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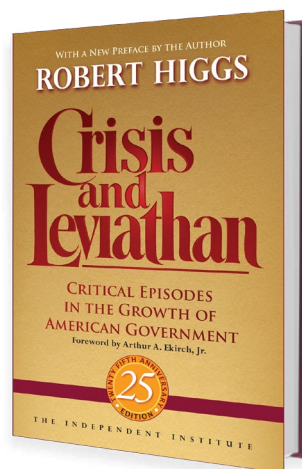
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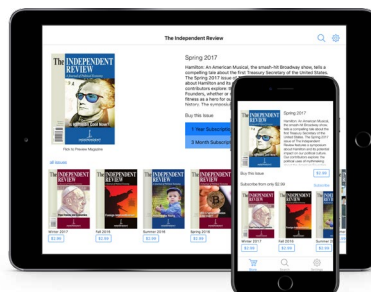
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Efficiency as Undetermined Allocation

On a “Just” Privatization of U.S. Offshore Resources

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JOHN C. BRÄTLAND

For the moment, assume that efficiency may be an impetus in privatizing U.S. (federal) offshore land resources.¹ But what does “efficiency” mean in considering privatization of these resources? What approach to privatization would achieve efficiency as appropriately defined? In considering these questions and the need for privatization, one notes that these lands are allocated through a complex, rigid, and largely outmoded leasing system that restricts enterprises to tightly regulated exploration and development of in situ resources.² Historically, strict regulatory control has been a principal policy concern, whereas efficiency has, at best, been seen as a matter of assuring statutory and regulatory compliance. One consequence of this approach to policy is that the issue of alternative or conflicting uses of these lands has never been addressed in a nonpolitical way. Understandably, anxiety over these conflicting uses has no doubt been a strong motivation for keeping these resources under strict

John C. Brätland is an independent scholar working in Bethesda, Maryland. He was formerly a senior economist in the U.S. Department of the Interior.

1. A reviewer of this paper reminded me of the possibility that the privatization process described in this article could also apply to onshore resources. However, different institutional and political considerations may arise with respect to privatization of onshore in situ resources.

2. In geology, the term *in situ* simply refers to the resource as it exists in the ground in its original location.

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federal control. This conflict hinges on the fact that *offshore resources* would include but not be limited to oil and gas resources but would also include the environmental amenities that *in the eyes of some* may be threatened or diminished by petroleum development. The federal government has dealt with these potential allocative trade-offs by succumbing to the pressures imposed by free-riding political constituencies with the power to foreclose alternative use. In an important sense, inefficiency is fostered by an allocative process in which the opportunity cost of foreclosed use can never become the requisite and decisive factor in determining alternative uses of these resources.³

But a nonpolitical solution to this trade-off issue suggests privatization and clear understanding of what private property means. Once true privatization of a resource were achieved, owners would be able to exercise secure allocative rights of *control*, *use*, and *unimpeded transfer*. Richard Epstein is emphatic in stating that these rights represent an *inseparable unity*, meaning that property rights do not exist if any of these rights are infringed (1985, 57–62). The exercise of each of these rights by any owner involves an opportunity cost that would be reflected in the owner’s most highly valued alternative use being forsaken in committing to a particular course of action (Buchanan 1969, 38–69; Thirlby [1953] 1981, 201–43). If ownership resides in the individual, “efficiency emerges from, and indeed is defined by, the separate decisions of owner-users who *confront opportunity costs that reflect* [in their own judgment] *the full value of sacrificed alternatives*” (Buchanan 2000, 290–91, emphasis added). Properly understood, Buchanan’s definition of *efficiency* obviously suggests an undetermined resource allocation. However, common definitions of *economic efficiency* seem to point to a *determined allocation of resources* in that they assume the existence and availability of information that does not exist if resources are privately owned. In the real world, efficient allocation means that at any given moment in time, the identity of resource owners is subject to change as is the case with objectives sought by owners. Private ownership necessarily means that the process of resource allocation is stubbornly *undetermined*. Allocation necessarily involves subjective choice as well as owners’ and prospective owners’ evolving preferences.⁴ Ex ante resource allocation is fundamentally indeterminate given the reality that expanding the legal scope of action alters the range of actions from which the actor may choose. The essence of this allocative indeterminacy is seen in the observation that “[t]he central issue is the critical interdependence between the

3. The term *free riding* refers to political constituencies’ ability to control the use of a publicly held asset without having to bear the opportunity cost of relinquishing alternative uses. Hence, control is “free” to those wielding sufficient political power to preclude certain alternative uses.

4. A reviewer noted that an unwanted indeterminacy characterizes the inherent inefficiencies of the existing regulatory process: “Often the regulations are so contradictory and convoluted that it takes an army of lawyers and an indeterminate number of lawsuits and appeals to get a decision made.” It may further be noted that electoral cycles have reflected extreme ideological swings in the types of legislative and regulatory sanctions imposed on private firms operating on offshore lands.

market choice itself and the informational content of the process, *which can only be revealed as the process is allowed to occur*" (Buchanan 1979, 86, emphasis added).

But how should *privatization* be defined and achieved? In answering this question, one must first note the nature of nationalization. Nationalization of offshore lands was imposed through the passage of two federal statutes in 1953, the Submerged Lands Act and the Outer Continental Shelf Lands Act, discussed in the next section. The jurisprudence of nationalization has the effect of preempting the private action required to achieve *just* private ownership of in situ resources. Hence, nationalization, as it is commonly implemented, simply means that a government has employed coercive means to declare and acquire *free* control of resources. But one must then question the ethical scope of this control as it may apply to the acquisition of property rights for in situ resources. Although a sovereign can declare coercive control over an "unowned" area, these actions by the government involve no acts that achieve ethical "just holdings" of resources. Epstein notes that legitimate property rights "*are not grounded in the commands of the state . . . and do not come without an expenditure of resources, and their expenditure makes clear the exclusivity of ownership*" (1985, 61, emphasis added). Epstein's observation on ethical and legitimate ownership is firmly grounded in the natural-rights jurisprudence and not in any presumed power that may be exercised by government (1985, 10).⁵

The case study in this paper highlights a contrast between resource allocation under the status quo and the allocation that could emerge if U.S. offshore in situ resources were to become privately owned. Publicly owned resources such as U.S. offshore lands are currently allocated through proscription and prescription in the form of statutes and regulations that are essentially aimed at constricting the scope of action-availed enterprises operating on these lands. But the consequences of expanding the scope of action-availed owners must be examined in a way that acknowledges the autonomy and legitimacy of the choices that may be made by actors at a particular moment in time. Owners' *ex ante* adaptive actions would be aimed at attaining their most highly ranked subjectively chosen ends with respect to the use of their property. But "potential [market] participants *do not know until they enter the process* [as owners] what their own choices will be. . . . [I]t is *logically impossible* for an omniscient designer to know [their choices], unless, of course, we are to preclude individual freedom of will" (Buchanan 1982, 5–6, emphasis in original). Moreover, allocative intentions are never static, just as the ownership itself is subject to change. No specific alternative pattern of owner action can be assumed once private ownership is acquired.

5. Grounding the ethics of legitimate ownership through acts of either first possession or first discovery only highlights the heavy-handed illegitimacy of the notion that nationalization of a resource automatically confers a defensible ownership right for "the public." But what about the possible sense of unfairness on the part of U.S. citizens who may have entertained the mistaken notion that they somehow "own" the affected resources? One grants that those who struggled to gain control of so-called public lands may historically have incurred "sunk costs." Nonetheless, such regrets and misunderstandings do not outweigh the principle of "just" acquisition of ownership.

Efficiency is not discernable empirically because efficient allocation is undetermined in an *ex ante* sense. This analysis explores the nature of an allocative process that addresses the dual issues of conservation of extractive resources and quests related to environmental concerns.

Genesis of the Problem: Nationalization of U.S. Offshore Lands

The move toward nationalization was undertaken against a historical backdrop in which many embraced the political presumption that the greatest benefit to the public would be assured by governmental management of natural resources.⁶ The origins of the allocative chaos characterizing the exploitation of U.S. offshore resources had its origins in the fact that “the private property tradition of the United States had never applied to coastal waters and the land beneath them” (Bradley 1996, 282, citing Bartley 1953, 7–29). Nationalization was arguably only a declaration of political control but did not in itself establish any legitimate ownership by the “public.” Rather, nationalization only made official the declaration of coercive control over the use of U.S. offshore lands. Moreover, attitudes toward nationalization of U.S. offshore resources may have been conditioned in part by the long-standing political concerns raised by the larger corporations within the petroleum industry (Armentano 1990, 55–80). The assumed need for governmental control and the negative view of the petroleum industry fostered a climate in which the regulation of offshore lessees was viewed as an unquestioned source of net public benefit. However, in practice, the resulting regulatory philosophy of control was and is based on the implicit notion that if the government is able to mandate compliance with some ostensibly popular regulatory stricture, then somehow a social benefit must accrue to the public. Conversely, any relaxation of regulatory sanctions would somehow mean a diminution of any benefit that may be enjoyed by the voting public. In a strange way, this zero-sum presumption has remained a tacit operative assumption for offshore leasing and regulatory policy on the Outer Continental Shelf.

Nationalization was made a formal reality in 1953 by the passage of the Submerged Lands Act and the Outer Continental Shelf Lands Act (OCSLA) (Bradley 1996, 282–83). The affected lands comprise 1.7 billion acres off the Alaskan coast, Pacific Coast, Gulf of Mexico, and the Atlantic Coast. These lands have been “managed” under the amended OCSLA to assure “expeditious and orderly development [of Outer Continental Shelf resources], subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs” (43 U.S.C. §1332(3)). Expeditious development has meant that leases have been issued under highly abbreviated lease terms of five or ten years. The misguided assumption that

6. Although this view has rarely been stated in so many words, Robert Bradley’s exhaustive history of governmental intervention in the petroleum industry demonstrates the point. See in particular Bradley 1996, 17–52, 1761–870.

expedited development can be considered *orderly* in uncertain markets should be noted immediately. Experience has shown that expedited development has generally meant chaos because of the forced expediting of lessee operations and in many cases the requisite relinquishment of lease holdings.⁷ The tendency toward allocative chaos is further reflected in the reality that the so-called *environmental safeguards* have only opened the door for free-riding regulatory control by powerful political constituencies.⁸ In brief, offshore lands of the U.S. Outer Continental Shelf are leased under tightly deterministic strictures that (1) through the foreclosure of timing latitude on the part of lessees have the effect of destroying the adaptive process by which extractive resources are allocated (conserved) over time and (2) foreclose any *non-political means* by which energy and environmental trade-offs are resolved through voluntary exchange.

But how would privatization be undertaken? Under the scenario suggested here, privatization would mean that property law would be revamped to foster private ownership of resources through first resource discovery (Kirzner 1989, 129–60).⁹ But once a discovery were properly established (documented), resources would become competitive targets for ownership or control by those prepared to bear the opportunity cost of pursuing nonextractive use.¹⁰ With full and secure rights of private ownership, the owners' identity and intended choices would be indeterminate a priori. Efficiency would emerge only from the fact that the owners would be able to render their own judgments of the opportunity cost of choosing to employ resources in a particular way.¹¹ Obviously, the prospective efficiency associated with such a privatization process would be *empirically indeterminate*.

Current Jurisprudence as Inefficient Allocative Indeterminacy

The resources at issue encompass both petroleum resources and any jeopardized environmental resources or amenities that may be affected by the discovery and

7. This issue is explored later in the article.

8. This issue is examined at greater length later in addressing the phenomenon of leasing moratoria. Other statutes also have the effect of placing alternative uses of these lands under strict political control. For example, the National Environmental Policy Act of 1970 and the Coastal Zone Management Act of 1972 foster a political framework in which free-riding political stakeholders are able to impose environmental sanctions while bearing none of the opportunity cost of foreclosing extraction of resources.

9. Regarding how the concept of first discovery applies to petroleum, see Bradley 1996, 70–74, and Rothbard [1982] 1998, 71. This issue is discussed at greater length later in this paper.

10. The process of establishing the legitimacy of the discovery is examined in greater detail later in this paper.

11. Hence, efficiency itself, appropriately defined, is amenable to *no* quantitative definition (Rothbard 1997b; Buchanan 2000, 290). As the discussion in the text emphasizes, in decision making, opportunity costs are always a matter of subjective judgment on the part of the owner, meaning that such *costs will always be unique to the owner or prospective owner. Moreover, the ex ante costs are unique to particular moments of time because of the reality that private preferences evolve, as do the external market circumstances bearing on choice.*

production of oil and gas deposits.¹² Private access to the extractive resources is governed under a largely outdated leasing process authorized by the often amended OCSLA of 1953. But this statute and other statutes bearing on the leasing process have never been amended to address their most egregious allocative shortcomings. The leases issued through a competitive auction process grant highly attenuated and circumscribed rights to explore for petroleum and rights to produce the resource if an economic discovery were made (Brätland 2004, 527–48). But, as noted earlier, this law and the prevailing jurisprudence proscribing ownership of discovered subsurface resources have the effects of obstructing the inherently speculative process by which extractive resources can be allocated over time¹³ and of disallowing voluntary property transfers as a means to resolve the issue of trade-offs between energy and environmental concerns.¹⁴ The implied opportunity costs of both constraints are essentially ignored in the imposition of statutory and regulatory mandates of governmental oil and gas leasing (Brätland 2008, 394). For example, economic conservation of extractive resources always requires unfettered (speculative) latitude in the timing of activities associated with extraction. But in the absence of speculative latitude, the resulting loss in expected capitalized value of the resource is an opportunity cost that is never acknowledged in the

12. Under current procedures, access to these resources involves the competitive auctions of tightly regulated leases for offshore tracts that are prespecified within a *permanent* grid system. Unfortunately, the permanent boundary of each 5,760-acre tract may be incongruent with the location or areal extent of any underlying resource deposit.

13. Expedited development is mandated by so-called diligence requirements. These requirements mean that lessees must relinquish leases if exploration is not expeditiously undertaken within the primary lease term. Diligence requirements are designed to squelch speculative delay in lessees' activities. The term *diligence* is used to suggest that some "good" is yielded by expediting lessee activities. But the notion that diligence requirements have net benefit represents only another unexamined absurdity of federal land policy. The term *subsurface* simply refers to the unrecovered, in-ground resource in the reservoir itself.

14. Others have addressed privatization of the way in which offshore extractive resources are managed. Walter Mead and his colleagues offer compelling reasons to privatize these resources. The privatization procedure that they propose is a leasing process with no relinquishment requirements (diligence) and with removal of all inducements to early exploration and development (1985, 112–15). Lease issuance would remain the province of the federal government. However, they do not offer any nonpolitical process by which the trade-offs between resource exploitation and concerns over environmental preservation can be addressed. Another major effort is found in Robert Bradley's treatise *Oil, Gas, and Government* (1996), which is an excellent history of governmental involvement in the oil and gas industry, including the control of federal offshore lands. Bradley follows Murray Rothbard in outlining a means by which full ownership of petroleum reservoirs could be achieved through first discovery—a form of original appropriation or first possession (Bradley 1996, 73, 1881; Rothbard [1982] 1998, 71). But Bradley does not explore any means by which the voluntary transfer (sale) of ownership of owned reservoirs may provide a nonpolitical means of dealing with the trade-offs between resource exploitation and environmental concerns. The late Robert H. Nelson also wrote extensively on U.S. public lands and certainly addressed the issue of creating alternative institutions of property in public lands. Although he did not address the issue of offshore lands in particular, in his book *Public Lands and Private Rights* (1995) he argued that the American public has many de facto rights in the use of public lands—that is, the *new property*. Hence, the property rights that he proposed are really a set of social rights to governmental action and the benefits of governmental programs. He described the proper role of government as making "a greater effort to introduce rational government planning and analysis, broadly understood" (258). He seemed to advocate a type of "social privatization" far removed from the means to economic privatization presented here. Nelson's analysis was not grounded in any sort of "methodological individualism." Hence, he did not address the epistemological barriers to dealing with the trade-offs implicit in efficiency concerns.

choice of land use under federal leasing mandates. This advertent ignoring of opportunity cost is a major source of inefficiency in the leasing process.¹⁵

Of equal importance is the fact that resource extraction may not be the most highly valued alternative use of the particular affected lands. But who would ever be in a position to render such a judgment, and what could be the source of the requisite information? Governmental leasing for the strict single purpose of expediting extractive-resource development is premised on the presumption that the implied trade-off between alternative allocations can be addressed through much criticized cost-benefit analyses.¹⁶ But in reality, aside from the pressures exerted by “free-riding” political constituencies, there is no informational basis for any such presumption. These strictures of single-purpose leasing stymie the fundamental means by which exhaustible resources are conserved over time and the process through which the affected resources may be *voluntarily* and *legitimately* diverted by private owners to uses valued more highly than exploitation of extractive resources. Obviously, the benefits of this allocative latitude cannot be quantitatively revealed in cost-benefits analysis. Nonetheless, the benefits of such freely chosen alternative uses represent yet another opportunity cost imposed but ignored by governmental management of these lands.

In essence, the most efficient use of any resource has no discernable existence separate and apart from the choices that could be made by those private owners who bear the opportunity costs of assuming ownership. Under private ownership, the current owner of a property would bear what the owner judges to be the *most highly valued relinquished use* to which the resource may be allocated. But the critical issue emphasized here is that prior to the establishment of private ownership, the opportunity costs of alternative uses never becomes a reality that can impinge on efficient allocative choice. But with the establishment of private-property rights, the undetermined nature of the allocative process arises from the fact that chosen uses of the lands would be a matter of subjective judgment for current or subsequent owners. In this context, privatization would be reflected in institutions that would foster a market process in which the current or future property owners would bear the full opportunity cost of

15. This issue has been part of the folklore of federal petroleum leasing. One such idea involves the notion that the federal government, not the lessee, should be the entity engaged in speculation. A modern variation on this idea is the notion that the federal lessor should refrain from issuing leases until these prospective leases have reached a certain threshold of expected net present value. Unfortunately, these notions reflect a basic misunderstanding of the economic process at work. Given the realities of uncertainty and change, the nature of decision making is necessarily subjective, speculative, and relevant only to the moment in time when decisions are made. Moreover, threshold expected value is not free of significant subjectivity in decision making. This being the case, no speculative decision by government can be designated as “correct” or “best” in a practical sense. Because no timing decision can be designated as “inefficient or efficient,” the speculative function cannot be left to a single bureaucratic lessor. Efficiency can be assured only by a public policy in which there are many speculators engaged in robust speculation.

16. One of the implications of governmental ownership and control of offshore lands is that allocative trade-offs between resource exploitation and other nonextractive uses can never be revealed in a nonpolitical way. In this connection, other writers have demolished the credibility of cost-benefit analysis, including James Buchanan (1969, 38–69), Peter Lewin (1982), and Robert Formaini (1990). The issue of using cost-benefit analysis in the governmental management of offshore lands is critically addressed in Bråtland 2004.

foreclosing actions related to a particular use of the land. But such institutions would require not only a complete repeal of existing statutes but also an alternative jurisprudence of ownership acquisition in which petroleum reservoirs would initially become private property through successful resource discovery.¹⁷ The consequence of these changes would reveal a process of exchange in which ownership may be transferred to those persons or entities (such as environmental organizations) who may choose to permanently refrain from any efforts to exploit the discovered extractive resource.¹⁸ Only the owner would be able to make a judgment of what is gained and forsaken in choosing alternative allocations. But given the inherent indeterminacy of the allocative process, what would be an appropriate framework to discern the benefits of privatization?

Prescriptive Governmental Allocation in Practice

The fact that private-property rights in U.S. offshore resources have either been highly circumscribed or strictly foreclosed has arisen from three sources. First, under current oil and gas law, resources cannot be owned even after discovery. This prohibition is universal, but it is clearly a dysfunctional feature of property law because it fosters a decision-making process in which opportunity costs are never considered or even acknowledged. Second, federal statutes and regulations are reflected in the exercise of prescriptive and proscriptive political power to minimize the scope of lessee discretion with no regard for benefits forgone. Third, ad hoc political moratoria have heightened the insecurity surrounding lessee tenure in particular tracts of offshore lands. All three of these sources of circumscription or foreclosure exist or are imposed with no legitimate consideration of the opportunity cost imposed as the result of the sequence of the allocative decisions required by governmental institutions.

Prohibition on Ownership of Subsurface Resources

Under current jurisprudence, oil and gas do not come under private ownership until these resources are captured at the surface in the process of production. Prior to this event, no private ownership is achieved. On this issue, the OCSLA is congruent with

17. Under current jurisprudence, discovery of the in situ resource does not establish ownership. This fact means that privatization would require a suspension or repeal of all statutes preventing acquisitions of ownership through a process of first discovery.

18. Environmental organizations could be likely bidders seeking to preclude development of offshore petroleum reservoirs. Candidates may include the Nature Conservancy, the National Audubon Society, the Sierra Club and its subsidiaries, the Natural Resources Defense Council, the Environmental Defense Fund, Greenpeace USA, the National Park and Conservation Association, the Wilderness Society, Defenders of Wildlife, and the Izaak Walton League (Anderson and Leal 2001, 86; see also Lee 2001).

universal petroleum jurisprudence in that the enterprise investing in an oil and gas lease acquires no ownership in the underlying reservoir even after discovery (Williams and Meyers 1993; Bradley 1996, 64–69). The underlying rationale for this restriction on ownership is that the migratory nature of subsurface petroleum within the single reservoir means that the resource could be extracted from beneath the land of one or more adjacent lease holders. Hence, a *rule of capture* has evolved in which the resource does not become private property until it is actually recovered at the surface.¹⁹ The rule of capture applies even though the petroleum being extracted may have migrated within the reservoir from beneath another surface owner’s property. But competitive production from the reservoir by multiple enterprises creates a situation in which the ultimate total production recoverable is likely to be wastefully diminished.²⁰

Foreclosing Timing Latitude While Ignoring Opportunity Cost

Timing latitude is critical to the economic conservation of the in situ resource, which means that any attempt to foreclose such latitude raises cost and increases exposure to market uncertainty.²¹ But under the timing mandates of the OCSLA, lessees who have competitively won petroleum leases must *expeditiously* invest in exploration within the primary five-year or ten-year lease terms.²² Policy failure is highlighted by the following *interrelated* concerns:

- The current lease terms and diligence provisions of the leasing process depress the capitalized value of the expected income stream by foreclosing the possibility of deliberate delay in attempting to maximize the expected net present value of extractive operations.
- Markets are subject to cycles of change, meaning that current leasing institutions do not accommodate adaptability and flexibility. Enterprises cannot exercise their own judgments in adapting to changing circumstances. In other words, the process by which the free market conserves resources can never be fully realized.

19. Bradley offers a succinct discussion of the jurisprudence bearing on the rule of capture and its allocative consequences (1996, 64–69). See also McDonald 1971, 31–32, 197.

20. Competitive recovery from a single reservoir by more than one firm depletes reservoir pressure and reduces the volume of the resource that can ultimately be recovered. One solution to this problem is a regulatory mandate that *unitizes production* decisions under the management of one operator (a single firm). See McDonald 1971 and Weaver 1986. One disadvantage of this solution is that the negotiation required to arrive at an agreement can be costly and subject to uncertain results for the individual affected enterprises.

21. Opportunity costs of exploration, development, and production can be driven upward as a direct function of the extent to which production is expedited. In addressing this aspect of cost in a production context, Armen Alchian (1959) outlines general principles by which such increase occurs.

22. “Term” or “lease term” is a reference to the duration of time specified in the lease contract.

Governmental control of these lands forecloses the continuous process of adaptation that is critical to the economic conservation of an extractive resource. In plain words, the speculative action that would otherwise be at the heart of the process of economic conservation is thwarted.²³ The late Stephen McDonald highlighted what is lost when he observed that “continuously maximizing net present value (continuously conserving) *requires flexible adjustments* in the time-distribution of production as the economic values reflecting sacrifice and gains of satisfaction (costs and prices) change over time” (1971, 84, emphasis added).²⁴ But maximizing the resource’s net present value has never been an overriding consideration in federal leasing policy. Rather, the hyper-rigid nature of the OCSLA forces the federal government to assess performance of its leasing program by focusing on “expedited physical productivity.” Although this standard of performance is grossly abortive in terms of economic conservation of the resource, it is not without its perverse rationale. The federal government collects a percentage royalty on the gross proceeds from the sale of the resource produced. The *gross* present value of the royalty receivable by the government is thus maximized by imposing expedited development and production schedules. Unfortunately, the prospective *net* capitalized value of the resource itself is minimized by this obligation. This reduction in capitalized value is another example of unacknowledged opportunity cost imposed by expediting development and production activity on the leased lands. Entrepreneurial timing judgment is thwarted, and economic waste is the consequence (Brätland 2012).

Leasing Moratoria That Ignore Opportunity Costs

The phrase “leasing moratoria” in this context refers to ad hoc moratoria on federal leasing of offshore land. The widely abused leasing moratoria reflect political sentiment but cannot reliably reflect any sort of trade-off between conservation of the resource and the preservation of environmental amenities. Nor can the moratoria deal with the likelihood that such a trade-off may change over time (U.S. House of Representatives 2011). These moratoria are expressions of the political power exerted by free-riding political constituencies that are brought to bear on the actions of U.S. presidents and members of the U.S. Congress. Nothing signals the need for privatization more than the bizarre, arbitrarily imposed leasing moratoria that have foreclosed leasing *off both coasts of the United States*. One need scarcely note that the politically imposed leasing moratoria do not settle or even address trade-offs implicit in resource use. Rather, they

23. Speculation defines the central function of *all* markets, which in turn means that no empirical means exist by which one can define “speculation” in a way that would make it recognizably distinct from so-called normal market activity. No market exists in the functional sense without speculation. By extension, market efficiency and even productivity are essentially impossible without speculation (Mises [1922] 1981, 125, 182).

24. Defenders of timing constraints (diligence) claim that the timing issues are adequately addressed by the process of forced lease relinquishment and *expeditious* competitive reofferings in subsequent lease auctions. In fact, however, this perpetual recycling process minimizes the scope of property rights availed the lessee and is simply a source of chaotic indeterminacy in the allocation of what should be treated as capital assets.

just highlight the political power of free-riding constituencies. Their effect is to foreclose petroleum development on hundreds of thousands of acres.²⁵ And there is no allowance for adjustments even at the margin (Epstein 1995, 302). The economic experience of choosing and hence forsaking the value of the next most highly valued use never impinges on the actions of nonowning bureaucrats, politicians, or environmentalists seeking to foreclose certain uses of these public lands (Anderson and Leal 2001, 79). The opportunity costs of these actions are weighed only within a political calculus, but in economic terms these actions are “costless” to political stakeholders.

Viewed more broadly, however, the jurisprudence preventing the ownership of the subsurface resource and the statutes of government control mean that *no non-political means* are available to determine and realize the efficient use of these lands. The critical implication of regulatory control and ad hoc moratoria is that marginal allocative trade-offs between resource exploitation and environmental amenities are never revealed in a way that reflects the adaptive actions of individual market participants. Hence, these trade-offs are only reflective of politically motivated actions of free-riding political constituencies.

Ownership of Discoveries: A Just Framework for Initial Private Ownership

True privatization of resources would also require a statutory repeal of existing statutes that overdetermine (prescribe and proscribe) the allocation of resources. Repeal of current laws would allow for the implementation of a framework in which localized offshore in situ resources could come under private ownership (control) through acts of documented petroleum discovery. A carefully crafted alternative legal framework would mean a complete cessation of further leasing under the OCSLA and repeal of the other statutes imposing regulations of enterprise activities.²⁶ These statutes would be repealed principally to rid the resource-allocation process of the strictures described earlier. In addition, the free ride implicit in existing executive orders and leasing moratoria would be rescinded.

A privatized jurisprudence would require an oil and gas law in which “the rule of first discovery” would establish secure ownership. Under such a rule, the resources would actually come under legitimate ownership when discovery is properly registered with an entity such as the U.S. Department of the Interior or possibly the U.S. Department of Energy. This process of reserve registration would need to be based on a standardized definition of proven reserves, which apparently does not exist at the present

25. “The 2017–2022 leasing program makes available for leasing approximately 97 million offshore acres, out of a total of approximately 1.7 billion acres on the U.S. [Outer Continental Shelf]. The available acreage consists of 96 million acres in the Gulf of Mexico and 1 million acres in the Alaska region” (Comay 2017, 3).

26. The proposal for privatization outlined here would necessarily require some accommodating provisions for those offshore lands that are under lease to private entities. The outline of such provisions is beyond the scope of this paper. The intent of the privatization proposal outlined here is not to jeopardize or to nullify any existing private contractual commitments.

time.²⁷ The new proposed rule for acquiring ownership of the subsurface resource would clear the way for owner autonomy in deciding between competing intended use. Hence, the new rule of first discovery would be functional and productive from both the perspective of economic conservation of the resource and the possibly higher prospective value of competing uses. These specific changes would establish an institutional framework characterized by the following features.

- New law would restrict the governmental function to serving as a registrar of ownership and protectorate of private-property interests. Strict tort law would be enforced.
- Those seeking to establish property rights through first discovery would not be impeded or constrained in their activities by the artificial grid boundaries that currently delineate all tracts under the OCSLA.
- A discovery would commence a process of *original appropriation* in which the enterprise would gather sufficient additional information to establish full legal title to the reservoir or deposit itself (Bradley 1996, 73, 1881; Rothbard [1982] 1998, 71).²⁸ The extent of the first discoverer's ownership claim would apply *only* to the particular reservoir discovered.²⁹
- Having established exclusive property rights in the reservoir, the owner would have unabridged rights of ownership: (*a*) the right of possession, (*b*) the right of choosing use, and (*c*) the right of disposition (i.e., sale). These rights would accommodate the owner's subjective judgments concerning the respective costs and benefits of choosing resource use.

Hence, an alternative statutory framework would be focused on and limited to the protection of property rights acquired through a process of original appropriation or first discovery. Of critical importance is the objective of divorcing the choice of alternative uses from any political dictates or pressures.

27. A reader raised the possibility of fraudulent behavior on the part of parties who have made a discovery. Potential buyers of the discovery would be justified in demanding carefully documented evidence that the discovered reserves are adequate to warrant future production. But to some degree such evidence would be reflected in the additional drilling undertaken to document the discovery and the issuance of title to the discovered reservoir (Bradley 1996, 72–73). This same reader also raised the possibility of political interference in such transactions with the intent of favoring some buyers. But such intervention would only reflect another form of free-riding interference in the allocative process. But another point of note is the fact that the discovered and developed reserves are currently traded between firms operating on both onshore and offshore lands (Clyburn, 2017). However, one should also note that prospective buyers intent upon precluding further development and extraction do not need the same level of accuracy as buyers planning future extraction of the resource. Those buyers who are prompted solely by environmental concerns would require only a threshold level of assurance that the reserve estimate were equal to or in excess of the minimum volume necessary to warrant the expectations of future oil and gas production.

28. In light of the fact that neighboring drillers' exploratory activities would be held in abeyance during the period in which the discoverer establishes the scope of the discovery, the discoverer would be obligated to quickly complete the steps necessary to establish the areal extent of the discovered deposit.

29. But another competing driller or operator attempting to drain the claimed reservoir through directional drilling would be guilty of tort invasion and subject to civil penalties and possible criminal action if deliberate theft were evident (Bradley 1996, 73).

The Private Owner's Judgment of Opportunity Cost

Events subsequent to privatization would be viewed simply as a qualitative characterization of the scope of action afforded private owners of specific resource deposits. Action undertaken after privatization would yield no data amenable to judgments of efficiency by any external observer. The actual pattern of resource use emerging from privatization would be revealed only as the process of private decision making unfolds in the passage of time.³⁰ In effect, “what privatization of a valued resource accomplishes is a matching between decision or choice authority with those consequences of choice that should be reckoned in any [private] efficiency calculus” (Buchanan 2000, 290–91). There is no time path of “optimal resource conservation” that exists independently of the plans implemented by private owners dealing with an uncertain, undetermined future. Alternative courses of action may include:

- Once property rights are established, the extractive enterprise would be afforded competing options with respect to the timing of activities. These options would include: (1) immediate commencement of resource development and extraction, (2) deliberate waiting as might be prompted by market uncertainty and expectations of various future market conditions. The extractive enterprise would always be able to adapt to continuously revised market expectations and bear the opportunity costs of chosen courses of action.
- Owners could sell to another extractive enterprise or perhaps to a party seeking to forestall or foreclose extraction for other reasons, possibly environmental. In the case of the latter purchasers, their actions would demonstrate a willingness to bear the opportunity cost of seeking their alternative objectives. The choice of this option would be an example of Coasean internalization of externalities achieved through mutual bargaining (Coase 1960; Lee 2001).
- However, a party motivated by environmental concerns may simply make a mutually acceptable payment to the owner to achieve a cessation or indefinite delay of extractive resource development. The advantage of such options is that they address specific environmental concerns in a way that addresses the opportunity costs of chosen uses of resources.
- The institutions of private property would also provide tort protections through enforcement of strict liability and payment of restitution by damaging parties to parties incurring demonstrable damage.

These alternative courses of action should not be viewed as being mutually exclusive; rather, they are complementary with respect to the legitimate internalizing of externalities that may arise from certain alternative uses. Property owners would be able to employ all available strategies, depending on the situation they face. Individual market participants would reckon

30. In a monetary economy, exchanges between property owners lead to the emergence of prices that facilitate a rational judgment, at the margin, of the respective costs and benefits associated with alternative actions (Mahoney 2002, 39).

their own costs and benefits as they undertake actions to achieve their respective ends. Of particular note is the fact that these costs and benefits would have no objective counterpart in cost–benefit analyses undertaken by government (Buchanan 1969, 57–60). But the institution of private ownership does accommodate conflict-free actions of parties who may have ostensibly incompatible objectives. The process of exchange would be efficient in that actors in the market would be able to make desired *adaptations at the margin* with respect to chosen uses of resources. At the same time, with privatized resources, no external observer would be able to make “scientifically valid” judgments of efficiency or inefficiency. In other words, alternative patterns of resource use that would emerge from privatization would be empirically indeterminate and not amenable to any convincing quantitative projection.

Under governmental ownership, stakeholders impose extensive externalities by foreclosing certain uses of these resources without bearing the opportunity costs of their political actions. Hence, a major benefit of privatization would emerge in the fact that free-riding political control would cease to exist. Political environmentalists would face a more economic incentive structure in which they would bear an opportunity cost in pursuing the goals that they may seek to attain. One might reasonably expect more disciplined economizing or rationing behavior on the part of environmentalists in light of the fact that they would be obligated to engage in a ranking-and-choosing process in deciding to foreclose resource extraction at particular locations. In a very important sense, environmentalists would need to become entrepreneurial as they ration their financial resources to control those properties that they seek to “protect.”

Efficiency would emerge without the exercise of political or bureaucratic power. Efficient use would emerge as owners adapt their plans to accommodate their own evolving judgments of the future. The degree to which an owner’s plan is “efficient” would have relevance only within the context of the owner’s decision-making calculus. This reality would be the essence of the allocative indeterminacy examined here. The benefit to society would emerge qualitatively through the incremental actions of numerous competing parties exercising speculative latitude in the management of numerous of properties. In essence, “no matter which set of persons in the community succeeds in securing rights of ownership in the valued resource, their own decision calculus, separately exercised, will ensure that efficient usage occurs” (Buchanan 2000, 290–91). Nonetheless, the results of the allocative process would not be determined from an a priori perspective.

Conclusions

Secure rights of resource ownership necessarily mean that at any particular moment in time, the ex ante allocation of these resources will not be determined. Why? Private property and free exchange mean that at any moment in time the identity of the owner and the owner’s allocative intentions cannot be known a priori. But what is known is that in choosing the most highly valued use, the owner would bear the opportunity cost associated with the owner’s judgment of the most highly valued relinquished use. These realities define the essence of legitimate market efficiency.

There is compelling reason to believe that the resources in and on the Outer Continental Shelf of the United States are not currently being committed to their efficient use. First, the extreme rigidity of the process currently governing the timing of exploitation of offshore extractive resources means that the benefits of more efficient timing are lost to the public; in essence, the opportunity costs of these timing mandates are ignored. But, second, the alternative uses of these lands are largely determined by powerful political stakeholders who bear none of the opportunity costs of foreclosing extractive uses of affected lands. This avoidance of opportunity cost has meant that the allocation process is *inefficient*.

This paper has explored an essentially indeterminate allocative process that would emerge from a jurisprudence in which subsurface resources come under secure private ownership through first discovery. Under such a process of original appropriation, first discovery would establish a claim to ownership of the subsurface resource. But such an efficient allocative process can emerge only if the OCSLA and other encumbering statutes are repealed and if a statute authorizing open exploration on these lands is subsequently passed.

The desired efficiency would be assured by the allocative indeterminacy in which justly-acquired private property would be voluntarily transferable through free exchange. Future use would be revealed only as private-property owners were to make choices and engage in free exchange to attain their most highly valued aims. Even if the initial owners were to intend no ultimate resource extraction, they would still bear all the opportunity costs and uncertainty associated with choosing an alternative use. In other words, the action of numerous competing entities would yield a broadly defined “conservation service” that could never be rendered by current federal control of these lands. The nature of the benefits of privatization would be suggested in the broad scope of choice as would be available to owners. Hence, the fact that opportunity costs would be borne by owners through their choices would be the *only* legitimate indicator of efficiency. Privatization of offshore extractive resources would reflect a long overdue change in the jurisprudence bearing on the ownership of these subsurface resources.

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