emergency situations by selling oil profitably in the marketplace. In any event, Kemp notes that BNOC's then

existing trading position may not have been sufficient to secure British supplies in an emergency⁹⁹. Because almost all BNOC oil was sold on a contractual basis, and most contracts were of a three month duration, it remains doubtful whether BNOC could have legally diverted its supplies. This would suggest one of three situations: either the government was badly informed about BNOC's abilities; the continued existence of BNOC was politically beneficial; or the bureaucracy was interested in the preservation of BNOC and persuaded the political actors to that position. The latter explanation does not preclude the former two.

It was BNOC's position as a major oil trader which provoked the final controversy culminating in the government's announcement in March 1985 to disband the corporation¹⁰⁰. In 1984, BNOC suffered considerable losses as a result of the decline in the international price. As the price moved ever more rapidly downward, the company could not dispose of its participation petroleum at the purchase price, let alone profitably. In the autumn of 1984, these trading losses became a matter of considerable public controversy, causing the government some embarrassment, especially in view of its original and frequently emphasised intention to reduce inefficient state activity in various sectors of the economy. The result was the government's decision to dismantle BNOC and to create in its place a regulatory agency to be called the Oil and Pipelines Agency (OPA) having responsibility for the disposal of state oil, the regulation of pipeline activities, and the custody of the state's deactivated participation agreements. BNOC had clearly outlived its usefulness.

The Labour government's creation of BNOC followed immediately on the heels of the first OPEC pricing crisis, and met with opposition from both political opponents and private industry. Nevertheless,

BNOC was rapidly, albeit reluctantly, accepted by the private petroleum companies in the series of participation agreements that followed its inception. Although its main function was intended to be the acquisition and disposal of state oil, in contrast to Petro-Canada's emphasis on exploration and production, BNOC was nonetheless fulfilling the same objectives of securing petroleum supplies in the national interest and providing the government with information on petroleum activities. In the late 1970s, it attracted much the same criticism as Petro-Canada from the New Right. However, neither Petro-Canada nor BNOC were subjected to immediate privatisation upon the election of a Conservative government, despite the fact that the British Conservative Party had included privatisation of BNOC in its election platform. Eventually, BNOC was privatised in part in 1982 and fully in 1986 as its financial losses proved more costly to the government than the political advantages of retaining the company. Privatisation of both BNOC and the BGC secured immediate funds for government and allowed the Conservatives to honour their ideological position.

3. STATOIL

"Before the OPEC revolution had even begun Norway's Labour Government had decided that since Norwegian capital would be unable to intervene significantly in the offshore operations, state capital should take the initiative."¹⁰¹ In this respect, as in others, Norway is different from both Canada and the United Kingdom where state petroleum companies were not established until after the first OPEC pricing revolution.

However, as in the cases of Canada and Britain, state participation was not a feature of the original licensing regime in the Norwegian offshore. The first round of licences awarded in 1965 did not involve state participation, although Lind and Mackay suggest that preferential treatment was given to companies willing to form consortia with Norwegian interests.¹⁰² As suggested in Chapter Five on depletion policies, both Norway and the United Kingdom were anxious, at an early stage, to attract investment in the potential petroleum resources of their respective offshore territories and direct state participation seemed an unnecessary disincentive to investors.

By the time of the second licensing round in Norway, held in 1969, the Norwegian government required that all licensees agree to some degree of state participation in their awards either through net profit sharing or a carried interest scheme. In the former, the state would receive a guaranteed percentage of profits accruing from any commercial discovery. This arrangement amounted to an additional tax made on the licensees by the government, and the percentage of state net profits was negotiated separately by licence area. The carried interest system of state participation gave the state an option to a percentage of participation after the initial exploration work had been done. The licensee was responsible for the outlay of all exploration expenses, "carrying" the interest of the state until such time as a commercial discovery was made. The state could then choose to exercise its right to participate, in which case it paid its percentage share of exploration costs. The range of state percentages ran from 5% to 40% in various fields under the carried interest agreements¹⁰³. After the 1969 licence awards, the net profit sharing scheme was dropped in favour of carried interest

arrangements principally because the carried interest scheme offered the government the advantages of participation which an additional profit-sharing tax did not: namely, direct access to information and to sources of petroleum in addition to its royalty oil.

In order to make the most of this potential information and access to petroleum, the Norwegian Ministry of Industry proposed in 1971 that these participation rights should be vested in a 100% state controlled joint stock company. This proposal was accepted unanimously by the Storting in June, 1972, and Statoil was established¹⁰⁴. Statoil was to operate like a private firm in the Norwegian offshore, seeking to maximise profit. The government clearly intended it to become the major player in Norwegian petroleum activities, but its original mandate was rather vague. It was not clear whether Statoil would be used by the government to pursue regulatory objectives through its exercise of its participation rights, or whether it was to be merely another means of rent collection for the Norwegian government. Its functions were not clearly defined until the publication of Report No.30 to the Storting 1973-74¹⁰⁵, in which its objectives were listed. These included the expansion of state activities in the downstream sector, a major operating role north of 62° North, cooperation with Norwegian industry to build up an integrated petroleum sector, and influence on the depletion rate as well as the management of state participation interests in various licences.

The Norwegian Petroleum Directorate (NPD) was established April 1, 1973, and was given the regulatory mandate of enforcement of legislation applying to all petroleum companies operating in the Norwegian sector, including Statoil¹⁰⁶. The NPD was also responsible for the collection of seismic data in newly explored areas in order

to assist the Petroleum Ministry in both its award of licences and its formulation of appropriate policies. Later in the decade, the subordinate position of the NPD to Statoil became evident; with its expertise and power, Statoil could easily resist NPD directives. Both organisations attracted criticism as a result.

The creation of the NPD further defined the role of Statoil as being principally concerned with the management of state interests in the offshore (rent collection) and the encouragement of Norwegian industrial participation in offshore supply and services. Through the exercise of this mandate, Statoil would acquire for the state sufficient knowledge and expertise to assist in the formulation of petroleum policies in other areas in addition to assuring that the Norwegian industrial sector, and the Norwegian nation, was benefitting from offshore activity.

'Norwegianisation' refers to the continued development of Statoil and to increased involvement by the Norwegian companies Norsk Hydro and Saga. It also refers to the use of Norwegian goods and services on the Continental Shelf to stimulate Norwegian industry and employment.

The government wants to be able to influence the development and production decisions in order to control the aggregate production levels and to facilitate participation by Norwegian industry.¹⁰⁷

From the private companies' point of view, the participation of Statoil in the carried interest scheme functioned much like any other tax on petroleum activity, but clearly was not such a disincentive as to discourage their continued investment in the Norwegian North Sea throughout the 1970s and early 1980s. Objections to state

participation via this mechanism were made on other grounds, but Statoil itself rapidly became an accepted feature of, and later the dominant company in, petroleum activity in the Norwegian North Sea. As Arve Johnsen, Statoil's first chief executive, asserted: "After all, we are not nationalising or confiscating. We have simply placed our terms on the table and said to the companies, come and negotiate. If they don't want to, they can leave -- although our experience to date is that they want to negotiate."¹⁰⁸

Statoil's legal position is exactly the same as any other petroleum company operating in the Norwegian North Sea, a situation which was meant to strengthen its commercial acceptance. Its activities are regulated by the NPD as in the case of any other company, and it is subject to the same taxation as private companies in the Norwegian sector. It is incorporated under the Companies Act and not by a separate statute¹⁰⁹. However, although it has the appearance of a private company in some senses, Statoil remains very much an instrument of the state. Article 10 of Statoil's Articles of Association states: "The Board shall submit to the General Meeting [the Ministry of Petroleum], ordinary or extraordinary, all matters which are presumed to involve significant political questions or questions of principle and/or which may have important effects on the nation or its economy."¹¹⁰ Government control over Statoil's activities is grounded in this article; Statoil's commercial interests are subordinated to larger national goals as defined by the Ministry of Petroleum. The company must present its operating and financial plans to the shareholders' meeting, and must accept the conclusions of that meeting with regard to important decisions. The Ministry is responsible for reporting to the Storting about Statoil's activities. Any important issues concerning the national petroleum

company are debated and decided upon in Parliament. Statoil's Board of Directors are businessmen with their own objectives which may at times conflict with those of the Ministry, but it is not within the power of the Board to challenge Ministerial directives.

State participation through Statoil in 1969 licence awards ranged from a 5% carried interest in the Frigg field to 17.5% net profit sharing in other licences¹¹¹. Throughout the 1970s, prospects in the Norwegian North Sea continued to attract great interest from private petroleum companies, and the Norwegian state interest in petroleum licences was steadily increased. The Norwegian government wished to encourage the development of smaller prospects as well as larger fields, and therefore developed a scheme whereby the percentage of state participation would increase as the field size increased. It was assumed that larger fields could more easily bear the burden of higher percentages of state participation and still remain attractive investments. In the third licensing round, state participation ranged from a minimum level of 50% up to 75%, and the upper level was increased in the fourth round to 85%¹¹². The fifth round in 1980 had a maximum state share of 80% in some licence awards. These state participation shares were implemented through State Participation Agreements, signed as part of the licensing procedure between the licensee and the Norwegian state, which would be represented by Statoil in the actual operations of the licence. The actual details of the agreements were negotiated between the licensees concerned and Statoil.

Since 1973, the only mechanism of state participation has been the carried interest scheme, whereby Statoil has an option to participate up to its agreed percentage after commercial viability has been proven. The private companies involved must carry the

exploration expenses of the state company, thus bearing a heavy front loading of investment. Exploration expenses are, it must be noted, small in comparison with development costs and Statoil pays its share of the latter¹¹³. The private investor bore an onerous burden, but the increasing value of petroleum and the bright prospects of the Norwegian North Sea made Statoil's participation an accepted fact of North Sea operations throughout the decade and into the 1980s.

Statoil was also automatically awarded a seat on the operating committees of each licence from 1973, regardless of its participation level¹¹⁴. In this way, the Norwegian government attempted to increase knowledge and expertise within the state company, and to gain access to information to help develop petroleum policies with the prime objective of mitigating the potentially negative social and economic impact of petroleum development on Norway.

By the late 1970s, the Norwegian state was the recipient of from two-thirds to 90% of oil income generated from licences on the Norwegian Continental Shelf¹¹⁵. This income was derived from its taxation and royalty policies, which constituted the highest proportion of total government shares, and participation rights. By exercising a public policy of "going slowly" in the area of petroleum licensing and overall development, the Norwegian government had kept control over the pace of North Sea exploitation. Through its fiscal and participation policies, it had secured for the Norwegian public purse a substantial share of the revenues accruing from the development of a depleting, increasingly valuable natural resource. Despite these achievements, in the late 1970s and early 1980s, the roles of Statoil and of the NPD came under increasing criticism from both the public and politicians.

Although there seemed to be a general consensus within Norwegian society on the value of a mixed economy and the importance of state control over the petroleum industry, arguments developed over questions of degree and emphasis. Right wing parties queried whether state objectives might not be better achieved by a reduction of direct state participation (i.e., a restriction of Statoil's role) and an increase in the activity of other Norwegian companies¹¹⁶. Statoil's dominance of the Norwegian petroleum sector had caused conflicts between it and private Norwegian firms, and also between it and the Norwegian Petroleum Directorate. The NPD was seen as ineffectual, and Statoil was viewed as a state company in name only, pursuing the objectives of its Board with relatively little actual government control. Statoil had spent approximately \$1.7 billion in its first seven years of operation, but it did not receive any equity oil until early 1980 and its investments in petrochemicals, refining, and marketing were yet to show profits. Coupled with these problems came the realisation that predictions of potential production and revenue from the Norwegian North Sea which were made in the early 1970s were unrealistically optimistic¹¹⁷. In short, state policies in general with regard to petroleum development became a political issue, and Statoil was the example of how they had gone wrong.

"The growing criticism was channelled into the conservative-liberal goal of 'clipping the wings of Statoil', and thus reorganising it from a policy-oriented to a more purely business-oriented and competitive-oriented, albeit state-owned, corporation."¹¹⁸ In the early 1980s, the common belief was that Statoil would account for nearly 15% of Norway's gross domestic product¹¹⁹. This represented nearly the equivalent of the remaining contribution of the rest of Norwegian industry. The fear was that

with Statoil's increased financial and other resources, it would gradually assume an increasingly important role in petroleum policy formulation, overshadowing responsible ministries and regulatory agencies. Although Statoil was originally established as a private company operating as the agent of the state, its increased power and its often conflicting commercial and political objectives proved increasingly problematic for its creators.

Statoil's role could be reformed by limiting its downstream activities, or by limiting its participation in license awards (its upstream activities). Unlike the Canadian and British situations with regard to public petroleum corporations, privatisation was never seriously considered as an option for Statoil. The public consensus on the desirability of direct state involvement held, but various instruments of state control became increasingly controversial.

The Conservative coalition government elected in 1981 lost little time in announcing its intention to reform Statoil¹²⁰. Statoil would no longer serve as a revenue collector for the state, and it would relinquish its regulatory role to the Norwegian Petroleum Directorate which, it was hoped, would reacquire the position of ultimate control within the Norwegian North Sea. In January 1982, the Storting cancelled the decision by the previous Labour administration to give Statoil a minimum 50% stake in all North Sea licences, although this decision was reversed within two years¹²¹. The political and financial benefits of retaining Statoil's position in the Norwegian petroleum sector must have outweighed the costs of the controversy over its power.

By 1984, Statoil's financial position had improved considerably. Its 1983 profits increased to \$893 million from \$453 million -- a 95% increase from 1982. As sole shareholder, the state received more

than half of these profits in addition to the over \$890 million Statoil paid in taxes and duties¹²². Clearly, the company was in a position to make a substantial financial contribution to the Norwegian state. In the face of these statistics, political actors reevaluated the necessity of clipping Statoil's wings, as had occurred with British Conservatives and BNO. Labour Party spokesman on industrial matters, Finn Kristensen, argued in March 1984 that "The best way to keep Statoil under control is to strengthen the control agency NPD and the Ministry of Oil and Energy."¹²³ The fact that Statoil remains the predominant petroleum company in the Norwegian North Sea is an indication that this latter strategy has proved more desirable than either privatisation or a restricted function for Statoil.

Statoil's ability to make this significant contribution to Norwegian public finances has been sharply curtailed in recent years as a result of the depression of the international price for oil. However, it is through the company's control over the bulk of Norwegian production that the new Labour government, returned early in 1986, has restricted exports in the attempt to support OPEC pricing initiatives¹²⁴. The Norwegian government had very consciously used Statoil to its maximum advantage in various aspects of the company's mandate: financially and in terms of influencing petroleum supply. Successive Norwegian governments have, indeed, been relatively free to use Statoil to manage North Sea production because of the general consensus supporting direct state involvement in the economy. To date, Statoil has not outlived its usefulness despite recurrent controversy, and it seems unlikely that it will do so while the Norwegian people retain their affection for social democracy, no matter which party is in power.

In substantial ways, the creation and development of Statoil differs from the experiences of both Petro-Canada and BNOB. Firstly, the former public petroleum corporation was created by the Norwegian government before the OPEC pricing crisis of 1973 to act as an agent to handle state participation in the Norwegian sector of the North Sea. In effect, Statoil's creation could be viewed as an administrative decision rather than one based on nationalism. Secondly, the way in which Statoil was to intended to operate differed fundamentally from the other two public corporations: Statoil was to behave like a private company with the prime objective of maximising profit for its owner (the Norwegian state). It was to be subject to the same fiscal and regulatory arrangements as other petroleum companies operating in Norway. Statoil was never subject to the kind of controversy surrounding the privatisation initiatives of Conservative governments in the late 1970s in Canada and Britain. There always remained a broad agreement in both the Norwegian public and policy-making circles that direct state involvement in the petroleum industry was both necessary and valuable. This was a position born both from the history of social democracy within Norway and from concern for the fragile balance of the small Norwegian economy. The size of revenues from petroleum development had potentially disruptive consequences for the Norwegian economy and society and there was, therefore, general agreement that the Norwegian government should have the means of mitigating negative externalities. Only by direct governmental control over the pace of petroleum exploitation, and by its capture of the largest possible economic rent, could Norwegian society hope to benefit from the development of vast petroleum resources. Statoil was the main agency to assist the government in this endeavor, and although it fell prey

to criticism in the late 1970s, there was never any doubt that it would continue to operate. Reform was the issue, not elimination.

CONCLUSION

Through an examination of the participation policies of three petroleum producing states, Canada, Britain, and Norway, several hypotheses derived from rational choice theory appear persuasive.

Firstly, it was expected that direct state participation in the petroleum sector would increase in response to strategic considerations regarding supply, public demand for an increased role in the development of a national resource, and when information for policy-making in other petroleum areas was lacking. In both Canada and Britain, public petroleum corporations were established almost immediately after the first OPEC pricing crisis created supply concerns and made petroleum a political issue. In response to these pressures, governments in these two states adopted very public means of demonstrating state involvement -- Petro-Canada and BNOC. The desire for more complete information also played a role in the creation of these companies (both states publicly defended their decisions in this way), but the prime reason for the decision to participate through public corporations was political, not technical. The costs involved in establishing and operating a company whose prime objective was not profit maximisation suggest this contention.

The first impression is that Norway is an exception, but the reasons for the creation of Statoil were similar. There was a public demand for direct state participation and the state required information for formulating its petroleum policies, especially the

fiscal regime. The prime objective of the Norwegian government in its regulation of petroleum development was to mitigate the potential damage to Norwegian society and economy. With broad public consensus concerning the necessity of direct state participation in petroleum affairs, the creation of Statoil seemed to satisfy both financial and political objectives. It allowed the Norwegian treasury to benefit from participation revenues while the government was, at the same time, using Statoil to assist in its go slow development policy and its Norwegianisation efforts. The emphasis of the Norwegian company was placed on its corporate activities rather than its political purposes -- its prime objective was to be profit and it was to operate as any other company in the Norwegian petroleum sector. This is especially surprising given that a Labour government was responsible for the initial establishment of Statoil. However, given the broad consensus in Norwegian society in relation to state involvement in industry, any government could have implemented the participation policy chosen without fear of electoral defeat. With the elimination of the electoral constraint, the government could afford to emphasise its financial interests. The company outgrew its mandate in the sense that it, rather than the government, controlled petroleum policy. This might have been expected, given the initial government drive to establish a strong and independent state agent in the private petroleum industry.

The second part of the initial hypothesis also appears to hold -- that as these strategic, public, and information pressures have subsided, so too has the importance of state participation in the petroleum sector. Once the initial oil price shock had subsided and all three governments concerned had acquired information adequate to their needs, all three public petroleum corporations came under

increasing criticism. This criticism was stemmed by the second OPEC crisis in 1979-80, despite the fact that Conservative administrations had been returned to office in all three states in the years 1979-81. The financial gain which resulted from the second OPEC price crisis also contributed to the value of the state petroleum companies to their respective governments, thus postponing the privatisation debates in Canada and Britain, and keeping the debate in the realm of reform in Norway.

Thirdly, the relationship between party ideology and government position on state participation has not proved to be strong. This supports the rational choice hypothesis that governments of all persuasions have similar objectives in mind: attaining or retaining office, and subsidiary goals to assist the achievement of that aim. In Canada, Britain, and Norway, parties of both the left and the right have taken on rhetorical positions consistent with their ideological position, but, once in power, have not necessarily acted in accordance with those positions. The short-lived Canadian Conservative government of 1979 reaped the wrath of the Canadian public for its ideologically-motivated attack on Petro-Canada, and its successor elected in 1984 did not made the same mistake. And it was the Liberal government at the end of its term of office which took away the policy role from Petro-Canada. In Britain, the Conservatives forcefully argued against the creation of BNOC and campaigned for its privatisation in 1979, only to postpone that decision until 1982, and then only partially implemented it. BNOC was finally eliminated in 1986, but only after its financial losses created such an embarrassment to the government that it had little

option. In Norway, the Conservatives came to power in an atmosphere of intense criticism concerning Statoil, and initiated some policy decisions to curb its power, only to reverse them later.

In short, rational choice theory has something valuable to offer in the comparative analysis of policy outputs. The similarity in the timing, mechanisms, and general objectives of petroleum participation policies in Canada, Britain, and Norway might well indicate that governments in these three petroleum-producing states have similar interests concerning the development of their national resources. Norway appears to be the different case in this policy area, but the difference in its approach to petroleum matters results from concerns over potential disruption to society and the economy from the rapid development of a resource with enormous financial potential. Even allowing for this, the development of Norwegian participation policy bears more similarities to those of Canada and the United Kingdom than might have been expected unless a rational choice approach is adopted.

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CHAPTER FOUR
PRICING POLICIES

Classical economic theory suggests that, at equilibrium, price ^{in perfect competition} should be equal to the marginal cost of production. The international market for oil was obviously not in equilibrium after the OPEC pricing initiatives of 1973/74 and 1979/80. In the early 1980s, oil was selling for more than \$30 per barrel, while the exploration and development cost of high-priced North Sea crude averaged about \$12. "Gulf fields still run at about 50 cents and experts have estimated that most of the world's ultimately recoverable oil resources could be produced for less than \$12 (in 1976 dollars)."¹ This discrepancy between the costs of production and the price of sale is known as the economic rent. The opportunity for the capture of large economic rents was great in this market situation, and the question addressed by all governments with oil resources in the seventies and eighties has been how to capture a share of that rent while still leaving sufficient incentive for the industry to continue investing in exploration, development, and extracting the resource. Pricing policy partly determines who gets what from the sale of oil; and indeed, it was OPEC pricing policy which caused the initial breakdown of the relationship between cost and price of oil.

As discussed in the chapter on rational choice theory as applied to petroleum policies, pricing policies may take two basic forms: determination by the market, or determination by government in either set prices or through public petroleum corporation activity. In the first case, the owners of the resource are demonstrating their

confidence in the market's ability to deliver a fair return while in the latter two, there are obviously considerations which make market price determination undesirable. Government regulation of petroleum prices, whether through administratively established price schedules or public corporation activity, necessitates the evaluation of prices above market levels (a benefit to producers), below market levels (a benefit to consumers), or in line with market levels (in which case they are symbols of sovereignty over the resource, and little else). Price levels also affect reserve standings and investment and influence other macro-economic indicators such as inflation, unemployment, and exchange rates. Pricing policies of petroleum producing countries must therefore be taken as an important indication of the priorities and constraints of the respective governments.

It is against the background of OPEC activities that the pricing policies of Canada, Britain, and Norway have been developed. All three governments claimed the right to determine the price of petroleum produced within their territories; however, both market and government pricing strategies have been employed. Canada is the sole example among the three cases of a strategy of price control by the government -- while both the British and Norwegian governments have determined that their country's oil should be sold at world market prices. Accordingly, this chapter will comprise three sections: an outline of OPEC pricing activities, a discussion of the Canadian pricing policy, and an examination of the British and Norwegian cases considered together.

1. OPEC PRICING ACTIVITIES

"In an effort to provide stability for a system which is inherently unstable, attempts at cartelisation have been common in the history of the world oil industry. In 1928 the leading powers of the day -- British Petroleum, Royal Dutch/Shell, and Exxon -- met at the Achnacarry hunting estate and agreed on the principle that no company should seek to expand its share of the market."² The free-rider problem illuminated by rational choice theory suggests that there is an inherent tension between the self-interest of individuals and the collective interest of the group. The Achnacarry Agreement was ineffective as the parties to the agreement (and their competitors) attempted to increase their market share at every given opportunity. Although the benefits of collective action were obvious to the parties to the agreement, their individual self-interest dominated their actions to the detriment of the group's collective interest. The recent collapse in the international price of oil is, similarly and in a large part, the result of OPEC's inability to remain a disciplined cartel. Given the premises of rational choice theory, this outcome is not surprising.

Cartels are groups which have a monopoly of a good or service, and *attempt* to maximise their members' profits. The cartel collectively restricts production and thus maintains a price higher than the market price. Cartels are therefore concerned with two issues: price and production levels, with the latter being the mechanism by which the former is maximised. Rational choice analysis suggests that cartels are inherently unstable due to the same individual self-interest which drove each of the members to join the group in the first place. Once the cartel has achieved a satisfying

price level by the imposition of production quotas upon members, the temptation to free-ride on the group becomes intense for the less scrupulous members. Large gains can be made by individual cartel members by undercutting the cartel price and increasing production in order to capture a larger share of the market. This type of activity must be clandestine if the cartel has an effective disciplinary power; in the absence of discipline, individual members will have a much greater opportunity to make large gains. Once one member pursues this course of action, the other members must cut their prices to maintain their market share. Consequently, the price spirals downward as the market is flooded.

Cartels are most effective when the cartel's market share is large, the concentration of production is high, demand is inelastic, and governments do not attempt to control the cartel³. This situation in the international petroleum market allowed for OPEC's strength to burgeon in the 1970s and early 80s. However, cartels tend to disintegrate when production outside the cartel threatens its market share, when the development of substitutes threatens the demand for the product, and when rivalry exists between cartel members. OPEC benefited in the 1970s from conditions favourable to cartel efficacy, but it has encountered the typical problems mentioned above in the 1980s.

In his study of the international price of oil from 1880 to 1977, Ray⁴ asserted that major price increases followed the two World Wars but that in both cases, the price returned to lower levels shortly thereafter. These price increases were directly related to supply shortages in wartime, but market equilibrium was quickly restored. Prices remained fundamentally determined by the costs of production and the balance between supply and demand. From the 50s

through the 60s prices remained low, but as demand increased and producer governments started to test their strength in relation to the oil companies, prices began to climb in the early 70s. The initial explosive jump which appeared to have put the international petroleum market in perpetual disequilibrium occurred in October 1973 as a result of OPEC initiatives⁵.

The development of OPEC's influence from its inception in 1960 through 1974 was outlined in some detail in Chapter 2. The effects of the OPEC crisis of 1973-74 were OPEC's acquisition of control over price and the demise of the concession system. This made OPEC the dominant force in the international petroleum market, controlling the bulk of free world reserves and production. OPEC had advanced from a position of consultative negotiation with a hope of influencing the pricing decisions of the companies to complete control of the petroleum industry within its territories and the attendant influence on the world petroleum market.

The response of the consuming nations to OPEC's pricing initiatives was to establish the Energy Coordination Group (ECG), later known as the International Energy Agency (IEA), at a meeting in February 1974 in Washington D.C. "The ECG was widely, and probably rightly, seen as an attempt to make a counter-cartel to OPEC in order to defend the interests of the consuming countries in matters of production and prices."⁶ The self-interest of consumer countries was to be advanced by collective action, primarily on the prevention of future vulnerability of the same extent to OPEC. Both Canada and the U.K. joined the IEA, but for Norway, membership was problematic as the intensely political debate over membership in the EEC had occurred a mere two years previously. This debate had centred on the potential constraints that membership in organisations such as the

E.E.C. might impose on Norwegian sovereign action. There remained strong public concern in Norway that the development of petroleum resources should remain firmly under the control of the Norwegian government. IEA responsibilities might interfere with the exercise of that control, especially in situations of crisis in the international petroleum marketplace. However, Norway finally accepted status as an associate member of the IEA in the spring of 1975 which allowed it to participate in all essential activities, but exempted it from participation in the crisis management activities of the group⁷.

The IEA's principal achievement was the determination of a supply sharing scheme among its members in the case of a crisis similar to that which occurred in 1973. Additionally, all its members committed themselves to undertake steps to reduce petroleum consumption domestically and generally to increase energy conservation. Although the IEA was established after the damage of the first pricing crisis was done, it nonetheless demonstrated to the OPEC governments that the consuming nations were not going to leave the security of their petroleum supplies entirely in the hands of the OPEC producers. Beyond this, however, not much else could be done collectively to mitigate the effects of the consuming nations' vulnerability to OPEC actions.

It was assumed that the price increases just experienced would of themselves sharply reduce the demand for energy and hence for OPEC oil. This tendency would be reinforced by official exhortation to use energy less wastefully in the IEA member countries. Next, non-oil sources would be developed more quickly, thanks to official efforts and to the

stimulus of the oil price jump. So, too, would oil and gas resources in the main consuming countries, more profitable as they would now be. After a few years, demand for OPEC oil would drop so that the cartel would begin to disintegrate. The consuming countries would then impose less one-sided arrangements for oil pricing.⁸

From 1973 through 1976, total oil demand and total energy demand fell faster than GDP in OECD countries and the share of non-oil sources of energy inputs increased. The combined effects of the price increases and IEA efforts were reducing demand for OPEC oil.

In response to these developments, OPEC became more conservative in its pricing policies. A principal feature of OPEC activities throughout the decade was the Saudi Arabian assumption of cartel leadership given its extraordinary productive capacity⁹. Moran's analysis, Modelling OPEC Behaviour: Economic and Political Alternatives¹⁰, suggests that the Saudis' effective monopoly over incremental production within OPEC had led them to agonise over their price leadership role several times in the 1970s. The implementation of a two-tiered pricing structure in 1976 was one demonstrable instance. In this case, demand was quite strong and OPEC was producing at 85% of capacity, yet the Saudis argued for price restraint in the face of other OPEC members' hawkishness. Moran concludes that the political circumstances in which these decisions were taken demonstrates that the Saudis were motivated in their actions by the desire to advance national political objectives, not necessarily OPEC objectives¹¹. However this may be, the two-tier

system was so difficult to manage that prices were reunified at the Stockholm meeting of July 1977. The Arabian marker price then stood at \$12.70 per barrel.

By February 1979, the impact of the Iranian revolution and the loss of two million barrels per day of its production was felt on the world market when spot prices reached \$23 per barrel against a market crude level of \$13.34 for that quarter. The general consensus is that the loss of Iranian production was not in itself a serious problem in the international petroleum market. Kemezis notes that other OPEC members, principally Saudi Arabia, "...neutralised part of the Iranian loss so that net shortfall was limited to 1 to 3 million barrels per day over a short time."¹² This shortfall represented only a small portion of free world demand, which was averaging approximately 48 million barrels per day in 1979. Rather, it was third party spot market sales of crude which were causing the price increases. These spot market sales were based on both the buyers' memories of the 1973-74 shortages and the sellers' maximisation of the opportunity to reap huge financial gains. The latter group aimed to capture the rent available between the official OPEC prices and what the market would bear in a period of perceived shortage. The rise of the spot market therefore became a key feature of the second pricing crisis, and the collective interest of the IEA was not sufficient to prevent its members from free-riding -- from actively trading on the spot market. The efforts of this 'counter-cartel' proved meaningless in an actual supply crisis as the self-interest of its members determined their respective actions.

The concept of a floor price for OPEC oil was introduced by the cartel in March 1979, but surcharges and other sales taxes could allow for any individual member to achieve any price which the market

would bear above the floor price¹³. OPEC's actions in this instance were clearly defensive: it apparently did not wish to act too hastily in terms of official increases, yet it clearly wished to be realising some of the benefits of the perceived shortage that had been going to middlemen sellers up to this point.

In June 1979, spot sale prices were running at \$40 per barrel against the \$14.54 OPEC price. An OPEC meeting of that month in Geneva moved the marker crude price up to \$18 per barrel and the newly admitted surcharge principle was now limited to \$2 per barrel¹⁴. Thus, a ceiling price for OPEC oil was to accompany the floor price in an effort to stabilise the volatile market. Just prior to the OPEC conference in Caracas in December 1979, Saudia Arabia retroactively increased the price of its marker crude by \$6 per barrel, to \$24 as of November 1. In November 1980, Saudi Arabian light was priced at \$32.00 per barrel, and in October 1981 the posted price was increased again to the \$34 per barrel level, its height, where it remained until the pricing problems of 1983.

The same basic forces produced both the 1973-74 oil crisis and the 1979 crisis. At the heart of each crisis were high levels of consuming country dependence upon Middle East and North African oil. There was nothing inevitable about this; rather, it was due to the failure of the consuming countries to develop effective energy policies and the major oil companies' emphasis on producing the 'easy' oil in these areas. In both cases, moreover, the growth of US demand for imported oil was the underlying factor that put the most pressure on world oil markets.

Both crises were triggered by political events not directly related to oil: the fourth Arab-Israeli war in 1973 and the Iranian revolution in 1979. Each

crisis involved only a minor loss of supplies; however, the impact of this loss was greatly aggravated by the competitive bidding among the oil companies that followed and consuming country policies, particularly in the United States, that misallocated supplies.¹⁵

The fact that the OPEC price increases of 1973-74 and 1979-80 were implemented successfully without the group having to allocate production quotas suggests that the inelasticity of demand for OPEC oil was a key feature in the international petroleum market throughout the 1970s and into the early 1980s. In fact, OPEC cannot be technically considered a cartel until it imposed production quotas in March 1982. However, its success in achieving prices for its petroleum substantially higher than the costs of production speaks more of the inability of the consuming nations to coordinate a strategic defense than of OPEC's clever manoeuvring. Although the IEA was intended to prevent precisely the type of panicked spot market purchasing which in fact provoked the second series of price increases, in the event it was powerless to coerce its members into disciplined restraint in a period of uncertainty. Once again, individual members attempted to maximise their own interests and broke faith with the IEA objectives by competitively increasing their stockpiles at almost any price, and in so doing, encouraged OPEC to increase prices further. The same free-riding activity within OPEC would lead to the demise of its control over the international price of oil.

Oil consumption in the free world peaked at 51.6 million barrels per day (MMb/day) in 1979, but declined to 47 MMb/day in 1981 and 45 MMb/day in 1983¹⁶. OPEC production was 30.7 MMb/day in 1979,

accounting for approximately 60% of free world production, and it declined to approximately 17 MMb/day by 1982, representing far less than half of free world production for that year. In addition, Britain and Norway were exporting North Sea production by that time, and U.S. domestic production had sharply increased. In short, the control which OPEC had as a result of its preponderant share of the world market declined significantly in the early 1980s. Furthermore, some economists maintained that the full effects of the 1979-80 price increases in terms of stimulating fuel efficiency had yet to be experienced. Griffin and Teece concluded that OPEC's price fixing power had passed its zenith and that a price decline was the situation for which consuming nations should prepare¹⁷.

The difficulties OPEC had in coping with this reduction in demand were manifest as early as 1982. OPEC called a special consultative meeting in March that year at which a production ceiling of 17.5 million barrels per day was set; it was the first time the Organisation had called upon its members to limit supply in order to defend the posted price¹⁸. The July meeting was suspended indefinitely after angry exchanges between Iran and Saudi Arabia over production quotas. Total OPEC production at the time was over 1 MMb/day above the March quota despite the underproduction of .5 MMb/day by Saudi Arabia and .35 MMb/day by Iraq. Iran, with the support of Libya and Nigeria, was agitating for a quota of 1.2 MMb/day on the strength of its economic need. The Iranian delegate further suggested that Saudi output might be further reduced in order to allow for the Iranian increase, at which point the meeting ended in disarray¹⁹. The December meeting was once again geared toward the preservation of the \$34 marker price, but individual members continued to discount their crudes and sell above their quotas.

Finally, on March 14, 1983, the marker crude price was reduced \$5 per barrel to \$29, and production quotas totalling 17.5 MMb/day were again agreed²⁰.

Demand was slack in 1984 and spot prices for North Sea crudes fell to between \$26 and \$27 per barrel in October 1984, in response to which Norway reduced the official prices of its crude by \$1.50²¹. This action prompted a price war which has ultimately resulted in the recent collapse of the price of oil.

A price war is a good example of the game of chicken, as discussed in Chapter 1. Both players dare each other to defy a disastrous outcome in order to assert their superiority over their competitor. In a price war, participants incrementally reduce the price of their product for two possible reasons: in order to maintain their market share or to encroach upon the market share of their competitors. The competition is forced to lower its prices to meet the initial reduction, or face the loss of its market share. Once all the players are in the game, the downward spiral of prices begins to threaten the profitability for each of them, but each player realises that the one who can stay in the game the longest will win the ultimate goal -- the custom of its competition. There is therefore an incentive to stay in the game, but there is also the knowledge that continued participation might result in disaster.

There are three possible outcomes in the game of chicken: both parties swerve; one party swerves; or both collide in a car crash. The price war could be stopped by an agreement between all parties to avert the ultimate catastrophe, or one or two players might "chicken-out" and sacrifice their market share in the short-medium term in the hope of building up in the future. The calamity of the car crash in chicken would be the non-optimal outcome for all players in a price

war -- a complete price collapse. In this case, all players would be rendered unable to participate as production would cease if prices remained below cost long enough.

In 1985-1986, the uncoordinated self-interest of OPEC, Norway, and Britain ultimately resulted in the collapse of the international price of oil. The chicken game between the OPEC and North Sea producers resulted in a price war which eventually reduced the international price of oil below \$10 per barrel. In mid-October, 1985, Britain quickly followed the Norwegian initiative in reducing the price for its oil, and OPEC ministers met in Geneva on October 29 to attempt to avert an all-out price war between the North Sea producers and the Organisation. Nigeria had already followed the North Sea lead, defecting from the OPEC price scheme and cutting its crude prices \$2 per barrel unilaterally, but a price cut on the \$29 marker crude was rejected by OPEC. Further cuts in production appeared necessary, but the cooperation of Norway and Britain was not forthcoming. The North Sea producers were not willing to be co-opted into OPEC, nor were they willing to give up part of their increasing market share in order to support a higher price for oil.

At the October meeting, OPEC ministers decided to cut the cartel's production by a further 1.5 million barrels per day to 16 MMb/day, with Saudi Arabia committing itself to cut its own production to whatever level would be necessary to mitigate the effects of cheating members and defend the \$29 price²². The action was not sufficient to stem the price fall, and the marker crude was trading at \$27.70 in late November despite production cuts²³. OPEC's next meeting was in Geneva on December 19, but was adjourned to decide upon a course of action which would enforce the existing

production ceiling. Sheikh Yamani, the Saudi oil minister, warned the North Sea producers on December 30 that any further cuts in their prices would result in a disastrous price war²⁴.

On January 14, 1985, Norway dropped its official price structure altogether, allowing its crude to be sold at spot market prices²⁵. OPEC met in Geneva later that month, but the meeting focused on differential pricing of crudes and the next meeting did not occur until July at which a price cut was again rejected. OPEC ministers instead decided to try to clamp down on individual countries' discount schemes. However, Saudi Arabia announced that it would double its crude output to its quota level of 4.35 million barrels per day no matter what the outcome of the next OPEC meeting. "The fall in oil revenues ha[d] depleted the Kingdom's foreign reserves, cast grave doubt on its ability to balance the budget and caused alarm within the Royal Family about the possible political implications."²⁶

As a price cut in the official marker crude had been rejected by the cartel, Saudi Arabia began to arrange the sale of its crude in the autumn on netback prices which guarantee the producer an agreed percentage of the spot market price of refined products made from the oil sold²⁷. In effect, the Saudis were abandoning the OPEC pricing structure for contractual arrangements based on what the free market would bear. At the OPEC meeting in Vienna in early October, half the OPEC members requested increases in their production quotas and the official pricing system seemed doomed. The price war between North Sea and OPEC producers began in earnest. Either one side would have to sacrifice its own self-interest to the interests of the other, or catastrophe would result. At the December meeting, Yamani predicted the shape of the potential catastrophe in the international petroleum market in the hope of averting this eventuality: prices below \$20 per

barrel in 1986 if OPEC and non-OPEC producers did not cooperate to limit supplies²⁸. OPEC then agreed to focus on maintenance of an appropriate market share, playing the North Sea producers' game, rather than the defence of official price levels.

Prices continued to fall on the spot market throughout January, and North Sea crude prices stood at \$18 per barrel by the end of that month²⁹. Yamani's predicted catastrophe had become reality. The price slide continued throughout the spring despite several OPEC meetings and various efforts to cut production and solve the problem of oversupply. The low point was reached in April, when prices fell below \$10 per barrel as a result of OPEC's failure to reach agreement in late March³⁰. Prices then rallied slightly, and in May the new Norwegian Finance Minister announced that Norway was prepared to cooperate with OPEC on production cuts if Britain would do likewise³¹. The Norwegian government had had enough and was clearly not interested in the continuation of an uneconomic price for its petroleum. The price rallied to \$15 per barrel in May on the strength of an expected agreement between the North Sea and OPEC producers³². However, the British government refused to cooperate on principle, noting the benefits of depressed energy prices on industrial activity and the price for North Sea oil dipped below the \$10 mark late in July, recovering to the lower mid-teens level in the autumn.

At its meeting in June 1986, OPEC did not agree on the distribution of new production limits within its membership³³. The delegates left the conference with recommended quotas to discuss with their governments, and reassembled in Geneva on July 28 to decide upon the exact production arrangements. A target price range of \$17 to \$20 by year end was agreed upon with an accompanying production

restriction of 16.8 million barrels per day, which was increased to 17 MMb/day at the October meeting. In the December meeting, production quotas were reduced to 15.8 MMb/day and OPEC reasserted its commitment to a fixed price policy for its production, the target being \$18 per barrel³⁴.

OPEC's policy of securing an appropriate market share in the face of encroaching North Sea production had indeed secured an increase of 17% in OPEC exports in 1986, but at the expense of a 44% loss in revenues as a result of the price collapse. The strategy of a return to a fixed price may assist its members to adhere to the stringent production quotas required to support the desired price levels, but this strategy remains vulnerable to the self-interest of individual OPEC producers. In June 1987, OPEC agreed an official price level of \$18 per barrel and agreed to a production ceiling of 16.6 MMb/day for the remainder of the year, boosting the spot market price of oil to above the \$20 mark for the first time since the beginning of 1986³⁵. However, prices slipped in the autumn and it remains to be seen whether OPEC members will be able to discipline themselves in the medium and longer terms. Rational choice theory would suggest that this is unlikely, and that the oversupply of oil on the international market will remain a feature which contributes to a lower price for oil until such time as non-OPEC sources are significantly reduced.

The rise and fall of OPEC's dominance over the international petroleum market in the last fifteen years is a remarkable example of the self-interest of individuals as both the driving force behind group cooperation and its eventual means of destruction. The inherent instability of cartels is due to the tendency of all self-interested individuals to free-ride on collective benefits, and the

history of OPEC's pricing and production efforts certainly illustrates the force of this tendency. However, the discussion of OPEC pricing policies serves a dual purpose in this chapter: it not only illustrates some concepts of rational choice analysis such as the pursuit of individual benefit, the free-rider problem, and the game of chicken. More importantly, it sets the environment in which the pricing policies of the three case states were developed.

2. CANADIAN PRICING POLICIES

In a federal state such as Canada, state powers are constitutionally divided between two levels of government. In the case of petroleum, the Canadian provinces own the natural resources discovered within their boundaries and have complete control over their development, production, and sale within the province itself. However, the federal government is responsible for interprovincial and international trade and commerce. Consequently, conflict between the two levels of government over the pricing of petroleum has been a feature of federal-provincial relations in the past fifteen years. This outcome is not surprising if a rational choice approach is adopted. Both levels of government are interested in retaining office and the attainment of instrumental goals to assist in that endeavor. Political resources, like economic resources, are scarce, and the competition for them is often a zero-sum game in which one party benefits at the expense of its competitors.

Petroleum prices were left to market forces in Canada prior to 1973, although the market itself was somewhat restricted by the implementation of the National Oil Policy in 1960. The resources

within Alberta were developed and sold by petroleum companies seeking the establishment of a healthy and profitable industry and a large market share for Canadian petroleum. The Alberta government shared these priorities. Watkins and Walker have concluded that "...throughout the period 1947 to 1960 wellhead price movements were consistent with the pattern expected under competition: equal netbacks on all sales and changes in wellhead prices reflecting changes in the market interface."³⁶ The main competition for Alberta petroleum was oil produced in the U.S., and price fluctuations reflected both U.S. crude price changes and changes in the exchange rates between the American and Canadian dollars.

However, in February 1961 the Conservative federal government began to influence indirectly the price of petroleum when it implemented the National Oil Policy. As mentioned in Chapter 2, the principal thrust of the NOP was to divide the Canadian petroleum market into two halves along the Ottawa Valley Line: the western half would be reserved for higher priced domestic petroleum, while the larger market in eastern Canada would be reserved for lower priced imports. This policy removed the necessity of maintaining competitive prices for the western Canadian petroleum industry, the objective being to secure a market for the petroleum and allow the industry to develop accordingly. The unstated objective of the federal government was to benefit the large voting populace in eastern Canada with less expensive oil. Although the government did not institute any direct pricing control in this policy, there is no doubt that the NOP had a very strong impact on the price of Canadian oil.

The petroleum industry was strongly divided on the question of the NOP. The multinationals made it clear both to the government and to the Borden Commission (which recommended the market division) that they wished to retain the large market in the east for the oil it was importing into Canada. This sector of the industry did not want to lose a share of its market to the independent producers which were becoming established in Canadian petroleum production. As for the smaller independent and Canadian companies, there was a feeling that the Canadian petroleum industry could develop the capacity for serving the entire Canadian market if it was allowed access to the eastern market. They could then increase the price of their product and invest the profits back into exploration and development of Canadian reserves, boosting production in a relatively short period of time to meet increased demand. This issue split the industry's lobbying group, the Canadian Petroleum Association. The independent and Canadian companies broke away from the larger organisation to form the Independent Petroleum Association of Canada (IPAC), and although they lost on the issue of the NOP, they continued to make representations to the government³⁷. These developments amply illustrate the differences in interests between the large multinationals and the smaller independent and junior Canadian firms.

The result of the NOP was that Quebec and the Maritime provinces had access to cheaper imported crude, while most of Ontario and western Canada was served by higher priced Canadian production. By 1970, Ontario refiners were paying approximately 27 cents more per barrel for Alberta crude than their colleagues with access to imports, but adjustments between 1970 and 1973 allowed for the

establishment of equality in price between Canadian and U.S. delivered prices in Chicago³⁸. At this time, the price for Canadian oil was under \$3.00 per barrel.

The NOP decision ... reflected a delicate balance between the needs of a number of interests. Markets were being regulated, but not in an imposed, draconian way. There is no question that the NOP satisfied the multinationals and the U.S. government and served to enhance the continental integration of the Canadian and U.S. oil markets ... [and it] also won the support of the Canadian provinces affected....

The only Canadians who could be said to have been hurt financially by the NOP were the consumers in Ontario who had to pay for the marginally higher priced Canadian oil. J.G. Debanne argues, however, that the Ontario government accepted the NOP and the higher retail prices it entailed in exchange for the concentration and expansion of a large refining and petrochemical industry within the province.³⁹

The NOP remained in effect until the first OPEC price increases forced the Canadian government to reappraise its petroleum pricing policy. With the price developments in the Middle East, Canadian prices increased 95 cents in four escalations between 1972 and 1973 before the federal government announced an export tax on Canadian production in September 1973⁴⁰. This tax was intended to increase the price of Canadian exports to world levels, and was initially set at 40 cents per barrel. It was increased to \$1.91 per barrel in December, to \$2.22 per barrel in January 1974, and to \$6.60 per barrel in February⁴¹. The export tax allowed the federal government

to acquire a share of the dramatically increasing economic rent available from petroleum production. This rent would otherwise have been distributed between the governments of the producing provinces (in royalties) and the petroleum industry (had prices been left to market determination).

The decision to freeze prices was taken quickly and followed the action of Imperial Oil (the acknowledged price setter) to increase prices. Of equal importance, the freeze decision was viewed by Alberta to be one of the first instances of small creeping unilateral acts by Ottawa, which were to escalate over the rest of the decade in a series of mutual acts of 'political aggression' reflecting the different national and regional interests involved and the different political parties in power.⁴²

As noted in Chapter 3, the Liberal party formed a minority government supported by the N.D.P. at this time, and was under considerable pressure to agree to some of the N.D.P.'s positions on energy, which included the establishment of a national petroleum company and a Canadian price for Canadian oil. Prime Minister Pierre Trudeau made a Parliamentary speech on December 6 which outlined the Liberal government's response to the OPEC crisis⁴³. The government planned to extend the interprovincial pipeline to Montreal, thus ending the Ottawa Valley division of market and allowing domestic oil to be used by the majority of Canadian petroleum refineries, and to establish a unified price system for the whole country. An Oil Import Compensation Program would be set up in which monies would be used to subsidise those refineries which continued to rely on imports. The government resisted moving towards the international

price of oil for domestic production, arguing that it was entirely unrelated to the cost of producing Canadian oil and that prices should rise, but remain below international levels to remain fair to all Canadians. Both the Oil Import Compensation Program and the proposed made-in-Canada price for domestic oil sheltered the populous eastern Canadian provinces (as well as the rest) from a higher price for oil.

Ontario, the other major provincial actor in petroleum pricing disputes, sided with the federal government in arguing that higher prices would have detrimental effects such as inflation, higher levels of unemployment, and a major transfer of wealth to Alberta. Alberta, on the other hand, had a keen interest in the price of oil moving rapidly towards international levels. As the producer of 85% of Canadian petroleum, the province argued for a market-based pricing system which would reflect the value of its depleting resource in a volatile market. The province, in a largely symbolic gesture of sovereignty over its resources, established a provincial Petroleum Marketing Commission to regulate prices of petroleum within the province⁴⁴. However, its function was limited to the relative pricing of different oils produced within the province and it had no jurisdiction over interprovincial prices which remained constitutionally with the federal government. Petroleum prices outside Alberta's borders would have to be negotiated between the two governments.

In late January 1974, at the First Ministers' Conference on Energy, the federal Energy Minister, Donald Macdonald, presented the government's scheme for the unified Canadian price⁴⁵. The wellhead price of oil would be increased from \$4.04 to \$6.05 per barrel, and the two dollar increase would be used to reimburse eastern Canadian

refiners reliant on more expensive imported oil. This policy was intended to satisfy both Ontario and Alberta, providing a subsidy for the former and an approach toward the international price for the latter. It satisfied neither, and the other provincial premiers criticised both the increase in prices and the federal subsidy. The conference ended with a compromise in which subsidies for imports would be funded by the export tax on Canadian production through April 1974. During this period, a permanent formula for a one-price system would be determined. This policy gave the federal government administrative control over the subsidy program and the attendant revenues with which it could be seen to benefit all Canadians. Both the governments of the producing provinces and the petroleum industry lost the opportunity of increased rent as the price was restricted and the federal government increased its revenue share. The export tax remained and the wellhead price was increased to \$6.70 per barrel on March 27 where it would remain until July 1, 1975⁴⁶.

The Liberals returned to power with an absolute Parliamentary majority in the July 8, 1974 federal election, and the new government moved to consolidate its position on petroleum pricing by the passage of the Petroleum Administration Act (PAA)⁴⁷. The PAA "...provided the federal government with the authority to set the price of Canadian oil and gas in the event that a negotiated price could not be arrived at through agreement with the producing provinces."⁴⁸ In this Act, the federal government assured its supremacy over petroleum pricing, having anticipated continued disagreements with the governments of the producing provinces.

A further First Ministers' Conference on Energy was called for April 9-10, 1975, to discuss the pricing arrangements after the previous agreement expired on July 1⁴⁹. By this time, the federal

government had come to believe that higher wellhead prices were necessary, partly due to the pressure of the producing provinces, but also because Canadian petroleum exploration had declined dramatically in the two years since 1973. Although prices had been increasing, there was very little increase in profitability. Both exploration and development rigs were moving to the U.S. where prospects in terms of price and return on investment were much more attractive⁵⁰. However, the Ontario government opposed further price increases at this meeting, arguing that the increases to date had largely benefited the federal and producing governments at the expense of consumers. The Conference was adjourned without agreement. This was the last First Ministers' Conference at which the establishment of petroleum prices was discussed. The federal government exercised its newly acquired power under the Petroleum Administration Act and raised the price to \$7.75 when the previous agreement expired⁵¹. The international price was then near \$12 per barrel, and although the federal government fulfilled its intention to move the domestic price closer to the international price, it also maintained its policy of protecting Canadians from the full effects of parity with the international market.

In May 1977, the producing provinces and the federal government concluded an agreement whereby the price of oil would increase by 95 cents per barrel twice a year, moving toward the world price. This policy was agreeable to the governments of the producing provinces, representing a consistent effort to increase the domestic price to the international level in the longer term. It was also agreeable to Ontario and Quebec, the largest provinces, as it represented continued protection for petroleum consumers. By late 1978, Canadian prices were at 80% of the world price⁵². However, in 1979

international prices escalated once more as a consequence of the Iranian revolution, and there was a new party in power in the federal government.

The minority Conservative government under the leadership of Joe Clark came into office in May, 1979. Although energy was not a key election issue, the Conservatives had campaigned on a radical energy platform which included the dismantling of Petro-Canada and a revision of Canadian petroleum prices. Of more importance to the voter in 1979 was the Conservatives' assertion that they would better be able to manage federal-provincial relations than the Liberals, especially as Conservative governments were in power in both Ontario and Alberta. It should be remembered that in the early months of the Clark government's term in office, spot prices were climbing to their peak of \$40 per barrel, while the Canadian price was increased from \$10.98 per barrel to \$11.85 on July 1, 1979 and \$12.65 early in 1980.

Despite negotiations undertaken immediately with the Conservative government under Premier Lougheed in Alberta, the Conservative federal government was unable to design a pricing and fiscal regime which was agreeable to the province in time for the tabling of its first budget in December. Over the autumn, petroleum pricing had become the subject of a public debate between Premiers Davis of Ontario (also Conservative) and Lougheed of Alberta, and the federal government was caught between its two major provincial barons, unable to satisfy both at once. In Alberta, bumperstickers on many cars read: "Let the eastern bastards freeze in the dark" while the Ontario government tabled a policy paper in November counselling the federal government to use its declaratory power (the ability to pass any legislation as might be required to preserve peace, order, and good government) to fulfil its responsibilities.⁵³

The federal Conservatives were, in principle, sympathetic to a move toward higher prices, but wanted to maintain electoral support in Ontario. Consequently, the Clark government initially offered Alberta a major price hike, \$5.20 per barrel a year, in exchange for Alberta's agreement to recycle oil revenues through two new federal institutions, the National Energy Bank and a Stabilisation Fund. "Alberta refused to make an equity contribution to either, so the federal government decreased its price offer to the \$3.45-3.90 range, with the energy self-sufficiency tax...."⁵⁴ This tax was the key issue in the defeat of the Crosbie budget tabled December 11.

Finance Minister John Crosbie proposed an increase of 15 cents per gallon on the excise tax on refined petroleum products, the "energy self-sufficiency tax", in order to encourage conservation and provide the federal government with badly needed revenues for its energy programs. The combined forces of the Liberals and NDP defeated the Conservatives on the budget vote⁵⁵, and the federal election in February 1980 returned the Liberals to power with an absolute Parliamentary majority. Ontario voters had been enraged by the apparent capitulation of the Clark government to Lougheed as evidenced in the \$5.20 increase offer, and the election was lost in Ontario ridings. The Liberals had lost 23 Ontario seats in the 1979 election, dropping from 55 to 32, while in 1980 they captured 52 Ontario seats and 74 of the 75 seats in Quebec.

As a party and as a government, the federal Conservatives never quite came to grips with either of the major planks of their energy policy -- Petro-Canada and oil and gas pricing. This was, in part, because the Progressive Conservative Party embodies two major lines of division: the ideological cleavage

between right-wing and moderate elements, and the regional division between its Ontario and Alberta power bases. For the Petro-Canada privatisation issue, the right-wing-moderate cleavage was key; for pricing, the Ontario-Alberta cleavage had primacy.⁵⁶

Back in office, the Liberal government wasted little time in introducing its National Energy Program (NEP) as part of its first budget which was tabled on October 28, 1980⁵⁷. The NEP was discussed in more detail in Chapter 2, but basically it introduced federally established pricing schedules which were to maintain Canadian petroleum prices below world levels, and a new fiscal arrangement under which the federal government was to receive a larger share of the economic rent from petroleum exploitation. The impact of the NEP on the producing provinces was that revenues declined. It was, in part, a very obvious move by the federal government to reduce the economic power of the producing provinces, particularly Alberta. A subsidiary objective of the federal government was to mitigate the political impact of a rapid increase in oil prices which otherwise would have occurred under the Liberal regime. To this end, prices were to increase gradually toward world levels in accordance with schedules set by the federal government, although it intended to keep Canadian prices below the world level.

"[S]enior officials ... questioned their ministers as to how firmly they were wedded to non-world-price scenarios. The reply was emphatically that the Liberals' commitment to a blended 'made in Canada' price was an unalterable one."⁵⁸ The rejection of world market prices was made by ministers, overriding doubts expressed by the bureaucracy, and the rationale was undoubtedly political rather

than economic. The Liberals had just fought an election campaign against the Conservatives, and had learned from their opponents' mistakes. Carten suggested that the Liberal pricing regime would achieve two objectives for the government: firstly, a direct transfer of wealth to the consuming provinces (i.e. Ontario and Quebec) to which it owed its Parliamentary majority; and secondly, the imposition of a series of excise taxes on the lower priced petroleum similar to a direct tax on provincial revenues⁵⁹. In this way, the federal government advanced its voter support and increased its revenue base with which it could further increase its popularity. The Liberal government was also interested in patriation of the Canadian constitution in this period, and any assertion of central authority was considered advantageous to its constitutional programme.

The NEP provoked a hostile reaction from the producing provinces and the petroleum industry. Alberta Premier Lougheed imposed a production cutback totalling 180,000 barrels per day in three stages in order to force the federal government into negotiations over pricing and fiscal arrangements. As in 1974-75, industry activity slowed down and rigs once again moved south of the border. The lower price combined with increased taxes made petroleum extraction in Canada less profitable.

After the second production cutback in early 1981, the federal government negotiated seriously with the province and a July meeting between the two sides resulted in a compromise which was reasonably satisfying to both sides. The federal single-price system was to be abandoned for a more complex system of vintage pricing ('old' and 'new' oil would be differentially priced so as to reflect differing costs of exploration and production, with new oil receiving approximately the world price), and the scheduled increases were

speeded up. The new pricing scheme and a new federal petroleum tax were made official in the September 1981 Memorandum of Agreement on Energy Pricing and Taxation (EPTA)⁶⁰ signed between the federal and Alberta governments. The EPTA was almost of greater benefit to the province symbolically than in practice, as it confirmed the province's ownership of the resource and gave Alberta a strong negotiating position for further pricing arrangements. It also reassured the Albertan public that its government could assert provincial rights in the face of a centralising federal government. However, the basic federal pricing policy remained intact as most Canadian production was classified as 'old' oil, which price remained under the international level.

The pricing schedules of the EPTA were based on the assumption that world petroleum prices would continue to rise by 2% per annum in real terms throughout the duration of the agreement, i.e., through to December 31, 1986. This did not happen and the EPTA had to be amended in June 1983 to reflect the softer pricing conditions in the international market⁶¹. Two categories of oil were defined for pricing purposes. Conventional old oil, discovered before 1974, had a price frozen at \$24.90 per barrel, about 83% of the world price, while the new oil category was extended to all discoveries after 1973 and received the international price. "The effect of these measures was that about 35% of Alberta oil would qualify for the world price. Industry cashflow would increase by about \$210 million, and both governments would benefit from the stability created."⁶²

In September 1984, the Conservatives returned to power with a large majority under their new leader, Brian Mulroney. The party had campaigned in the west on a platform to dismantle the NEP. The new Energy Minister, Patricia Carney, commenced formal negotiations with

the governments of the producing provinces and the petroleum industry almost immediately upon coming to office, and by early in the new year, progress was being made⁶³. After eleventh hour negotiations concerning taxes, on March 27, 1985, the Western Accord⁶⁴ was made public. This was an agreement between the federal government and the provinces of British Columbia, Alberta, and Saskatchewan which virtually eliminated the NEP. Prices for oil and gas were to be deregulated and the fiscal regime established under the NEP dismantled.

It is a great irony indeed that, in June 1985, the Canadian government deregulated the price of oil, a mere six months before the ultimate collapse of the international price. After a decade of sustaining a price level below that realised in the international market, the deregulation of petroleum prices in Canada coincided with the most dramatic price decline ever. The economic rent which the federal government had consistently allocated to Canadian petroleum consumers in the face of producer discontent was vanishing even as the producers celebrated their achievement of deregulation. The federal government has not taken steps to support the price of Canadian oil, whether consumed domestically or exported, although, in 1986, some industry representatives argued for a floor price for Canadian production.

The competition between the federal and provincial levels of government on the question of petroleum pricing is made comprehensible if rational choice theory forms the basis of analysis. Both levels of government are interested in attaining or retaining office and the instruments which assist in that endeavor. Economic rent from petroleum production is seen as an instrumental goal by both governments and the competition for it is a zero-sum game in

which the petroleum industry, and ultimately the Canadian consumer, has lost. The federal government's policy of maintaining domestic oil prices below the international level was a very obvious effort to acquire voter support in the most populous provinces, and it succeeded. Unfortunately, the cost was the lost opportunity of maximum economic rent from oil production in the 1970s and early 1980s. Deregulation was implemented too late.

3. NORTH SEA PRICING POLICIES

"The future changes in the price of oil are as enigmatic to the British and the Norwegians as to anybody else in the western world. Both are essentially marginal producers, in the sense that their volume of production makes up only a small fraction of the oil being traded in the world market. They cannot control prices by their level of output."⁶⁵ There is no doubt, however, that both the British and the Norwegians have greatly influenced OPEC pricing policies in the last few years. The growth in oil production in the North Sea contributed to the erosion of OPEC's market share which prompted the 1986 pricing crisis. It is from North Sea producers that OPEC has actively sought cooperation in limiting the international oil supply since 1985. Consequently, the pricing and depletion policies of the U.K. and Norway have been of great interest to OPEC and the rest of the world. Although they appear to differ markedly on the question of depletion, the two governments of the North Sea producing countries have implemented similar pricing policies which are administered differently but have similar objectives and results.

Taxes are paid on company profits and on oil produced, and in both cases relate directly to the price at which the oil is bought or sold. Because most of the large oil companies are vertically integrated, their downstream (or refining) operations could purchase crude at artificially low prices from their upstream (or exploration/production) operations for the purposes of *reducing tax liabilities*. Consequently, the concept of the 'posted' or tax reference price, as discussed in Chapter 2, became the norm in OPEC countries and in oil producing countries where large multinationals have integrated operations. The posted price is a tax reference price which eliminates the possibility of low transfer prices (the price at which petroleum is transferred between various arms of the company) within integrated companies. It also reduces the possibility of disagreements over tax assessments between companies and governments. Posted prices can, however, vary substantially from market prices occasionally, and the former are consequently adjusted upward or downward by the government as the situation necessitates.

Prior to 1974, the British government did not differentiate between the transfer price and a possible posted price for oil -- the government merely accepted the companies' transfer prices as the price base on which taxes would be calculated. In Norway at this time, legislation provided for negotiations on price to take place between the companies and the government to decide on a posted price as closely related as possible to the market price. "If the government and the companies were unable to agree, the government had the right to establish the value of oil in accordance with the equitable market price. It has been argued that the Norwegian government legally would have the right to use, for example, the OPEC posted price as its tax base."⁶⁶

In Britain after the Second World War, the government's objective in energy pricing policies was to protect the coal industry in the face of competition from less expensive imported oil⁶⁷. However, from the mid-1950s, consumption of coal declined rapidly and demand for petroleum increased to the point that it provided 47% of UK primary energy consumption by 1973⁶⁸. With increasing demand for oil, the British government was anxious to develop its petroleum resources as rapidly as possible. In order to encourage investment in the North Sea, the British government initially offered generous licensing conditions, lenient taxation, and world prices to companies interested in offshore exploration within its territories. "All United Kingdom Governments have agreed that North Sea oil should be priced at its world market value even for domestic sales."⁶⁹

After the 1973 price increases, the government devised a new fiscal regime and introduced the British National Oil Corporation, but retained liberal licensing procedures and the world price (especially attractive in a market in which it was rising dramatically) to sustain development. The objectives of the new fiscal terms and the national oil company were to ensure that the British nation would receive a share of the windfall profits to be made on the increasing economic rent to be had from oil exploitation, and, at the same time, to secure a government presence in North Sea operations. Later, as a result of participation agreements with the companies involved, BNOC was to assume the role of oil trader with a right to purchase 51% of the oil produced in the North Sea and an opportunity to sell it back to the companies at the same price. The price at which it purchased and resold the oil was the world price, or rather a price determined by third-party contractual arrangements for various qualities of North Sea crudes. BNOC was not involved in

price-setting; it merely sold the oil back to the refining interests in Britain at the same price at which it had purchased. Although BNOC could have influenced the price of British oil simply as a consequence of the large volumes it was trading in the late 1970s, there is no evidence to suggest that it did so, nor that it had a mandate to do so. Its primary role was to secure British petroleum.

BNOC's oil trading competence was called into question in the early 1980s when it was purchasing North Sea crude in an international market of declining price. As discussed in Chapter 3, BNOC was selling its supplies at a loss due to long-term purchasing agreements and its inability to attain the price it originally paid when it came to resell the oil. The controversy which arose coincided with the implementation of the Thatcher government's privatisation programme, and BNOC was eventually privatised totally in 1985. The government then established the Oil Trading Authority to retain its ability to secure supplies of North Sea production in times of emergency, but it continued to allow British oil to be sold at world prices. The British government has taken no action to support the international price of oil in the current environment of depression. This might be considered a further indication that the essential purpose of BNOC was not to influence the price of oil, but to secure supplies.

The British oil price was therefore not set administratively, as it was in Norway. Rather, British oil is taxed on the price determined in an open market contract -- an arm's length transaction. With BNOC actively trading 51% of British North Sea production, verification or administrative enquiry into these contractual prices was unnecessary. "The contract price is the only price reference;

the terms of sale are not to be influenced by any commercial relationship between the buyer and the seller; the seller is to have no direct or indirect interest in the further disposal of the oil."⁷⁰

"It has been stated explicitly as official policy [in Norway] that the prices of North Sea petroleum products used by households and firms should equal world prices."⁷¹ As mentioned earlier, the Norwegian government initially negotiated with the companies to determine an appropriate posted price; but just as in the British case, it reflected the international market value of oil.

The Norwegian Labour government of 1974, like the British, introduced a new fiscal regime in the wake of the OPEC price developments, but, unlike the British, its new tax system was accompanied by a new pricing system. Norwegian oil production was to be taxed on the 'norm' price for oil. "It is defined as the real market price of the same type of crude over a given period as determined by independent traders in a free market. It has been explicitly stated that the purpose of the norm price is not to increase taxes but rather to avoid long arguments with the companies. In this respect the Norwegian norm price differs from the posted price used in OPEC countries prior to 1974."⁷² The government reserved the right to decide the price of oil unilaterally, but the norm price was in effect an administrative tool by which market prices would be monitored and averaged out for tax reference purposes. It was set quarterly by the Petroleum Price Board in US dollars (converted to Norwegian kroner for taxation purposes), and the decisions of the Board could be appealed to the Ministry of Petroleum and Energy by the companies involved⁷³. Statoil had nothing to do with the determination of the norm price, although as a dominant force in the Norwegian petroleum sector, it produces and

disposes of a large proportion of Norwegian oil and therefore assisted in the implementation of the norm price policy. It had a similar position to that of BNOG in its oil trading capacity. However, the fact that the Norwegian government established its own form of posted price indicates that it had less faith than the British government in the ability of the national petroleum company or the bureaucracy to verify arms' length contractual prices. Perhaps the Norwegian government was also hesitant to place yet more regulatory power in Statoil. In the end, the result of its norm price policy was not dissimilar to the British pricing policy.

On October 15, 1984, Norway reduced its norm price (via an announcement by Statoil of a new price for its contracts) by \$1.35 per barrel⁷⁴. The norm price structure was officially abandoned by the Norwegian government on January 14, 1985⁷⁵. Uncertainty in the international petroleum market with regard to future price trends led to this initiative. The price war which developed between the North Sea producers and OPEC must have made impossible the administration of the norm price policy. Once Norway had reduced the price of its oil, Britain had to follow to remain competitive, and although official OPEC prices were maintained, spot prices followed the North Sea trend as well. As discussed in the section on OPEC, a price war is like a game of chicken, where players hope to outlast each other -- maintaining their market share despite losses on price, while avoiding catastrophe -- price collapse or resource exhaustion.

OPEC warned the North Sea producers about the consequences of not limiting their production in the interests of maintaining the international price level, and efforts were made to open negotiations between the OPEC and North Sea producers. Norway initially refused discussion with OPEC officials, but some contact was made after a

change of government which brought the Labour party back into office in May 1986. It is likely that the reduction of the international price below \$10 per barrel in April further encouraged the Labour government to negotiate with OPEC. The Norwegian administration appealed to Britain to open similar talks, although the former refused to agree publicly to cut production to support the international price. The British government refused, and shortly thereafter Norway restricted exports in an effort to reduce the oversupply which was depressing the international price⁷⁶.

Despite the Norwegian initiatives, the British government remained committed to free market principles and refused to support either the OPEC cartel or the price of its own oil. Although each reduction of \$1.00 in the price of oil reduced U.K. government revenue by \$285-430 million per year, the government continued to stress publicly the benefits of the lower price of oil on the inflation rate and the reduction of unemployment⁷⁷.

The United Kingdom and Norway have very similar interests and concerns when it comes to petroleum pricing. The geographical situation of the resource is identical and its relatively recent development has meant that exploitation is a costly and risky business. Although the macro-economic and social impact of petroleum development varies greatly between the two countries, pricing policies for both have been determined by the international petroleum market. However, "...both countries have a vested interest that OPEC does not break down, with a collapse of the oil price. It is equally important for both countries that the OECD economies do not suffer an economic setback because of a scarcity of oil, or because of a sudden jump in the price of oil."⁷⁸ OPEC is not entirely broken, and the OECD countries are currently enjoying the benefits of low cost energy

which should greatly enhance their economic performance. Both Britain and Norway have attempted to walk the fine line between the maximisation of their interests as oil producers and the maximisation of their interests as members of the consumer community. The result has been the enjoyment of high oil prices when the international market has so dictated, and the acceptance of low oil prices as is the present case. On close examination, there appears very little difference indeed between the two countries on pricing policy.

CONCLUSION

The petroleum pricing policies of Canada, the United Kingdom, and Norway are indicative of the political objectives of each government. Canada, as the only state which had a policy of government established prices below those of the international market, has been the clear loser in financial terms. Neither federal nor provincial governments nor the petroleum industry were able to capture the maximum economic rent from the exploitation of the resource in the 1970s, and deregulation coincided with the collapse of the international price of oil. Britain and Norway, on the other hand, implemented pricing policies based on the international market price for petroleum initially due to the necessity of a high price to encourage investment in a costly exploration and development situation. Both states subsequently utilised their fiscal regimes to capture the economic rent in the course of production and sale of petroleum. However, the price of petroleum was not a political issue of the same magnitude in the North Sea states as in Canada.

The federal division of powers was the necessary condition for the development of the federal/provincial conflict over petroleum pricing and fiscal arrangements which was a striking feature of Canadian politics throughout the 1970s and early 1980s. This conflict centred on which level of government should have ultimate responsibility for the determination of natural resource pricing and taxation, but the controversy did not concern merely the federal and producer governments alone. Consumers and the electorate were also involved. The majority of Canadian voters reside in Ontario and Quebec, so federal elections are won and lost in eastern Canada. The bulk of Canadian petroleum consumption also occurs there.

Consequently, the price of petroleum became a crucial issue in both Liberal and Conservative federal governments' attempts to retain office and this complicated intergovernmental relations with the producing provinces. Both parties, once in power in Ottawa, found themselves caught between the interests of Alberta and Ontario, and, regardless of the party affiliations of those two provincial governments, found the conflict difficult to manage.

The retention of office in the federal government was more important for both parties than the capture of maximum economic rent through increased petroleum prices. Consequently, both parties attempted to appease the large voting population in Ontario and Quebec which inevitably alienated western Canadians. Canadian petroleum pricing policy was directed toward reducing the impact of the OPEC price revolution on the consuming population by keeping Canadian petroleum prices well below world levels. Once the issue had faded from the immediate public agenda, in the mid 1970s and again in the mid-1980s, the federal government was able to move

toward world prices, either through price increases or through total deregulation, in order to appease producer interests (both government and industry).

The Canadian government was able to use petroleum pricing policy for political ends for two reasons. Firstly, because the petroleum industry was well established in the producing provinces, the government, unlike the British and Norwegian governments, did not have to introduce incentives for investment in petroleum development. Secondly, there was a tradition of federal intervention in provincial natural resource development in the implementation of the 1961 NOP and even earlier, because the federal government retained authority over natural resources after the creation of the western provinces. Although this authority was relinquished in the 1930 Natural Resources Acts, which returned the power to the provincial governments of Manitoba, Saskatchewan, and Alberta, it left a legacy of expectation of federal intervention in natural resource development, bitterly remembered in the west.

None of the conditions which required and allowed for the political use of pricing policy were present in Britain and Norway. Neither state had a federal arrangement which complicated jurisdiction over natural resources; both central governments were entirely responsible for the development of petroleum policies. Unlike Canada, both states had an exploration and development situation which required huge sums of capital investment and consequently both governments had to introduce incentives to encourage investment. Part of the incentive to invest was a guarantee of world prices for the product, of no great significance in the 1960s, but crucial in the 1970s and 1980s when production came onstream. With the emergence of enormous economic rent potential,

prices were allowed to rise and the capture of that rent was made principally through the fiscal system. As prices declined, the North Sea governments lost a large share of the revenues to which they had become accustomed, but nonetheless, neither has attempted to sustain price levels through new pricing policies for domestic consumption or for export, although Norway encouraged cooperation with OPEC on production through the restriction of exports in late 1986.

In conclusion, all three states had the sovereign right to determine the price of their natural resources, but different political and historical circumstances in Canada resulted in petroleum prices being held below the international levels by the federal government. Both the United Kingdom and Norway based their prices on those in the international market, and the principal difference between the two states' policies was an administrative one, with Norway having utilised the 'norm' price system from 1974-1984 while Britain relied on contractual prices throughout. The end result was the same: world prices for North Sea production which encouraged investment in North Sea petroleum and now necessitates some readjustment of government balance sheets. In all three cases the party allegiance and, indeed the party election manifesto, has not been the crucial factor in the fundamental policy options chosen.

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CHAPTER FIVE
DEPLETION POLICIES

Depletion policies regulate the development and production of a non-renewable resource such as petroleum. There are several different reasons why the owners of such resources might wish to implement depletion policies. Firstly, there may be some consideration for the future consumers of the resource; conservation of some level of future supplies may seem a responsible and prudent policy. Secondly, conservative depletion policies may be necessary to maximise the ultimate retrieval of the resource. Future developments in technology might allow for greater extraction of the resource in total. Thirdly, depletion policies may be used to support high price levels; by reducing production and restricting supply, the owners might increase their immediate return by receiving higher prices for their product.

However, regulation is a broad concept and can be approached from several different perspectives.

One can view regulation in several ways... For example, one can visualise it in relation to government efforts to affect conduct at the various 'stages' in the production cycle of the industry. Thus regulation occurs at the point of initial exploration, at later development and production stages and in the transportation and marketing stage.... A second way to view regulation is to visualise 'types of behaviour' that regulation is attempting to affect, such as 'policing' versus 'developmental' behaviour. Regulation can be

directed towards 'preventing' things from happening, in short a policing function, or a public utility style of regulation ... designed to prevent abuses of monopoly power such as in the case of pipelines. Developmental regulation, on the other hand, involves an attempt to induce/require certain positive kinds of preferred behaviour as well.¹

Government depletion policies concern the encouragement, in the various stages of the petroleum production cycle, of preferred behaviour on the part of the petroleum industry by governments. Thus depletion policies can be examined through the various regulations on petroleum exploration, development, and marketing in addition to production, or they may be more narrowly (and commonly) considered solely in the terms of promulgated production policies. This chapter proposes to concentrate on the latter interpretation in the cases of Britain and Norway where such policies are a matter of public record, but will have to explore some aspects of Canadian petroleum regulation in order to determine what, if any, depletion policy exists in Canada. In addition, the licensing regimes in all three states will be examined as a less explicit demonstration of government attitudes regarding resource development.

The depletion rate of an exhaustible natural resource is of vital importance to governments which own or control such resources. It directly affects the length of time during which production is economic and profitable, and it is in turn affected by changes in price, production costs, and technological advances, all of which influence estimates of reserves and production rates. Depletion does

not only concern production rates, but is also closely related to exploration rates and the investment environment. It influences and is influenced by these latter two factors.

There are several policy mechanisms which may be employed to determine depletion rates. A government can dictate a level of production over the natural resource. This is a very public form of regulation, demanding constant assessment of the relative advantages and disadvantages of various production levels and leaving the government directly accountable for the impact of the production level. In a less explicit depletion policy, governments can create a more or less attractive environment for exploration by utilising a lenient or stringent licensing procedure for exploration, or by determining prices for the resource either above or below the international price. In addition, they can encourage or discourage investment by imposing a lenient or stringent fiscal regime on production. Governments may also employ regulatory bodies to affect the behaviour of the petroleum industry. This approach enhances the relative influence of the bureaucracy and allows the government to distance itself, if necessary, from the policy.

Depletion policy, in the sense of production regulation by government, did not exist prior to the first OPEC pricing crisis. Before the early 1970s, a concessionary system of licensing was employed not only in the Middle East but also in North America and other petroleum-producing regions. In these concessions, oil companies (usually the large multinationals) were leased large tracts of territory by the owner for the exploration and production of such petroleum resources as might be found. The companies determined both the rates of exploration and of production and, in exchange, the owners of the resource were given a revenue share through nominal

payments made for the concession and a royalty paid either in like or kind. The advantage of the concessionary system to both parties was clear: owners of resources without means to develop them were able to gain some benefit from production by others, and those with the expertise but not the ownership were allowed to exploit the resources.

The consequence of the concessionary system was that the large multinationals were almost in the position to take independent decisions over the exploration, production, and sale of petroleum products without actually owning the resource, although there was usually consultation with the owners. It was in fact the frustration of OPEC producers in the face of a price cut made unilaterally by the oil companies which spurred OPEC into action on petroleum pricing and state participation.

"The case for government depletion controls in theory is based on the assertion that an imperfect industry is unlikely to bring about an optimal depletion rate."² A calculation of the optimal depletion rate depends on the interests of the party making the calculation. Governments will vary in their calculations from as rapid development as possible to a very conservative rate. In the case of the Middle East and North African concessions, the companies were seen by governments as depleting the resources too quickly, thus contributing to an oversupply in the international market and undesirable price reductions. The rationale behind OPEC's actions in the 1970s was to achieve a reasonable petroleum price for its members by collectively agreeing a policy over petroleum resources and establishing a price for OPEC oil which was unrelated to exploration/production costs. Later, OPEC unsuccessfully attempted to restrict production in order to sustain its price levels. In this

case, production policy was not concerned with the conservation of a depleting resource, but was rather an instrument of pricing policy. However, the original impetus to OPEC action in the early 1970s was the virtually unrestricted control over petroleum resources which was exercised by the oil companies in the concessionary arrangements.

Governments which implement depletion policies are indicating that the production rates established freely by petroleum companies in their territories are in some way unsatisfactory. Governments of producer countries, whether OPEC members or not, tend to have different objectives in mind concerning the speed of production and therefore employ a discount rate on petroleum investment which is different from that of the private industry. The general assumption is that governments will tend to deplete resources more slowly than will the industry largely because of concerns regarding the political, economic, and social impact of petroleum development which may not be considered important from the industry's viewpoint.

"However, the oligopolistic oil industry does not necessarily deplete resources 'too fast'.... Oligopolies tend to price higher and fix output lower than in a competitive market situation [in order to sustain a desired price level] resulting in a tendency to deplete oil 'too slowly'."³ The general assumption that the petroleum industry is solely interested in maximum production rates clearly ignores its interest in a premium price for its product. There may be equally strong incentives for reducing output in order to secure certain price levels or continuity of activity in the longer term, especially in a market made imperfect by producers joining together to advance their interests (i.e. maximise their profit). Even if it could be proven that the private industry does not deplete natural resources more rapidly than government, all things being equal, the

rhetoric of depletion control is based on the assumption that it does. This is because the general assumption is that governments are unified bodies interested in maximising the public interest. Rational choice theory challenges that assumption by suggesting that governments are comprised of self-interested actors who are in competition with each other for scarce political and economic resources. In consequence, the 'public interest' is often defined by the interests of dominant political actors.

For the petroleum industry, the expected rate of return must at least equal the average rate of return on investment elsewhere in the economy. For governments, there is likely to be greater interest in the social rate of return which is influenced by the absorptive capacity of the economy. "In other words, the greater the potential for using the revenue in the domestic economy, the higher the expected social rate of return."⁴ If the domestic economy cannot absorb petroleum revenues effectively and such revenues must be invested outside the domestic economy, a slower depletion rate might be the optimal policy for the government. If the domestic economy can be buoyed by petroleum revenues, or if the government can make political gains from the acquisition and/or employment of such revenues, then a more rapid depletion rate would be expected.

The *political* rate of return is largely determined by macro-economic factors such as the balance-of-payments position and the exchange rate. From the rational choice perspective, governments would implement depletion policies to maximise their revenues whenever possible. Depending on the trends in the international price, the domestic political and economic situation, and the estimates of petroleum reserves, a more rapid depletion policy would be chosen over a conservative one in the case of a government with a

high *political* rate of return. Governments with low *political* rates of return, i.e., which cannot productively utilise huge amounts of revenue, would be more likely to implement conservative depletion policies. However, political and social considerations will strongly influence the the government's preferred rate of resource development.

Regional, social and environmental effects related to oil are determined by the rate of extraction. It can generally be assumed that these spin-off effects can be handled best when the economy is prepared for the new market and its impact of the infrastructure and the environment. These considerations imply control and they theoretically tend to lower the social rate of return expected by governments.⁵

However, it is arguable that given the short time horizons of governments in democratic countries (ie., a maximum of four to five years between elections), particular governments might have a shorter term view than an industry which is counting on making profits from petroleum investments for far longer than five years. The uncertainty of price in the petroleum market since the OPEC revolution has been a further incentive for governments to encourage rapid exploration and production -- the bird in the hand philosophy. Therefore a government with an extremely high *political* discount rate might tend towards a more rapid depletion of the resource than would the industry.

The petroleum industry is concerned not only with profits available from exploitation, but also with the discovery of additional reserves in order that future profits may be made.

Governments, on the other hand, may be constrained in the formulation of depletion policies by pressing political, economic, and social concerns which have little to do with the "repletion" rate. In terms of political rhetoric, governments tend to be primarily concerned with reducing depletion rates rather than increasing repletion rates. This is partly because the public is more interested in conservation -- the preservation of resources already available -- than in exploration -- the discovery of future potential. The public may be partly interested in the preservation of the resource for future generations, or it may prefer to prolong the productivity of a known commodity at known prices to the uncertainty of the future. An indication of the government's true objectives in the exploitation of public resources is whether political rhetoric and policy match.

Depletion policies give information about the social discount rate and they may also indicate the relative bargaining position of the government in relation to the industry. "A government opting for a high rate of extraction will necessarily be more exposed to the demands and needs of private companies controlling the relevant technology than a government opting for a low rate of extraction."⁶ Governments may also be largely dependent on the petroleum industry for the information necessary for the design of a depletion strategy, unless a public petroleum corporation is at their disposal. There are also uncertainties in the size and future economic viability of reserves which "...cast doubt on the government's ability to alter depletion rates to achieve an optimal outcome -- even if one was theoretically attainable."⁷ In addition to illuminating other petroleum policies such as price and marketing, depletion policies can be an indicator of government priorities in resource development and in relations with the private industry.

As mentioned, depletion policy can be examined from the broad perspective of government regulation of all aspects of petroleum activity, or it may be evident in production policies alone. In the former case, all regulatory activity undertaken by the state has an effect on the rates of the exploration for and development of the resource. In the case of Canada, which has no production policy, regulations concerning the acquisition of exploration licences, the prorating system in Alberta, and export policy changes will be examined in order to identify Canadian depletion policy. Both the U.K. and Norway have public production policies which can serve as indicators of their respective depletion policies, but it is important to examine their production records in order to assess the impact of these policies. The licensing system will provide an initial and common basis of comparison between the three countries on the question of depletion policy.

1. LICENSING PROCEDURES IN CANADA, BRITAIN, AND NORWAY

Exploration licensing can be considered an important factor in the overall depletion policy of a petroleum producing country. As mentioned earlier, the old concessionary system in effect handed over all depletion decisions to the multinational petroleum companies. The number and size of exploratory licences, and the frequency of their allocation, must, by definition, affect the possibility of petroleum discoveries and their subsequent development. A lenient licensing regime therefore would be an indication of a high *political* discount rate and a depletion policy favouring rapid exploitation.

Licenses for petroleum exploration are generally allocated in one of two ways: either by competitive bidding in an auction or by discretionary allocation by the government.

In a competitive auction each bidder gains by giving up more expected economic rent to the point where all the expected economic rent has been captured by the government.... Over time as bidders acquire information and expertise the difference between expected and realised economic rent would tend to diminish. Thus the auction system.., by employing the price mechanism, enables the government to capture the maximum economic rent as well as ensuring economic efficiency in that the successful bidder will be the lowest cost bidder.

In a discretionary allocation system licences are awarded on the basis of a set of criteria established by the government. These criteria may include political or bureaucratic considerations and may be discriminatorily enforced.⁸

The discretionary system has the additional advantage in that it is a very public means of controlling the allocation of exploration licences. The government can be seen to favour domestic firms over large multinationals and it can impose conditions on the exploitation of petroleum resources by altering the criteria on which various applicants are assessed. In short, the discretionary system of allocating licences emphasises government control, whereas the auction system maximises the capture of economic rent.

However, the two are not mutually exclusive. Auction systems of licence awards are often supplemented by specific requirements built into the licence contracts. The discretionary system can be

associated with a more stringent fiscal regime designed to capture the economic rent. The choice of the method employed indicates the interests a government has in public perceptions of control and maximum revenue.

A. Canada

Petroleum production in Canada began in Alberta in the early part of this century; Canadian procedures for the licensing of petroleum exploration were initially designed for that province. The licensing system in Alberta (and subsequently the other petroleum producing provinces) is based on auction and is often referred to as a bonus bid system. At regular intervals, the provincial government publishes a list of various blocks to be put up for auction. Petroleum companies then submit sealed bids for exploration blocks to the provincial government. The company with the highest bid is awarded the exploration licence. In addition to the bonus payment (or auction bid, whichever it is termed), the company must pay the government a rental fee and a royalty on production. In Alberta, royalties are based on a sliding scale depending on the rate of production and the time of discovery.

In addition to the licensing regime, the Alberta government created the Turner Valley Gas Conservation Board in 1932 to control the flaring of natural gas in the Turner Valley oilfield⁹. In 1938, the Petroleum and Natural Gas Conservation Board was established (renamed the Energy Resources Conservation Board -- ERCB -- in 1975) in order ensure effective conservation of Alberta's petroleum resources¹⁰. Its responsibilities include the evaluation of applications for new or expanded energy projects, the regulation of existing energy facilities, and the provision of a data base

regarding Alberta's energy resources. With regard to petroleum, the ERCB assesses the site and proposed facilities for all wells drilled within the province, and regulates drilling and petroleum production so that technical and engineering standards are maintained and reservoir life is maximised. The ERCB monitors all petroleum production in the province and also maintains a comprehensive data base on Alberta petroleum geology. It also administers Alberta's prorationing scheme in which individual wells are allowed to produce at certain rates depending on the geological and engineering particulars of the project. The objective is to maximise reservoir life rather than to restrict the flow of petroleum on to the market for strategic purposes.

At the federal level, a regulatory system quite different than that which exists at the provincial level was introduced by the Canada Oil and Gas Lands regulations of 1961¹¹.

The COGL provided for a system of long-term exploration permits and production leases. The exploration permits were available for a nominal sum and were generally issued on a first come, first served basis. The permits were for a definite term (usually nine to twelve years) but were for exploration rights only. These permits could be renewed but at the sole discretion of, and on terms set by, Ottawa. Any subsequent production arrangements under COGL were provided through separately negotiated leases.¹²

The leniency of the Canada Lands licensing regime is an indication of the desire on the part of the Canadian government to encourage petroleum exploration in a forbidding environment. The

lack of competitive auctions in the award of exploration licences is a significant departure from the regime established in Alberta. The length of the licences was generous, although only renewable at the discretion of the federal department of Energy, Mines, and Resources. However, the terms were retroactively changed once petroleum extraction in these areas was well-established. In 1977 Petro-Canada received a 25% working interest in renewed Canada Lands exploration licences, and in the National Energy Program 1980, this provision was modified to a carried interest so that Petro-Can did not immediately have to pay its share of historical exploration expenses. The COGL regulations were also modified in the NEP so that the federal government obtained an automatic 50% share in any area designated for production. This retroactive imposition of government participation on the Canada Lands regime was viewed by the petroleum industry as confiscatory and unfair, and was seen by the American government particularly as a provocative initiative on the part of the Canadian government. However, it demonstrated the federal government's interest in maximum participation once exploratory interest had been secured.

The National Energy Board (NEB) was created in 1959 on the recommendation of the Borden Commission enquiring into energy and the Canadian national interest¹³. In 1957, John Diefenbaker, leader of the Conservative Party, called for the establishment of a national authority to regulate energy. After the Conservatives were returned to power later in the year, his government established a Royal Commission on Energy under Henry Borden; one of its terms of reference was to enquire into the desirable extent of the authority vested in such a body. The resulting legislation proposed an independent authority with powers to licence the imports and exports

of natural gas and exports of electricity as well as evaluating the building of interprovincial and international pipelines. The Board was required to hold public hearings on major issues which came before it, and it was expected to perform advisory functions for the government on all energy matters. The NEB today performs many of the same functions at the federal level as the ERCB at the Alberta level. It has responsibility for monitoring and reporting to the government on all federal aspects of energy, not only those pertaining to petroleum matters. Its regulatory functions include controlling the transportation, import, and export of energy and setting utility rates and tariffs.

It seems clear that the NEB's decisions are not based on a conservative notion of depletion. It authorises exports of petroleum whenever domestic supplies and reserves are plentiful. It has only limited exports immediately following the two OPEC crises in order to safeguard domestic supplies. In its own literature, the NEB appears proud of the increase in Canadian energy exports.

Exports of natural gas climbed from 3.1 billion cubic metres in 1960 to a peak of 28.3 billion cubic metres in 1979 and then declined [as a result of an increase in U.S. production] to 20.2 billion cubic metres in 1983. Oil exports soared from 7.1 million cubic metres in 1960 to a high of some 80.5 million cubic metres in 1973 and subsequently declined sharply as Canada directed a growing share of its production for domestic consumption. In 1983, oil exports amounted to 30.2 million cubic metres. Over this period, from 1960 to 1983, Canada's net exports of electricity increased from around 5,000 gigawatt hours to more than 35,000.¹⁴

This is hardly the tone of a body concerned primarily with the conservation of Canada's energy resources. However, when imported supplies are threatened, the NEB can and has restricted exports of domestic production of all energy sources.

After assurances made as late as June 1971 by the federal Energy Minister, Joe Green, that Canada had "...923 years of reserve oil and 392 years of reserve gas..."¹⁵ at 1970 production rates, reserves were revised downward in the early 1970s. By the time of the first OPEC price crisis, it was apparent that Canadian petroleum supplies were not as inexhaustible as they had seemed but two years earlier. However, approximately 50% of Canadian oil production was then being exported and about 45% of requirements were being imported at rapidly increasing prices¹⁶. The federal government consequently restricted exports to the US in an attempt to safeguard supplies for Canadian use. In response to this federal initiative, the Alberta government established the Alberta Petroleum Marketing Commission (APMC) in order to strengthen its control over petroleum within its borders¹⁷. The APMC sets the prices for oil differentials within Alberta and according to the Mines and Minerals Amendment Act¹⁸ proclaimed by the Albertan government in December 1973, all producers within the province are required to sell their oil through the marketing commission.

In October 1974, the NEB warned that Canadian oil supplies were inadequate to serve Canadian markets and that exports should be phased out¹⁹. By 1976, when the federal government published its Energy Strategy policy statement²⁰, the government's primary concern was the safeguarding of Canadian supplies and the reduction of Canada's reliance on insecure foreign imports. The government made several proposals to achieve these objectives, including appropriate

energy pricing, energy conservation, and increased incentives for exploration and production. The government acknowledged that energy self-sufficiency (complete satisfaction of domestic requirements from domestic production) could not be realised by 1990, but that energy self-reliance (significantly reduced dependence on imported sources) was a realistic goal.

Despite growing concerns over Canada's ability to satisfy its energy needs throughout the 1970s, no rationing schemes of any kind over production or consumption were ever implemented. In the National Energy Program 1980²¹, a certain emphasis was laid on oil substitution, greater efficiency in petroleum use, and greater conservation efforts. However, the government did not impose exploration or production restraints, nor did it allow the price of Canadian petroleum to rise to international levels which certainly would have impacted consumption.

In 1980, after the introduction of the NEP, the Alberta government implemented actual production cutbacks. As discussed in Chapter 4, Premier Lougheed announced a total production cutback of 180,000 barrels per day in supplies destined for eastern Canada in response to the unilateral introduction by the federal government of the National Energy Program²². This cutback was to be administered through the ERCB's authority over prorating in Albertan wells, and was to occur in three stages of 60,000 barrels every three months. The first two cutbacks were implemented, but the third was forestalled by the Alberta-federal agreement on energy pricing and taxation reached in September 1981²³. This action had nothing to do with petroleum conservation or a depletion policy; it was a strategic ploy designed to bring the federal government back into serious negotiations with Alberta. However, it demonstrated that the

Albertan government had the power, in addition to the constitutional authority, to cut petroleum production when it desired. This power has never been used for purposes of conserving the resource; depletion policy has not been a concern in Alberta.

In short, depletion policy in terms of production cutbacks or controls does not exist and has never existed in Canada either at the provincial or the federal level. However, both levels of government have taken appropriate means of regulating the petroleum industry with regard to exploration licensing and production rates to promote good engineering practice and the preservation of reservoir life. With existing regulatory bodies and legislation, the option of designing and implementing a conservative depletion policy exists in Canada, but both the Alberta and the Canadian governments have chosen to ignore depletion policy in favour of encouraging energy conservation at the consumption end of the market. This is partly a consequence of the historical development of petroleum policy in Canada in addition to the obvious political costs of a federal depletion policy which would challenge public expectations.

According to National Energy Board statistics, Canadian oil reserves have remained at a life index (a ratio of reserves to production) of approximately ten to twelve years for the decade commencing in 1973 despite a continual decline of estimated established reserves²⁴. This indicates that estimated reserve additions are largely matching production rates. With regard to natural gas, the life index hovers at approximately twenty-five years. Therefore it could be argued by either governments or the industry that a depletion policy is not necessary in Canada. Market forces are apparently ensuring a continued supply of petroleum. The recent collapse of the international price will no doubt affect the

attractiveness of investment in Canadian petroleum exploration, and should these life indices deteriorate substantially, the government may well be compelled to consider a more conservative depletion policy. For Canadian oil producers or government officials, depletion only refers to the depletion allowance granted for petroleum taxation purposes.

Canadian political rhetoric about oil consumption conflicts directly with the federal policy of maintaining the price of Canadian crude below the international level. The best way of restricting consumption of a product is to increase its price. If the federal government was seriously concerned with the efficient use of Canadian oil supplies, prices would have been allowed to rise along with the international price. The policy of a made-in-Canada price no doubt affected the consumption of Canadian petroleum, although the extent to which it did so cannot be measured. Not only does the Canadian government not have a depletion policy concerning production, but in actual fact it has clearly been less concerned with restricting consumption than the policy statements would indicate. Canadian oil and gas has been produced and consumed with little regard for longer-term supply issues. The only real restriction ever imposed was on exports to the United States.

B. The United Kingdom

The exploration licensing regimes of the United Kingdom and Norway were formulated in the 1960s after large discoveries of gas were found off Holland. The North Sea as a potentially rich petroleum-bearing site then became of great interest to petroleum corporations. Both governments had to decide rapidly on the means

which would be employed to licence exploration activity. Both governments were also interested in retaining, as far as possible, maximum control over the development of petroleum resources.

In the U.K., the Petroleum (Production) Act 1934²⁵ set out the regulations under which onshore petroleum activity would take place, and in the Continental Shelf Act 1964²⁶, these licensing provisions were extended to the offshore. Under the 1934 regulations, companies were able to make uninvited, non-competitive applications for areas of exploration interest to them. Conditions of the licence such as safety requirements were incorporated into standard clauses in the licenses, but in general terms, the acquisition of a petroleum exploration licence was not an onerous task. In the Continental Shelf Act, the licensing system was left largely intact but an important change was made in the method of licence allocation. "Instead of leaving it to companies to apply for production licences at the times and for the areas that they might themselves determine, we divided our designated areas into blocks of an average size of 250 square kilometers and provided for the grant of licences only after licensing 'rounds' in which the blocks chosen by the government would be offered for application by the companies."²⁷ By restricting exploration and production licences, the government took the power to make decisions on which areas would be open for exploration at which times. However, further government control was put in place by the choice of the discretionary method of licence award rather than the award by competitive auction.

The debate between the use of auction or discretionary methods of licence allocation was not intense in Britain. Angus Beckett, the civil servant in charge of oil policy from 1964 to 1972 has stated publicly that "...under rounds one to four, the primary aim was rapid

North Sea development so as to provide breathing space in which to evolve a long term energy strategy."²⁸ The discretionary system offered the government great flexibility to allocate rapidly large tracts for exploration, and terms were designed leniently to encourage companies to invest in the North Sea. The auction system was rejected due to its heavy front-loading of capital investment, thought to be a disincentive to exploration in the formidable North Sea environment. The companies favoured the discretionary allocation of licences for precisely the same reason: licences obtained by this method were believed to be far less expensive than those acquired by a bid in a competitive auction. It has been suggested that both the Treasury and the then Ministry of Power were reliant upon the cooperation of Shell and BP in commencing North Sea activities, and that these companies both favoured the discretionary award over a potentially more expensive auction²⁹.

The discretionary method of licence allocation was reviewed several times during the 1960s and 70s. After the second licensing round in 1965, the debate between discretionary and auction mechanisms began, but the government decided that the discretionary method was successfully encouraging rapid exploration. The fourth round in 1971 saw the government's first experiment with a combined discretionary/auction award. The government's position was that unexplored territory would, by definition, be unattractive in an auction, but by the early 1970s large tracts of seabed had already been explored and seemed very promising. The government felt that it could safely offer some blocks for auction and capture a larger share of the economic rent while still making discretionary awards for most of the blocks. Four hundred twenty-one blocks were offered, of which 267 were licensed. Fifteen blocks were auctioned raising a total of

\$90 million³⁰. Shell/Esso made the highest bid: \$50 million for one block, (\$32 million higher than the next highest bid) demonstrating both a lack of geological knowledge (the two wells drilled on it proved dry) and a lack of experience in auctions in the North Sea environment. Although the government found this capture of rent surprisingly successful, the auction of licences was not repeated until the 1980s under the Conservatives. It has been suggested that the discretionary/auction debate reveals a division of the interests between the Department of Energy and the Treasury, and that the Department of Energy had the upper hand in the 1970s³¹. The Department of Energy was interested in the maximum exercise of bureaucratic control while the Treasury was interested in the maximum capture of economic rent. These interests were conflicting, although not mutually exclusive. However, the Department of Energy was supported by the interests of the oil companies themselves which acknowledged the possibility of increased expense under the auction system. The combined interests of the Department of Energy and the petroleum industry outweighed the fiscal interests of the Treasury and the auction system was used only occasionally as a secondary instrument of capturing economic rent.

An auction was included in the eighth licensing round announced in September 1982³². Once again, fifteen blocks were put up for auction, and seven were awarded, raising more than \$55 million. The ninth round in 1985 also included an auction, raising more than \$135 million in bids³³, but the tenth round in May 1987 did not have an auction component. The reduction of available economic rent after the collapse of the international price of oil made redundant the use of auctions in later licence awards. Although the Conservative government appeared willing to employ auction elements in licence

awards in order to gain immediate revenue, the discretionary allocation of licences remains the basic means of government control of North Sea activities. The government, whether Conservative or Labour, has not been principally motivated by the capture of economic rent from the licensing mechanism. It has been concerned with maximising Department of Energy control over the awards themselves, the attendant regulations, and work requirements.

The discretionary system offers the government a great deal of control in terms of regulating the behaviour of the licensees. "[B]ecause the discretionary system transfers economic rent to the licensee, the government will attempt to 'buy' something for the economic rent such as requiring a rapid rate of exploration (as compared to the rate determined by the market), requiring reserves to be sold to the government at a lower than market price (i.e. natural gas and the Gas Council) or by increasing taxation."³⁴ Furthermore, in the discretionary award of licences, companies could be easily encouraged to purchase goods from British suppliers and in other ways fulfil the government's objectives. Punitive measures such as the exclusion from future awards could be taken against companies which did not comply with government wishes. The government was under no obligation to divulge its method of making choices in these matters, although criteria on which these decisions were supposed to be made were published well in advance of licensing rounds. "The Department has indicated that it uses a system of points for weighting the various factors it takes into account, but has refused to disclose what factors attract what points."³⁵

Exploration licences are contractual in nature and imply both financial and work responsibilities on the part of licensees in exchange for the Crown's granting of production rights over its

resources. Royalties (fixed at 12.5% of the value of production³⁶) and area fees were paid by the licensees to the government in acknowledgement of state ownership of the resource. Royalties can be wholly or partly remitted at the discretion of the Secretary of State for Energy in order to encourage development of marginal fields. On the question of work responsibilities, the licensees were obliged to agree a work programme with the government which had to receive Department of Energy approval and had to comply with safety regulations³⁷. In addition, the licences have a tripartite structure: the initial term of four years during which 150-250 kilometers of seismic work must be undertaken; a second term of three years during which at least one well must be drilled; and a third term of thirty years during which only one-third of the original area licensed is retained by the licensee for production purposes³⁸. The licensee may at any time relinquish all or part of the licence by giving at least six months' written notice expiring on the anniversary date of the start of the licence.

In 1964, Frederick Erroll, Conservative Minister of Power, outlined the government's preferences in the award of exploration licences. Although the first consideration mentioned with regard to licence awards was the "...need to encourage the most rapid and thorough exploration and economical exploitation..."³⁹ of North Sea petroleum, Erroll wanted to protect the national interest and noted that an important consideration would be the extent to which foreign interests were benefitting from British petroleum production. The requirements for licence applicants included the incorporation of the firm within the U.K. so that it was taxable in Britain. Furthermore, the government pledged to examine both the applicant's work programme, contribution made to date, and future potential

contribution with regard to the development of North Sea resources and the British fuel economy generally. The level of equitable treatment of British petroleum interests in the home countries of applicants was also considered. The government appeared primarily concerned with the issues of tax avoidance and of potential economic benefit to the U.K.

The first licensing round was held in 1964 and "...was hurried through by the Conservative government so that it could be completed between the passage of the Continental Shelf Act and the impending general election."⁴⁰ Presumably there was political advantage to be gained by the government if it was seen to make rapid progress in North Sea development. Fifty-three licences covering 348 blocks were awarded. U.K. participation was 30%, with the Gas Council representing the public sector with 3% interest in the awards⁴¹. In the second round, the new Labour government granted 37 licences covering 127 blocks. "The main addition to the licensing criteria was an indication that proposals to facilitate nationalised industry participation would be viewed favourably."⁴² U.K. participation increased to 37% with the public sector share rising to 6% as a number of companies offered partnerships to the Gas Council and the National Coal Board. The third round in June 1970 once again preceded a general election and awarded thirty-seven licences covering 106 blocks. In announcing the round in July 1969, the Minister of Power, Roy Mason, outlined additional criteria by which the applicants would be evaluated⁴³. These included the applicant's work programme and ability to carry it out, previous applications and exploratory endeavors, facilities for disposal in the U.K. of any petroleum produced, potential contribution to U.K. economic prosperity, balance of payments and employment contributions with

reference to regional considerations, provision for public participation, and involvement by the Gas Council, NCB, or other British interests. Additionally, new areas in the so-called Celtic Sea were to be licensed and in these awards the Gas Council had a mandated 50% interest. According to Hann, U.K. participation dropped to 36%, but the public sector share increased to 13%⁴⁴. The fourth round in 1971 saw the experiment with a limited auction, as mentioned earlier. The criteria for discretionary award remained the same, and tenders for the auction were subject to the Secretary of State's right to reject any bid.

The fifth round was held in 1976. The Labour government had created the British National Oil Corporation in 1975 and intended that either BNOC or BGC would have a 51% interest in all blocks awarded. The majority interest of the public corporation was a right to production which, if exercised, necessitated that BNOC or BGC would bear its share of the exploration costs. Amoco publicly resisted this development and was subsequently excluded from any fifth round awards⁴⁵. Licences were issued for forty-four blocks. In August 1978, companies were given the opportunity to offer BNOC greater than 51% interest in their licences, and could additionally offer to carry the state company's interests for all or part of the exploration costs⁴⁶. Consequently, in the months preceding the sixth round awards, companies were actually in competition to provide increased state participation in order to be awarded exploration licences.

The Conservatives returned to power in 1979 and introduced a less interventionist element in the next licensing round, although a competitive auction was not implemented. "In May 1980 the government announced that, for the seventh round of leasing, about twenty of the

ninety blocks to be offered would be sold on application for [\$10] million each (about a tenth in real terms of what Esso offered for the highest price block in 1971)."⁴⁷ The government selected the areas open for purchase, but the companies were able to choose to apply for specific blocks on offer and make the required payment if interested. Additionally, BNOC and BGC were eligible to apply for licences on the same bases as other oil companies; their preferential status in licence awards was eliminated⁴⁸. The government was clearly not interested in eliminating BNOC's function as an oil trader and the security of supply this could offer. Forty-two blocks were awarded in the company-selected areas and forty-eight in others, raising an initial payment of \$430 million.

The eighth licensing round was announced in September 1982 and was received by an oil industry highly critical of the recently modified offshore taxation system. Fifteen blocks in the northern North Sea were offered for auction, and 169 others in both frontier and Southern Basin areas. Seven of the auction blocks were awarded, raising more than \$55 million, while discretionary awards were made for 63 licences totalling 70 blocks, which was well below the government's target of licensing 80 to 85 blocks⁴⁹. By 1985, the government had provided some tax relief in the North Sea to compensate companies for the declining world price of petroleum. The ninth round which followed also included an auction which raised \$135 million. Ninety-three blocks were awarded, which exceeded government expectations⁵⁰. The tenth round, awarded in May 1987, granted 51 blocks despite depressed prices and reduced exploration budgets. As mentioned, it did not contain an auction component⁵¹.

"The licensing system laid the foundation for political involvement and manipulation in the oil sector."⁵² The use of discretionary awards clearly concentrated power in the hands of the Department of Energy both in terms of timing and size of areas to be licensed for exploration, and also in terms of regulating the behaviour of company activity in the North Sea. In addition, the contractual nature of petroleum licences allowed the government to sacrifice an indeterminate amount of economic revenue in exchange for the satisfaction of other objectives, including increasing participation of state petroleum corporations in the mid and late 1970s. Once again it appears that party politics did not significantly alter the government's use of the licensing mechanism. Both Labour and Conservative governments retained the discretionary awards while both parties also implemented limited auction elements in various rounds in order to maximise immediate revenue. The principal contribution of the Labour government was predictable, viz. licensing was used as an incentive to encourage the increasing participation of public corporations in the exploitation of North Sea resources. The special contribution of the Conservatives was to eliminate BNO's equity interest in all North Sea licences and eventually to dismantle the corporation. In terms of the fundamentals of licensing procedures, however, the parties appear to have been in general agreement both about the means and legitimate objectives of the government in granting exploration and production rights in the North Sea.

"If a free system of licence auction (backed up by taxation) had been consistently operated from the first round it is clear that revenues accruing to the Government to date would have been higher, possibly by a considerable margin."⁵³ Regardless, it is equally

clear that the licensing mechanism has proved an ample arena for the strategic bargaining between politicians, civil servants, and the petroleum industry. The government's objectives have been to give sufficient incentive for industry investment while still securing its political and bureaucratic objectives. The industry has the option of voting with its feet and simply refusing to invest if the conditions are considered unattractive. Because the licenses are contracts, freely entered into, exploration activity has fallen when the government's terms have seemed unreasonable, as in 1982. The debate over the appropriate means of awarding licences also highlights the competition between the Treasury's need for immediate revenues and the Department of Energy's desire to maintain control over North Sea activity. The combined interests of the Department of Energy and the oil industry, despite the financial advantages of the auction system, assure that the discretionary award of petroleum licences is likely to be a permanent feature of Britain's petroleum policy.

C. Norway

In a process similar to that in the U.K., the Norwegian Ministry of Industry vets all applicants for licences and makes selections based on technical and commercial grounds. For several reasons, auctions have never been employed in the Norwegian sector of the North Sea. Norway has a stronger political tradition of social democracy and greater concern over foreign economic dominance than does the U.K. The Norwegian treasury does not need immediate revenues in the way which encouraged the British government to include an auction element in some licensing rounds. "Gradually, a new policy based on the petroleum industry as a means of stimulating

the country's industry was evolved. Licensing is linked to industrial efforts by the interested oil companies' offers of industrial cooperation."⁵⁴

The Royal Decree of April 9, 1965⁵⁵ outlined the original licensing regime in Norway. As in the U.K., blocks would be offered by the government for application by interested parties, although the blocks were of approximately twice the size of those in U.K. waters⁵⁶. As in Britain, the Norwegian government designed the licence terms to include a brief initial term of exploration before partial surrender of the licence. Work programmes were to be negotiated between the licensees and the government, and remuneration of the state took the forms of area fees and royalties. Similarities between the British and Norwegian licensing systems were intentional and had been proposed in the government document on petroleum activities of 1964.

In the North Sea area it is particularly natural and simple for the international oil companies to make comparisons between the compensation systems of the various North Sea states.... The compensation system may thus cause the companies to concentrate their exploration in the areas where the financial considerations are most favourable.⁵⁷

The Norwegian government was conscious of the need to attract an interest in exploration, and consequently attempted to design a liberal licensing regime. The larger size of the exploration blocks, the less rigorous terms of surrender (only one-quarter of the territory had to be surrendered after six years, and a further quarter after three more by contrast with the U.K. where two-thirds

of the licence had to be given up after seven years⁵⁸), and a lower royalty rate (10% as opposed to 12%) were all designed as incentives to investment in the Norwegian sector. In addition, the 1965 Tax Act created a regime more favourable to petroleum companies than to other firms⁵⁹.

The Royal Decree of 1972⁶⁰ established a licensing system which regulated all phases of petroleum activity. Area fees were increased and a sliding scale of royalties based on increasing production was introduced. The surrender requirement was changed to half the original acreage after six years. Statoil was established and received an automatic share in all licences. The companies carried the exploration costs and when a commercial find was made, Statoil could choose to exercise its participation rights and contribute its share of development and production (but not exploration) costs. The tightening of the Norwegian regime appears to indicate that the government could afford to increase its control and revenue share once exploration interest had been firmly established in the Norwegian sector.

On March 22, 1985 a new Petroleum Act⁶¹ was passed which reaffirmed the licensing principles developed in the 1970s. An exploration licence covers a limited area and lasts three years. Before a production licence is awarded, the impact of the petroleum activities on all aspects of Norwegian society (political, economic, and social) must be evaluated by the Ministry. A new addition in 1985 was that the Ministry acquired discretionary power over the administrative procedure to be used in each individual case when compiling the impact assessment report. In addition, the 1985 Act required the submission of a detailed development plan, outlining information about the installations to be used for the production and

transportation of petroleum. The plan must also detail the licensee's use of the Norwegian offshore supply industry so as to promote Norwegian goods and services. "The rationale for requiring the presentation of a development plan is that the development phase involves extensive obligations for the licensee. Concurrently, it is of substantial importance for the authorities to ensure that environmental, safety, and societal interests have been considered before development commences."⁶²

Production licences are no longer limited to companies with a Norwegian subsidiary and are initially granted for a period of six years with possible yearly extensions for a maximum of four more years. The licensee must execute an agreed work programme in this period, after which the licence is extended for one-half the original area for a maximum of thirty years. The licensee may be required to enter into agreements with other companies, the government, or public corporations. In addition, the licensee must pay a duty per square kilometer of the licensed area and Norwegian royalties are levied on a sliding scale of production, which is to say that royalties increase with increasing levels of production. The Ministry can also appoint inspectors to monitor North Sea activities, and on the basis of their reports, the authorities can take various means to encourage better performance from the licensees. If the latter do not comply, operations can be shut down by the Ministry.

There is a 'Norwegianisation' policy attached to petroleum licences in that licensees are required to familiarise themselves with Norwegian suppliers and, if possible, purchase their goods and services. "The concessions stipulate that Norwegian goods and services should be used whenever they are competitive with respect to quality, maintenance, availability, and price."⁶³

Finally, Statoil has had, since its inception in 1972, a majority interest in all petroleum activity in the Norwegian North Sea. As discussed in Chapter 3, the rationale for the creation of Statoil was that the state should retain majority interest in all licences in order to maintain control over petroleum activities. Statoil was not to have a role in petroleum policy development, but was to be a very important partner representing the state's interest in all petroleum activities undertaken in Norwegian territories.

The first licensing round was held in 1965. Seventy-eight blocks were awarded in comparison with 348 by the U.K. government, although the Norwegian blocks are roughly twice the size of the British (500 square kilometers compared with 250 square kilometers⁶⁴). The criteria for awards included technological capacity and willingness to form consortia with Norwegian companies. As in the U.K., both the industry and the state "...were interested in rapid exploration to assess the quantity of recoverable reserves. The state gave itself no participation rights in the first round of awards."⁶⁵ In the second round in 1969, only 14 blocks were awarded, of which 12 involved some level of state participation varying from 5% to 40%⁶⁶. The terms remained generous in order to keep up the interest of the multinationals which had the expertise and the capital to develop the Norwegian resources. The third round in 1974 awarded only 8 blocks, and Statoil was granted a 50% carried interest in 4 of the 5 licences, and 55% in the fifth "...with an option to increase its participation up to 75% in accordance with an agreed scale based on the eventual size of the discovered reserves."⁶⁷ A further 9 blocks were reserved for Statoil development plans to be arranged with private companies, but this exclusive licensing did not take place presumably because of Statoil's inability to operate

independently at the time. The fourth round in 1978 marked the high point of state control through Statoil's licence interests.

"Provisions were made for the gradual take-over of all production by Statoil, through such arrangements as increasing Statoil's percentage of ownership of a block as production increased and setting five-year limits on the licences awarded to other companies so as to permit future participation by Statoil."⁶⁸ The Conservative coalition was elected in 1979 and these plans for an increased role for Statoil were promptly jettisoned. Statoil retained its majority interest in all future awards, but was not granted the increasing status which the Labour government had envisaged for it.

Since 1979, there have been eight licensing rounds with a total of 135 blocks awarded, over half of which have been awarded in the last two rounds which have emphasised northern frontier waters. Norwegian participation in these licenses remains at around 60%, the level at which it has been relatively constant since the third round⁶⁹. Licences remain at the discretion of the government, and applicants must agree, as before, to Statoil participation and to the other criteria concerning financial and work arrangements which have been a part of the Norwegian process since the early 1970s. Licensing rounds have been more frequent in the last six years, although the total area licensed remains small by comparison with Britain.

The principal differences between the licensing procedures in Britain and Norway are in the timing and size of licence awards and the role of the public petroleum corporation in Norway. Although Norway opened North Sea activity with a more lenient licensing regime than the British, by the early 1970s terms were toughened in order to increase state control, participation, and revenues. However, both

Britain and Norway have licensing regimes based on the discretionary award of licences over government-delimited blocks of exploration territory. Area fees and royalties are paid by companies, and work programmes negotiated between licensees and the government. In order to encourage efficient exploration of the licensed areas, both governments have introduced surrender clauses so that a certain percentage of the original licence must be given back to the state after several years of exploration activity. The similarity in the regimes may partly be accounted for by the fact that, in some senses, the British and Norwegian governments were in competition for exploration investment in their respective areas in the 1960s. Once interest in the Norwegian sector of the North Sea had been secured, the Norwegian government was able to pursue its original policy of a slower rate of petroleum development through the limitation of licence awards.

2. DEPLETION POLICIES IN BRITAIN AND NORWAY

Explicit policy statements concerning petroleum depletion have been issued in both Britain and Norway, whereas in Canada, as previously mentioned, this has not been the case.

In Britain, the 1964 Continental Shelf Act extended both the petroleum licensing and regulatory powers granted to the government in the 1934 Petroleum Production Act to the offshore areas of the North Sea. As previously indicated, the principal objective of the British government in the early period of North Sea development was to secure a rapid pace of exploration. This was, in part, due to Britain's weak balance of payments position; it was assumed that

rapid exploitation would assist in redressing the trade balance and provide increased revenues for the government. The government therefore concluded that "the balance of advantage to the U.K. lay in exploiting and extracting these reserves of gas and oil as quickly as possible."⁷⁰ Consequently, government controls over depletion were not discussed seriously until the early 1970s. In the initial period of North Sea exploration and gas production, the government let the depletion rate be determined by the producers within the bounds of good oilfield practice, much like the Canadian case.

However, in the environment of the early 1970s, when expectations were that oil prices might rise indefinitely and U.K. reserves were found to be larger than originally anticipated, this policy was called into question. "The Committee of Public Accounts in 1973 received evidence from the Department of Trade and Industry who for the first time suggested that the government was considering the possibility of phasing out its rapid exploitation policy and that they could foresee circumstances in which there would be an 'advantage in delaying the exploitation' of North Sea oil reserves."⁷¹ The Labour Party campaigned in the general election of the following year on a platform which included "some general references to the need for the development of the United Kingdom's offshore oil and gas to be under public control."⁷² When Labour was returned to office, depletion policy was on its agenda. As early as May 1974, the new Secretary of State for Energy, Eric Varley, indicated that the government was reconsidering the idea of rapid development and was looking favourably at a policy of longer term, more balanced North Sea production. In the July White Paper on

Offshore Oil and Gas Policy the Labour government stated that it intended to 'take power to control the level of production in the national interest'⁷³.

At the time of this policy announcement, Britain was suffering a supply crisis similar to other oil consuming nations. The Heath government had arranged bilateral oil supply agreements with both Iran and Saudi Arabia, in addition to attempting to influence BP to favour Britain in its supply allocations, all without tangible result⁷⁴. The public concern over the nation's petroleum supply resulted in considerable pressure on the new Labour government to demonstrate its ability to control North Sea development. A conservative depletion policy, further increasing Britain's dependence on insecure imported oil, would seem at odds with the reality of the supply crisis; but a depletion policy of some type would nonetheless reassure the anxious British public that the North Sea was being developed for its benefit. Parliament empowered the Secretary of State for Energy with extremely broad and ill-defined control over petroleum production in the Petroleum and Submarine Pipelines Act 1975⁷⁵, but the employment of such powers seemed at best unwise given the immediate supply and balance of payments positions. "Thus the 1974-9 Labour Government constructed the legal framework for the introduction of a depletion policy although, as far as can be known, they did not implement any aspects of it with respect to oil."⁷⁶

Although the Labour government's intentions regarding state participation, tabled at the same time, proved controversial outside and within the House of Commons, its proposals concerning depletion policy were hardly discussed. There was a consensus that the prospect of ever-increasing oil prices made oil in the ground

increasingly valuable. Another factor was Norway's go-slow depletion policy which contributed to ensuring that her reserves would far outlast the British.

The mechanisms favoured by each party varied, but the general objective of depletion control was agreed. The Scottish Nationalists argued for a restriction on annual production to 50 million tonnes of oil equivalent, while the Conservatives favoured the establishment of an Oil Conservation Authority along the lines of the Alberta Energy Resources Conservation Board⁷⁷. The Labour plan was to vest in the Secretary of State for Energy sufficient discretionary power to control petroleum production in the national interest.

The vagueness of this power made the petroleum industry rather uneasy, and on December 6, 1974, the Secretary of Energy, Eric Varley, issued guidelines under which the powers of his office were to be exercised in the attempt to reassure producer companies.

We propose ... to take powers of control for use in the future, but it remains the Government's aim to ensure that oil production from the United Kingdom Continental Shelf builds up as quickly as possible over the next few years... This will help our balance of payments, contribute to our Government revenues, stimulate our industries and make our energy supplies more secure.... I wish, therefore, to assure the oil companies, and the banks to which they will look for finance, that our depletion policy and its implementation will not undermine the basis on which they have made plans and entered into commitments.⁷⁸

The Varley Guidelines indicated that delays would not be imposed on the development of finds made up to the end of 1975 under existing licences. Development restrictions on later discoveries would be made after full consultation with the companies involved. Production cuts would not be imposed on fields under existing licences until 1982 at the earliest, or until four years after the start of production, whichever proved later. Furthermore, production cuts would not be imposed until 150% of the capital investment in the field was recovered. Finally, production cuts would be limited to 20% at most with an appropriate period of notice to be negotiated with the industry. The petroleum industry active in Britain was assured that the Varley guidelines, although lacking the force of law, would be followed.

The Petroleum and Submarine Pipelines Act received Royal Assent on November 12, 1975. Its major sections comprised the creation of the British National Oil Corporation, the amendment of existing petroleum production licences, the establishment of government control over submarine pipeline and refinery development, and miscellaneous provisions including the establishment of the National Oil Account.

In the area of depletion policy, the PSPA 1975 granted the Secretary of State broad discretionary powers of control over North Sea petroleum production that had been indicated in the White Paper. It "...gives the Minister power to approve, modify, or reject programmes submitted by producers, which must specify their capital investment plans and propose maximum and minimum annual production rates for oil and gas. The Minister can reject programmes either on the grounds that they are contrary to 'good oilfield practice' or that production plans are not in the 'national interest'; producers

then have to modify their proposals."⁷⁹ There is no appeal against the ministerial decision. The Minister is required to give notice to producers if their production either exceeds or falls below desired levels, but if his decision appears in conflict with principles of good oilfield practice as understood by the companies involved, the national interest as defined by the Secretary must take precedence.

This power of the Secretary of State for Energy to decide production levels in the national interest greatly concerned the industry, only partially placated by the Varley guidelines. The Energy Act 1976⁸⁰ further enhanced the discretionary powers of the Minister by enabling him to control the production, supply, acquisition and use of petroleum and other fuel substances, and to give directives to producers and suppliers in the case of any energy emergency. If these powers are to be exercised, they must be preceded by an Order-in-Council. It has not been necessary to put the Energy Act into effect, but it again demonstrates the Labour government's desire to have broad discretionary powers over petroleum and other energy sources.

During the late 1970s, the Varley guidelines made impossible the implementation of depletion powers granted to the Secretary of State in the Petroleum and Submarine Pipelines Act, 1975. Companies submitted development plans to the Secretary, but up to 1977, the only control imposed was a restriction of the flaring of natural gas. The only delay imposed on North Sea petroleum activity occurred in 1980 in the development of the Clyde field. The anticipated North Sea production 'hump' flattened of its own accord as various fields took longer to develop than expected; the implementation of a conservative depletion policy was therefore not required.

The next statement of the British government on depletion policy came after the Conservatives were returned to power in 1979. On July 23, 1980, the Secretary of State for Energy, Mr. Howell, announced the government's intention to prolong high levels of petroleum production to the end of the century⁸¹. The rationale for this policy was strategic and security of supply considerations following the second OPEC pricing crisis. U.K. production would be controlled to equal U.K. consumption, and Britain would become an exporter again in 1990. Once again, there was an apparent conflict between concerns for secure supply and resource conservation. Measures would be taken by the government to increase exploration while at the same time initiating some form of depletion control. On this latter point, Mr. Howell was imprecise although he indicated that both production cutbacks and development delays were being considered. The only result was the previously mentioned delay in the development of the Clyde field. On June 8, 1982, Energy Secretary Nigel Lawson announced that production cutbacks would not commence before the end of 1984, effectively extending the existing non-policy⁸². The political advantage of appeasing public opinion through the government's posture on depletion policy was far greater than any benefits which might have been realised by its implementation.

"The overt use of depletion controls ... seems unlikely due to opposition from private companies and also due to the impact on tax revenues."⁸³ The Labour party was, in principle, more disposed towards the implementation of depletion control than the Conservatives, but neither party in office exercised the powers which Labour had secured for the government on this issue. Whether the prospect of the loss of revenue in the form of royalties and taxes or opposition from the petroleum industry and the Treasury is

responsible for the lack of depletion policy in Britain remains unknown. The policy remains as it was originally formulated in the aftermath of the first OPEC crisis, but the broad discretionary powers are not used. There is not therefore a petroleum depletion policy in Britain, although there have been policy statements made and powers acquired after both OPEC crises.

So far the U.K. and Norwegian governments have opted for remarkably different depletion policies. In the U.K. both Conservative and Labour governments have advocated a high rate of extraction, whereas Norway has quite consistently opted for a moderate rate of production.... It can of course be argued that the U.K.'s normal production of 120 million tonnes is not particularly high for an industrial country of 56 million people. Furthermore, Norwegian production of 90 million tonnes, which in Norway has been set as a moderate level, is not moderate for a country of 4 million people. However, this does not alter the basic difference in the perceived time horizon for oil production in the two countries.⁸⁴

The Norwegian "go slow" policy of petroleum depletion is well known, and, at first glance, contrasts quite starkly with the British policy of rapid exploitation. The reason for the difference in the two countries' policies in this area relates to the differing perceptions of the social rate of return. In Britain, the political, social, and economic advantages gained from rapid development are perceived far to outweigh any benefits which might derive from developing the resource more slowly. In Norway, the social rate of return is much lower, largely due to the limited absorptive capacity of the Norwegian economy. Difficulties might be experienced in

Norway as a result of a rapid rise of petroleum revenues and a lower rate of resource exploitation has been the means by which problems have been avoided.

Norwegian depletion policy does not take the traditional form of production controls; rather, Norwegian production is limited by the limited issue of exploration and production licences. It has not been the policy of the government to halt developments or restrict production already underway, but, as mentioned previously, the licence rounds in Norway have been less frequent and offered less territory than the British licence rounds.

Several factors contribute to the Norwegian government's ability to pursue this policy. Norway's abundant hydro-electric capacity makes the production of domestic oil not nearly as urgent as it has been in Britain. Over 40% of Norway's energy requirements are satisfied by indigenous hydro-electricity⁸⁵. Oil consumption in Norway averages approximately 8 million tonnes per annum, in comparison with Britain's use of 90 million tonnes, while the petroleum reserves of the two countries are roughly similar⁸⁶. Norway's population of 4 million generates a national income only one-eighth the size of that produced by Britain's 56 million citizens. In short, the differences in the energy requirements, sizes of populations, and national economies between the two major North Sea oil producers *have* important implications for the rate at which the resource has been extracted. Norway's smaller demand for petroleum, smaller population, and smaller economy means that the rate of depletion of the resource can be slower than in Britain, and that, some argue, it must be slower to protect the smaller economy from inflationary effects. Add to this the general mistrust of foreign capital prevalent in Norwegian public opinion, and the

implementation of a conservative depletion policy seems inevitable. The social rate of return on petroleum revenues is evidently much lower in Norway than it is in Britain.

In the 1974 Parliamentary Report, Petroleum Industry in Norwegian Society⁸⁷, the government made its claim for control over Norwegian petroleum production.

It is important to have public direction and control of the exploitation of resources ... first and foremost the scope of the operations on the Continental Shelf must be controlled by regulating exploration activities. Once a discovery is made, technical, economic, and political reasons will tend to require that the resources be exploited as rapidly as possible. The harsh climatic conditions on the Shelf mean that the individual fields must be exploited at a relatively rapid pace, before the installed equipment has to be removed. This reduces the possibilities of regulating the rate of extraction once production has commenced.... One appropriate method of control might be to delay the development ... of individual finds. This will be facilitated by increased government participation in the activities on the Shelf....⁸⁸

The government's objective was to have proven reserves equivalent to 10-15 years of current petroleum consumption, so a target production rate of 90 million tonnes of oil and gas equivalent per year was set in this report. This consumption/reserves ratio corresponds almost exactly with the Canadian case of a 12 year life index of reserves which has been maintained by the petroleum industry for the last decade without any government action either on depletion policy or on

the encouragement of exploration activity. In contrast to Norway's production/consumption ratio, the U.K. production target of 150 million tonnes equivalent is only about 50% greater than domestic consumption. Norway's target production of 90 million tonnes is over ten times greater than her annual domestic consumption. Many would argue on this basis that the so-called "go slow" policy applies not so much to petroleum depletion in Norway, but more aptly to the care and precision with which the Norwegian government has formulated its petroleum policies, taking into consideration the most important political, economic, and social factors.

The next statement on depletion was made in the 1979/80 white paper on petroleum activities⁸⁹. This document contained nothing new and the target rate of depletion set in 1975 was confirmed. The government remained committed to what it termed a moderate, as opposed to maximum or minimum, rate of extraction. In fact, Norwegian production has not reached the target range, so the introduction of development delays and the use of Statoil to control output has not been necessary. Despite below target production rates, Norway has been a net exporter of oil since 1975. A state which was conserving its petroleum resources would not be an active exporter of production. As in both Canada and the U.K., the powers to implement a strict depletion policy have been put in place in Norway but have not been exercised.

The only restriction of Norwegian petroleum occurred late in the summer of 1986 when exports were reduced in an attempt to support OPEC's production and pricing initiatives⁹⁰. Norway's depletion policy had been based on the assumption of increasing prices for a depleting natural resource with relatively inelastic demand. Per Kleppe, Finance Minister made this point succinctly in 1975:

As long as some of Norway's petroleum reserves remain below the North Sea, our assets are probably well placed. A gradual rise in the relative price of petroleum would represent interest earned on these untouched assets. Reasoning along these lines, this kind of investment compares favourably with financial investment abroad.⁹¹

With the recent collapse of the international price of oil, Norway's production as well as her untouched petroleum assets have also dramatically declined in value. Early in 1986, the new Labour administration opened discussions with OPEC and attempted to encourage the British government to likewise consider restricting production in order to support OPEC's efforts to restore the price of petroleum. Britain refused to enter into such talks. In the autumn, the Norwegian government restricted its country's exports of petroleum by 10 percent for November and December, and this policy was extended into 1987⁹². Norway implemented this policy by refining and storing the bulk of the petroleum it receives in royalty, amounting to a restriction of supply of approximately 80,000 barrels per day. This policy could be considered one of depletion, but in fact it is a short-term strategy aimed at bolstering prices rather than a long-term policy concerned with resource conservation. The means by which it is implemented do not affect production or even exploration for Norwegian petroleum.

Norway's conflicting interests as part of the community of international petroleum producers and as a member country of the OECD had implications for its depletion policy earlier as well. "It is well known that Norway rejected membership of the EEC in 1973, and

one of the major reasons was the fear of external interference in oil and fishing policies."⁹³ The following year, Norway declined full membership in the International Energy Agency (IEA), the OECD organisation responsible for supply sharing agreements and emergency preparedness set up after the first OPEC crisis. Joining the IEA might have necessitated a more rapid exploitation of Norwegian resources than was in accordance with Norwegian national interests. The problem was resolved by Norway becoming a part member of the IEA. This absolved her of supply obligations but allowed her to contribute to the IEA's data base and energy information network.

The general conclusion to be drawn on depletion policies in Britain and Norway is that they are different, but less dramatically so than is commonly suspected. Britain espoused a policy of rapid depletion, while Norway chose a more moderate depletion policy through the limited issue of exploration licences. Neither country has a depletion policy in the sense of limiting production; nor does Canada. Relative to the size of her population, economy, and petroleum reserves, Norway is a prolific petroleum producer whose actions in terms of international supply are of equal significance to OPEC as those of the U.K.

It is interesting that in this period of petroleum price decline, Britain has been attempting to maximise her interests as a consuming nation while Norway is clearly promoting her interests as a petroleum producer. The Norwegian economy is so heavily dependent on petroleum she is almost obliged to explore every avenue possible to support price levels. Britain, on the other hand, with her larger industrial economy, can wear either the producer or the consumer hat, depending on the situation. The British government has greater

latitude in dealing with the public when the international petroleum market moves dramatically -- the British economy can be presented as a winner in either case.

Norway can more readily afford to forego short-term revenues in order to acquire a greater return in the longer-term as her social discount level is lower than in Britain. However, her "go slow" depletion policy is perhaps more evident in the political rhetoric of Norwegian public debate than it has been in results. Norway has become one of the leading non-OPEC oil producers in the world and this position could not have been achieved with a genuinely conservative depletion policy.

CONCLUSION

The application of rational choice theory to an examination of depletion policies would lead to the expectation that *political* rates of return are the prime determinants of whether or not a government will impose a rapid or conservative depletion policy. Where governments can make effective use of large and immediate revenues, there will be a faster rate of resource exploitation. Where the social rate of return is lower than the expected increase of price over time, a slower rate of depletion is expected.

In the three cases of Canada, Britain, and Norway, none of the states have imposed depletion policies over production rates as anything other than a short-term strategy to achieve other policy objectives (as in Alberta in 1980 and Norway in 1986). Conservation of the resource for future generations seems not to enter into the public discussion of petroleum exploitation at all in Canada and

Britain, and the U.K. openly espoused a policy of rapid exploitation for much of the 1970s. All three states have taken the necessary legislative steps to ensure that they can implement depletion policies in terms of production cutbacks and development delays, although none have found the need to use their powers except as a short-term strategy to achieve other policy objectives. Norway remains the sole exception on the question of depletion; her "go slow" policy of licensing territories for exploration is the only serious attempt by any of the three states to control the rate at which the petroleum resources are exploited, but in relation to Norwegian petroleum consumption, her depletion policy is not very conservative. The explanation for her different policy lies in the lower *political* rate of return she enjoys as a result of her smaller population and economy in relation to the size of her petroleum resources.

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CHAPTER SIX

PETROLEUM FISCAL REGIMES

The purpose of this chapter is to examine the development of the petroleum fiscal regimes in Canada, Britain, and Norway. There is a plethora of economic studies which analyse, with the aid of economic models, the implications of minute petroleum taxation adjustments. Most papers concerned with petroleum policy are of this nature. The precise economic and financial implications of tax changes will not be of prime concern here. In keeping with the other chapters on participation, pricing, and depletion, this chapter attempts to clarify the similarities and dissimilarities in broad policy objectives and mechanisms in each of the three case states. Although the subject is an economic one, the analysis of it is political.

The petroleum fiscal regime is itself a concept which can be defined in a number of different ways. In the broadest sense, it includes all aspects of government policy which impact upon revenues associated with petroleum development. Thus participation, pricing, and depletion policies could all be viewed as partial determinants of the petroleum fiscal regime. State ownership of depleting natural resources not only justifies policy action on all these fronts, but implies that various policy directives will impinge upon each other. "A licensing system that implies a 'free' transfer of a valuable right from the public sector to the private sector creates a demand for a tax regime that captures the value of this right and returns it to the government."¹ However, for the purposes of this chapter, and in more general usage, the petroleum fiscal regime comprises the principal revenue-capturing policies -- taxation and royalty

instruments -- of the governments of the producer countries. Royalties themselves are, in effect, another form of taxation although, in the political rhetoric of fiscal debate, royalties are more strictly speaking payments to the owners for the privilege to develop and produce. Taxes are applied to all manner of profits from economic activity undertaken within the jurisdiction of the state and, in the case of petroleum activity, they include both corporate income taxes and such special petroleum taxes as may be deemed necessary for the maximum capture of economic rent. Both taxation and royalty policies are commonly thought to make up the particular fiscal regime of any given petroleum province.

The development of fiscal arrangements concerning a non-renewable resource must indicate the economic interests, particularly in situations of price appreciation, of the responsible government. The degree of economic rent available will determine the potential revenues which might accrue to the owner of the resource through the taxation system. Economic rent, or surplus value, is the difference between the cost of production (including an appropriate return on the producer's investment) and the revenue from sales. In the hypothetical situation of perfect competition, economic rent does not accrue as marginal costs of production are equal to demand and therefore price. In the real world, there are many market situations in which prices are quite independent of costs of production, and this has been particularly evident in the case of petroleum since the first OPEC pricing crisis. Since that time, the international price of petroleum has been relatively independent of the costs of production, especially within the high-production, low-

cost petroleum provinces of the Middle East.² The issue of petroleum economic rent has therefore been one of intense concern to all producer governments, OPEC and non-OPEC alike.

In petroleum development, the investment-production lead times are very long and investment in exploration must come well in advance of any revenue from production. This implies two things: firstly, that the estimated costs of producing today's barrel of oil were based on price expectations at the time the investment decision was made; and secondly, that the price of today's barrel of oil may bear little relationship to its actual cost of production. When costs remain relatively constant and prices appreciate, economic rent appreciates as well, and vice versa. When prices appreciate greatly beyond expectations, as occurred in 1973-4 and 1979-80, the economic rent available from the exploitation of the resource is high simply because the only fields deemed economically viable at the time of the investment decision were those which could produce at a lower price. This means that there is a windfall profit to be captured either by the producing companies and/or the owners of the resource. As the owners of the resource are states, the taxation and royalty systems are the principal means by which economic rent is captured, although licence and other fees may also contribute.

When prices depreciate unexpectedly, as occurred in 1986, the economic rent is reduced or eliminated altogether. Once again, development decisions have been taken much earlier on higher price expectations and the system designed to capture economic rent must be flexible enough to cope with this possibility. State revenues depreciate against public expectations and company revenues decline, disrupting exploration strategies.

An axiom of rational choice theory is that politicians in government will attempt to capture sufficient votes to enhance their ability to remain in office. Instrumental goals which would assist in the achievement of this objective include the maximising of revenues from all sources to facilitate the provision of desirable policies and services to citizens to win public support. Therefore, the first assumption concerning governments' behaviour on the fiscal front must be that they will at all times wish to maximise the financial return to the state insofar as this is consistent with retaining public support.

Rational choice theory assumes a degree of competition for revenues between various government actors which could affect policy output in both timing and in content. In a unitary state, the central government remains solely responsible for the determination of national policies, although it cannot be assumed to be a strictly unified body given the conflicts which take place within any administration. This competition may occur between political actors, political and bureaucratic actors, or between various bureaucratic actors, each claiming authority on a certain fiscal issue and/or a greater requirement for revenues.

In the case of a federal state, such competition is complicated by conflict between two levels of government if there is concurrent jurisdiction. This conflict is often interpreted as a struggle between forces of centralisation and decentralisation. Sproule-Jones³ identifies three characteristics which increase the relative bargaining power of either level of government in the federal conflict: 1) the degree to which responsibility and authority is constitutionally defined; 2) the greater the monopoly over policy input and delivery; and 3) the degree to which the government

approximates a team rather than a collection of various interests. Federal conflict in Canada on the issue of petroleum fiscal arrangements should therefore highlight the relative positions of both the federal and provincial levels of government. The unitary states of Britain and Norway should have similar policy outputs and Canada should be the divergent case because of its federal division of powers. Competition over fiscal arrangements within the unitary states is likely at the bureaucratic level between departments, and in federal states, conflict between federal and provincial governments is added to this bureaucratic competition.

Short-term revenue acquisition is not the only objective of government. There is a fine balance between securing maximum revenues and continuing to encourage investment in resource development through allowing companies to achieve sufficient rates of return on their investments. Capital employed in petroleum development could be employed elsewhere, and with the long lead times mentioned above, producer companies must believe that the prospects for profits are good in order to maintain levels of exploration and production activity which the government deems adequate. After the larger fields in any petroleum-bearing province are discovered and exploited, the fiscal regime must also encourage the development of more marginal prospects.

This is a scenario of a competitive, non-zero sum game played between resource owners (states or governments) and producers (the petroleum industry). If the government is to increase its share of the economic rent from petroleum production, it does so at the expense of the private industry's share, regardless of whether the absolute value of economic rent is increasing or decreasing. Each party is interested in securing the largest share possible while

still satisfying the requirements of the other party. Modifications to the fiscal regime will occur after major changes in international prices or costs of production, whether due to technological advances or the depletion of larger, less expensive fields. Companies might exert influence over this policy area principally due to their monopoly of information on what constitutes a sufficient rate of return as well as the effectiveness of current technology and costs of technological developments in the industry. National petroleum companies may perform an essential information function on matters such as these for the government once they are established.

As discussed in Chapter 1, petroleum fiscal regimes can be designed along three broad lines: taxation on corporate profits alone (the free market option), the inclusion of resource rent taxation, and taxation combined with incentives to achieve other policy goals, such as increased rates of exploration and the promotion of the interests of domestic industries. Petroleum taxation solely on corporate profits was employed in the early days of petroleum exploitation in Canada, but is out of favour because the underlying assumption -- that petroleum activity is like any other industrial activity -- is no longer believed. Petroleum is a depleting resource, strategically important because it is the primary energy fuel in most industrialised economies. Furthermore, the development of petroleum resources carries with it economic and fiscal externalities. It affects employment, inflation, the state's current account position, the value of the state's currency, and generally has an impact on other economic and industrial activity. As the owners of the resource, states are required to design fiscal regimes which attempt to recompense the nation for the exploitation of this natural resource and the problems that might be associated with it.

In rhetorical terms, the state attempts to capture the maximum economic rent from petroleum production in order that the nation, the owner of the resource, benefits from its exploitation and depletion.

Resource rent taxation, usually manifest in a royalty scheme, in which the state attempts to capture maximum economic rent from the production of a national resource, is employed in virtually every petroleum producing province today. The justification of such a policy derives both from the nation's ownership of the resource and from the government's responsibility to mitigate negative externalities and enhance benefits associated with petroleum exploitation. The advantage of this type of fiscal regime is that it is a simple and effective means of capturing economic rent, but it may be inflexible in terms of encouraging marginal developments in the hope of increased prices in the future. To offset this problem, some states which wish to encourage longer-term petroleum investment have added an incentive scheme. The incentives are designed to diminish some of the risks inherent in investment in marginal fields or new technologies. The difficulties with taxation-incentive fiscal regimes are largely associated with their complexity and, sometimes, their discriminatory application.

On rational choice assumptions, it would be expected that right-wing political actors would favour the simple resource rent fiscal regime, while left-wing politicians might more frequently prefer the tax-incentive scheme. This hypothesis is based on the assumption that right-wing political actors will favour more free-market policy options and left-wing politicians will be more interested in state intervention in the market to achieve other policy goals. However, the prime objective of capturing votes is likely to outweigh these ideological concerns. The petroleum industry would be expected to

prefer the more simple scheme rather than complicated and discriminatory incentives, unless the incentives were to apply equally to all companies. However, the petroleum industry does not constitute a uniform body of opinion on this matter. Smaller, independent companies tend to have interests which differ from those of the larger multinationals, especially on the fiscal front, as they often have smaller cash flows and therefore less ability to make marginal investments. In practice, various segments of the industry would prefer incentive schemes which discriminate favourably toward them. Finally, according to the precepts of rational choice, bureaucrats would be expected to favour whichever fiscal regime would give them more authority and discretionary power, and this usually means a more complicated arrangement. The public can be assumed to be relatively indifferent on the whole to the specifics of the fiscal regime, as long as there is general satisfaction that the nation's short and medium-term interests are being safeguarded (i.e., a reasonable price and secure supply) and that the petroleum industry is not escaping with windfall profits.

There is more public concern on the question of state expenditure of petroleum revenues. The investment of state revenues from petroleum exploitation takes two forms: management of immediate financial difficulties or longer-term investment. In the first case, governments will have been tempted to utilise petroleum revenues immediately upon receipt to reduce deficits, support currency values, and increase services to the public. All of these types of activities can be viewed as vote-enhancing strategies. In a state unconcerned with such financial problems, there is the opposite difficulty of absorption of huge petroleum revenues into a relatively small economy. The concern here would be the inflationary impact and

social disruption that such huge revenues might produce. States with financial problems will have a higher absorptive capacity than states without, and if petroleum revenues cannot be profitably absorbed into the economy, they must be invested elsewhere. Governments in such situations might be expected to control stringently the flow of petroleum revenues into their economies through investment of such monies elsewhere and also through conservative depletion policies.

Initial hypotheses generated from rational choice theory lead to the expectation that Canada, the United Kingdom, and Norway would have resource rent taxation coupled with incentives to invest in marginal prospects to secure maximum capture of revenue in the shorter-term and continued development of the resource in the longer-term. However, there should be a marked distinction between the development of the fiscal regimes in the United Kingdom and Norway as opposed to Canada, where federal conflict might contribute substantially to the determination of fiscal policy. In addition, the fiscal regime in each of the three states would be modified to cope with both increases and decreases in economic rent arising from petroleum production. As a sufficient rate of return to the industry is a required part of each petroleum fiscal regime, then it would also be expected that, notwithstanding different resource situations, the percentage of economic rent acquired by governments should be broadly similar in each of the three cases.

As part of this general discussion of petroleum fiscal regimes, the expenditure of petroleum revenues will also be examined briefly. On this subject, it would be expected that if the absorptive capacity of the economy is high, petroleum revenues will be utilised to

alleviate immediate financial problems. If the absorptive capacity is limited, petroleum revenues will have to be invested to generate future earnings, political and financial.

1. CANADA

Fiscal arrangements in Canada are greatly complicated by the fact that, as a federal state, both the national and provincial levels of government have taxation powers. The federal Parliament under section 91(3) of the Canadian constitution has the powers to pass legislation in order to raise revenue "by any mode or system of taxation".⁴ In section 93 of the Canada Act, the provincial governments are given the power to tax economic activity undertaken within their respective jurisdictions, and in the case of natural resources, they exercise the responsibilities of Crown ownership. These include the responsibility of regulating and administering the development of those resources, including pricing and taxation, within their borders. While this apparent conflict of powers did not have any major impact in the early petroleum fiscal regime in Alberta, it was the source of continuing conflict throughout the 1970s and into the early 1980s in relation to petroleum revenue sharing between the federal and provincial levels of government. Much like the debate which centred on petroleum pricing throughout that period, petroleum taxation and revenue distribution proved another fertile source of intergovernmental conflict.

Petroleum was initially discovered in Alberta in commercial quantities prior to 1920. However, in the early stages of the petroleum industry's activity in the province, petroleum companies

were taxed by the federal and provincial governments in the same manner as other corporations. Until 1930, this was a result of the federal government's reservation, as part of its National Policy of development, of the powers of the provinces over natural resources⁵. Had this power not been reserved to the federal government, royalties would probably have been introduced by producing provinces at the outset of petroleum production in Canada. Alberta, Saskatchewan, and Manitoba were the three provinces affected by this policy. As a result of the transfer of responsibility to the provinces concerned in 1930, the government of Alberta introduced petroleum royalties for the first time in 1931. The rate was set at 5% of gross production⁶.

In 1948, the government introduced a maximum royalty rate of $16\frac{2}{3}\%$ of gross production⁷. By this time, the province had become an established petroleum producer and was receiving substantial revenues from the development of its petroleum resources. It could therefore afford to allow the industry a potentially larger but certainly more secure share of the available economic rent from petroleum production. The province as a whole would also benefit from increased industrial activity resultant from increased petroleum exploitation. The principal motivation behind the introduction of a maximum royalty was to encourage continued development of those resources by offering a stable fiscal arrangement to petroleum companies.

In 1962, a sliding scale royalty schedule was introduced in Alberta, with royalty rates to increase in proportion to increased production up to a stipulated maximum rate⁸. The objective was to stimulate investment in less productive fields. It was hoped that fields which yielded lower levels of production might not be

neglected by the petroleum industry. Once again, the government demonstrated its interest in encouraging maximum development -- in this instance, of more marginal prospects.

Petroleum companies also paid corporate income taxes imposed both by the federal and provincial governments, but there was no explicit resource rent taxation. The cost of production and transportation of Canadian petroleum led, in 1961, to the introduction of the National Oil Policy which divided the Canadian petroleum market into the western half, supplied by more expensive domestic crude, and the eastern half, supplied by cheaper imported oil. The question of surplus economic rent from petroleum production had not yet arisen as the market price for Canadian petroleum had to be competitive with less expensive imported production.

The Conservative Party under the leadership of Peter Lougheed displaced decades of Social Credit government in the provincial election of 1971. In 1972, the new government's "Natural Resource Revenue Plan"⁹ imposed a mineral tax on top of the maximum royalty rate set by its predecessors, yielding the equivalent of an additional gross royalty. New drilling incentives were also a part of the package, but the basic intention of the program was to raise incremental revenues to be used by the provincial government to diversify the Albertan economy over the forthcoming decade. The new mineral tax was intended to raise the average royalty rate to 21%, providing the provincial government with an additional \$70 million in 1973 if wellhead prices remained unchanged. This initiative coincided with increased production as a result of increased U.S. demand for Canadian oil, and by August 1973 the additional revenue to accrue to Alberta was estimated at \$103 million¹⁰. Although the

Alberta government could not have anticipated the first OPEC oil crisis, it must have anticipated increased revenues from exports to the U.S.

In early 1973, the United States dismantled its oil import quota system, and Canadian petroleum exports rose dramatically. Canadian production was pushed to full capacity, and wellhead prices became more and more influenced by petroleum prices in the U.S. market, in turn greatly influenced by the price of imported Middle Eastern crudes. In consequence, the Canadian domestic price rose 95 cents within a year, almost 50% of its previous price¹¹. In early September, a price freeze had been requested of the industry while the federal government revised its petroleum policy¹². As discussed previously, the National Oil Policy was then abandoned in December¹³ as events in the Middle East rapidly overshadowed North American pricing concerns, and the federal government introduced an export tax on Canadian crude destined for the United States.

The federal export tax was to be the difference between the lower Canadian price and the market price in the States. The export tax was increased from its initial level of 40 cents in October to \$1.91 by December¹⁴. Canadian oil was then priced at less than \$3.50 per barrel, while OPEC prices rose to \$11 per barrel by January 1974. The export tax was further increased to \$2.22 per barrel in January 1974, and stood at \$6.60 per barrel for the months of February and March, after which it was complemented by the new federal pricing initiatives, discussed in Chapter 4. These efforts not only contributed to federal government revenues, they were also of great assistance to hard-pressed petroleum consumers who were grateful for

a depressed domestic price. It was a very popular program for Canadian consumers, but was abhorred by the governments of the producing provinces and the petroleum industry.

Alberta's response to the export tax was to announce the abandonment of its revised royalty scheme in favour of royalty appreciation related to the increasing international price. "The province's primary objective was to force Ottawa to withdraw its export levy by squeezing the industry...."¹⁵ Later in the year, both Alberta and Saskatchewan introduced legislative packages attempting to increase their control over production, regulation, marketing, and pricing of their resources¹⁶. The Saskatchewan legislation was declared ultra vires by the Supreme Court of Canada in 1977, but the Alberta legislation was not challenged; its most important element, as mentioned previously, was the creation of the Alberta Petroleum Marketing Commission.

These fiscal initiatives were the trigger for the first federal-provincial conflict over petroleum revenues. The export tax was viewed by producing provinces as an unwarranted federal appropriation of revenues which would otherwise have accrued to the provinces, and should have done so. As royalties were deductible for the purposes of federal income tax, the federal government viewed increased royalty rates, especially a sliding scale designed to capture the maximum economic rent from all types of oil fields, as a means of eroding the federal tax base. The federal government retaliated by passing the Petroleum Administration Act¹⁷ which gave it powers to set prices for petroleum. The new "made-in-Canada" price for petroleum was to be an average between domestic and imported prices,

with a subsidy provided to Canadian refiners purchasing the more expensive imports. In May 1974, the new federal budget eliminated the deductibility of royalties for the calculation of federal tax¹⁸.

"The effect on corporate profits was dramatic and the result was a significant decrease in exploration activity for the 1974-75 season."¹⁹ Petroleum companies took their exploration funds and drilling rigs south of the border where prices were higher and financial prospects appeared much better. Realising that it had contributed to taking the industry's rate of return lower than was acceptable, the federal government reduced the level of corporate tax applicable to resource profits²⁰. The provinces of Alberta and British Columbia followed suit by introducing incentives aimed at alleviating the fiscal burden of the petroleum companies by reducing royalties and introducing drilling incentives. This initial confrontation between federal and provincial levels of government over petroleum revenues had resulted in a game of chicken in which the catastrophic movement of petroleum activity south of the border marked the end of the game. Both parties backed away from the confrontation and made serious attempts to reconcile their own interests with those of the petroleum industry.

In the debate concerning the division of petroleum revenues in Canada, there are three prime claimants: the federal government, the provincial governments, and the producing industry. In the initial conflict over the acquisition of rapidly increasing economic rent, each of the three actors had a legitimate claim to an increased revenue share. The federal government bore the responsibility for the administration of the subsidy program to Canadian petroleum refiners (the Oil Import Compensation Program) in addition to its usual fiscal responsibility for equalisation payments to provinces

whose revenue-generating capacity remained below the national average²¹. The provincial governments, as owners of the resource, could legitimately increase royalty and taxation rates within their borders so as to facilitate their capture of the increased economic rent. Although their absorptive capacity for revenues was far less than that of the federal government, their claim was in some senses stronger as it was based directly on their constitutionally-based ownership of the petroleum resource. Finally, the producing industry had a claim to an increased share of economic rent as it took the risks inherent in petroleum investment and was therefore entitled to some of the new profits. Indeed, without the private petroleum industry, these resources would not have been developed in the first place and the question of capturing economic rent from inflated prices would not have been an issue. The conflict remained in the governmental sphere, with the federal and provincial initiatives highlighting the tensions inherent in the constitutional provisions for natural resources. Energy issues, primarily concerned with petroleum prices and revenue distribution, were to remain one of the key elements in the centralisation-decentralisation debate which gripped Canada throughout the 1970s and into the 1980s.

Obviously, the federal-provincial conflict resulted in the industry's financial interests being sacrificed to advance the interests of both levels of government. When the petroleum industry had reached its limit of tolerance, it voted with its feet and effectively halted exploration activity in Canada. The outcome was a retreat by both the federal and provincial governments and a revival of industry activity. In part, these events contributed to political pressure on the federal government to create a national petroleum

company, and they affected pricing policy as well. They created considerable uncertainty for petroleum investors, and they also foreshadowed events which were to develop later in the decade.

In its Energy Policy document of 1973²², the federal government stated that a reasonable rate of return to the petroleum industry was 20% of the capital invested. It implied that it would endeavor to recover any rent above that level of return for the benefit of the nation. Through the rest of the decade, estimates of sufficient rates of return remained at around 20% after tax "...which compares unfavourably with apparent available returns on new investment of about 14%."²³ The reason the petroleum industry considered 20% unfavourable compared with 14% elsewhere is, it argues, that it is engaged in high risk investment, and uncertainty requires high return, especially as front-end investment costs are high.

Petroleum industry spokesmen frequently claim that preferential tax treatment of the return to capital in oil and gas production is necessary to offset the extraordinarily high risk associated with that activity, implying that resource allocation would thereby be improved. The claim is based on three assertions: first, that oil and gas production involves very high risks; second, that given the high risk there is a need to encourage more risk-taking; and third, that the tax system contains an anti-risk taking bias due to its incomplete loss offset.²⁴

Whether oil and gas exploration activity is more or less risky than other industrial activity remains open to question. There is less uncertainty in Western Canada where the exploration drilling

success ratio remains constant at about 10%²⁵. No one would doubt the costs associated with drilling nine holes on the average in order to find one commercial field, but many would argue that such costs are not appropriately described as risks. The petroleum industry, it is claimed, overplays the risk aspect in order to justify a larger share of rent for itself. Risk, in the case of drilling costs, might more properly be related to situations in which success ratios vary dramatically from time to time and therefore a reliable estimate of the cost of discovery cannot be made. However, the uncertainties of price in the international petroleum market make the industry's claims about risk appear more sensible.

After the exploration "strike" by the industry in 1974, the federal government amended its corporate income tax relating to resource extraction industries to reduce the petroleum industry's tax liability throughout the mid and late 1970s²⁶. Petroleum corporations were allowed to treat capital expenditures as current expenses for the purposes of federal corporate tax. This "expensing" of costs associated with land acquisition, geological and geophysical expenses, and drilling all contributed to delays in tax payments which could be extended indefinitely if the company grew at a sufficient rate. The immediate burden of corporate tax was reduced and the expansion of petroleum activity was encouraged. The federal government also introduced a depletion allowance of $33\frac{1}{3}\%$ ²⁷. This resulted in an automatic reduction of one-third in the profit liable for federal corporate income tax.

These fiscal arrangements, while applauded by the petroleum industry, were received with some criticism from the financial sector. "It has been aptly observed that the Canadian tax system ... is not designed to capture a very high percentage of the economic

rent.... Although it has encouraged an accelerated rate of exploration, development, and production.., the principal effect was probably to enhance the rents paid to landowners, including provincial governments."²⁸ In absolute terms, all three parties were receiving substantially increased revenues as a result of increased prices. The petroleum industry's net profits after tax rose from \$2.6 billion in 1968 to \$6 billion by 1976 and to \$12 billion in 1980 despite the fact that its percentage share of gross revenues declined after 1972²⁹.

The other major fiscal issue in the late 1970s was the expense associated with the Oil Import Compensation Program (OICP). As mentioned previously, this federal program provided a subsidy to Canadian petroleum refiners whose supplies came from the more expensive imports. The subsidy was provided from funds gained by the export tax on Canadian production. Canadian domestic prices had been allowed to rise since 1973-74 and the eventual goal was to bring them in line with international prices. This policy eased the fiscal strain of the OICP in the mid-1970s, but once the second OPEC pricing crisis developed in 1979-1980, the federal government was pressed to sustain the program without additional revenues. "In July 1978, the per barrel difference between world prices and domestic prices was less than \$3. By [the time the National Energy Program was tabled in] late 1980, however, the differential was about \$20 a barrel."³⁰ The OICP was projected to cost almost \$3 billion in the years 1980-1983³¹.

In addition, the federal government was coming under increasing pressure concerning rising public expenditures. "The Canadian government's expenditures on the public debt had increased sharply, from less than \$3 billion in 1975 to almost \$11 billion in 1981.

With most of the federal government's revenues committed in advance both to servicing the debt and to providing funds required for social programs (whose cost has been escalating rapidly in recent years), Ottawa feared that it would lack any significant revenues with which to pursue new programs and to help develop the economy."³² The outcome was that the Liberal government, returned to power under Pierre Trudeau in February 1980, committed itself to the tabling of a new energy program designed to capture a larger share of increasing petroleum rents.

Once again, petroleum revenues became the focus of federal-provincial conflict. "With a federal budgetary deficit then approaching some \$14 billion a year, it seemed to Ottawa in late 1980 both justifiable and essential to attack the revenue base of the Alberta government, which has over the past few years been massing petrodollars in a 'Heritage Fund' that by 1983 contained more than \$12 billion."³³ Alberta's aggregate petroleum revenues had increased from \$518 million in 1973 to \$2.6 billion in 1977, creating embarrassing budget surpluses. By 1980, they would "...be of the same order of magnitude as the economy-wide federal corporate income tax revenues from the entire country."³⁴

In May 1976, the Alberta government established the Alberta Heritage Savings Trust Fund in an attempt to invest the accruing surplus petroleum revenues in the interests of the provincial economy³⁵. The Heritage Trust Fund was to receive 30% of the province's annual petroleum income which would be used in efforts to mobilise capital to encourage economic diversification. At least 65% of the Fund's assets had to be invested in provincial projects yielding reasonable rates of return to the province, 20% had to be invested in projects providing long-term social and economic benefits

for the province, and the remaining 15% could be invested elsewhere in Canada -- mainly in loans to other provinces, further enhancing the province's economic influence. At the time the bill was passed by the Alberta legislature, 69 of the 75 provincial seats were held by Premier Lougheed's Conservative party, ensuring that the bill was enacted regardless of the controversy associated with it, one aspect of which was that the Fund was kept under cabinet, not parliamentary, control. This would ensure that the Premier and his closest colleagues would retain control over the Heritage Trust Fund, which was important in a legislature where the majority of the governing party was so large that its own backbenchers could sometimes be a force of opposition. On more than one occasion, the Heritage Trust Fund has been referred to as the Heritage Slush Fund.

The Alberta government was able to consider investing a portion of its economic rent from petroleum production because the absorptive capacity of the provincial economy was limited. The province has a very small population which was well-off in comparison with many other Canadians, and it was widely believed that investing some of the petroleum revenues (either for future generations or future economic development) was a prudent use of an unusual opportunity. A similar situation occurred in Norway and is discussed in greater detail later in this chapter.

The fact that the province of Alberta was gaining in economic power, and attendant political influence among the other provinces, contributed to the federal government's urgent need to redesign petroleum revenue distribution more strongly in its favour. The federal government also had a desperate need for increased revenues, but the critical issue was that Alberta's surplus revenues were

eroding the dominant fiscal position of the national government thought essential by the centralist Liberals under Prime Minister Trudeau.

The minority Conservative government elected under Joe Clark in May 1979 had, by December, reworked its energy policy. However, it was defeated on budget proposals which included an increased tax on gasoline. The voters in Ontario and Quebec were mainly responsible for re-electing the Liberals whose energy platform was far more sympathetic to the large consuming market in central and eastern Canada. The second OPEC crisis caused energy prices to soar once more, but the Liberals remained committed to the popular policy of holding down the domestic price of oil. Before losing office in May 1979, they had begun a reform of energy policy to ensure increased federal petroleum revenues. Once returned to power in February 1980, the Liberal government resumed that effort in order to table the new policy as part of the budget of October.

The National Energy Program³⁶ was a major initiative and a predictable outcome of the Liberal government's thinking on petroleum policy. Firstly, the federal government was in need of substantially increased revenues to maintain the OICP and payments on its increasing deficit. Secondly, the financial strength of the Conservative government of Alberta was alarming the federal Liberals. Thirdly, the federal government had produced Energy Futures for Canadians in 1978³⁷, a policy document which outlined the principal elements of a new energy policy which were finally implemented in the NEP.

Contrary to popular opinion that the NEP was an opportunistic attempt on the part of the federal government to increase its revenue share after the OPEC price rises of 1979-80, it was in fact a well-

planned strategy, developed long before the OPEC actions, which had been interrupted by the short-lived Conservative government's time in office in 1979. The price increases of 1979-80 served to support the federal initiative in the face of strong opposition to the program from the producer governments, the industry, and the American government. The vast majority of Canadian voters continued to stand behind the federal policy in the belief that the exploitation of Canadian petroleum resources should benefit Canadians, not Albertans or oil tycoons or Americans. However, the National Energy Program was part of a highly confidential budget document which contributed to the surprise which greeted its introduction. It was drafted in secret within the federal bureaucracy at very senior levels without the consultation of the provincial governments concerned or the petroleum industry. It proved to be a radical policy change with far-reaching political, as well as economic, impact. "The NEP was, beside being a set of policies, a bargaining ploy and a power play. It was a political strategy by the Liberals to restructure political power both between the federal government and the producing provinces, and between the federal government and the foreign versus Canadian-owned portions of the oil and gas industry."³⁸

The National Energy Program was tabled on October 28, 1980. Its stated objectives included security of supply, opportunity for Canadians, and fairness in pricing and revenue sharing. The principal means by which the federal government was to achieve these goals included price schedules below the international level (discussed in Chapter 4), a new fiscal regime including the introduction of several federal energy taxes, and an incentive scheme aimed at alleviating the tax burden of frontier exploration for Canadian companies. The objectives of supply, security, and fairness

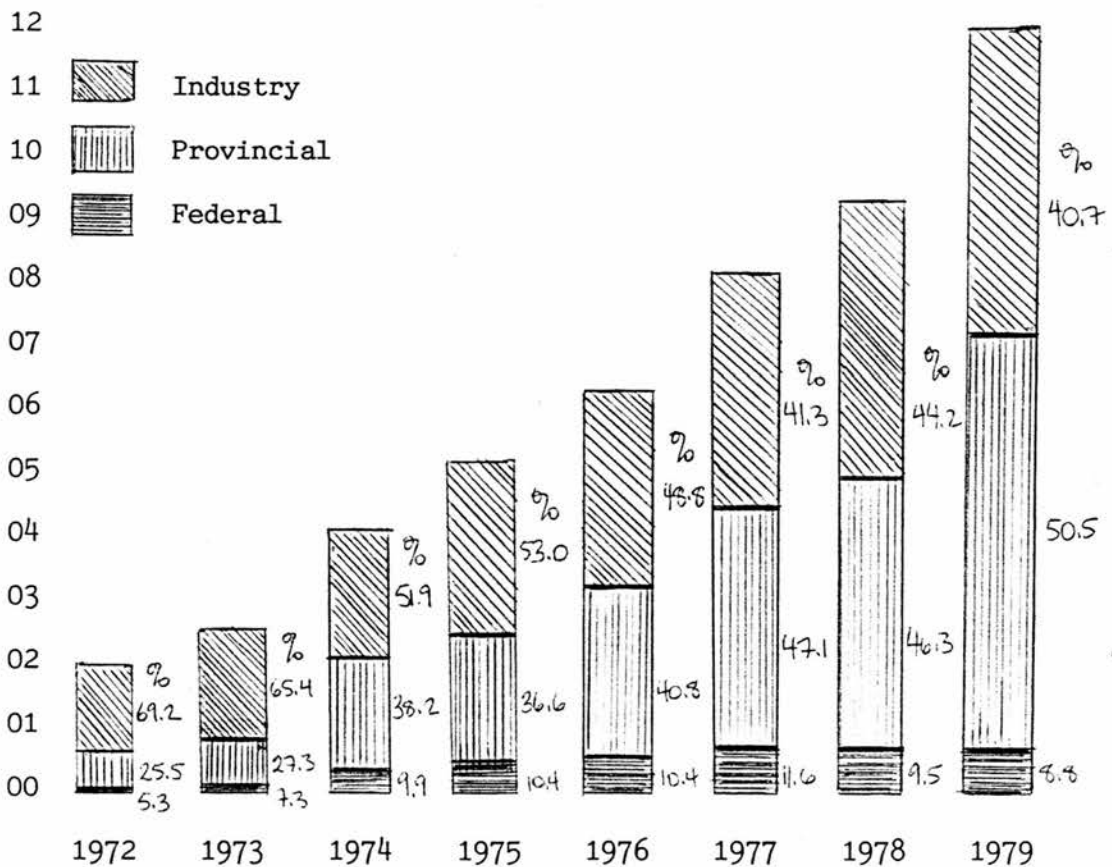
in pricing and revenue distribution were, however, conflicting. Security of supply implies high prices and low taxes to encourage investment but the policy actually implemented secured low prices and a myriad of taxes on production, refining, and consumption, in effect discouraging investors and provoking an industry reaction similar to that of 1974.

The two principal objectives of the fiscal changes introduced in the NEP were to rearrange the distribution of economic rent from petroleum exploitation, and to bias incentives for exploration in favour of Canadian firms and in favour of activity on the Canada Lands. On the former, the federal government introduced taxes on the principal aspects of petroleum activity: production, refining, and consumption. The Petroleum and Gas Revenue Tax (PGRT) was a 16% federal tax on all petroleum production in Canada, despite the fact that provincial ownership of the resource was not contested. There was a 25% resource allowance which brought the effective PGRT rate down to 12%, but, like a royalty, the new federal tax was not to be deductible for the calculation of federal income tax. A Natural Gas and Gas Liquids Tax (NGGLT) was a similar levy placed on natural gas production. The Petroleum Compensation Charge (PCC) was levied at the refinery and would fund the oil import subsidy to importing refiners. The Canadian Ownership Special Charge (COSC) was a tax paid by consumers at the petrol pump from which Petro-Canada's acquisitions would be funded. As the federal initiatives were not in any way coordinated with the provincial fiscal regimes, these new taxes represented a net loss to the industry and ultimately an increased financial burden on the Canadian petroleum consumer.

The NEP outlined the historical petroleum revenue distribution from 1972 through 1979, reproduced below³⁹. The dramatically increasing revenues in the post 1973 era show a slightly increased but stable federal revenue share, an increased provincial share, and a decreased industry share.

Historical Sharing of Oil and Gas Production Income-Percentages

Canadian\$ billions



With the NEP's new fiscal regime and international price expectations of just under \$80 per barrel by 1990, the federal government hoped to increase its percentage share of petroleum revenues to 24% over the

years 1980-1983. The industry share would be 33% (which, in the federal government's calculation included cash flow and fiscal incentives), and the producing provinces would share 43% (Alberta -- 35%, Saskatchewan and British Columbia -- 4% each). Revenue sharing is a zero-sum game in percentage terms. If one party gains, other parties lose, despite the fact that all may be realising larger absolute revenues if the available economic rent is increasing. This is partly why the competition for increased percentage revenue shares is fierce while none of the parties tend to acknowledge absolute increases in revenues. In the Canadian situation, three parties were involved in this game: the federal and provincial levels of government and the petroleum industry itself.

The 'Canadianisation' efforts of the NEP are evident in the Petroleum Incentives Programme (PIP). All petroleum companies active within Canadian territories were to be rated according to the extent of Canadian ownership. Those with positive ratings were eligible for up to 80% grants for exploration activities carried out on the Canada Lands. The lower the Canadian Ownership Rate (COR), the lower the grant percentage. PIP grants were to be funded through new PGRT and NGGLT revenues, and companies had to apply to Ottawa directly, enhancing the federal presence in petroleum activity. Since the programme was intended to discriminate in favour of Canadian companies at the expense of large, foreign-owned multinationals, the American reaction was predictably hostile. The Canadianisation program also vested more discretionary power in the federal bureaucracy in both the COR and PIP programs.

The provincial reaction to the introduction of the NEP was likewise hostile, as discussed in Chapters 4 and 5. Premier Lougheed saw the federal fiscal initiative as a bold grab for revenues not

properly belonging to the federal government. In Alberta it provoked something like a siege mentality, with the provincial government and the petroleum industry lined up to fight the new energy program at all costs. Every federal encroachment upon provincial jurisdictions since the original withholding of natural resource rights to 1930 was bitterly recalled. The province implemented production cuts in order to force the federal government to negotiate as it seemed powerless to fight the pricing or taxation legislation by any other means. Once again, petroleum exploration declined dramatically in 1981 as the industry moved rigs and capital to the States. According to the Petroleum Monitoring Agency Canada, gross industry revenues had increased 13.6% in 1981 over 1980 figures while industry net income declined 33.5% over the previous year's figure as a result of the new fiscal regime⁴⁰. Clearly, the difference was accruing to the federal government.

When the 1981 legislation was enacted, the oil fields of the Canada Lands were not yet in production but the federal government hoped, in the longer term, that they would provide an additional source of revenue. A separate fiscal regime for these territories was embodied in the Canada Oil and Gas Lands Act 1981⁴¹ which provided for a greater federal revenue share than did the regime introduced in the NEP. Its principal provision was the introduction of a basic royalty rate of 10% that would be levied on all ensuing production. There would also be a Progressive Incremental Royalty (PIR), a tax levied at a rate of 40% on net profits. In addition, production from the Canada Lands would be subject to the usual federal petroleum taxes as well as corporate income tax.

The effect of the provincial production cutbacks coupled with severe criticism of the NEP from the provinces concerned, the industry, and the American government, brought the federal government back into negotiation with Albertan representatives over the NEP. In September 1981, after six months of negotiations, the Memorandum of Agreement on Energy Pricing and Taxation⁴² was signed by Prime Minister Trudeau and Premier Lougheed. Its main provisions included revised price schedules for oil and gas through 1986, the introduction of a further federal tax on petroleum production, the Incremental Oil Revenue Tax (IORT), and the establishment of the Alberta Petroleum Incentives Program. The Alberta government gained little in these negotiations -- slightly increased prices for some categories of oil and a reduction of the NGGLT to a rate of zero on gas exports. In turn, the Alberta government assumed the financial and administrative responsibility for the PIP program within the province. The federal government appeared to have outmanoeuvred the province, succeeding in levying a further federal production tax on petroleum which was to act as a windfall profits tax. The IORT was set at 50% of the increase in revenue above the previous NEP price schedules, and was intended to capture the increased economic rent resultant from the OPEC initiatives of 1979-80. The only deduction allowed was royalty payments. However, revenue subject to the IORT was not subject to corporate income tax. Within months, this agreement too would be outdated.

In the spring of 1982 a number of factors dovetailed to dampen the short-term outlook for the industry. Continued high interest rates; the

deepening of the world-wide recession; the softening of demand for oil in Canada and world-wide, along with the growing realisation that the emerging glut of oil on world markets may be more than a short-term temporal condition; the maturation of many of the conservation and substitution programs put in place since 1973 in the western consuming world; the subsequent softening of world price and the growing dissension within OPEC, all combined with the new, higher royalty and taxation provisions of the September 1981 Canada-Alberta Agreement, to squeeze industry cash flow and profits⁴³.

Several megaprojects concerning oilsand developments lost industry partners early in 1982 as restricted cash flows curtailed participation in high-risk ventures. In 1982, the industry's gross revenues increased by 9% while net revenue declined a further 52%. In response to the deterioration of the industry's financial position, the Alberta government introduced the Alberta Oil and Gas Activity Program (AOGAP)⁴⁴ in April which comprised royalty reductions, and other grants and credits totalling \$4.5 billion in assistance to the industry. The federal government followed suit with the NEP Update⁴⁵ announced in May. The IORT was suspended for one year, the basic rate of PGRT was reduced from 16% to 14.67% and smaller producers were eligible for exemption, and higher prices introduced for some categories of oil. The federal government expected these measures to reduce its revenue share by 7%, reduce the provincial share by 3%, and increase the industry's share by 10% in the years to 1986.

By 1983, the improved condition of industry net revenue was evident in its relatively slight decline of 11% from the previous year⁴⁶. Total revenues had once again increased, by 5%, which was matched by a similar percentage for each of the next few years. Net income increased 141% in 1984, and 14% in 1985 before extraordinary items. Revenue shares developed in this way:

PMA Estimated Percentage Revenue Shares 1979-1985⁴⁷

	Industry	Provinces	Federal
1979	41.2	45.7	13.1
1980	54.4	34.9	10.7
1981	50.4	30.4	19.2
1982	45.9	27.9	26.2
1983	50.3	29.2	20.5
1984	53.6	31.5	14.9
1985	54.0	29.8	16.2

The impact of the NEP on revenue distribution between the three parties is quite clear. The federal government made substantial gains in its revenue share at the expense of both the industry and the provincial governments in both 1981 and 1982 with the introduction of new taxes. After 1982, its share declined once more as the IORT was suspended and international prices started to fall. Nonetheless, the federal government share of petroleum revenues

improved appreciably after the implementation of the National Energy Program when compared with the pre-NEP figures of between 7% and 11% in the years 1973 through 1979.

In a Departmental document produced by the Financial and Fiscal Analysis Branch of Energy, Mines, and Resources in December 1982, Do Governments Take Too Much?⁴⁸, the federal government's position on revenue distribution was clearly stated.

One of the objectives of the federal government in the development of the National Energy Program ... was to secure a larger share of the revenues from oil and gas production, and to have in place a system which afforded the federal government a significant share of the upside revenue potential. The federal government emphasised, however, that it was not its intention to improve its share solely, or even substantially, at the expense of the industry. The government believed, and still does, that there was some room for higher taxes on industry revenues, but made clear that the principal issue was the disposition of revenues between the two levels of government.[my emphasis]⁴⁹

The purpose of the report was to argue against industry accusations that the federal government achieved its fiscal objectives primarily at the expense of the industry itself and not the provincial levels of government. The industry associations had waged various advertising and public information campaigns after the implementation of the NEP in the effort to make the Canadian public aware of both the taxation of petroleum and its products as well as the employment and investment contributions of the petroleum industry to the

Canadian economy. The federal government was increasingly sensitive to charges of revenue-grabbing, and clearly wished to set the record straight.

Quoting Canadian Petroleum Association figures, the report noted that the average percentage revenue shares in the years 1975 through 1980 were: industry, 45.3%; provinces, 45.1%; federal, 9.6%. By departmental calculations (no longer those of the CPA), percentages from 1981 through 1986 would average at these levels: industry, 46%; provinces, 32%; federal 22%. The report concluded that "...the tax and incentive regime introduced in the NEP does not result in an increased relative fiscal burden on the industry.... The industry's criticism on this count is misplaced."⁵⁰

This report was originally intended for Departmental revision and use. It was, however, distributed within the petroleum industry and created additional uproar. According to the federal government, its gain was at the expense of the provinces, and cash flow difficulties in the petroleum industry were largely a result of increased interest rates. "Canadian companies which made major acquisitions financed by debt have been particularly hard hit by high interest rates, and it is important to distinguish them from other Canadian firms which have been more financially cautious about taking on major new debt burdens."⁵¹ The report did not mention that the acquisition-debt problem was a direct result of the federal PIP scheme in which grants were related to the assessed percentage of Canadian ownership. As many foreign-owned and controlled firms sought to increase their Canadian ownership rating, they fell prey to unforeseen interest rate problems through acquisitions made possible by substantial loans. In the report, the federal government was

disregarding the impact of its new fiscal regime on the industry in its effort to prove that its financial gain was at the expense of the producing provinces, not the petroleum industry.

Early the next year, the Conservative Opposition began consultations with key petroleum interest groups and provincial governments in an effort to shape energy policy in the face of an impending federal election⁵². Industry representatives were surprised to be consulted by the Conservative Shadow Energy Minister, Pat Carney, at the outset of policy planning. This had not occurred in the development of either the NEP or the federal-provincial agreement which followed. The industry had vigorously argued that petroleum fiscal arrangements made without industry input were unrealistic and doomed to fail. Sympathetic to industry frustrations, the Conservatives committed themselves to eliminating the NEP if elected in September 1984. Having gained office, the new administration quickly opened negotiations with the producing provinces and the petroleum industry in order to establish how best to fulfil its campaign promise. However, until the last stage of negotiations, the Conservatives attempted to retain a federal resource rent tax by replacing the PGRT with another type of petroleum tax⁵³. Their concern was that the federal government would be left unable to fulfil its PIP obligations if the PGRT was eliminated immediately. In addition, the new federal government had serious financial difficulties in managing the \$26 billion deficit on the current account. The Canadian Petroleum Association and the Independent Petroleum Association of Canada suggested a phasing-out of the PGRT to secure some petroleum revenues for the government in the near term, but eventually to return to the pre-NEP fiscal regime⁵⁴. This suggestion was accepted by the government.

The Western Accord⁵⁵ between the federal, Albertan, Saskatchewan, and British Columbian governments was announced on March 28, 1985. Crude oil prices would be deregulated, natural gas pricing would be redesigned along more market-oriented lines, and the petroleum fiscal regime would be overhauled. The government removed the NGGLT, IORT, COSC, PCC, and the oil export charge. The PGRT was eliminated on new production and would be phased out on all production by the end of 1988. The PIP scheme would end in 1986. The Western Accord dismantled the entire NEP fiscal structure and did not replace it with another federal resource rent taxation regime. The petroleum industry would be taxed as it was in pre-NEP years, paying royalties to the government of ownership and corporate taxes to both levels of government. The system was greatly simplified and the federal government believed that the reduction of the federal fiscal burden on the industry would improve prospects for petroleum activity in Canada. "The Western Accord has been welcomed as a major step forward in rationalising and restoring equity to the fiscal and regulatory regime applying to the oil and gas industry. The substantial removal of government influence from pricing and marketing of crude oil has been an objective of most industry participants for over a decade."⁵⁶ Unfortunately, this fiscal initiative coincided with the dramatic decline in the international price of oil (see Chapter 4) and the Canadian petroleum industry remained as depressed as the industry elsewhere in the world.

The rapid decline in the international price of oil in 1986 was estimated to cost the industry between \$3.3 and \$4.1 billion in cashflow⁵⁷. Only 71 drilling rigs were active in June 1986 compared with 320 a year earlier. On April 30, 1986, the federal government announced a tax relief program worth \$130 million to the industry to

the end of 1988⁵⁸. In April and June, the provinces of Alberta and Saskatchewan offered packages of royalty relief. On September 8, the federal Energy Minister Masse announced the elimination of PGRT effective from October 1, 1986⁵⁹. Despite these fiscal modifications, some industry representatives called for the introduction of a floor price for Canadian petroleum to support their financial position, a proposal which the federal government has resisted strongly.

There are three principal conclusions to be drawn from this discussion of the development of the Canadian petroleum fiscal regime. Firstly, in both 1973 and 1980, governments took fiscal initiatives to improve their revenue shares prior to the international price crises, and both these initiatives provoked conflict between the two levels of Canadian government. In 1973, before the OPEC crisis, the Alberta royalty increases were followed by the federal export tax. In 1980, the NEP was implemented prior to the full impact of the second OPEC price increases, and it had been in the planning stages prior to the short-lived Conservative government of 1979. Canadian governments, contrary to popular belief, did not redesign petroleum fiscal arrangements because of the two OPEC crises. Rather, these crises simply coincided with initiatives already underway, and encouraged further action on the part of both levels of government by introducing the prospect of additional economic rent. The OPEC price crises simply increased the stakes; they did not start the zero-sum game between federal and provincial levels of government for petroleum revenue shares.

The second conclusion to be drawn is that the petroleum industry has learned to play the game as well. Since the events of 1973, it has used increasing political *savoir-faire* in its effort to inform

both governments and the Canadian public that the continuing competition for increased revenue shares between the two levels of government has resulted in the occasional reduction of the industry's share to unacceptable levels. The reduction of industry cash flow results in radically reduced exploration and investment activity. The industry voted with its feet in both 1974 and 1981, moving drilling rigs and exploration funds south of the border, but in the second instance made serious efforts to enlist public support to oppose the NEP. By 1981, it had learned the value of making political points against its opponents. In the negotiations preceding the Western Accord, the industry had a strong position supported by the governments of the producing provinces, but yielded on the question of PGRT elimination in recognition of the federal government's continued financial difficulties and its responsibility for PIP payments.

The third conclusion is that the development of the petroleum fiscal regime in Canada has not been primarily a question of balancing government and industry shares to secure the two main objectives -- maximum state capture of economic rent and sustained industry activity. It has more to do with the political question of federal and provincial competition for supremacy in decision-making and revenue distribution, with backpeddalling occurring whenever the "chicken game" resulted in disaster. Canadian federalism, with its often conflicting areas of jurisdiction, provides ample opportunity for muscle-flexing at both levels of government, often at the ultimate expense of the Canadian public.

2. THE UNITED KINGDOM

The United Kingdom claimed jurisdiction over its resources in the North Sea in the Continental Shelf Act 1964⁶⁰. It then began to issue licences for exploration and the production of such petroleum as might be found. As discussed in Chapter 5, the British government was anxious to encourage investment in petroleum activity as it wished to assess the magnitude of exploitable reserves and to encourage rapid production from North Sea fields. Early licence terms were therefore generous with regard to the financial cost to be born by the industry. Likewise, the initial fiscal regime was designed to encourage investment in petroleum resources. Royalties were set at 12.5% of the wellhead value of production (landed market value less costs of transportation to land) and corporate tax, at a rate of 50%, was subject to substantial allowances in the case of petroleum activities⁶¹. The fiscal regime was quickly criticised as an inefficient method of capturing an appropriate state share of economic rent. It was significantly altered after the first OPEC pricing crisis.

As a result of the growing controversy over the value of the discretionary method of licence allocation, the House of Commons Public Accounts Committee (PAC) undertook a review of licensing and taxation policy for petroleum activity in the North Sea in 1972, published under the title North Sea Oil and Gas⁶². Evidence presented to the PAC by the Department of Trade and Industry, which was responsible for the administration of the discretionary system of licence awards, indicated that projections under the existing regimes would yield substantial revenues to the government. However, the Department of Inland Revenue challenged that position, arguing that

the DTI figures underestimated the impact of the generous allowances in calculating the corporate tax liability of the petroleum companies. Hann suggests that this discrepancy in evidence illustrates at the very least, a serious lack of communication between government departments, and perhaps competition between bureaucratic interests⁶³.

However, the Public Accounts Committee received enough evidence from various sources to draw its own conclusions. In its review of revenue generated from petroleum activities in Britain, the Report was highly critical of the generous treatment in the field of corporate taxation. In the early 1970s, petroleum corporations were very favourably treated by British tax laws which allowed free depreciation on capital expenditures and the offset of foreign taxes against British tax liability. "This second provision extinguished the UK tax obligation of Shell and BP before North Sea oil started flowing, but the real concern was that 'losses' on overseas operations that exceeded the United Kingdom tax obligations in any one year could be accumulated and carried forward to offset UK tax obligations in future years."⁶⁴ This cumulative loss of taxes had reached \$3.75 billion for the nine major petroleum companies, according to the Public Accounts Committee.⁶⁵ It was "...unsatisfactory that UK tax revenue from continental shelf operations should be pre-empted by the tax demands of administrations elsewhere in the world."⁶⁶ The Report recommended a new taxation policy for the petroleum industry, and suggested the possibility of a system of quantity taxation. In this arrangement, tax revenues would depend more heavily on the amount of production, which accorded well with the government's aggressive production policy. A barrelage tax would secure an increased portion of the economic rent available for

the state, although it might be a disincentive to the producing industry, assuming the competition for economic rent to be a zero-sum game.

It should also be mentioned that the experimental auction of several exploration blocks in the fourth round (1971) further indicated to the government that the industry was prepared to pay substantially greater sums for the privilege of exploration and production in the British North Sea. Clearly, the licensing regime was not securing a reasonable share of the economic rent available for the state. The government wished to continue encouraging rapid exploration and production of Britain's petroleum resources, so the licensing regime was left unrevised while taxation arrangements were examined. In spring 1973, the Conservative government announced in its budget that the North Sea tax regime would be revised and it opened discussions with petroleum companies⁶⁷.

The PAC had been well aware of the potential difficulties associated with overtaxing the industry when rapid exploration and exploitation were the government's primary objectives. It assessed the impact of various taxation regimes on the industry, and came to the conclusion that the taxable capacity of the petroleum industry as a whole was much greater than British authorities had believed, and the upper limit was certainly not being reached by the existing system. The oil crisis of 1973-74 served to support further the PAC Report by increasing the taxable capacity of the industry. The Heath government's inability to secure increased supplies for Britain also contributed to increased pressure on the government to modify the licensing and taxation legislation. In 1974, the Conservative government, in the midst of revising its policies, lost the election.

The new Labour administration came into office with its own energy priorities, the principal^{one} of which was to increase state participation in the industry.

In July 1974, the Labour government's White Paper on North Sea petroleum policy⁶⁸ indicated that increased state participation would take two forms. Greater public control would be assumed through the establishment of BNOC, and an increased share of the profits generated from petroleum production would be achieved by tax changes. It proposed to close the tax loopholes brought to light in the PAC Report and to introduce an additional tax on North Sea production. "This was intended as a specific tax ... designed to recapture economic rent transferred to the oil companies via the discretionary licensing system."⁶⁹

The Oil Taxation Bill was introduced to Parliament in November 1974⁷⁰. The Labour government did not intend to introduce a barrelage tax, as had been suggested by the PAC, as such a tax was thought too detrimental to marginal fields. Instead, it proposed the levying of a Petroleum Revenue Tax (PRT) which would be calculated not on production but on some agreed concept of liable revenues. Negotiations between government and industry officials occurred at the report stage of the bill, and many changes in the proposed legislation were made. Hann suggests that the success of industry pressure was largely due to its monopoly of information about North Sea activity and costs associated with it, coupled with uncertainty on both sides about price, cost, and production expectations⁷¹.

As originally conceived, the PRT was to be a single rate tax on net positive undiscounted cash flow. It would be levied on a company basis, rather than a field basis, and this was thought by the industry to be discriminatory and potentially detrimental to smaller

firms. In its final form, PRT was calculated on a field-by-field basis at a rate of 45% of eligible revenues, but without any offsetting of losses between various fields. In addition, a 25% "uplift" allowance on capital expenses was introduced during the course of the Bill's passage. Finally, safeguard provisions limited the payment of PRT to 80% of annual net revenue less 30% cumulative capital expenditure in any one calendar year. PRT payments would be deductible from profits in the calculation of corporate income tax. The Secretary of State was also to be granted additional powers to waive or refund royalties in whole or in part as deemed necessary.

In 1976 it was further decided that royalties would be calculated on a tax reference price from the fifth round in 1977⁷². A ring fence on the North Sea was introduced for the purposes of corporate income tax calculation (then at a rate of 52%), which meant that losses in one field could be used to offset gains in another within the British North Sea⁷³.

Under the Oil Taxation Act 1975⁷⁴, the Exchequer expected to receive revenues in the order of \$11 billion to 1981 and \$7.7 billion per annum thereafter⁷⁵. The government expected the new fiscal regime to capture 70% of the ^{net} revenue generated by fields up to the fourth round of licensing, and 85% for fifth round licences (which included BNO's automatic 51% stake). Although BNO was responsible for its share of development costs, the new fiscal regime, in the latter half of the 1970s, only yielded 60-70% of net company revenues to the government, given variations in company and field performances⁷⁶. Because tax liabilities built up slowly (as a result of various allowances, falling production, and smaller field

development), there would be a bell-shaped tax curve at a constant price level. This too could contribute to a smaller revenue share for the government than it had expected.

Economic studies of the impact of the new fiscal arrangements conducted by Robinson and Morgan concluded that the PRT contributed a fairly small percentage of total government revenues from petroleum activity⁷⁷. For model fields examined at the 1977 price, the total government share was in the range of 61-67% of net company revenues, of which PRT contributed between 0% and 15%. The maximum PRT liability of any of the model fields they studied was 22%. The conclusion was the PRT was not a serious deterrent to field development; there were sufficient allowances built into the regime to reduce liability for the tax.

The Robinson and Morgan study also examined the impact of the British fiscal regime for petroleum at various price levels, concluding that the British system yielded lower company returns at price levels below \$14 per barrel than the Norwegian regime, which was generally assumed to be much harsher⁷⁸. At the lower price levels, royalties and corporate income tax were responsible for the higher government share as PRT liability was eliminated. At higher prices, petroleum companies under the British regime did very marginally better than did those operating in Norway. Garnault and Clunies Ross suggested that the government's objectives could have been much more easily achieved through the introduction of an indexed resource rent tax, "...the rules of which did not need to be amended when oil prices changed."⁷⁹ They also noted that a resource rent tax would have been more profitable for the government than the current PRT.

The inflexibility of PRT adjustment to price variations meant that its basic rate and allowances were modified several times over the following decade. By 1978 the Labour government was sufficiently confident in North Sea exploitation to propose an increase the rate of PRT from 45% to 60% along with a reduction of the uplift allowance on capital expenditure and the oil allowance⁸⁰. Although these initiatives were announced before the Iranian Revolution and the price developments which followed it, they indicate that the government believed it was not obtaining maximum economic rent from North Sea production. In 1975, the new fiscal regime had been based on an assumption of falling oil prices in real terms after the initial OPEC action. This did not occur, and in 1978 oil companies were reaping large profits from the North Sea. With a general election in the offing, the Labour government wanted to maximise the state share from North Sea development. The Conservative Opposition was in agreement with Labour's proposals; the Conservatives would benefit from being on the popular side of this political issue, and would have increased revenues at their disposal if they won office. The Conservatives won the election and their first budget included the increase of the PRT rate to 60%.

Although the OPEC marker price stood at over \$33 per barrel by the time the new administration enacted this change, it is important to note that the new budget was not a reaction to increased international prices. As in Canada, the government realised it was not capturing its potential share and proposed changes before the second price rises occurred. Because these fiscal arrangements were designed prior to the second price increases, they had to be modified

almost immediately to increase the government share in the face of greatly increased economic rent produced by higher international prices.

In March 1980 the Chancellor announced further changes in the petroleum fiscal regime⁸¹. The PRT rate was increased to 70% effective from the end of 1979. In November, the Chancellor announced his intention to introduce, in the following year, another tax on offshore oil production⁸². The new tax, the Supplementary Petroleum Duty (SPD), was intended to act as a windfall profits tax in the wake of international price increases. The petroleum industry was invited to make proposals for alternative tax systems which would leave the government with a similar percentage share of net revenues from petroleum exploitation. In the 1981 budget, the SPD was set at 20% of gross revenues, to be collected monthly, less an annual allowance of one million tonnes per field. PRT allowances were marginally reduced. Although the SPD was originally intended to cover the periods 1981 through the first half of 1982, it was later extended to the end of 1982.

The industry's reaction was strong and critical. In response to the Chancellor's invitation for comment, both the United Kingdom Offshore Operators' Association (UKOOA) and the British independent operators' group, BRINDEX, recommended that the SPD be abolished⁸³. The Institute for Fiscal Studies (IFS) likewise concluded that the new fiscal regime would overtax the industry and make marginal investments unattractive. In The Taxation of North Sea Oil⁸⁴, the IFS advocated a replacement of all oil and gas taxes by a simple three-tiered resource rent tax, with thresholds indexed at 15%, 25% and 35% and a top marginal rate of 85%. Other commentators agreed with this basic proposition, but disagreed over threshold levels and

assumptions used in the study. Hann suggests that these and similar proposals were rejected by both the government and the industry because "tax experts in government and in oil companies had accumulated skill in manipulating the existing system and a new, simple system could diminish their relative expertise and thus their relative power and job security."⁸⁵ In a less formal reaction, several new projects were shelved and rumour spread that UKOOA members would not apply for exploration blocks in the next licensing round.

Various analyses of the impact of SPD were undertaken which brought to light some of the industry's complaints concerning the new tax. The fiscal regime now "...incorporated a top marginal rate of over 90% with two front-end production taxes in the royalty and SPD.... Compared to the previous situation the structure of the system was now less geared to profitability and the Government was not sharing in the exploitation risks to the same extent."⁸⁶ With international prices no longer increasing, the industry's position strengthened and in the March 1982 budget, relief was given⁸⁷. The SPD was replaced with Advance PRT (APRT) which was similar to SPD in that it was a 20% tax on gross revenues with an annual production allowance. However, it was allowable against PRT and did not affect total PRT liability but it increased immediate payments to the government. To compensate for the reduction in the government share, the PRT rate was increased to 75%. Industry criticism was immediate, and further modifications were made to the budget proposals so that APRT would not be incurred within the first five years of a project's life and companies would be repaid APRT after five years rather than in a lump sum at the end of field life⁸⁸. With all these fiscal changes, marginal tax rates had increased from 76.9% in 1975-78 to

87.4% after the 1979 and 1980 changes, to a high of 90.3% after the introduction of the SPD. After the 1982 relief, this was reduced to 89.5%⁸⁹.

In 1983, the decline in both new developments and the international price of oil spurred the government into further petroleum fiscal modifications in its budget⁹⁰. Royalties were abolished and the production allowance for PRT was doubled for new fields (fields granted development approval after April 1, 1982). The distinction between old and new oil fields allowed the government to develop two fiscal regimes: one which was more flexible, intended to encourage new projects; and the other more rigid, intended to sustain a large government share from less expensive production. The newly established APRT was to be phased out and eliminated by the end of 1986. Further relief was offered in the Oil Cessation Bill, which allowed companies to claim capital expenditure on shared projects against PRT. These reliefs reduced the marginal tax rate to 88% instead of the previous 89.5%⁹¹. In the 1984 budget, further relief was offered in the form of a reduction of corporate tax over a period of time from 52% to 35%, and relief on secondary recovery projects was expected in the following year⁹². Kemp and Rose concluded that under these fiscal arrangements, and assuming a 10% minimum rate of return with prices constant at \$28 to \$30, "...a considerable number of the fields available for development from the mid-1990s would not be commercially viable on a pre-tax basis. The addition of taxation ensured that several more fields could not be developed."⁹³ With the collapse in international oil prices, the future looked considerably more bleak. Although representations were made to the government, major fiscal changes have not been

introduced. In any event, patchwork modifications to the fiscal regime would contribute little to enhance security of long-term investment.

Taxation arrangements affect two outcomes: industry activity, as demonstrated in the discussion above, and state revenues which in turn allow the government to pursue various financial courses of action. In 1982, petroleum output contributed approximately 4.75% to the GNP; gross revenues were in the order of \$24.5 billion for oil and \$1.7 billion for gas production⁹⁴. In 1982-83, government revenues from petroleum exploitation equalled 9.8% of total central government revenues excluding national insurance contributions (7.9% including such contributions)⁹⁵. To make another comparison, government petroleum revenues amounted to over half of the total sum collected in VAT and just under one-quarter of total income tax revenues in 1982-83⁹⁶. These sums are not insubstantial.

The issue of spending petroleum revenues was largely obscured in the mid-1970s by the government's increasing burden of public debt as a result of loans borrowed on the strength of future petroleum revenues, and inflationary difficulties in the aftermath of the increased price of oil. The government had initially several options for spending petroleum revenues. Immediate financial difficulties, such as the increased public debt and rising unemployment, could be addressed directly. Petroleum revenue could have been invested in energy or industrial projects rather than being applied in whole or in part to pressing financial problems. This was the type of option favoured by the Scottish Nationalists, who advocated an investment fund for the community most affected by oil exploitation and therefore, according to the SNP, with the most legitimate claim -- Scotland. A more general option was to treat petroleum revenues as

any other form of state revenue and not to earmark them. There was a strong case against the employment of petroleum revenues for specific purposes, such as industrial development. Uncertainty about the future shape of the British economy, its industrial potential, and its requirements in the 1990s could make a strategy formulated in the 1970s completely inappropriate in the future. Commentators of the right were opposed to such strategies precisely because of uncertainty and the high risk of wasting resources. "There is no more reason to believe that the assembled multitudes of Ministers and civil servants (even when joined by the Confederation of British Industry, the Trades Union Congress and miscellaneous academics) can work out the 'correct' strategy for Britain ... than there is to think that the Energy Department can determine an 'optimum' depletion rate."⁹⁷

The Labour government of 1974-79, the period in which substantial revenues began to accrue, did not establish a specific investment fund for petroleum revenues. Like the Conservative administration which followed, the Labour government had greater interest in employing the revenue for current account expenditure. In the 1980s, petroleum revenue of around \$14 billion per annum contributed to general revenues and still only covered under half of the estimated fiscal loss due to unemployment⁹⁸. With declining production in the British North Sea and a depressed international price for oil, many commentators believed that the opportunities created by an influx of petroleum revenues have been missed altogether.

Oil revenues provide resources which would permit tax reductions, lower interest rates, and raise investment incentives, but the main (though not the only) effect of these policies would be to move us along a given marginal efficiency of investment schedule. More direct reforms, for example in the labour market, are required to shift that schedule. North Sea oil cannot be separated from the general problems of the UK economy. ...[O]il revenues provide a substantial increase in the level of resources available to the country, but it is the performance of the non-oil economy which will determine whether those resources can provide a contribution to expansion or a rentier's cushion against decline.⁹⁹

Unfortunately, it appears that the latter has proved to be the British experience.

3. NORWAY

Norwegian petroleum policy has developed contemporaneously with the British but it has been shaped by three factors -- Norway has similar petroleum reserves to Britain, a population less than one-tenth that of the UK, and a substantially lower demand for petroleum. Consequently, influences on policy development in the Norwegian case have been fundamentally different than those affecting the British government. The principal issue was to formulate petroleum policies which allowed the Norwegian parliament sufficient control over exploitation to mitigate externalities. On the fiscal front, these

externalities were primarily related to the lack of absorptive capacity for the tremendous influx of petroleum revenues in the Norwegian economy.

In the Royal Decree of May 31, 1963¹⁰⁰, Norway declared its sovereignty over the offshore areas of the Norwegian coastline. In 1965, the first petroleum taxation act was passed¹⁰¹, in which the Norwegian government claimed the right to tax foreign petroleum companies operating in the Norwegian offshore. Like the British government, the Norwegian government was anxious to attract investment in the exploration of its offshore resources. Until the first OPEC pricing crisis, the Norwegian government exercised this right by levying corporate taxes on the petroleum companies according to the regulations of the General Tax Act 1911. The companies also paid licence fees and royalties determined by the Norwegian government for the right to explore for and to produce petroleum.

In the late 1960s, the royalty rate was 10%, but once exploration was under way and prospects were encouraging, the Norwegian government modified the licence fees and royalty rates¹⁰². It did this in 1972, well before the first OPEC price increases. Licence fees were increased and a progressive royalty rate was introduced which, like the sliding scale royalty scheme operating in Alberta, related increased royalty rates to increased production. The objectives were clearly to encourage the exploration of large and small petroleum fields, to protect small producers, and to increase the fiscal burden on more profitable oil wells (large producers). The progressive royalty ranged from 8% for fields with production under 40,000 barrels per day to 16% for fields with production of

350,000 barrels per day and above¹⁰³. Some older fields retained a fixed rate of 10%, and a separate royalty of 12.5% was established for natural gas production.

Norwegian corporate tax comprised three taxes. The rates applicable in the initial period of petroleum activity in Norway were: federal tax at 26.5%, municipal tax at 15%, and a withholding tax on distributed dividends at 10%. This municipal rate for the petroleum industry compared very favourably with the 16% to 19% liability of other industries¹⁰⁴. However, the municipal group of taxes was increased to 24.3% at the same time as the new royalty scheme was introduced¹⁰⁵. In 1975, corporate tax was modified again to total 50.8%: the federal tax was increased to 27.8% and municipal taxes came down to 23%¹⁰⁶. This corporate tax is not subject to an explicit ring fence, as it is in the U.K., but deductions of expenditures outside the country are prohibited and only 50% of the losses incurred in petroleum and related activities onshore can be deducted from profits. For the purposes of calculating the tax, deductible losses may be carried forward for no more than fifteen years, and only one-third of the previous year's loss may be claimed in any given year. In addition, expenditures may be deducted over a period of not less than six years from the year in which the asset comes into ordinary use¹⁰⁷.

As in other petroleum-producing countries, the OPEC price increases of 1973-74 had a great impact on Norwegian petroleum fiscal policy in that rent-capturing initiatives already under way were encouraged. The Norwegian government was well aware of the increased opportunity for both companies and the state treasury. The fiscal terms governing petroleum activity were changed while the participation and licensing regulations remained constant. In 1975,

a new Petroleum Tax Act (PTA)¹⁰⁸ was implemented in which a Special Tax (ST) on petroleum production was introduced at a rate of 25% on a revenue base equal to that subject to corporate tax. The Norwegian ST is similar to a windfall profits tax. An uplift allowance was set at 10% of the cost of purchasing permanent installations offshore for fifteen years, totalling 150% of the investment. Fixed assets were to be depreciated at $16\frac{2}{3}\%$, and losses could be carried over for fifteen years.

With the introduction of these new fiscal arrangements, the companies' marginal tax rates increased from 50.8% to 75.8%, although with various allowances and deductions, the real tax rate for the period 1975-1980 was approximately 68-70%¹⁰⁹. Although this fiscal initiative was greatly criticised by the petroleum industry, "...only one pending application for a licence was withdrawn and was promptly replaced by another applicant. This acceptance of the special tax recalls a statement by a Norwegian Minister of Finance in the 1940s, that 'it is incredible how much taxes [sic] people are prepared to pay, once they get used to them...'"¹¹⁰

The principal criticism which was levelled against the new fiscal regime, and continues to be made today, was that it did not discriminate between profitable and marginal fields and bordered on discouraging the development of the latter. Hans Ramm, Advisor to the Ministry of Finance on oil taxation, acknowledged this point in a speech made to the Norwegian Petroleum Society in 1983.

It is a matter of fact that our petroleum taxation system is not a particularly progressive one.... Now -- there will always be some fields that are marginal under any tax system. Correspondingly, a majority of fields are either profitable or nonprofitable. Since

a significant number of fields up till now have been ready for development, our concern about less profitable fields and reserves has obviously been limited.¹¹¹

By acknowledging the Norwegian government's lack of interest in the development of marginal fields, Ramm's comments highlight the principal difference between the British and the Norwegian approach to petroleum taxation. Because of relatively limited reserves, strong demand for petroleum, and a high absorptive capacity for revenues within the British economy, the government of the UK has attempted to continue encouraging the development of more marginal prospects as well as the obviously profitable. In Norway, with its relatively abundant petroleum reserves, limited demand for petroleum, and restricted absorptive capacity for revenue influx, the encouragement of marginal field development was unnecessary and potentially harmful. This distinction between the objectives of the two governments remains constant and is the source of the common belief that the Norwegian regime is much harsher on the industry than the British, a charge which appears largely unsubstantiated in many economic studies comparing the two regimes.

The new fiscal regime in Norway remained stable until the second OPEC pricing crisis, after which taxation measures were once again re-evaluated. The Norwegian government estimated that profits would increase from \$8.3 billion at a price of \$18.50 per barrel, to \$20.6 billion at \$33 per barrel, and the Petroleum Tax Act was modified accordingly¹¹². The rate of Special Tax was increased from 25% to 35% and the uplift allowance was reduced from 10% per annum to $6\frac{2}{3}\%$, making the total deduction over fifteen years 100% rather than the

previous 150%. Tax credits were also reduced and new regulations concerning the timing of tax payments were put into effect. The average tax rate was expected to increase from 73.2% to 81.5%, and the industry's income would be limited to \$13.8 billion of the anticipated \$20.6 billion potentially available as a result of the price increases. Total government revenues were expected to increase over the period 1980-85 from \$46 billion to \$57 billion, with the assumption that the nominal price of oil would increase at a rate of 10% per annum during that time¹¹³. By 1982, petroleum revenues amounted to 32.4% of the total Norwegian tax revenue¹¹⁴.

After the decline of the international oil price, the Norwegian government announced, in July 1986, tax changes intended to provide substantial relief for new production and some easing of the fiscal burden on production¹¹⁵. Statoil's exploration share would no longer have to be carried by the private licensees; royalty rates would be reduced to zero on future developments; the ST rate would be reduced to 30% from 35%; and depreciation allowances would be granted from the start of spending rather than the start of production. The government acknowledged that these initiatives were designed with an international oil price range of \$13 to \$18 per barrel in mind, and that if prices average less than \$13 there will be no incentive to develop even the large fields. With its support of recent OPEC attempts to increase and stabilise the price, the Norwegian government is clearly committed to a higher price for oil.

Throughout the 1970s and 1980s, there have been similar developments in the British and Norwegian petroleum fiscal regimes. Both states opened North Sea activity with attractive fiscal arrangements, and tightened them up after the initial exploration period and after the first OPEC pricing crisis. Both

states introduced resource rent taxes which operated differently, but which contributed to similar percentage ^{government} revenue shares according to independent economic studies. Both states increased the rates of their resource rent taxes and reduced allowances after the second OPEC price increases in attempts to capture an increased share of economic rent. Both have made modifications to their fiscal regimes in the environment of depressed international prices. Although there are broad similarities on taxation, there are great differences between these two case states on the disposal of such revenues.

Three main themes stand out in Norwegian expenditure of petroleum revenues. The difficulty of absorption justified the government's investment of petroleum revenues outside the Norwegian economy. The tradition of social democracy in Norway encouraged the government's pursuit of a policy of full employment in the wake of the international recession brought on by the first OPEC crisis. The increase in the public debt throughout the 1970s was financed on the strength of petroleum revenues.

Norwegian state revenue from oil and gas production became substantial in the mid-1970s. In 1975, petroleum revenues amounted to approximately 3% of the Norwegian GDP, and by 1983 this figure had increased to nearly 20%¹¹⁶. However, by the end of 1978 the public debt had reached 45.6% of GDP, amounting to almost \$20 billion. This situation gave the government the option of employing petroleum revenues exclusively within the country. However, those revenues were not entirely devoted to reducing the public debt. Norway's Prime Minister, Odvar Nordli, in an interview in 1977 noted that 40-50% of Norway's oil revenues were being invested outside the Norwegian state as its economy could not absorb them appropriately¹¹⁷. Despite this foreign investment, it was still

expected that, by the early 1980s, the revenues would be sufficient to offer the government the choice of continuing to service the debt or to abolish the budget deficit within a matter of three to five years. The latter strategy was chosen and by 1984, Norway was the only OECD country with a surplus on its state budget.

Cappelen, Offerdal, and Strom suggest that it was precisely the petroleum revenues which allowed the Norwegian government to pursue the popular policy of full employment¹¹⁸. Lind and Mackay suggest a domestic absorption of 60% of the petroleum revenues as the threshold level before significant inflation and other industry- and geographically-specific problems arose¹¹⁹. It appears that the Norwegian government came to a similar conclusion. In the 1974 parliamentary report of the Ministry of Finance, Petroleum Industry in Norwegian Society¹²⁰, the impact of increased petroleum revenues in the economy was assessed, indicating the government's resolve, even before substantial revenues accrued to it, to employ petroleum revenues cautiously both within and external to the Norwegian economy.

The Norwegian government was not solely concerned with the problem of economic absorption of large amounts of petroleum revenue, despite its rhetoric. At the same time as it publicly advocated slow development to control revenue inflow, it took every opportunity to increase the government percentage of economic rent, and was not using the revenues exhaustively within the Norwegian economy before seeking investment opportunities elsewhere. The Norwegian government was clearly maximising its revenue share and applying it selectively between political investment on the domestic front and profitable foreign investment.

In Britain, necessity almost foreclosed discussion on the use of revenues altogether, whereas Norway was in the fortunate position of being able to employ strategically its petroleum revenues both domestically and abroad to maximise both political and financial returns. In addition, the extent of Norwegian petroleum reserves implies that the availability of petroleum revenues is not of limited duration, as it is in the British case. "The challenge facing the Norwegian economy is to adjust to quite considerable oil and gas revenues over a long period of time."¹²¹ The challenge which faced the British government was how best to employ a relatively short-term revenue gain. The Norwegian investment policy has proved more successful, but that was to be expected given the absorption problem of the Norwegian economy which did not exist in the British case. The British sector of the North Sea is not expected to yield any more large petroleum discoveries, while the Norwegian province remains more promising. This, coupled with the British population of almost sixty million, a balance of payments problem, and industrial decline, makes the Norwegian situation all the more attractive. "Finally, a little digest of the likely causes of the differences between the two regimes. The Norwegians are the blue-eyed Arabs. The British are just blue."¹²²

CONCLUSION

Rational choice theory hypothesises that governments, like all economic agents, will maximise their revenue gains when possible. It has been demonstrated that each of the three governments has, on every occasion, seized the opportunity to reform fiscal arrangements

to capture a larger share of the available economic rent. Such initiatives were not solely, as is commonly thought, the result of the two OPEC pricing crises. In every case, governments have encouraged exploration and development within their territories, and once the extraction industry was well established, have sought to increase their relative revenue share. Fiscal regimes were continually modified as opportunities increased for the capture of increased economic rent. There have been further fiscal modifications after decreases in the international price, which indicate a sensitivity on the part of fiscal planners to the fine balance between sufficient returns to industry and maximising state revenue.

Federalism is an independent variable. The development of the Canadian petroleum fiscal regime demonstrates that competition in this zero-sum game for revenue shares between the two levels of government can be at the expense of the industry's interest. In this respect, the Canadian regime is significantly different than those of either Britain or Norway. The latter two share many similarities in the timing, mechanisms employed, and impact on government revenues of their respective petroleum fiscal policies.

The significant difference between the British and Norwegian cases can be explained by the issue of revenue absorption in the economy. Because the British economy is more constrained than the Norwegian, it has a greater need for petroleum revenues. British petroleum policy therefore encouraged rapid development and the immediate acquisition of maximum government revenues. In the Norwegian case, petroleum revenues cannot be fully absorbed in the economy and the taxation regime, in consequence, does not encourage the development of marginal prospects. Nonetheless, the Norwegian

government is and was as fully committed to maximising its revenue as are both the Canadian and British governments. In all three cases, government/industry revenue shares are similar, despite differences in political arrangements and resource situations. It is unlikely that such a result would have been expected if the basic principles of rational choice had not been assumed to determine governmental behaviour in the formulation of petroleum policies.

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CONCLUSION

The purpose of this dissertation is twofold: firstly, to demonstrate the applicability of rational choice theory to the comparative analysis of policy output; and secondly, to elucidate the similarities and differences between petroleum policies in Canada, Britain, and Norway. The first two chapters provided broad theoretical and historical overviews which provided the foundation for the analysis to be undertaken in the last four chapters, each devoted to a specific policy area. This thesis starts from the assumption that the formulators of public policy behave in a rational way, which is to say that they order preferences, are self-interested actors, and are frequently engaged in competitive games with other interested parties.

At the political level, this means that governments will be primarily interested in the attainment and maintenance of office, and secondarily interested in instrumental objectives, such as maximising government revenues to assist in achieving that primary objective. However, governments are not unified actors; they are composed of differing interests, often in competition with each other, and their policies frequently represent the compromises made between these interests. Similarly, "the public" comprises various interests and individual members of the public may demonstrate different and sometimes contradicting preferences as voters, as producers, and as consumers of goods and services. The petroleum industry is also made up of various groups sometimes with differing objectives; the most obvious examples being the major multinationals and the smaller independent firms. The relative bargaining strength of these various

interests and the timing (both in terms of elections on the political front and market movements on the economic front) will influence the actual policy implemented in any given area.

It is unlikely that other theoretical approaches would have had the same predictive value of rational choice in relation to petroleum policy outputs. Collectivist theories of the state assume that governments are dominated by one group which, although motivated as individuals by self-interest, acts in concert for the achievement of collective benefits. Pluralist theories of the state are individualistic and emphasise the process of political activity which is assumed to take place between individuals, in voluntary organisations, and governments. Although based on the premiss of economic self-interest, these theories do not adequately account for the problem of free-riders on group activity.

Rational choice theory is based on the assumption that individuals are self-interested, but it differs from other theories of the state in its conclusions regarding this premiss. Rather than assuming that individual self-interest will naturally be subordinated to collective interests when groups are formed, rational choice theorists contend that individual self-interest often inhibits the achievement of collective goals. Therefore, collective activity is subjected to a natural tension between the interests of individuals and collective benefits. In this sense, rational choice theory has more predictive value than other theoretical approaches in that it offers a more complete explanation of competition between various interests.

The examination of petroleum policy outputs on rational choice assumptions is justified on several counts. Public policy concerning a financially and strategically important resource has been

demonstrated to be amenable to rational choice analysis. The petroleum industry yields two types of goods -- the private good of petroleum and the public good of the opportunity for increased government revenue. The policy areas examined concern these two types of goods: state participation, pricing, depletion, and fiscal policies are all related to the development of both private and public resources.

In Chapter 1, theoretical models of petroleum policy options were generated from rational choice assumptions. The purpose of these models was to see if rational choice assumptions correctly predicted behaviour. In each of the three states under examination, governments implemented policies which corresponded with the assumptions, and when there are policy variations, the rationale behind the policy option was explicable in rational choice terms.

With regard to state participation, the application of rational choice theory predicts that state participation in the petroleum sector would be increased in response to strategic concerns regarding supply, to public demand for an increased role in the development of a national resource, and to a perceived need by governments for more information to formulate petroleum policies. In two of the three cases under study, Canada and the United Kingdom, public petroleum corporations were created immediately after the first OPEC pricing crisis of 1973-74. Norway was the exception, having previously established Statoil in 1972; however, the public demand for its creation coupled with the government's desire for information provides the rationale of the policy decision, even though it anticipated events in the international petroleum market. All three state petroleum corporations came under severe criticism in the late 1970s and early 1980s, and BNOC and Petro-Canada were the targets of

privatisation proposals. Reduced public concern over petroleum supplies and the resurgence in conservative politics contributed to a re-evaluation of participation policy in all three states. There was growing public concern about the cost of government operations which appeared excessive as the initial shock of OPEC's impact waned. Statoil has retained its position as the state petroleum company, helped by the emphasis on the requirement placed upon it to make a profit like any other corporation in Norway. The most interesting finding was the lack of relationship between party principles and government policy on state participation in the petroleum industry. This indicates the common interests of all governments in this policy area, regardless of their positions on the right/left spectrum.

On pricing policies, Canada is the only state in which petroleum prices were determined by the government -- in this case, below the international level. This was the result of the federal nature of the Canadian state -- the conflict between the two levels of government was influenced by the location of petroleum extraction in the western provinces and concentration of voters in the eastern provinces, who were consumers, not producers of petroleum. The Canadian government sacrificed maximum financial gain to its political interest by transferring economic rent arising from price increases to the voting consumers. It could afford to exercise this policy option because Canada has a history of federal intervention in the development of natural resources under the jurisdiction of the provinces; the majority of the public was advantaged by the federal pricing policy. However, in both Britain and Norway, where the development of the resource was dependent on heavy capital investment, both states allowed their petroleum to be priced at the international level. This pricing policy was in part a necessity,

but it was an option available because of the unitary nature of the government of these two countries. The increasing economic rent arising from petroleum development was captured by the fiscal regime which, in the case of the North Sea states, was not contested by another level of government nor by the public. The governments of the United Kingdom and Norway were, in this sense, less constrained in their policy options than was the Canadian government on this issue. Again, party politics and manifestos were not influential in the formulation of the pricing policies implemented.

According to rational choice assumptions, depletion policies should be largely determined by the *political* rate of return of the respective economies. Where governments can productively employ the additional revenues generated from petroleum production, depletion rates will be liberal or non-existent, despite any political rhetoric to the contrary. Where the economy has a low potential for revenue absorption, and other investment opportunities do not exist, more conservative depletion rates would be expected. In Canada and the U.K., powers over depletion policy have been assumed by the governments but *little* used. There was political value in rhetoric favouring control over production, while there was financial advantage in rapid exploitation in the 1970s and early 1980s. While Norway is, to some extent, an exception; the rhetoric of the "go slow" depletion policy is reflected in a more conservative licensing regime than the regime in Britain. Both North Sea states were interested in securing activity in their respective petroleum jurisdictions, but the former has a smaller population and economy than the British, and therefore the Norwegian state was more conservative in the development of its petroleum resources. However,

the rhetoric of Norwegian depletion policy appears to be more forceful than the policy itself if production levels relative to national demand are considered.

The fiscal regimes in all three states indicate the governments' interests in securing for the states the maximum revenues possible while leaving the petroleum industry sufficient incentive to continue investing. Each government seized every opportunity to increase its relative share of petroleum revenues, and petroleum fiscal arrangements were not modified solely after OPEC price increases, as is commonly thought. The competition for revenues is a zero-sum game in which increased shares for one player mean decreased shares for other competitors. In Canada, federalism determined the nature of the main issue -- the growth of significant financial power of the governments in the producing provinces was the stimulus for federal fiscal intervention. The conflict between the federal and provincial levels of government over revenue shares twice escalated into a game of chicken, in which the industry's share was so restricted that exploration ground to a halt. This situation was disadvantageous to all three parties (the federal government, the provincial governments, and the petroleum industry), and resulted, in both instances, in the liberalisation of the petroleum fiscal regime. In the North Sea states, competition for petroleum revenues occurs between the governments and the petroleum industry. As most of the petroleum development in the North Sea took place during a period of increasing petroleum prices, both governments could afford to increase their revenue shares relative to the industry's share as economic rent increased. The use of petroleum revenues in the two states was different as a result of the different absorptive capacities of the two economies. Norway's social rate of return is

much lower than Britain's, and this allowed for a more conservative exploration policy and the investment of petroleum revenues abroad. However, in all three states, policy objectives did not appear to vary significantly along ideological lines -- all governments, regardless of their political persuasion, were interested in maximum revenues.

This application of rational choice theory to petroleum policies in Canada, Britain, and Norway has proved fruitful on all the main issues. It has demonstrated that, in the area of petroleum policy, the three states under examination have had governments which have acted rationally in the pursuit of both political and economic goals. The study has also elucidated the different policies in the three countries and provided some explanation for the similarities and differences. The similarities in the petroleum policies implemented in the three states has been striking, with principal differences being the results of the differing constitutional structures (Canada's federal state in contrast with the unitary states of the United Kingdom and Norway) and different ~~political~~ rates of return (Norway's low absorptive capacity against the higher social rates of return in Canada and especially Britain). In addition, ideas for further research have been generated in the political and economic implications of different petroleum policies.

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APPENDIX ONE

ACRONYMNS

OPEC	-	Organisation of Petroleum Exporting Countries
NOP	-	National Oil Policy (Canada)
GC	-	Gas Council (UK)
BGC	-	British Gas Corporation (UK)
PRT	-	Petroleum Revenue Tax (UK)
PTA	-	Petroleum Tax Act (Norway)
ST	-	Special Tax (Norway)
BNOC	-	British National Oil Corporation (UK)
NOA	-	National Oil Account (UK)
NEP	-	National Energy Program (Canada)
SDA	-	Scottish Development Agency (UK)
PGRT	-	Petroleum and Gas Revenue Tax (Canada)
NGGLT	-	Natural Gas and Gas Liquids Tax (Canada)
PIP	-	Petroleum Incentives Program (Canada)
COR	-	Canadian Ownership Rating (Canada)
FIRA	-	Foreign Investment Review Agency (Canada)
EPTA	-	Energy Pricing and Taxation Agreement (Canada)
IORT	-	Incremental Oil Revenue Tax (Canada)
SPD	-	Supplementary Petroleum Duty (UK)
AOGAP	-	Alberta Oil and Gas Activity Program (Canada)

APPENDIX TWO

TIMETABLE OF POLICY EVENTS : OPEC, CANADA, UNITED KINGDOM, NORWAY

YEAR CANADA

UNITED KINGDOM

NORWAY

1960 - formation of Organisation of Petroleum Exporting Countries (OPEC)

- National Oil Policy (NOP): division of Canadian petroleum market along Ottawa Valley Line - eastern market to consume imported oil; western served by more expensive domestic crude.

1961

1962

- Liberals under Pearson elected
- sliding scale royalties introduced in Alberta.

1963

- May 31: Royal Decree that territorial seabed and subsoil are subject to Norwegian sovereignty; stipulated Crown may issue regulations regarding exploration and exploitation of submarine resources.

1964

- UK Continental Shelf Act passed
- 1st Licensing Round
- October: Labour government elected.

1965

- 2nd Licensing Round
- Gas Act 1965: creation of Gas Council monopsony
- first North Sea discovery: BP's West Sole gas field

- April 9: Royal Decree re: licensing procedure
- 1st Licensing Round (78 blocks)

- 1966
- 1967
- first commercial gas production from UK North Sea: West Sole
- 1968
- Liberal government under Pierre Trudeau elected
 - 2nd licensing round announced; permits to be granted in 1969 and 1971.
- 1969
- **2nd Licensing Round** introduction of state participation option (14 blocks)
 - Ekofisk oil discovery
 - Valhall discovery
- 1970
- **3rd Licensing Round**
 - BP Forties discovery (announced as commercially viable 12.71)
- 1971
- **4th Licensing Round** (bids for 15 of 286 blocks raised £37 million)
 - first oil production from Ekofisk
 - Minister of Industry proposed government participate via state company
 - Frigg gas field discovery (production onstream in 1988 accounted for 30% UK gas consumption in 1980)
- 1972
- Gas Council became British Gas Corporation (BGC)
 - prior to 1975, UK oil taxation comprised royalties (in licences) and corporate tax only (52%)
 - June: Statoil set up by unanimous vote in Storting
 - December 8: **Royal Decree** specifying exploration, production, and other licences

1973

October 16: OPEC unilaterally increased the price of oil of its marker crude by 70% to \$5.12/bbl; the next day it imposed an embargo on countries sympathetic to Israel in the Arab-Israeli War. The price of Saudi Arabian light oil was increased again to \$11.65/bbl on January 1, 1974.

- December: NOP abandoned; export tax on crude to U.S.; voluntary price freeze requested of industry
- North Sea Oil and Gas, First Report from the Committee of Public Session 1972-73 opened debate on UK offshore oil taxation
- 3rd licensing round announced

1974

- Jan.: First Ministers' Conference on Energy: introduction of Macdonald's single-price formula (expensive eastern imports to be subsidised by export tax on domestic crude)
- **Petroleum Administration Bill** (federal government retains power to price petroleum)
- July: White Paper UK Offshore Oil and Gas Policy proposing state oil corporation and special petroleum tax regime
- first oil production from British North Sea (Forties)
- Nov.: Oil Taxation Bill outlined suggested PRT form; negotiations with industry
- Dec.: Varley guidelines re: depletion policy
- Spring: policy statements by Ministries of Industry and Finance
- 1973/74 White Paper: The Role of Petroleum Activity in the Norwegian Society No. 25 - production levels of 70 or 90 million tonnes of oil equivalent per annum deemed acceptable
- **3rd Licensing Round**: Statoil awarded 50% in all concessions

1975

- July 30: Petro-Canada incorporated by Parliament
- Feb.: **Oil Taxation Act** (PRT at 45%)
- **Petroleum and Submarine Pipelines Act** (powers for depletion control, BNOC, NOA)
- Odelsting Proposition No. 26: **Petroleum Tax Act**, June 13 (ST at 25% and corporate tax at 51.9%)
- world (norm) pricing
- N. net exporter of oil

1976

- Energy Strategy report
- Jan.1: British National Oil Corporation (BNOC) operating
- **Energy Act** (further depletion and emergency controls)

1977

- **5th Licensing Round**
(51% interest to
BNOC/BGC partic-
ipation)

- April: Ekofisk
blowout; 4th Licen-
sing Round delayed

1978

- Energy Futures
report (previewed
NEP)

- **6th Licensing Round**
(51% interest to
BNOC/BGC)
- White Paper The
Challenge of North
Sea Oil: rejection of
discrete oil fund;
set up Scottish
Development Agency
(SDA)

1979

The Iranian Revolution prompted a perceived oil supply shortage; spot market prices increased to \$40.00/bbl by June and OPEC increased its marker crude price to \$26.00/bbl on January 1, 1980.

- May: minority
Conservative govern-
ment under Joe Clark
elected
- Background report
- December: introd-
uction of budget with
gasoline tax
- December 13: defeat
of Conservative
government

- March: devolution
referendum
- May: Conservatives
under Margaret
Thatcher elected
- July: **Finance Act**,
PRT increased to 60%

- **4th Licensing**
Round: increased
percentage of Statoil
participation and
five-year limits on
licences awarded to
other companies
- June: 5th licensing
round announced

1980

OPEC market crude price increased to \$26.00/bbl on January 1, and \$28.00 effective April 1.

- February 18:
election of Liberal
government under
Pierre Trudeau
- March 25: Duncan-
Lalonde formula for
export price of
natural gas
- October 28: introd-
uction of **National**
Energy Program (NEP)
in budget (price
schedules, PGRT,
NGGLT, COSC, PIP,
COR, FIRA)

- March: PRT up to
70%
- UK self-sufficient
in oil
- announcement of
delay of development
of some post-1975
fields
- Nov.: Chancellor
announced new tax
intention (SPD and
changes to PRT in
1981 legislation);
invited suggestions
for alternative

- Feb.: White Paper
on The Activity on
the Norwegian
Continental Shelf,
cos. & interested
parties invited to
make suggestions
- end March: prop-
osals modified
- PTA changes (ST to
35%, average tax rate
increased from 69.2%
to 81.8%)
- depletion: 70/90
mtoe

- Alberta government suggests production cutbacks totalling 180,000bbl/day by September 1981
- taxation with same government share
- 5th Licensing Round

1981

OPEC market crude price increased to \$32.00/bbl in January.

- September 1: Energy Pricing and Taxation Agreement (EPTA) between Alberta and federal governments (revised price schedules, IORT)
- 7th Licensing Round
- March budget: introduction of SPD to mid-1982
- Finance Act 1981: SPD to mid-1982 at 20%
- Sept.: defeat of Labour government by Conservative coalition
- Cons. policy review: role of Statoil, depletion, economic impact
- 6th Licensing Round

1982

March: OPEC production quotas imposed totalling 17.5 million barrels per day.

- April 13: Alberta Oil and Gas Activity Program (AOGAP) introduced
- May 31: NEP Update
- Oil and Gas Enterprise Act (BNOG split, Britoil privatised)
- Finance Act: PRT to 75%; SPD replaced at year end by advance PRT (same as SPD but allowable against PRT)
- Nov.: 51% Britoil (expltn/prodtn arm) sold on market yielding £625 million to government, government retained 49%; BNOG kept as government trading company
- Dec.: White Paper on development strategy emphasizing north of 62
- 7th Licensing Round
- evaluation of petroleum tax system by Treasury and Ministry of Petroleum and Energy

1983

March 14: OPEC reduced the price of its marker crude to \$29.00/bbl and reasserted production quotas totalling 17.5 million bbls/day.

- June 30: Amendment to EPTA (revised price schedules)
- Budget: patchwork reliefs
- royalty exclusions, allowance extensions
- differentiation between old/new fields (01.04.82); opportunity for different taxation
- June: Treas. & PE group report made public; comments sought from industry
- Odelsting Proposition No. 72 (1982-83) re: petroleum activity legislation (to supercede Decrees

- May: **8th Licensing Round** awarded: part auction (33 million for 15 blocks), part discretionary allocation
- June: Conservation General Election win
- Decrees and Regulations); expected to pass spring 1985
- Autumn: applications for 8th round licences
- re-evaluation of Statoil's role

1984

- September 4: Conservative government elected under Brian Mulroney
- Budget: CT to be reduced to 35% (from 52%) over time with reduced allowance (to 25% from 100% by 1986)
- **8th Licensing Round**
- consideration of tax report; no changes
- average tax rate over field life = 80%

1985

February - OPEC market crude price reduced to \$28 per barrel.
December - OPEC abandoned official prices to secure fair market share.

- March 28: **Western Accord** between governments of Canada, Alberta, British Columbia, and Saskatchewan (abandonment of NEP, deregulation of prices, new fiscal regime to be introduced)
- June: oil prices deregulated
- June: Alta. royalty reduction of 10%
- Oct. 30: **Frontier Lands Policy** changes: 25% back-in abolished; no pref. treatment for Petro-Canada
- Oct. 31: **Agreement on Natural Gas Markets and Prices** (deregulation over one year)
- **9th Licensing Round** (13 of 15 blocks auctioned raising £121 million)
- March: BNOC abolished
- Autumn: BGC to be privatised
- **9th Licensing Round** 13 blocks and part blocks awarded
- 10th licensing round announced
- March 22: **Petroleum Act** replaces **Continental Shelf Act 1963, Decrees of 1965, 1972** and other safety and conservation regs.
- Sept.: Conservatives retain power in election
- Oct.: First half of 10th Licensing Round

1986

January: international oil price falls below \$20 per barrel
April: international price falls below \$10 per barrel, but rallies
July: international price again below \$10 per barrel, before rising to below \$20 at year end.

- August: Canada -
Nova Scotia Offshore
Petroleum Resources
Accord
- Sept.: PGRT abol-
ished from 1st Oct-
ober

- March: 2nd half of
10th Licensing Round
- October: bids due
for 39 blocks in 11th
Licensing Round

1987

The international price of petroleum generally remained in the mid-teens levels, with the exception of an increase above \$20 per barrel in June after OPEC agreed a production ceiling of 16.6 million barrels per day to support a price of \$18 per barrel.

- March: federal
government introduces
incentives for pet-
roleum exploration

- Budget concessions
for PRT
- May: 10th Licensing
Round awarded - 51
blocks
- Oct.: government
sells remaining 32%
of BP

- April: 1st half of
11th Licensing Round
- 11 blocks
- 2nd half of 11th
Licensing Round - 10
blocks

APPENDIX THREE : PETROLEUM PRICES

TABLE ONE

OIL PRICES: OPEC, CANADA, BRITAIN, AND NORWAY (\$US)

YEAR	(Month)	OPEC	(Month)	CANADA (Cdn\$)	BRITAIN	(Month)	NORWAY
1947				2.54			
1958				2.42			
1961				2.27			
1973	(09)	3.01	(09)	3.80			
	(10)	5.12					
1974	(01)	10.50					
			(03)	6.50			
1975						(01)	11.90
						(04)	11.80
			(07)	8.00		(07)	11.70
	(09)	11.46				(10)	12.45
1976					avg. 12.80	(01)	12.70
						(04)	12.79
			(07)	9.05		(07)	12.89
						(10)	13.15
1977			(01)	9.75	avg. 14.00	(01)	14.33
						(04)	14.39
	(07)	12.70	(07)	10.75		(07)	14.26
						(10)	14.04
1978			(01)	11.75	avg. 13.80	(01)	13.98
						(04)	13.94
			(07)	12.75		(07)	14.13
						(10)	14.29
1979	(01)	13.34			avg. 20.67	(01)	16.05
	(03)	14.54				(04)	20.05
	(06)	18.00	(07)	13.75		(07)	24.00
	(12)	24.00				(10)	27.50
1980	(01)	26.00	(01)	14.75	avg. 34.99	(01)	33.75
	(05)	28.00				(04)	36.00
	(08)	30.00	(08)	16.75		(07)	37.05
	(11)	32.00				(10)	37.10

YEAR	(Month)	OPEC	(Month)	CANADA (,	BRITAIN	(Month)	NORWAY
1981			(01)	17.75		(01)	40.00
			(07)	18.75		(04)	39.30
	(10)	34.00	(10)	21.25		(07)	35.75
						(10)	36.75
1982			(01)	23.50		(01)	35.05
			(07)	25.75		(04)	32.50
						(07)	34.15
						(10)	34.00
1983	(03)	29.00	(01)	29.75		(01)	31.45
						(04)	30.20
						(07)	30.25
						(10)	30.00
1984						(01)	30.10
						(04)	30.05
						(07)	29.10
					(09)	30.00	
					(10)	28.65	(10)
				(11)	27.60		
1985						(01)	free
			(06)	free	(02)	26.60	
	(10)	free			(06)	26.00	

TABLE TWO**AVERAGE WORLD CRUDE OIL PRICES (\$US)**

DATE	OPEC	NON-OPEC	WORLD
31/12/78	13.03	13.44	13.08
01/01/81	34.82	38.54	35.49
01/01/85	28.43	28.16	28.33
01/01/86	27.81	26.14	27.10
28/02/86	26.88	18.73	23.73
07/03/86	15.65	15.56	15.61
11/04/86	13.03	13.44	13.08
09/05/86	13.48	12.72	13.21
01/01/87	16.10	16.44	16.34
01/01/88	16.77	16.21	15.56

Source:

US Department of Energy in Petroleum Economist, April, May, June 1986 (pp. 153, 193, 237), December 1987 (p. 461), March 1988 (p.107).

APPENDIX FOUR : PETROLEUM SUPPLY AND DEMAND

TABLE ONE

SELECTED INDICATORS OF ENERGY USE AND PRODUCTION 1982

<u>COUNTRY</u>	<u>POP</u> (millions)	<u>GDP</u> (US\$bn)	<u>PRIMARY DEMAND</u> (petajoules)	<u>PRODUCTION</u>	<u>PRIMARY DEMAND</u> (fossil fuel equivalent) PER CAPITA PER GDP	
CANADA	24.7	363	9,086	9,968	368	25
U.K.	56.3	582	8,236	9,404	146	14
NORWAY	4.1	69	797	2,618	242	15
U.S.	232.1	3,708	73,291	66,959	316	20

Source:

Adapted from National Energy Board 1984, p. 102 (OECD statistics).

TABLE TWO: WORLD CRUDE OIL PRODUCTION (MILLION BARRELS)

<u>YEAR</u>	<u>WORLD</u>	<u>OPEC</u>	<u>SAUDI ARABIA</u>	<u>CANADA</u>	<u>U.K.</u>	<u>NORWAY</u>
1973	21,209	11,314	2,773	772	3	12
1974	21,245	11,216	3,095	728	3	13
1975	20,162	9,923	2,583	633	11	69
1976	21,851	11,252	3,139	582	91	102
1977	22,607	11,413	3,358	587	287	102
1978	23,134	10,879	3,030	582	404	130
1979	24,011	11,289	3,479	667	583	149
1980	23,059	9,838	3,624	645	603	193
1981	21,645	8,201	3,580	591	670	185
1982	20,645	6,937	2,366	579	773	191
1983	20,579	6,340	1,825	608	861	237
1984	21,106	6,345	1,675	650	942	273
1985	20,781	5,878	1,236	662	953	297
1986	21,837	6,693	1,840	656	949	331
1987	*10,521	6,521	1,535	*334	*456	374

* (1st half only)

Source:

Petroleum Economist: September 1986, p. 360, December 1987, p. 464, March 1988, p.108.

Public choice theory and petroleum policies in Canada, Britain and Norway

Miriam EDWARDS

University of Edinburgh, UK

Abstract. It is assumed that the development of an economically promising resource such as petroleum would be amenable to analysis from an economic viewpoint, and that government initiatives in this area might reveal the essential economic interests of the state. If governments are assumed to have similar economic and political objectives (i.e., to attain the greatest revenues possible from the exploitation of a depleting natural resource and to maintain public office), then it is to be expected that the petroleum policy outputs in various states would likewise be similar. Such differences as do exist should be amenable to explanation by examining the differences in the political constraints and economic situations of the states in question. The study models petroleum policy in four areas: state participation, pricing, depletion (including exploration and production policies), and fiscal arrangements, based on assumptions central to public choice theory. A comparison of policy outputs in the three case states illustrates the usefulness of the public choice approach to comparative policy analysis.

Petroleum policies in Canada, Britain and Norway can usefully be compared within a theoretical framework derived from public choice theory. Petroleum exploitation necessarily yields two types of product: the private good of petroleum and the public good of increased state revenue opportunities resulting from exploitation of a national resource. If public choice assumptions about political and economic rationality are correct, petroleum policies in these three countries should possess more similarities than might otherwise be expected. This is because governments in all three states would be similarly interested in maintaining office: increasing revenues would further enhance the possibility of securing that principal objective. A comparison of petroleum policies with regard to state participation, pricing, depletion, and fiscal arrangements demonstrates the usefulness of the public choice approach to comparative policy output analysis.

The treatment of the exploitation of petroleum as the provision of a public good and the management of market failures is justified on several counts. Firstly, in the very broadest sense of the term 'public good' (which is that it has the characteristics of public supply and administration), public policy in general may usefully be analyzed from this theoretical perspective. Secondly, petroleum exploitation yields two types of goods in the sense of joint produc-

tion: the private product of petroleum and the collective good of the opportunity of increased government revenues which would necessarily accrue from such production. In addition, there are the positive and negative external effects of petroleum exploitation upon the economic and fiscal conditions of the state as a whole.

Government interest in both these goods and the externalities associated with their joint production is demonstrable in policies which concern government ownership and control of the industry itself (state participation), regulation or non-regulation of petroleum pricing, depletion policy, and the fiscal regime. This article suggests what types of policies in these four areas might be expected if it is assumed that governments are indeed economic utility maximizers, constrained in their activity principally by the contingencies of public opinion and regular elections. The policies implemented in each of these areas by the three case states will be briefly outlined and (dis)similarities will be analyzed from the public choice theoretical framework. In this way, the utility of public choice theory for comparative policy study should become clear.

The function of our models of policy options is to suggest likely state objectives and mechanisms which can be employed to realize those objectives with regard to a rapidly-depletable, financially rewarding natural resource. They will be used to assess the similarities and dissimilarities in policy measures taken by the three case states in the subsequent analysis of the actual policies implemented. If public choice assumptions about economic rationality are correct, it is to be expected that the petroleum policies in the three case countries will be broadly similar, with differences accounted for by principles of public choice theory.

1. State participation in the industry

A. The model of policy options

'Because of the shortages that have occurred in petroleum products and the sharply rising energy price levels since 1972, consumers are unhappy with various segments of the energy industry. Given this general dissatisfaction, political appeals for increased regulation and even public ownership are more frequently voiced and welcomed by an irate public.' (Watkins and Walker 1977, 165) Prior to the OPEC price crisis of 1973, the public perception of the oil industry was that of its dominance by the major multinational petroleum companies, the seven sisters. With its assertion of power as a cartel-like organization of the world's largest petroleum producing governments, OPEC's control of the international market became the focus of public concern until very recently. In both cases, there seemed to be a consistent body of

public support for government intervention in the petroleum industry in order to prevent or ameliorate negative externalities associated with oligopolistic control of a major energy market, at first by the major multinationals and later by the OPEC governments.

There appear to be three major policy options for participation in the petroleum industry which could be pursued by producer governments, all of which could secure a degree of stability and control in an oligopolistic petroleum market. In the first case, state ownership may be limited to the resource itself, and control will thus be exercised only through the regulation of production and the imposition of taxes. In other words, the private industry could be left alone to produce the resource within the confines of government regulation set up with only stability of price and security of supply as the principal objectives of collective ownership and control. On the other hand, if the free market option is rejected as being insufficiently secure, nationalization efforts may be undertaken in which governments either participate in equity ownership or create national petroleum companies.

'Economic nationalism is not a costless indulgence.' (Garnault and Clunies Ross, 1983, p. 292) There are compelling reasons for governments to participate directly in the petroleum industry, some of which pertain to market failure in the forms of decreasing costs, externalities, and uncertainty. Other advantages offered by direct government participation in the industry are related to the information gained which is useful to the formulation of petroleum policy in other areas of concern. Equity ownership would appear to be a less public form of participation which may also afford less direct control than the creation of a state petroleum company. Public petroleum corporations offer the advantages of high public profiles and a direct industrial participation which can yield invaluable policy input. In addition, depending upon the scope of their mandate, if they are granted participation of buying rights in much of the state's petroleum resource, they can also directly influence production and pricing levels in ways less obvious to the public than promulgated policies.

From the public choice perspective, it can be expected that government ownership in the petroleum industry will be augmented in response to strategic concerns, public pressures for increased state presence in the industry itself, or when the government wishes to secure more information regarding the actual state of the industry in order to sharpen its policies and capture the greatest benefits possible from exploitation of the resource. If none of these conditions pertain, the utility-maximizing government would likely choose the free market option, limiting its participation to regulation in other areas of petroleum policy or in equity ownership. However, if the issue of collective ownership and control of the petroleum industry has become a strategic and/or public concern, it is more likely that participation will take some form of nationalist

policy, from the establishment of a state petroleum company through to outright nationalization of the industry. Complete nationalization, however, seems an unacceptable option in terms of political interests in the western liberal democracies.

B. The policies

Once the effects of the OPEC initiatives of October 1973 were felt, the Canadian government announced a series of energy policy steps. These included plans to create a publicly owned petroleum company to expedite the exploration and production of Canada's petroleum resources. Petro-Canada was incorporated by the Canadian Parliament on July 30, 1975, and commenced operations six months later.

Throughout the late 1970's, Petro-Canada's roles as policy advisor and Canadian public presence in the petroleum industry were not prominent, yet it nonetheless met ideological opposition from both the federal Conservative Party and the Conservative government in oil-rich Alberta. In May 1979 the federal Conservatives formed a minority government after an electoral campaign which included a promise to privatize Petro-Canada. In the following December, however, this government was defeated on a budget which proposed an 18 cent tax on transportation fuels. The Liberals returned to power with a strong majority in February 1980, and introduced the National Energy Program (NEP) in October, a policy which greatly enhanced Petro-Canada's role. On Canada Lands and in frontier regions (federal territories and waters), Petro-Canada was to have an automatic 25% back-in (without compensation at market value) on all ongoing exploration. Furthermore, the company's expanded operations were to be assisted by cash injections from the federal government. This created some not inconsiderable ill feeling within an industry subjected to a much more rigorous fiscal regime under the NEP. The company also became a prime acquirer of foreign-owned firms under the Canadianization legislation which accompanied the NEP, to the extent that it is now the largest petroleum retail concern throughout Canada. In short, Petro-Canada's role was greatly expanded after the second OPEC oil crisis.

In 1984 the federal government announced that cash injections for Petro-Canada were to be halted. The company's president responded by stating that its role in petroleum policy development would not continue if it had to operate within the confines of a private industrial concern (Interview with P. Manders, Calgary, 8.1.86). However, Petro-Canada quickly ceased to be an issue of political concern, and discussions towards the end of 1985 on possible privatization proved to be of little interest to Petro-Canada's employees, the petroleum industry as a whole, and the public at large. Formal privatization

appears to many to be a redundant initiative.

In 1965, the British government began actively to pursue energy policy objectives through the creation of the Gas Council, later known as the British Gas Corporation (BGC). The Gas Council was the means by which economic rent would be collected from British natural gas production. By denying producing companies the right to sell British gas to any agencies other than the Gas Council, the government made of the national gas corporation a state monopoly. With the Department of Energy as the sole arbiter of a reasonable price for sales to the Gas Council, BGC set a price below market levels for the gas it purchased, and consequently transferred some of the economic rent from gas production to consumers, so creating distortions in the gas market on the demand side. Additionally, exploration activity from the southern North Sea gas fields to the oil prospects in the northern North Sea can, to a certain extent, be explained by private industry's dissatisfaction with the marginal returns received on gas production.

The new Labour administration of 1974 extended the debate to a public oil company. In April 1975 the Conservatives countered by proposing the establishment of a UK Oil Conservation authority with regulatory powers over depletion. Early the following year, the government passed the Petroleum and Submarine Pipelines Act of 1975, creating both BNOG and the National Oil Account (NOA) from which it was to be funded (Johnson, 1979, 5). BNOG commenced operations in January, 1976, and was to provide policy advice and to exercise depletion control through the development of its own reserves and the disposal of its production in the national interest. Under all licensing rounds, BNOG had the right to purchase 51% of oil production at market prices, and from the fifth round, it had an automatic 51% stake in all North Sea exploration, carry risks as well as gaining reserves (Kemp, 1984, 73). It was also exempt from Petroleum Revenue Tax (PRT) payments.

The Conservative government elected in 1979 announced a policy of reducing the privileged position and quasi-governmental role of BNOG by denying it access to government funds, ceasing to use it in a policy-advising capacity, and eliminating its mandatory participation in all exploration licences. In 1982 the government announced the creation of Britoil out of the exploration and production arms of BNOG, and sold 51% of the new company into private hands: 'BNOG remain[ed] only as an oil trader purchasing 51% of oil from licensees' (Kemp, 1984, 73). However, in an international petroleum market with declining prices, BNOG had frequently purchased North Sea oil on long-term contracts at prices well above those at which it could sell on the Rotterdam spot market. As the attendant public controversy developed early in 1985, the government changed its policy once again, and the Conservatives announced plans to abolish BNOG while retaining powers to demand 51% of North Sea production in emergency supply situations (Scotsman, 14.3.85).

Later in the year, the government introduced legislation to sell the British Gas Corporation into private hands as well (*Guardian*, 7.11.85). In Britain, privatization has become the fate of the national petroleum companies.

Not so in Norway: 'Norway. . . has seen almost unbroken social democratic rule since World War II. The hegemony of social democratic ideas, including the legitimacy of a strong and active state, was undoubtedly a necessary precondition for the establishment of Statoil' (Vishner and Remoe, 1984, 337). Additionally, Norway has a strong tradition of nationalism, and consistent public mistrust of foreign capital made the creation of a state oil company a desired policy initiative as soon as North Sea petroleum potential became obvious.

In 1971 the Norwegian Ministry of Industry proposed that state participation rights should be vested in a 100% state-controlled joint stock company, a proposal which was passed unanimously by the Storting in June 1972. Statoil was created to operate under normal Norwegian corporate law, with its objective being profit. Its functions included the management of government oil and gas participation agreements, the expansion of state activities downstream, a major operating role north of 62°, conservation of petroleum resources (by influencing a slower depletion rate than might be indicated by commercial considerations alone), and cooperation with Norwegian industry to build up an integrated petroleum sector (Johnson, 1979, 24).

In the late 1970s tensions appeared both between Statoil and the private petroleum companies operating in Norwegian territories, and between Statoil and the Norwegian Petroleum Directorate (NPD) which had been created in 1973 to perform regulatory functions with regard to petroleum exploitation. 'The growing criticism was channelled into the conservative-liberal goal of "clipping the wings of Statoil" . . .' (Vishner and Remoe, 1984, 333). In 1981, the Labour government was replaced by a Conservative coalition pledged to reevaluating the role of Statoil. However, a recent editorial in the *Petroleum Economist* (Vol. LIII, No. 2, Feb. 1986, 38) suggests that Statoil remains the dominant presence in the Norwegian petroleum industry.

In both Canada and the United Kingdom national petroleum companies were created shortly after the impact of the first OPEC pricing crisis, and came under increasing criticism in the late 1970s. Both BGC and BNOC were privatized in Britain at roughly the same time as Petro-Canada lost its policy role. In Norway, Statoil has had a longer policy life; however, it suffered the same critical evaluation as did the other companies in the late 1970s and early 1980s. The similarities in the timing of the creation, critical evaluation, and privatization (both formal and informal) in the cases of the Canadian and British companies is quite striking, although their actual policy functions were different in many respects. It can be suggested that these similarities are related to the initial shock of the first OPEC pricing initiatives. Once other

policy mechanisms were satisfactorily operating in the petroleum sectors, and once public concern had been calmed, the continued usefulness of public petroleum companies was called into question. The return of Conservative governments in all three states within a few years of each other also contributed to the criticism levied against public petroleum corporations along with the abolition of their policy functions in Canada and the U.K. The Norwegian situation appears to be the exception, but perhaps the strong tradition of social democracy in that state helped preserve Statoil against a similar abandonment of its policy role. In all three cases, the governments appeared to have similar political interests in creating national petroleum companies, with less concern for the economic efficiency of such corporations than for the public presence of the state in the petroleum industry.

2. Pricing policy

A. The model of policy options

Since the OPEC-induced price crises of the 1970s, pricing policies of the private product have come to be of great concern to governments with such resources. There appear to be two main pricing policy options: determination by the international market or by the government (either via established price schedules or by public corporation activity).

The decision of states to allow the price of petroleum produced by private and public firms within their territories to fluctuate along with the international market indicates a willingness, at the most basic level, to allow OPEC initiatives (primarily) to continue to determine the price of the resource. Government regulation of prices, on the other hand, demands evaluation and decision regarding the relative utility of a price set below the international market value (a benefit to consumers) or above the international market value (a benefit to producers). Lower prices automatically lower reserve standings, as the economic cost of developing any geological prospect determines the viability of its production, and vice versa for higher prices. Various price levels also affect the world petroleum market itself, the value of the producing country's currency, and production costs elsewhere in the economy. Price levels can be established by government determination of schedules or more implicitly by the activities of a public petroleum corporation if it is given the responsibility for purchasing and distributing a large proportion of petroleum production within state territories. Public choice theory would suggest that in an environment of rising international prices, all things being equal, governments would be less likely explicitly to determine price levels for production within their territories. However, given the primacy of the political objective

of maintaining office over economic interests, governments may determine petroleum prices not only when it is to their economic advantage, but also when political circumstances make such a policy advantageous.

B. The policies

An explicit petroleum pricing policy was not implemented in Canada until the first OPEC pricing crisis forced the federal government to reevaluate its petroleum policy as a whole. In late 1973, as the impact of the OPEC initiatives became manifest, the government requested the petroleum industry to accept a price freeze while it determined a new petroleum policy. With the inflation of international oil prices, domestic production was to be subject to an export tax to be collected by the federal government, the tax representing the margin between the frozen domestic and rapidly-escalating international prices. Early in 1974, a single-price formula was adopted by the government in which the export tax on domestic production would subsidize more expensive import requirements. A conflict arose between the Albertan and federal governments over the export tax and price levels (held below international prices), but it was resolved through intergovernmental negotiations. Throughout the remainder of the decade, prices were established through negotiation between the federal and Albertan governments at the bureaucratic level.

A similar federal-provincial conflict emerged after the second OPEC price increases in 1979–80. International oil prices doubled while Canadian prices were held well below international levels, resulting in a domestic price of less than half the international price in 1980. Negotiations were undertaken between the two levels of government throughout the first half of 1980, but agreement could not be reached, as the Albertan government argued for price deregulation, while the federal government wished to maintain domestic price levels well below international prices. The unilateral introduction by the federal government of the National Energy Program (NEP) in October implemented gradually escalating price schedules which maintained the domestic price below international levels in addition to a new fiscal regime designed to capture a large share of the rapidly increasing economic rent on petroleum production for the federal government. The Albertan government responded by reducing domestic production (with the cooperation of the industry) by a total of 180,000 barrels per day in order to force negotiations to resume, and in September 1981 an agreement was reached between the governments. Price schedules remained the essential feature, but they had been designed with provincial input and with a gradual approach toward expected international levels.

With the decline in the international price which began in 1983, the price

schedules were revised and the case for deregulation made stronger as the domestic price approached international levels more rapidly than expected. The Conservative federal government reached an accord with the producing provinces in March 1985 which dismantled the NEP and deregulated petroleum prices altogether.

Both the British and Norwegian governments have instituted policies that allow prices for North Sea production to be determined by the international market. In Britain, as was noted, the BGC was used as a mechanism for keeping the price of natural gas at a low level for domestic consumption, whereas BNOC's role as an oil trading company had no such price-fixing element; it was more concerned with secure supplies of a strategically important resource. The decline in international prices, especially the recent rapid fall, has meant that North Sea production, which was selling for over thirty dollars per barrel in December 1985, was selling for less than \$10 per barrel in some contracts six months later. Clearly this has very serious implications for the British Treasury and for North Sea development and investment as a whole. The same concerns must confront the Norwegian government which, until early 1985, set prices via a norm price. The norm price, however, was merely a tax reference price based on average prices of various Norwegian crudes as obtained in contracts and on the spot market; therefore, the Norwegian government, like the British government, allowed its petroleum to be priced in the international market-place. It abandoned the norm price when downward adjustments in the international petroleum market made the scheme much more difficult to administer. The North Sea producers have thus been price takers, implying that the economic viability of such a remotely-situated resource is best determined by international price levels.

Both the situations of the petroleum resource and the federal nature of the Canadian state contribute to the difference in its pricing policy with regard to British and Norwegian policies. Conventional crude oil has been produced in the province of Alberta since 1914, and has been a far less expensive resource to exploit than North Sea oil. The conflict between the federal and provincial governments over petroleum pricing in the 1970s and 1980s is largely a result of the federal government's concern to appease the highly-populated, large consumption market in eastern Canada being confronted by a defensive provincial posture based on the presumption that domestic production should be priced as highly as possible. In the United Kingdom and Norway, pricing policy was not such an issue simply because the situation of the resource necessitated certain price levels to secure investment, and in a climate of rising international prices the international market was the best determinant of such a price level. In addition, the unitary nature of both states allowed a certain freedom in policy design and implementation from which Canada is constrained by the federal nature of the state. In consequence, the free market

pricing option was chosen by the British and Norwegian governments as the best mechanism by which to encourage investment in their resources and to gain economic rent. In Canada, economic interests were outweighed by political concerns in the price question, and the free market option was rejected in favour of maintaining prices below the international level, primarily to appease the large body of consumer voters in eastern Canada.

3. Depletion policy

A. The model of policy options

Depletion policies are an extremely important indicator of the way in which a government views the value of petroleum and the length of time it expects to have the resource at its disposal. Slower rates of depletion indicate a concern for conservation, while policies which encourage rapid exploration and maximal production imply urgent need on the part of the government for immediate benefits to be realized from such exploitation, or perhaps indicate an optimism with regard to the geological, technological, or pricing prospects which may arise in the near future. Depletion policy is consequently a valuable indicator of government assumptions and interests in the development of petroleum resources.

Government control of depletion of the resource is related both to price, as illustrated in the discussion of pricing policy, and to the assumption that the private industry's discount rate may be higher than the social discount rate (Kemp, 1984, 69). The assumption is that petroleum companies will produce the resource at maximal levels without due regard for social interests in conservation, the socio-economic impact of rapid development, increasing scarcity, and the like. If governments are indeed the omniscient and altruistic organizations assumed by welfare economists, operating to maximize social welfare, depletion rates lower than those desired by industry would be typical of all governments. If, on the other hand, governments are economic and political utility maximizers, a rapid depletion of the natural resource wherever politically possible is to be expected. It is possible that to satisfy both political and economic interests, governments may publicly support slower rates of depletion, whereas actual policies may belie this public posture.

In terms of major policy options, governments could choose to disregard depletion policy altogether, leaving production levels to private industry and assuming efficient investment in future energy sources as a result. On the other hand, depletion policies, as mentioned earlier, can be effectively implemented either through licensing mechanisms which allow for varying rates of exploration, or through production controls on petroleum development. Further-

more, licensing for exploration leases can be undertaken in two principal ways: either through the discretionary allocation of licences by the bureaucracy, or by competitive auction for leases in which private companies make bids for desired exploration territory. Discretionary awards demonstrate interest in government control; competitive auctions demonstrate interest in economic rent.

B. The policies

An explicit depletion policy has never been implemented by either the Canadian or the Albertan government, although security of supply has been a stated policy objective of the federal government since the mid-1970s. The export tax levied on domestic production in 1974 cannot be considered an effort in depletion control; it was very obviously designed to capture increasing economic rent. In addition, conservation of petroleum within Canada was hardly to be encouraged by prices held below the international market price. Likewise the Albertan production cutback in response to the introduction of the NEP was not an exercise in depletion control. It was clearly the provincial government's most effective means of forcing the federal government back to negotiations by increasing the amount of more expensive imported oil which would be required in eastern Canada.

In terms of exploration licensing, the auction system of Crown lands has been the means by which exploration licences are allocated in Canada. Companies submit sealed bids for desired leases in auctions which are held regularly, and the highest bidder is awarded the lease. There is little room for bureaucratic or political discretion in this system, and many would argue that it is a better means than the discretionary award system of capturing economic rent.

In the United Kingdom, the policy of rapid exploitation was instituted in the mid-1960s with the encouragement of gas exploration and production by a relatively generous fiscal regime and simple licensing procedure (Robinson and Morgan, 1978, 19–20). It has been suggested that '...the Government desired a rapid build-up of [petroleum] production in the 1970s in order to bring relief to the weak balance-of-payments' (Kemp, 1984, 79). A discretionary system of licence awards was instituted in order to speed exploration, allow for substantial British participation, and because of '... the fact that both the Treasury and the then Ministry of Power relied on the cooperation of Shell and BP, which favoured discretionary allocation over auction' (Garnault and Clunies Ross, 1983, 280). The reasons for this preference are clear both in terms of government and industry interests. On the government side, the discretionary system is best suited to the nationalistic purposes associated by

the British government with resource development (principally the encouragement of British participation), and it vests enormous power in the bureaucratic department responsible for making awards. From the company point of view, licences awarded by the flat fee, discretionary system are far less expensively obtained than if awarded via competitive, sealed bids. The choice of this system of licence award can thus be seen as having little to do with depletion control and far more with the satisfaction of both government and industry interests. It should be noted that despite much criticism of the discretionary system as a far inferior means of capturing economic rent than auction awards, the British government retains the discretionary system, although it has experimented with auction sections in licensing rounds 4 (1971), 8 (1983), and 9 (1985), with increasing financial success.

In the Petroleum and Submarine Pipelines Act 1975 the government set out specific ministerial powers to control depletion which were subject to virtually no constraints. The Minister of Energy can set maximum and minimum production rates, vary production plans and the like in accordance with his determination of the national interest (Robinson and Morgan, 1978, 30–31). However, these depletion powers have not been exercised.

Norway is well-known for its 'go-slow' depletion policy. In contrast to the British policy of rapid development, the Norwegian government undertook to moderate the depletion of its resource from the outset, not via production controls but through the limited and discretionary award of exploration licences. It could afford to do so for several reasons, which include the differing sizes of the two economies and populations, differing energy consumption, and the fact that North Sea reserves are approximately the same for both states (Robinson and Morgan, 1978, 27). With its small population and comfortable balance of payments, there was little incentive for the government to advocate rapid exploitation on economic grounds, much less for political reasons. As Per Kleppe, the Finance Minister, expressed it in 1975:

As long as some of Norway's petroleum reserves remained below the North Sea, our assets are probably fairly well placed. A gradual rise in the relative price of petroleum would represent interest earned on these untouched assets. Reasoning along these lines, this kind of investment compares favorably with financial investment abroad (Lind and MacKay, 1979, 35). The Norwegian Ministry of Energy carefully vets all licence applicants in a process very similar to that employed by the British (Robinson and Morgan, 1978, 28). However, it held licensing rounds rather infrequently in the 1960s and 1970s, and awarded fewer licences per round (4 rounds comprising 123 blocks, as opposed to 6 rounds awarding 296 blocks in UK territories (Bergen Bank, 1985, 38; Noreng, 1980, 59), although the Norwegian blocks have typically been of greater size than the British). Nonetheless, it has been suggested that the Norwegian 'go slow' is not all it appears to be at first glance:

In relation to domestic gas and oil requirements the U.K. target (production) level of 150 million tonnes . . . is about 50 percent greater than domestic demand. In Norway the target level of 90 million tonnes . . . is about 800 percent greater. Looked at in that way, it could be argued that the Norwegian rate is about forty times faster than the U.K. Does that constitute a 'go slow' policy? (Lind and Mackay, 1979, 48).

None of the three states has implemented an explicit production policy regarding depletion of the resource, although all the governments have the powers to do so; licensing procedures have largely determined the rate of resource development. Canada and Britain use different methods to achieve similar outcomes, while Britain and Norway use similar methods to achieve different outcomes. In Canada, an auction system is the means by which the government attempts to maximize its capture of economic rent through the award of licences, with little regard for the depletion rate of the resource. The British government appears equally unconcerned with depletion, less concerned with maximal economic rent in the award system, but more concerned with bureaucratic control and satisfaction of the national interest via that control. Norway's famous 'go-slow' depletion policy is implemented via a mechanism of awarding exploration licenses similar to that of Britain, although licensing rounds have been less frequent and extensive. However, target rates of production in relation to domestic requirements are far greater in Norway than in Britain and it may be possible to argue that the Norwegian 'go-slow' policy is not as restrictive as it is thought to be. The difference in the Norwegian approach from the British policy is largely accounted for by its less constrained economic position, its abundance of other fuel sources, and the public concern over the development of Norway's petroleum resources for the benefit of the Norwegian people.

4. The fiscal regime

A. The model of policy options

Fiscal arrangements concerning the exploitation of petroleum necessarily indicate the economic interests of the state. If governments are assumed to be economically rational, then royalty levels and taxation policies will be designed so as to capture the maximum economic rent from the exploitation of the resource while leaving to private industry sufficient incentive in terms of profit to continue developing the resource. The fiscal regime will also be designed to encourage the production of marginal developments, while reaping a larger proportion of economic rent from more profitable fields. Modifications to the royalty and taxation system will be expected to follow every major

increase and/or decrease in the price of petroleum, whether the price is government-regulated or follows the international market.

The fiscal regime can be designed along three broad lines: taxation on corporate profits only (the free market option), resource rent taxation, and taxation combined with incentives. Taxation on corporate profits alone would imply that the development of petroleum resources is similar to any other industrial activity and has no strategic importance and minimal external economic and fiscal effects. This system was employed only in the very earliest days of petroleum exploration and production in Canada, and never in the United Kingdom or Norway. Resource rent taxation comprises taxation on corporate profits in addition to a single resource rent tax (a royalty) designed to capture maximal economic rent for the owners of the resource from those who are developing it. The advantages of this scheme are associated with its simplicity and efficacy in capturing economic rent, while the disadvantages might be thought to lie in its inflexibility in terms of encouraging marginal developments. Taxation combined with incentives overcomes the difficulty with resource rent taxation in that it allows for the development of an often complicated scheme of various taxes and incentives, the objectives of which are to capture maximal economic rent, leave sufficient incentive to investors, and encourage the development of marginal prospects.

B. The policies

The petroleum fiscal regime in Canada was relatively straightforward until the first OPEC price increases of 1973–74. Petroleum production was subject to Alberta royalties, initially introduced in 1931, and normal corporate income tax at both the federal and provincial levels. Royalty rates were increased very occasionally as prices increased, but beyond that the petroleum industry was taxed as any other industry in Canada.

The export tax introduced by the federal government in 1974 incited the Alberta government to increase its royalty rates substantially, but over the late 1970s the export tax decreased in relation to negotiated increases in the well-head price of crude oil. It was not until the introduction of the National Energy Program in 1980 that the petroleum fiscal regime in Canada became a complicated arrangement of various taxes and incentive schemes. In the NEP a new federal well-head tax, the Petroleum and Gas Revenue Tax (PGRT) was introduced along with the Petroleum Compensation Charge (PCC) – levied at the refinery gate, and the Canadian Ownership Special Charge (COSC) – levied on gasoline at the pumps. The PGRT was, in effect, a federal royalty on petroleum production, and part of these revenues funded the Petroleum Incentives Program (PIP) which was a grant system directed at Canadian-

owned companies to encourage exploration on the Canada Lands. The PCC was to provide a fund from which more expensive imported oil was to be subsidized for refiners in eastern Canada who had to purchase it. The COSC was to provide monies to be used by Petro-Canada to acquire foreign petroleum companies in the Canadianization effort undertaken by the federal government. This complicated taxation-incentive regime was strongly objected to by the Albertan government, which saw it as an encroachment on provincial jurisdiction over natural resources. The Memorandum of Agreement on Taxation and Pricing made between the two governments in September 1981 modified the NEP price schedules, and introduced a further federal windfall profits tax, the Incremental Oil Revenue Tax (IORT), which, however, was very shortly thereafter suspended. The fiscal regime of the NEP remained basically intact until the Conservative government negotiated the Western Accord with the producing provinces in March 1985. Under this agreement, the fiscal arrangements of the NEP were dismantled, and the federal government pledged itself to foregoing a resource rent tax and simply taxing corporate profits on the petroleum industry as had been the case before 1973.

In the April 1973 budget the British Conservative government decided that North Sea production should be treated differently for tax purposes than other corporate activity. Up to this point, royalties had been a part of the licensing agreements, and corporate tax had been levied on companies as in any other British industry. The Oil Taxation Act, passed in February 1975, introduced the Petroleum Revenue Tax (PRT), which was increased in subsequent budgets. In November 1980 the Chancellor announced his intention to implement a new petroleum tax, which duty appeared in the March budget of 1981. The Supplementary Petroleum Duty (SPD) was designed to capture an increasing share of the increasing price of oil, but like the IORT in Canada, it was shortly thereafter suspended. The 1983 budget introduced some incremental tax relief in terms of royalty exclusions and, tax allowances, and corporate tax rates were reduced in the 1984 budget. As in the Canadian case, the level of government taxation clearly increased with the increasing potential for economic gain from petroleum production, but once the international price started to fall, the government reduced and eliminated some taxes in order to sustain sufficient incentive for the industry to continue investing in North Sea petroleum activities.

Norwegian production is subject to corporate tax, royalties and a special tax (ST) on petroleum which was introduced in 1975. Royalties are levied on a sliding scale with rates, ranging from 8% to 16%, fixed according to the level of production – the same system as that employed in the province of Alberta (Robinson and Morgan, 1978, 94). The ST approximates the British PRT. Robinson and Morgan estimated that at 1977 prices and taxes, the Norwegian

and British petroleum tax systems probably yielded similar percentage government tax shares (Robinson and Morgan, 1978, 105). The average tax rate increased from 69.2% to 81.8% in 1980, with the ST increasing from 25% to 35% thus absorbing much of the windfall profit which would have otherwise accrued to the industry. With the dramatic decrease in international petroleum prices, the rate of the ST has not been changed, though ameliorations to various allowances have been made.

This brief outline of the petroleum fiscal regimes of Canada, Britain, and Norway illustrates some broad similarities in the policies of the three countries. Roughly speaking, the Canadian fiscal arrangements appear slightly more complicated than those of the UK and Norway, largely due to the federal-provincial conflicts surrounding energy issues. Britain and Norway have approximately similar taxes levied on petroleum production which yielded, in the latter half of the 1970s at least, approximately similar government shares. In the environment of declining world prices, all three governments have reevaluated their petroleum fiscal regimes with varying results.

Conclusion

An application of public choice principles to a comparative analysis of petroleum policy outputs in Canada, Britain, and Norway has proved a useful exercise. As expected, the policies within four issue areas possess more similarities than might have been expected at the outset, at least in terms of general objectives and methods. Where differences are evident, they seem to have political origins, as with price in the Canadian federal state or with Statoil's longevity in Norway, or to have been the result of differing economic constraints on the state, as in the case of a more conservative depletion policy in Norway. In short, it would appear that the fundamental determinants of petroleum policies in the three states have been the international price and public concern over both cost and control of petroleum development.

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