

1. Sovereignty and ownership

1.1 OIL – A FREE GIFT OF NATURE

In a free competitive market, the individual producer is unable to influence the market price, and thus only controls the quantity produced. Basic economic theory finds the producers maximize profit when they produce the exact quantity whereby price equals marginal cost – marginal cost being the cost of producing one more unit of the product. As the marginal cost is assumed to increase, the producers accrue profit from the difference between the average cost and the market price. The average costs of the individual producers might differ. Since the market price is the same for all producers, the producer with the lowest average cost will gain a higher total profit than producers with higher average costs. There are many reasons for differences in production costs, such as skills, efficiencies, labor costs, technology, productivity, and so on. The extraction of natural resources differs from this standard model of the economics of production, since nature itself provides economic value – a *resource rent*.

The extraction of natural resources provides an extra economic value in addition to the factors mentioned above. Nevertheless, David Ricardo (1821/2001, p. 51) in essence applies the same logic to the extraction of natural resources as he does for other markets, “The return for capital from the poorest mine paying no rent, would regulate the rent of all the other more productive mines . . . It will be sufficient to remark that the same general rule which regulates the value of raw produce and manufactured commodities, is applicable also to the metals.” According to Ricardo, rent is “that portion of the produce of the earth, which is paid to the landlord for the use of the original and indestructible powers of the soil” (Ricardo, 1821/2001, p. 39). The excess profit from extracting or harvesting natural resources appears due to differences in production costs following differences in the quality of the goods or natural conditions, such as the fertility of different land areas. This understanding of resource rent is called Ricardian rent, or differential rent. In the case of oil, a world market price sets the price for all producers. The natural conditions are extremely varied – from easily accessible oil reserves in the Middle East, to costly reserves in deep water offshore production in Brazilian waters or in the

North Sea. Obviously, the producer of the oil fields with low production costs of a handful of dollars per barrel makes more money than producers with extraction costs of \$20 or \$30 per barrel.

A different understanding of resource rent was developed by Harold Hotelling (1931). He advanced a theory of the price path of non-renewable resources. The core idea is that the economic value of the extraction of exhaustible resources increases over time as the scarcity of the resource increases. Maximizing the rent of the total extraction of the given stock of the resource implies that the price should increase at an equal percentage to the discount rate. Hotelling based his understanding of the resource rent on the scarcity of the resource, not on the differences in production costs. The scarcity of the resource drives the price upwards in a continuous path. This price path is not observed in the oil market, as any scarcity of oil resources is hard to identify. I will return to the issue of scarcity in the next chapter.

The third understanding of resource rent is to some extent inherent in the two outlined above, although not explicated. Here the essence of the concept is the exclusive control the owner has over unique or non-renewable resources. Such control can generate an excess profit above normal profit – or rent – if the resource owners are able to extend their control to the entire market. In terms of natural resources, a prime example is the owner of a mine extracting rare minerals. From the beginning of modern oil production in the latter half of the 19th century, various individual oil producers or groups of producers in collusion have tried to exercise such monopoly power over the oil market, with varying degrees of success. These attempts constitute the core of the second part of this book.

It is important to note that the three variations of the resource rent can be hard to distinguish from each other. When excess profit from oil extraction is empirically identified, it is usually the outcome of a combination of all three. For example, a group of producers agreeing to cut back production with the aim of enhancing their profit from increased market prices, is an attempt to create scarcity in the market. However, the resource rent provides a strong argument for the importance of resource ownership. The next question therefore is who can rightfully claim the benefits of natural resources like oil. In other words: *who owns nature?*

1.2 SOVEREIGNTY OF NATURAL RESOURCES

“Sovereignty and ownership are the most fundamental legal concepts governing the relationship between humankind and its natural environment” (Lee, 2009, p. 1). With respect to natural resources, these two concepts are somewhat intertwined. Here, sovereignty will relate to the relationship

between states and the single state's control of its own natural resources. Ownership relates to the relationship between the state and individuals regarding production or extraction of the resources, and the right to the benefits from this extraction. However, it is important to note that the two concepts are inextricably linked.

1.2.1 Property Rights and Territorial Rights

John Locke (1632–1704) developed a theory of property that has formed the backbone of most elaborated theories of territory based on individualist property rights. “They typically begin from an account of property as an individual (natural) right and then conceive of territory as arrived at by the consent of many individual property owners who agree to establish a government (legislative, executive, and judiciary) to rule over them” (Moore, 2015, p. 17).

Whether we consider natural *Reason*, which tells us, that Men, being once born, have a right to their Preservation, and consequently to Meat and Drink, and such other things, as Nature affords for their Subsistence: Or, *Revelation*, which gives us an account of those Grants God made of the World to *Adam* . . . 'tis very clear, that God . . . *has given the earth to the Children of Men*, given it to Mankind in common. (Locke, 1689/1988, p. 286)

For the purpose of this book, it is essential that this gift also gives individuals the right to utilize the property and receive the economic rent of extracting the natural resources. However, the formation of a sovereign state presupposes the formation of a government. This is probably one of the most studied issues in political theory and philosophy, mulled over ever since Plato wrote *The Republic* in 381 bc. For Locke, *consent* is essential for the formation of governments. “Men being, as has been said, by Nature, all free, equal and independent, no one can be put out of this Estate, and subjected to the Political Power of another, without his own *Consent*” (Locke, 1689/1988, p. 330). The motive of individuals to form a community is “for their comfortable, safe, and peaceable living one amongst another, in a secure Enjoyment of the Properties, and a greater Security against any that are not of it” (Locke, 1689/1988, p. 331). Having consented to the formation of the community or government every individual “puts himself under an Obligation to every one of that Society, to submit to the determination of the *majority*, and to be concluded by it” (Locke, 1689/1988, p. 332).

The essence of the individualist Lockean perspective is that while private property is a natural or moral right, the regulation of occupation of territory, transfer of rights, and regulation of harvesting or extraction of resources lies with the sovereign government, provided the individuals

consent to it. The individualist Lockean theory can justify government jurisdiction over a territory, but does not justify the government's authority over those property holders who do *not* consent to the authority of the government. "In other words, this argument does not justify territorial right *as we know it*, where territorial rights and especially jurisdictional authority are consistently or evenly applied across the territory" (Moore, 2015, p. 20). Another problem that arises in moving from philosophy to empirical observations is that hardly any state is "actually legitimated through individual consent of private property holders . . . The standard for state legitimacy is set so high that no state can meet it" (Moore, 2015, p. 21).

Cara Nine (2008) has suggested a solution to this problem, by introducing a collectivist Lockean theory of territorial rights. Now the distinction between property rights and territorial rights becomes important. A property right

gives the owner of the land the right to control access to that land and to use that land in any way that does not violate the law of nature or civil laws . . . A state territorial right, by contrast, describes a relationship between the state and a geographic region. It is a jurisdictional right – the state has the right to make, adjudicate, and enforce law within a certain area. (Nine, 2008, p. 149)

In the individualistic version of the Lockean theory "the state acquires territorial rights indirectly, only after individuals have acquired property rights to the land and then consented to the state's territorial jurisdiction over that land" (Nine, 2008, p. 155). In the collectivistic Lockean theory, however, "the state acquires territorial rights in much the same way that individuals acquire property rights" (Nine, 2008, p. 155). Based on natural law theory, Nine (2012, pp. 26–45), elaborates the argument that a "collective may claim a general right to territory, if territorial acquisition, 1. is necessary for the provision of members' basic needs, or 2. can be used by the collective (without spoilage) and does not prevent others from meeting their basic needs, or 3. all persons consent to the exclusive acquisition." The second point directs us toward the characteristics of natural resources, in particular the distributional aspects of the extraction of a natural resource like oil.

1.2.2 Property Rights and State Jurisdiction

Even with a clear-cut notion of state sovereignty, the actual relationship between state jurisdiction and private ownership – in other words, between individual property rights and the state's exercise of jurisdictional rights following its sovereignty – remains to be understood. Control of natural resources is part of the larger legal issue related to human rights, and the relationship between the state and the individual in general. "The

legal consequences of belonging to a political community with a territorial base have not changed a great deal since the seventeenth century” (Crawford, 2012, p.607). The relationship between property rights and state jurisdiction reflects the fundamental tension between individual and collective interests throughout the history of man. In the 19th century, legal theory created the myth of absolute, exclusive, and unbounded individual ownership, which seemingly had its roots in classical Roman law. However, analysis of the actual application of Roman law suggests a much more dynamic relationship. “Originally, private ownership in its full sense (with a full bundle of property rights in the hands of individuals) existed only on surveyed and assigned land according to Roman law. *Ager privatus* was defined through the boundary stones, dividing it from *ager publicus*” (Jakab, 2015, p.120). As the use of land and exploitation of natural resources developed, so did private enterprise. This exposed the weaknesses in the legal framework of property rights in ancient societies.

From the 2nd century bc on, there were more and more kinds of possible usage granted on *ager publicus*, which added a certain private feature to public land . . . Land was scarce and originally owned by the state (*populous Romanus*): nobody had open access to public land, and property rights to individuals could be granted only by the state. But a low efficiency of public exploitation and private interference (by force) generated several types of private usage which were tolerated (tacitly) by the state without a proper legal framework, therefore with lack of security. (Jakab, 2015, p.121)

In medieval Europe, the relationship between private property and state jurisdiction was largely a redundant issue, as monarchs or the papal state owned all landed territory. The king could then grant land areas, or estates, to lords, who then parceled out properties to tenants. None of this suggested that ownership was transferred or the tenants acquired rights of any kind. As feudalism broke down people became formally free of a landlord, but their freedom was constrained as they had no property themselves. The ideas of John Locke reflect the ideas of freedom and human rights that emerged during the Enlightenment, but both the ideas and political forces advocating individual human rights emerged earlier.

During the English Civil War (1642–1651), ‘the Levellers’ argued that the King had violated the people’s natural rights during the war. They regarded property rights as deriving from a person’s work on their property and thus as the fruit of their labor. It was therefore “sacred under the biblical injunction, ‘thou shall not steal’” (Ishay, 2008, p.91). Bernard Mommer (2002, p.9) notes a remarkable debate in the National Assembly in Revolutionary France in 1791. It was assumed that “the Nation was entitled to fully benefit from all its natural resources. Regarding the

surface, [the Assembly] concluded that the best way to achieve this end was by granting private property rights to the occupiers. . . . Regarding the subsoil, however, doubts were raised about whether this would be enough.” The subsequent Mining Act of 1791 gave the surface owner the right to “mine all minerals that could be worked in the open-air . . . with excavations down to the depth of one hundred feet” (Mommer, 2002, p. 9). Due to the costs and the knowledge required, deeper mines remained in the public domain, declared as *‘utilité publique’* (Mommer, 2002, p. 10).

Almost replicating the Roman Empire, Revolutionary France performed a balancing act between individual property rights and the goals and jurisdiction of the state, with the innovation that property was now part of the concept of human rights. “Regarded as a radical human rights affirmation in the seventeenth century, the right to property would become a major source of contention in nineteenth- and twentieth-century human rights discourse” (Ishay, 2008, p. 91). As demonstrated in the previous section, the sovereignty of states over their natural resources has become a fundamental part of international law. The same is not the case regarding individual property rights over natural resources. Article 1 of the 1952 protocol to the 1950 European Convention on Human Rights (ECHR), for example, states:

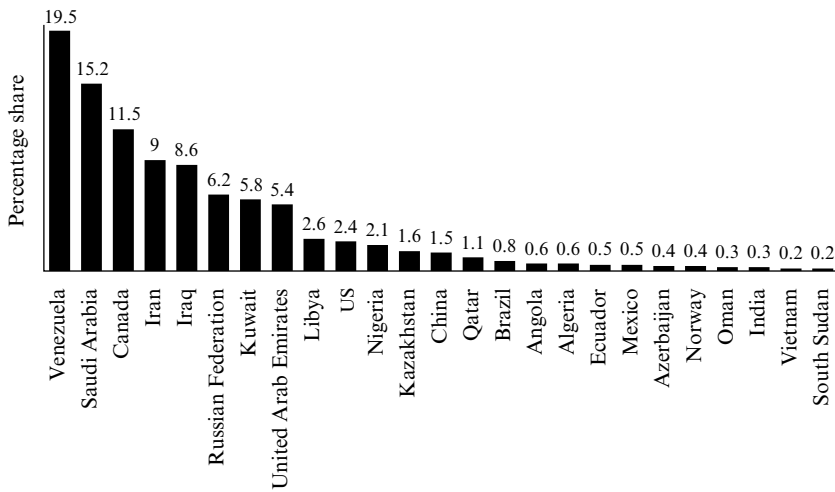
Every natural or legal person is entitled to the peaceful enjoyment of his possessions. No one shall be deprived of his possessions except in the public interest and subject to the conditions provided for by law and by the general principles of international law.

The preceding provisions shall not, however, in any way impair the right of a State to enforce such laws as it deems necessary to control the use of property in accordance with the general interest or to secure the payment of taxes or other contributions or penalties.¹

The wording, “entitled to enjoyment of his possessions” seems a carefully formulated phrase. The two paragraphs of the article taken together, demonstrate, once again, the same balancing act between individual property rights and the judicial rights of the state that occurred in ancient Rome and Revolutionary France. The individual right to property is not absolute and the state has wide degree of discretion to limit these rights by law, in order to serve the common good.

1.2.3 The Distribution of Resource Rights

As Figure 1.1 shows, oil resources are far from equally distributed among the countries or citizens of the world. Three countries hold 46 percent of the proven reserves, and the top eight reserve holders control more than 80 percent of the total proven oil reserves. Almost every country in



Source: BP (2017).

Figure 1.1 Percentage share of total proven oil reserves 2016

the world consumes oil, and the number of individual consumers nearly corresponds to the number of people on the planet. Oil is the dominant fuel for mechanical transportation, and thousands of consumer products are partly based on oil-derived substances. Oil is an integrated part of the modern economy and life in general in most parts of the world.

The fundamental assertion by John Locke quoted above, that God gave nature to humankind in common, prompts the question: Who has the right to oil resources, and why? This goes beyond the discussion of territorial rights and addresses the distributional aspects of natural resources. “A theory of natural resource justice will define and allocate a set of resource rights, determining who can justly derive which benefits in which circumstances, or who has the right to make decisions, say, about how resources shall be used” (Armstrong, 2017, p.15). Armstrong then develops a set of core resource rights. These encompass both individual property rights and states’ rights of property or jurisdiction. In line with the discussion above, he distinguishes between what he calls ‘first-order rights’, the rights describing “the ability to directly enjoy or transfer benefits from a resource” (Armstrong, 2017, p.30), and ‘second-order rights’, which are “rights to distribute, condition or constrain the ways in which others can derive or transfer benefits” (Armstrong, 2017, p.30). Some of these rights, such as the right to access, understood as the right to visit a resource and enjoy it in a non-damaging way, are outside the scope of this book. Since oil is regarded

here as an economic resource, the two relevant rights are the right to derive income from natural resources and the right to regulate that income. It is also important to distinguish between the concepts of rights and rules (or regulation). Schlager and Ostrom (1992, p. 250) make the following distinction: “‘Rights’ refer to particular actions that are authorized . . . ‘rules’ refer to the prescriptions that create authorization.” The authority to regulate the benefits derived from the utilization of the resource rests with the state’s government, based on its jurisdictional rights or power, as outlined above. But if the oil resources of the world belong to mankind in common, the right of the oil-rich sovereign states to utilize their resources for the sole purpose of benefitting only their citizens seems unjust. A counter argument could be that if oil resources were the common heritage of mankind they would not be utilized, at least not in an effective way.

Let us assume, in line with Locke’s justification of private property, that natural resources were held by mankind in common, without governmental rule. In that case nobody would have the incentive to invest time, money or effort in order to develop them or improve the productivity of land in general (Moore, 2015, p. 165). Nevertheless, “it seems unjust if one group’s land is large, fertile, and resource-rich, while another group’s land is meager, barren, and resource-poor” (Moore, 2015, p. 176). To correct this injustice “Thomas Pogge . . . proposes a tax on natural resources, designed to transfer substantial, but not staggering amounts of money, from well-off states to poorer ones through a small charge on certain limited natural resources” (Moore, 2015, p. 177 based on; Pogge, 2002, p. 206). In practical politics, natural resources are generally not considered the common heritage of mankind. The latter concept is in itself controversial as it challenges the sovereign right of states.

In the anarchic system of states, unfair distribution across countries seems to be the order of the day, not only with respect to oil resources, but also in terms of resources and standards of life in general. Institutions with the authority and power to execute large-scale redistribution among the states are nowhere in sight. This is different on the national level, as governments possess the authority to redistribute wealth among their citizens, although there are wide variations as to how far states pursue the role of authoritative redistributor (Esping-Andersen, 1990). Thus, the scope of distributive justice is national, not international. Most natural resources are under national sovereignty, with a few exceptions like the high seas, the deep seabed, and Antarctica.

Nine (2012, p. 123) suggests that “illegitimate or corrupt officials would not be recognized as legitimate representatives of the collective, and thus these officials could not be recognized as legitimately holding authority over resources.” It follows that legitimate collective resource rights and

the jurisdictional right to make, adjudicate and enforce law, presupposes democracy. Of the 25 countries with the largest oil reserves listed in Figure 1.1, only five are listed as ‘free’ countries by Freedom House: Brazil, Canada, India, Norway and the United States. These five hold a mere 15 percent of the world’s oil reserves.

1.2.4 Natural Resources in International Law

In line with the discussion above, the generally recognized principle in international law is that natural resources “in the ground or under the seabed from the outset belongs to the state under whose territory or continental shelf the resources are found” (Alvik, 2015, p. 233). In 1962, the UN General Assembly adopted a resolution on the sovereignty over natural resources:²

“Permanent sovereignty over natural resources”, General Assembly resolution 1803 (XVII), 14 December 1962.

1. The right of peoples and nations to permanent sovereignty over their natural wealth and resources must be exercised in the interest of their national development and of the well-being of the people of the State concerned.

2. The exploration, development and disposition of such resources, as well as the import of the foreign capital required for these purposes, should be in conformity with the rules and conditions which the peoples and nations freely consider to be necessary or desirable with regard to the authorization, restriction or prohibition of such activities.

3. In cases where authorization is granted, the capital imported and the earnings on that capital shall be governed by the terms thereof, by the national legislation in force, and by international law. The profits derived must be shared in the proportions freely agreed upon, in each case, between the investors and the recipient State, due care being taken to ensure that there is no impairment, for any reason, of that State’s sovereignty over its natural wealth and resources.

4. Nationalization, expropriation or requisitioning shall be based on grounds or reasons of public utility, security or the national interest which are recognized as overriding purely individual or private interests, both domestic and foreign. In such cases the owner shall be paid appropriate compensation, in accordance with the rules in force in the State taking such measures in the exercise of its sovereignty and in accordance with international law. In any case where the question of compensation gives rise to a controversy, the national jurisdiction of the State taking such measures shall be exhausted. However, upon agreement by sovereign States and other parties concerned, settlement of the dispute should be made through arbitration or international adjudication.

5. The free and beneficial exercise of the sovereignty of peoples and nations over their natural resources must be furthered by the mutual respect of States based on their sovereign equality.

6. International co-operation for the economic development of developing countries, whether in the form of public or private capital investments, exchange of goods and services, technical assistance, or exchange of scientific information, shall be such as to further their independent national development and

shall be based upon respect for their sovereignty over their natural wealth and resources.

7. Violation of the rights of peoples and nations to sovereignty over their natural wealth and resources is contrary to the spirit and principles of the Charter of the United Nations and hinders the development of international co-operation and the maintenance of peace.

8. Foreign investment agreements freely entered into by or between sovereign States shall be observed in good faith; States and international organizations shall strictly and conscientiously respect the sovereignty of peoples and nations over their natural wealth and resources in accordance with the Charter and the principles set forth in the present resolution.

The first paragraph of the resolution can be understood as recognizing “what may be deemed the collective proprietary interest of the nation to natural resources on its territory” (Alvik, 2015, p. 234). Resolutions of the UN General Assembly are not legally binding for UN member countries. Alvik (2015, p. 234 fn. 6) notes that “no consensus was or has been reached on the exact legal consequences of the principle.” However, the principle in the first paragraph, concerning the right of peoples and nations to sovereignty over their ‘natural wealth’, has “found an authoritative expression as common article 1 of the two main UN Human Rights Covenants” (Alvik, 2015, p. 234):

All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic co-operation, based upon the principle of mutual benefit, and international law. In no case may a people be deprived of its own means of subsistence.³

Several of the paragraphs of the resolution address issues that will be discussed later in this book. The regulation of exploration (§2), the state profit (§3), and nationalization (§4), are all discussed in Chapter 2. The right of resource countries to enter into cooperation with other countries regarding the governance of their resources (§5 and §6) are both related to the topics of Chapters 4 and 6.

The final sentence in this article brings us back to the starting point above and John Locke’s assertion that people have the right to preservation and subsequently to natural resources necessary for their subsistence. This philosophical and legal exposition looks upon individual access to natural resources and the state’s sovereignty over territory as natural (moral) rights. The property rights of individuals and the jurisdictional rights of the state are, at least in theory, beyond the arbitrary discretion of individuals in possession of political or economic power. Power is not supposed to define rights. Furthermore, the legal regulations regarding the extraction

of natural resources are based on the sovereignty of states and their self-determination over their respective territories.

1.3 GOVERNANCE OF OIL RESOURCES

The legal notion of natural resources developed above suggests that such resources are not in themselves obviously subject to private ownership. In the case of oil, one could argue that the oil deposits in the ground have economic value only after someone has invested capital and labor in order to extract the oil from them. The value of the extracted oil, for most of the reserves, most of the time, is far above the production costs, including any reasonable profit. Thus, nature provides, by itself, an economic value, the resource rent discussed in Section 1.1. “Being a resource provided by nature one might argue that it would not be just and reasonable that an individual should be able to lay claim to an exclusive and unlimited proprietary right to a petroleum reservoir merely by virtue of first discovery, appropriation, or ownership of the land in the subsoil of which the petroleum is found” (Alvik, 2015, pp. 236–237).

As discussed in Section 1.2, on territories under the jurisdiction of a sovereign state, private ownership is a result of the state exercising its sovereign right to provide the individuals with property rights following from its ownership of the territory. The property right can imply a limited or extended right to develop the resources in the ground and benefit from them. The extension of the territories under state jurisdiction has increased throughout the history of man. Today only a very few areas of the landmasses of the earth lie outside the territorial jurisdiction of sovereign states.

Some areas are contested as more than one country claims the area. In such cases, the claiming countries can agree to abstain from their claims, and thus leave the disputed area as no-man’s land (*terra nullius*). In other cases, the concept of *terra nullius* has been related to the extent of the state’s sovereignty in areas where indigenous people live. Antarctica is a special case of the limitation of state sovereignty over onshore territories. Antarctica has no indigenous people and very few permanent occupants (who are there almost exclusively for scientific purposes). Seven countries have made partly overlapping claims to Antarctica. The part of the continent called Marie Byrd Land is today the largest single unclaimed territory on Earth by far, with an area of 1,610,000 km². The 1959 Antarctic treaty strictly limits human activities on the entire continent – an area of 14,000,000 km². With these exceptions, and for the purpose at hand, we can regard all land territories of the world that contain prospective oil resources as being under

state sovereignty. The main division in the legislation relevant for the ownership of oil resources is between oil found underground in land territory (onshore) and oil found underground in the continental shelves of coastal states (offshore). These two areas – onshore and offshore – will be discussed in sub-sections below. First, we need to provide a historical account of the development of the relationship between individual property rights and state jurisdiction concerning oil resources.

1.3.1 Private Governance of Oil Resources

The history of the US oil industry is a fascinating story which this book leaves untold, although, some of the market-related aspects are discussed in Chapter 5. Here, we will discuss some of the features, present and historical, of the almost unique US system of private governance of oil resources. There are two countries in the world, United States and to a limited degree Canada, where the property rights of private landowners include the right to explore and produce oil resources in the ground. Individuals, companies, corporations, Indian tribes, and various partnerships and organizations all hold the right to develop oil resources in the United States. In addition, the local, regional and federal governments have property rights, and thus the right to develop the oil resources. The federally owned areas are particularly important as they can easily be regulated in accordance with the policy decisions of the US government.

The recent surge in exploration of non-conventional oil resources in the US, also known as shale oil, has mainly been in land areas with private owners. This growth has brought the federal share of the oil reserves down to just above 20 percent in 2014, from over 36 percent in 2010. Almost four-fifths of the oil production in federal areas takes place offshore. In total, almost 80 percent of US oil production is in private ownership, where private actors largely control the development of their own resources, without the need to seek authorization from public bodies. This is not to say that the US industry is without any kind of regulation or taxation. However, there are striking differences between the US system and the rest of the world. Outside the US, the fundamental feature of the governance system is that the government at the outset takes full ownership of all oil resources.

In the US, the basic principle is that the owner of the land is the owner of the resources in the ground underneath that land. The landowner is usually not in a position to develop the resources on his own. He will have to enter into a contractual relationship with an oil drilling company by way of a lease. A lease is a “contract that grants the rights to explore and produce from the owner of the mineral rights (lessor) to a tenant (lessee), usually for a fee and with a specified duration” (Cleveland and Morris,

2006, p.250). The oil company is usually the initiator, since it will have the geological knowledge indicating where oil resources are most likely located. The payment for the lease can include three elements: an up-front bonus or sign-on fee, a rental as an annual payment for the duration of the lease, and finally royalties, which are a share of the gross value of the oil produced. Historically, the standard royalty rate was 12.5 percent, but today it is often higher. If the oil company can deduct the production costs, the royalty becomes more like a split of profits.

It follows that the investments into the resources are fully in private hands. The investment decisions of the US onshore exploration and production (E&P) companies are made according to a commercial business calculation of risk and potential profit. Thus, both investments, and the subsequent level of production in the non-federal areas of US oil drilling, are much more responsive to changes in market prices than oil investments and production in countries with a publicly-owned E&P industry. The regulation of oil E&P in the non-federal areas in the US is largely left to the states. "Each state has developed common law principles and enacted statutory schemes which govern privately owned minerals and the leasing and assignment thereof" (Derman and Villarreal, 2013, pp.277–278).

The oil under federal lands might also be developed under lease agreements. For the federal areas, the regulatory body is the Bureau of Land Management in the Department of the Interior. Privately held oil interests are regulated by the various states, through bodies like the Railroad Commission in Texas, which will be discussed further in Chapter 5 (Derman and Villarreal, 2013, p.283). Two particular legal features of the historic development of the US oil industry are the so-called *rule of capture* and the *rule of offset drilling*. "The rule of capture evolved out of common law cases where dispute arose on oil and gas fields" (Boyce, 2013, p.156). The rule of 'capture' implies that the "owner of a tract of land acquires title to the oil and gas which he produces from wells drilled thereon, though it may be proved that part of such oil and gas migrated from adjoining lands" (Hardwicke, 1935, p.393).

The rule of 'offset drilling' implies that the "owner of the land being drained by the operation of wells on neighboring lands cannot enjoin the further operation of the operator wells, and cannot recover damages from the operator thereof, but must protect his lines as best he can by producing from offset wells drilled on his own land" (Hardwicke, 1935, p.393). A Pennsylvania Supreme Court decision from 1889 is generally regarded as the first leading oil and gas case, which applied the rule of capture doctrine. The court stated that water, oil and gas, in common with animals "have the power and the tendency to escape without the volition of the owner." And that they therefore "belong to the owner of the land, and are part of it, so

long as they are on or in it, and are subject to his control; but when they escape . . . the title of the former owner is gone” (Kramer and Anderson, 2005, p.906). Thus, the rule of capture dissolves the link between ownership of the soil and the fugitive natural resources in the subsoil.

In another case, the full transfer of the property of the oil through the logic of the rule of capture was explicitly stated. “If an adjoining owner drills his own land and taps a deposit of oil or gas, extending under his neighbor’s field, so that it comes into his well, it becomes his property” (Kramer and Anderson, 2005, p. 907). This common law privilege of draining the oil from your neighbor’s land caused unnecessary drilling because of the craving to be the first to ‘capture’ the oil. As everybody had the same incentive to do so, over-investment and unnecessary drilling in the oil fields was common, resulting in a loss of pressure and the production of a non-optimal amount of oil. In the early 20th century, the demand for a federal compulsory unitization statute emerged in the US oil industry. Unitization implies that the government forces the owners to operate jointly in the extraction of the oil reservoir. No such legislation emerged until 1945 when Oklahoma initiated the first comprehensive compulsory unitization statute (Kramer and Anderson, 2005, p. 902). The market implications of the rule of capture are discussed in Chapter 5.

1.3.2 Public Governance of Oil Resources

As indicated above, Canada also has private ownership of oil resources. In Alberta, about 19 percent of the oil is in private hands. The federal government owns offshore resources, while public ownership onshore resides with the states. These resources are governed in a similar way as in the rest of the world, in what we can call the system of ‘public governance of oil resources’. Although the governance system of each oil-producing country has its own specific nuances, the public governance system has some basic features in common, that are generally in place in most oil-producing countries.

With state ownership, the private contractual relations that operate in the US (described above) are less relevant. The three-party relationship, with the state as regulator, the landowners as resource owners and the oil companies as operators, is replaced by a comprehensive system for regulating the two-party relationship between the state as both owner and regulator, and the oil companies set to perform the actual exploration and production (E&P) of a resource they initially do not own. In some cases, the government decides to take control of the operative aspects of the E&P by creating a state-owned national oil company, and providing this company with exclusive rights to explore and produce all oil reserves within the territory of the country. In such cases, the legislative aspects are

less pronounced as the governance of the resources is, to a large extent, a matter of the relationship between the government and a subsidiary entity of the public administration of the country. In cases where state-owned oil resource is to be developed by private companies, a bargaining relationship can emerge. A model for this relationship is discussed in Chapter 2. Here the focus is on the legislative aspects.

The basis for public governance is, of course, that the state takes full ownership of the resources, in accordance with the international law recognizing the principles of UN General Assembly resolution 1803 from 1962 on permanent sovereignty over natural resources, discussed above. State sovereignty implies governmental control over resources inside the territory of the state, in relation to other states. State ownership implies governmental control over the resources in relation to domestic actors and individuals. The most effective instrument of state power and control toward its own citizens is legislation, in particular constitutional provisions. “Typically, the national constitution provides for state control and state ownership. The constitution also sets out certain rights and obligations of private actors” (Pereira and Talus, 2013, p. 9). In addition to constitutional provisions, the oil state would normally develop a body of legislation specifically for petroleum activity, including:

- Specifications of the public administration of the sector with assignment of authority and responsibilities.
- Procedures and conditions for granting licenses, including issues like work programs and the duration of licenses.
- Government take and fiscal provisions.
- Qualification requirements for operating companies.
- Codes of conduct and environmental standards for the E&P activities.
- Other provisions, such as labor standards, transparency, management requirements etc.

It is beyond the scope of this book to go into all aspects of state legislation and regulation of oil activities. However, three of the issues deserve some comments.

Public administration

The importance of the public administration of the extraction of natural resources can hardly be overestimated. As will be evident in Chapter 3, to transform natural resources like oil deposits in the ground into economic growth and the development of welfare for the entire population of resource-rich countries, is no easy task. It is considered to be one of the

most complex tasks in development, both politically, socially and economically (Kaufmann, 2017, p. 3).

The ability of the government of oil-rich states to perform ‘good governance’ of the oil sectors is a vital prerequisite for the resource curse to be combatted at least in political terms (Lahn et al., 2007). The Norwegian administrative system is regarded as an example of best practice in this regard (Moses and Letnes, 2017). The key feature of the so-called ‘Norwegian Model’ is the separation of administrative functions. The Parliament decides the framework through its legislative powers while the power of the political executive rests with the Ministry of Petroleum and Energy. The administrative functions are in the hands of the Norwegian Petroleum Directorate. The directorate is a subordinate agency of the Ministry, but exercises administrative authority over E&P activities, and has the power, under the petroleum legislation, to make decisions and adopt regulations. Finally, the state’s commercial interests are handled by the partly state-owned (67 percent) national oil company, Equinor (formerly Statoil). Thurber, Hults, and Heller (2011, p. 5,366) find widespread support for “a strict separation of functions as something of a *sine qua non* of effective oil sector governance.” It is another matter, though, to what extent the Norwegian administrative system can serve as a model for other oil-producing countries. Based on a comparison of 10 countries Thurber et al. (2011, pp. 5,374–5,375), draw three conclusions:

First, serious efforts to create separation of functions rarely seem to be undertaken where political competition is low. Second, a country’s ability to implement separation of functions in a meaningful way is heavily dependent of its level of institutional development. Third, countries lacking deep institutional capacity . . . early in the development of their oil sectors may benefit from *not* establishing the separation of functions model initially.

Stevens, Lahn, and Koorshy (2015, p. 12) point to the pre-existing conditions of the Norwegian case, and suggest that these cannot be expected to be present in other cases. “[T]he Norwegian example was born of very special circumstances . . . Such conditions are difficult to find elsewhere . . . the only way its [Norway’s] experience can be replicated is to start with 4.5 million Norwegians.”

Contract regimes

With state ownership, the operating oil company needs a contract with the state regulating the relationship akin to the leases with the landowner in the private governance system presented above. In general, there are three main models of contractual regimes, although the specific contracts or contract schemes of individual producing countries are often hybrid

Table 1.1 Key features of contract arrangements

Feature	Royalty/Tax	Production Sharing Agreement	Risk Sharing Agreement
Ownership	Transferred to IOC at the wellhead	Transferred to the IOC at delivery point	Stays with the State or NOC
IOC Control	High	Moderate to low	Low
Government Control	Low	Moderate to high	High
IOC Lifting Entitlement	Typically around 90%	Typically 50% to 60%	None
Cost Recovery Limit	None	Frequently	Rarely
Ownership of Production Facilities	IOC	Typically State/NOC	NOC/State
Limits to IOC Profitability	Few	Significant	Absolute

Source: Inkpen and Moffett (2011, p. 245).

versions containing elements from more than one of these models. Table 1.1 compares some of the key features of the various contract arrangements.

Concession agreements. This is the traditional type of contract, and resembles the lease contracts in the private governance system. It was used both in the United States in the 19th century and by the International Oil Companies (IOCs) in the Middle East after the Second World War. In this system, the oil company is granted an exclusive right to explore a specified area, and to develop and produce oil there. The duration of the concession is limited, but can usually be extended. Today the concession holder is under a work program obligation to perform a certain number of exploratory drillings. The production company takes ownership of the produced oil, so-called ‘equity oil’. At this point, the owner – the state – receives a royalty, either in cash or in physical oil. In this system, the E&P companies assume the risks and costs of finding and developing the oil field. The costs then have to be covered by the companies’ revenue after the royalty is paid to the owner (Downey, 2009, p. 86).

Production sharing agreements (PSAs). This system was first introduced by Indonesia in the 1960s (Inkpen and Moffett, 2011, p. 89). As the name suggests, this system means that the company and the owner – the state – share the produced oil. The company usually has

the right to so-called ‘cost oil’, in order to recover its production costs. The rest of the oil, called ‘profit oil’ is divided according to a specified formula. The company still might have to cover all production costs and the costs of exploration, even if it is unsuccessful in finding oil. But many PSAs have a complex structure, specifying which parts of the costs are deductible and at what rate. A sliding scale can be included, detailing the change in the division of income between the state and the company over time. To some extent PSAs accommodate host countries that are reluctant to give foreign companies ownership of the oil, so-called ‘equity oil’.

Service agreements. In this system the state’s ownership of the oil remains at all times, including after production (Pereira and Talus, 2013, p. 12). The pure form implies that the state takes all exploration risks, notwithstanding discovery or production. The company is simply paid for its services, almost like a contractor. Thus, the state can gain or lose, dependent on the net profit from the production. In a so-called risk service contract, the company assumes the exploration risks, and is paid for its services according to the proceeds derived from the produced oil.

Fiscal regimes

The three contract regimes have some general implications for the way the state, and the companies, make money. “Royalty/tax agreements generate on average the greater takes for the E&P firms and the lowest government take . . . Service agreements generate the lowest return for E&P firms and reserve all true price or other market-based returns to the state. PSAs . . . often fall into a mid-range of balance between the IOC and the state” (Inkpen and Moffett, 2011, p. 245). Therefore, the nature of the contract regime has implications for how the revenue from oil production is distributed between the companies and the state. Even more important, of course, are the government’s various mechanisms for rent extraction, and the actual percentages specified in the contracts. The taxation regimes of the different oil-producing states vary even more than the contract regimes, so also this section can only provide a brief overview. Johnston and Johnston (2010, pp. 2–5) identify four different mechanisms used by governments to gain rent from oil and gas companies:

- *Signature bonuses* are used as part of oil and gas contracts by approximately 40 percent of countries with a hydrocarbon industry.
- *Royalties* are one of the most common ways to gain governmental rent in the oil industry. They are usually based on gross revenue or gross production. Royalties are around 5 percent for PSAs and on

average 10 percent in concession systems (Johnston and Johnston, 2010, p. 4).

- *Profit-based mechanisms* take the form of corporate income tax (or other profit-based taxes) and production sharing. The former is paid in dollars, the latter in barrels of oil. Both forms often include various cost deductions for the companies. If deductions are high enough, the companies can end up not paying any tax at all.
- *Government participation* represents a smaller part of the overall government take compared to the other mechanisms above. It is usually very controversial. It works as follows: the foreign or private companies assume all costs and risks of exploration. If a profitable discovery is made, the government takes a percentage share of the production, usually via the national oil company. The government is *carried* through exploration for free.

The concept of ownership is not easily incorporated into economic models. “Modern economic science considers the ownership of natural resources irrelevant to the determination of prices” (Mommer, 2002, p. 6). The discussion above suggests that ownership does in fact have an impact on business and profits. Nevertheless, sovereignty and ownership are not only about rent and profit sharing. “The question of natural resource ownership and its relationship to prices is definitely a question of politics and not of economics” (Mommer, 2002, p. 105). It is also, and probably even more so, about state control and legitimacy in the eyes of citizens, at least in the case of democratic states. In non-democratic states, the control of natural resources is often an important issue for ordinary citizens if for no other reason than that of national pride.

1.4 LAW OF THE SEA – IMPLICATIONS FOR OFFSHORE OIL

The production of oil at sea (offshore) represents about 30 percent of world oil production, a share which has remained stable over the last decade. More than 27 million barrels per day are produced offshore in more than 50 countries. In 2015, five countries provided 43 percent of total offshore production: Saudi Arabia, Brazil, Mexico, Norway and the United States.⁴ Offshore oil production is established as an ordinary part of the oil industry. Many of the aspects related to regulations and state–company relations are no different if the oil is located offshore or onshore.

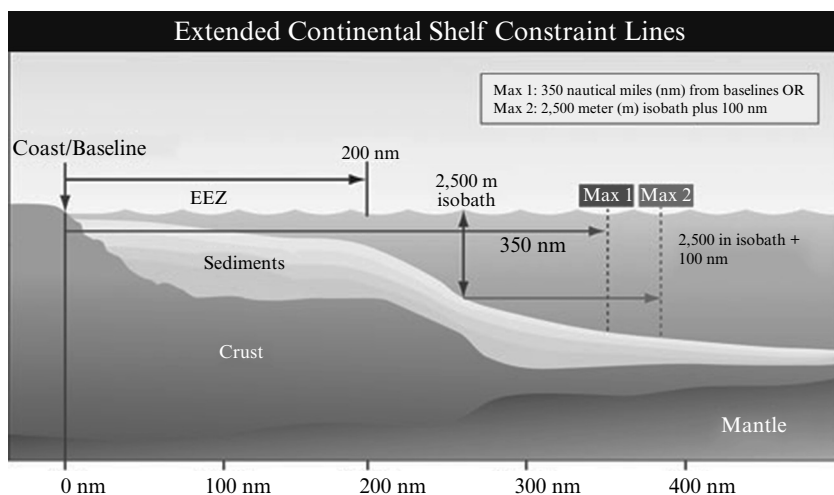
The legal aspects related to offshore oil, however, are fundamentally different – in particular those related to property rights and state

sovereignty. “Where petroleum is found offshore in the continental shelf, the absence of any private proprietary rights is quite logical . . . since the seabed is not subject to private ownership” (Alvik, 2015, p. 238). Since the 17th century, coastal states have claimed sovereignty over the sea adjacent to their land territory. The extension of this sovereignty was first attached to the range of canons placed next to the shore, but this was a rather imprecise measure of a territorial line. “During and after the Napoleonic wars, British and American prize courts translated the canon-shot rule into the three-mile rule” (Crawford, 2012, p. 256). Today, the UN Convention of the Law of the Sea (UNCLOS) regulates the extension of the territorial sea as 12 nautical miles from a straight coastal baseline. In addition, the content of the coastal states’ sovereignty is regulated in UNCLOS. “The coastal states have all the practical rights and duties inherent in sovereignty, whereas foreign vessels have privileges, associated particularly with the right to innocent passage, which have no general counterparts in the respect of the land domain” (Crawford, 2012, p. 264).

The coastal states’ sovereignty over offshore oil resources is regulated by international law, primarily UNCLOS. It is outside the scope of this book to outline the comprehensive legislative regime of UNCLOS, as oil resources are located in the seabed, the regulations of the oceans themselves are less relevant for the discussion here.

UNCLOS contains specific regulations regarding the seabed, in particular the seabed adjacent to the coastal state, known as the continental shelf. Article 76 of UNCLOS grants all coastal states a continental shelf of 200 nautical miles provided it does not meet another state’s shelf.⁵ This is the equal distance as the coastal states’ ‘exclusive economic zone’ at the sea level. The coastal state enjoys exclusive rights over oil resources located in its assigned continental shelf. In cases where it is less than 400 (200+200) nautic miles between coastal states, the states will have to negotiate a delimitation line between them, including both maritime borders and division of the continental shelf. The divisions of the North Sea between Denmark, Norway and the UK, is one example of such a negotiated division. In some cases, an oil field can happen to be located so that it extends across such a territorial delimitation line. There are various models for handling this situation. One example is a so-called unitization agreement, where the parties agree to joint development of the field crossing the delimitation line.

According to the provisions of UNCLOS, a continental shelf can be extended beyond the 200 nautical miles: “The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin.”⁶ This is known as the natural prolongation principle.



Source: NOAA (2017).

Figure 1.2 Law of the Sea regulations

Such extensions require that the geological features of the seabed accord with the definition of such a shelf in the UNCLOS provisions, which implies that the extension must be recommended by the Commission on the Limits of the Continental Shelf (CLCS). The coastal state is required to present scientific data determining the geological features of the seabed, as the basis for CLCS' evaluation and recommendation regarding the extension of the shelf. From 2001 up until today, the CLCS has received 78 submissions pursuant to the provision in Article 76 regarding the extension of continental shelves.⁷

It is uncertain how many of the cases of extensions of continental shelves that involve oil resources. Coastal states can behave proactively, and try to extend their continental shelves 'in case' oil should be discovered later. If there are no overlapping claims, the presence of oil resources in the ground will not have implications on the process of gaining sovereignty through the CLCS recommendation. In cases where there are overlapping claims, oil discoveries are more likely to have an impact on the process of gaining sovereignty. In particular since the CLCS does not have any role in the case of overlapping claims following from extensions of continental shelves. Where overlapping claims exist, the coastal states must negotiate in order to determine a delimitation line, or resort to a third party like an arbiter, a tribunal or the International Court of Justice. These negotiations between coastal states with overlapping claims, can be

very different with the prospect of large oil resources in the continental shelf compared to a situation without such prospects.

There are presently several overlapping claims around the globe. One prominent example is the claims in the Arctic Ocean. Russia submitted claims of extension already in 2001. The documentation was regarded as insufficient by CLCS. Thus, Russia submitted a revised documentation in 2015. By then, Denmark in 2014 had submitted documentation for an extended continental shelf overlapping the Russian claim. In addition, the expected Canadian claim will overlap parts of the same area. However, the contested area is unlikely to be very interesting for oil exploration (Claes, 2017: 91–92).

The US Geological Survey (USGS) published an appraisal of the world's oil and gas resources in 2000, in which a quarter of the remaining resources were located to the Arctic region. This created an idea in public media of an Arctic resource race. A more thorough appraisal of the Arctic in 2008 estimated the Arctic undiscovered oil resources to be about 90 billion barrels (USGS, 2008). More important is that they locate most of the resources to shallow waters, and thus within the undisputed jurisdiction of the coastal states (Gautier et al., 2009). As indicated above, conflict can arise even if the resource prospect seems weak today. The five coastal states around the Arctic Ocean have all committed themselves to abide by the UNCLOS regulation. In their joint declaration, they state that “the law of the sea provides for important rights and obligations concerning the delineation of the outer limits of the continental shelf . . . We remain committed to this legal framework and to the orderly settlement of any possible overlapping claims.”⁸

Coastal states in such territorial disputes might want to engage the oil industry. Since the development of offshore energy resources requires large up-front investments, companies prefer that the jurisdictional conditions are resolved and undisputed. There have been cases where one party to a delimitation dispute has encouraged oil companies to start exploration in contested waters. Soviet authorities approached several Western oil companies for this purpose in the Barents Sea in the early 1980s (Tamnes, 1997, pp. 323–324), and in 2003 US authorities prepared to sell leases of blocks in waters where Canada had a claim.⁹ In both cases, the oil companies refrained from involvement.

NOTES

1. The text is from the protocol of the Convention amended in 1952. European Convention of Human Rights, p. 31. European Court of Human Rights (ECHR). https://www.echr.coe.int/Documents/Convention_ENG.pdf (accessed July 3, 2018).
2. See <https://www.ohchr.org/Documents/ProfessionalInterest/resources.pdf> (accessed July 9, 2018).
3. *International Covenant on Economic, Social and Cultural Rights*. Adopted and opened for signature, ratification and accession by General Assembly resolution 2200A (XXI) on December 16, 1966. Article 1, paragraph 2.
4. EIA – Today in Energy: Offshore production nearly 30% of global crude oil output in 2015, October 25, 2016. <https://www.eia.gov/todayinenergy/detail.php?id=28492> (accessed June 19, 2018).
5. United Nations Convention of the Law of the Sea (UNCLOS), December 10, 1982, 1833 UNTS 105.
6. UNCLOS, Article 76.
7. http://www.un.org/depts/los/clcs_new/commission_submissions.htm (accessed June 19, 2018).
8. <http://www.arcticgovernance.org/the-ilulissat-declaration.4872424.html> (accessed June 19, 2018).
9. 'US plans to tap oil in Beaufort Sea', *Alexander's Gas & Oil Connections*, April 28, 2003. http://www.gasandoil.com/news/n_america/a65f4c61aae19ce2f50b1aea23e1133e (accessed October 10, 2017).