Public Choice (2009) 140: 1–13
DOI 10.1007/s11127-008-9375-x

Coase and Bertrand on lighthouses

Walter Block · William Barnett II

Received: 4 August 2008 / Accepted: 30 September 2008 / Published online: 14 October 2008

Abstract Coase (Journal of Low and Economics 17(2):185–213, 1974) failed to appreciate that the construction and maintenance of nineteenth-century lighthouses were in part financed by British taxpayers. Bertrand (Cambridge Journal of Economics 30:389–402, 2006) rightly calls him to account. While agreeing with Bertrand's conclusion, we dispute her reasoning and argue that lighthouses nevertheless could have been supplied by the private sector.

Keywords Lighthouse · Market failure · Public goods · Coase · Bertrand

JEL Classification H41

1 Introduction

Could lighthouse services, with the technology of the mid-19th century, be provided profitably in the absence of government action, apart from protecting private property rights and enforcing voluntary contracts signed between competent, uncoerced individuals? Did Coase (1974) demonstrate, that private firms did in fact make a profit by producing lighthouse services in the absence of government action, save for support of contract and property rights? If Coase did not demonstrate this, as we shall argue, *could* private for-profit firms have nevertheless provided lighthouse services? It is the burden of Sect. 2 to wrestle with these important questions.

W. Block (✉)
Harold E. Wirth Eminent Scholar Endowed Chair, College of Business Administration, Loyola University New Orleans, 6363 St. Charles Ave., Box 15, Miller 321, New Orleans, LA 70118, USA
e-mail: wblock@loyno.edu
url: www.WalterBlock.com

W. Barnett II
Joseph A. Butt, S. J. College of Business Administration, Loyola University New Orleans, 6363 St. Charles Ave., New Orleans, LA 70118, USA
e-mail: wbarnett@loyno.edu

As far as most economists are concerned, Coase (Coase) proved that the market provided lighthouses on a profit-making basis. This is an important part of the history of economic thought, as the lighthouse is one of the crucial examples in the critique of markets that maintain they are unable to provide (adequate amounts of) public goods. We agree with Bertrand (2006) that Coase did not succeed in undermining this market critique. Section 3 is devoted to exploring our disagreements not with Bertrand's conclusions about Coase, but with her reasoning. We conclude in Sect. 4.

2 Coase and the lighthouse

Did Coase (1974) succeed in showing successful market provision of lighthouse services? He did not. The examples he cited were instances of governmental, not market-based, supply. Coase (1974, p. 206) offers the following quote from Report from the Select Committee on Lighthouses, in Parliament Papers, Session 1845, vol. 9 at vi:

> Their Lordships cannot admit that is any violation of the principle of property in the reduction of a *tax* levied for public purposes, where no vested interests have been acquired in the proceeds of the *tax*; and where the tax in question is one levied upon a particular class of Your Majesty's subjects, without that class deriving any adequate advantage in return (and any excess of light *dues* beyond the amount necessary to maintain the lights is a *tax* of this character), the reduction of such a *tax* not only involves no violation of the principle of property, but is in the highest degree just and expedient (emphases added).

That definitively settles the issue. A *tax, or compulsory levy,* simply is not compatible with the free enterprise system, which is predicated upon *voluntary payments.* This distinction is perhaps the most important in all of political economy, and Coase fails to make it. But, given Coase's standing in the profession, perhaps some more support for our contention would not be amiss. According to Van Zandt (1993, p. 48):

> My thesis is that the term 'private enterprise' hardly captures the reality of the provision of lighthouse services. For the period Coase surveyed (Great Britain from 1513 to 1898) and both prior and subsequent periods, the government played a substantively greater role in the provision of lighthouse services than Coase's term 'private' suggests…

(see also Barnett and Block 2007). *Were* there private; i.e., voluntary, lighthouse providers during this epoch? Yes. But they were *charitable* organizations, as demonstrated by Bertrand (2006). This author, however, does not recognize them as such since they were not organized on a profit-making basis. But we contend that the charitable sector of the economy is, because voluntary, as private as any other, specifically including profit-maximizing firms. There are two sectors of any economy: the violent or coercive sector and the voluntary. The former spans from government through organized crime to disorganized and/or one-off crime. The latter encompasses both actions undertaken solely either for pecuniary profit or for psychic profits (that is, subjective benefits), or those carried on for a mix of these motives. The key is not the motive for an action; rather it is the nature of the means—violent or voluntary. Therefore, that charitable organizations provided lighthouses for altruistic reasons does not alter the fact that these actions were voluntary and thus private. Some commentators lump together the activities of charitable organizations and governments and then distinguish them from those of profit-seeking firms on the basis that altruism characterizes state and charitable efforts, but not market activity. As for altruism, we adopt the Public Choice perspective that this is a component of *all* of human activity, and that governments and charitable organizations have no monopoly over it.

Next question: were there any for-profit lighthouse providers during this era in history? Our research has not been able to uncover any such. And now for the $64,000 question: *Could there have been* lighthouse services, with the technology of 1850, provided profitably in the absence of government action, over and above enforcing private property rights and voluntary contracts signed between competent, uncoerced individuals? Before answering, we note that this is a *theoretical question, calling for an analysis of a counterfactual situation.* It *cannot* be settled by resort to the historical record. And, yet, much depends upon it. For, if this question is answered in the negative, that tends to strengthen the public good argument in general, and justify including the lighthouse as an instance of this phenomenon in particular. If in the positive, the opposite tendency ensues.

Our response is positive. We suggest that *there could well have been* lighthouse services, with the technology of 1850, provided profitably in the absence of government action, (we abstract from government enforcing private property rights and voluntary contracts signed between competent, uncoerced individuals). How, then, could such entrepreneurs have excluded free riders? Several scenarios present themselves. One is moral suasion. The lighthouse entrepreneur could announce to all and sundry that the XYZ shipping line refuses to pay its fair share of costs; negative publicity would undoubtedly ensue. Or, the owners of all boats plying their trade could gather into a *voluntary* club, and together pool the resources necessary to build and operate such a venture. Yes, of course, just as cartels tend to break up over both internal and external challenges, such an arrangement might not be definitive. But, it might work in some cases where transactions costs were low, and the given trade route was used by only a few.

Escalating, the lighthouse owner has a threat that "one of these days" when weather circumstances permit, he will *turn off the light.* He will do so if with a sharp-eyed look he determines that none of his paying clients are in the vicinity of the lighthouse, but only free riders. How credible is this threat? It might not be thought too serious at first blush, since if the employees of the lighthouse firm can see the silhouettes of the ships well enough to distinguish client from non-client, then, presumably, the ship's captain can see the rocks on which the lighthouse is perched well enough to avoid them. But this is not necessarily so. It might just be that "one of these days" vision will be better in one direction than in the other, sufficient for this threat to be carried out. If the boat crashes on the rocks, a vast amount of money, and lives, will be lost; whereas, in contrast, the fees for lighthouse protection under free enterprise are likely to be far less. Then, too, once this threat is announced, the sailing ships will have to pay higher wages to their employees, to compensate them for this additional hazard. And, if, ever, the lighthouse turned off its facility and a non-paying ship perished as a result, and this were publicized, that would pretty much put paid to this ploy.[1]

But we need not rely on sharp eyes, nor the exigencies of weather conditions to see that this is indeed a credible threat. Boat owners could send their upcoming cruise schedules, either positive or negative, in advance, to their lighthouse provider. They would do this, one, because no one likes to see a competitor getting away with an advantage, and/or, two, because the lighthouse owner would have an incentive to give compliant shippers a reduced

[1]These comments are predicated on the assumption that the lighthouse firms would not be prevented from making, and carrying out, such threats, e.g., by government safety regulations. But in a scenario of laissez faire capitalism, where government is limited to enforcing contracts, and upholding private property rights, no rules of this sort would exist.

price. A positive notification could be of the form: "I intend to travel on such and such a date, between the hours of this and that, during which time I will need the services of your lighthouse." A negative notification might be of this form: "I do not intend to travel on such and such a date, during which time I will therefore not need the services of your lighthouse." Air pilots commonly now file flight plans; ship captains could have done so as well, even in our bygone era. For, armed with such information, the lighthouse entrepreneur would be in a position to turn off his signal when none of his clients were scheduled to use it. A mere announcement to this effect ought to quickly bring non-payers to heel.

In the long run, this "game" can only be won by the lighthouse owner, not the recalcitrant ship-owner. For, the latter has to lose only once, and it is game over. Were one of his sailing vessels to crash on the rocks due to his unwillingness to pay the fee, he would pretty much be driven out of business. Who would want to work on any of his boats ever again? In contrast, the former can "lose" every day, for years; all he needs to do is "win" just one time.

Perhaps most important would be the effects of insurance rates on shippers, ship-owners, and insurers. Shippers, for good reasons, insure their cargoes and ship-owners, their ships. Various factors affect insurance rates; e.g., the seaworthiness of the vessel; piratical activity (Leeson 2007), the hazardousness of the route. On many routes the presence of a lighthouse undoubtedly would result in lower insurance rates. It would then be in the interest of those whose ships or cargoes regularly navigate such passages to secure the services of lighthouses. The locations of lighthouses are, in general, such that the opportunity costs thereof are very low and thus the initial expense of acquiring an appropriate site would be quite small. Although the cost of building the structure might not be insignificant, nevertheless, the expected life of a well-constructed lighthouse is sufficiently long that the annual expense associated with amortizing the investment in site acquisition and construction would be relatively low. In fact, such expenses, including interest, would likely be recovered long before the economic life expired. Moreover, the type of relatively unskilled labor required to run a lighthouse was not highly remunerated. Therefore, operating expenses, including maintenance, would be almost trivial. Were the capital and operating costs spread over numerous voyages, the per-voyage expense would be cheap. Beneficiaries would find it in their interest to cooperate. No one can be sure of the details, but it seems very reasonable to think that owners or shippers or insurers, or a combination thereof, would form an organization to provide such services.

However, consider that if the ship-owners were the proprietors of the lighthouses, insurers might refuse to insure, or might charge premium rates to, ship-owners who were not part of the relevant association(s) and to those who transport with them, and shippers might use their services only at a discount, if at all. Were insurers to be the owners, insurers not part of the pertinent association(s) would find ship-owners demanding a discount, if they would insure at all; and they might refuse to carry, or carry only at a premium, cargoes insured by them. Moreover, shippers might not insure with them, or only at a discount. And, were the shippers to be the joint-venturer, ship-owners might carry their freight, if at all, at a premium, and insurers might not insure the freight, if at all, at a premium, of those not members of the appropriate organization(s).

Need any or all of these threats eliminate 100% of all possible free riders? No. There are many firms that continue to operate without being able to exclude *all* recipients of any conceivable external benefits. For example, long before government began to subsidize higher education in the United States there were thousands of such institutions sending forth educated citizens into society, benefiting not only the institutions, and the students, but society at large. In similar manner, lighthouse owners might well have been able to continue in business without deriving payments from each and every last person who benefits from their commercial undertakings.

3 Bertrand

Just as in marketing, so too in economic political philosophy; product differentiation is important. We now explore how our paper differs from Bertrand (2006). There are, to be sure, similarities. We agree with Bertrand (2006), along with Van Zandt (1993), that Coase (1974) has not shown that the lighthouse has served as a real-world case of private market provision of a public good.[2] We also enthusiastically support Bertrand's (2006, p. 396) contention that "Coase uses the terms 'private' and 'government' too vaguely and without careful definitions." Where do we disagree? In the following 14 ways.

3.1

Bertrand (2006, p. 390) agrees with Van Zandt (1993), not Barnett and Block (2007), when she states that "the 'private form' (sic) Coase describes ... never existed." In our view, there were "private firms" e.g., charities, that did indeed offer lighthouses.

3.2

Bertrand (2006, p. 392) sees a strong parallel between Coase's work on social cost (1960) and the lighthouse (1974). For Bertrand (2006, p. 392), they "fit perfectly" together. She states (2006, p. 393): " 'The Lighthouse' could be thought of as an application of 'The Problem of Social Cost'."

In our view, these two high-profile articles of Coase's are not at all in the same tradition. Yes, superficially, they resemble one another, in that both feature historical case studies and lawsuits. But in "The Lighthouse" Coase reaches the correct pro-market conclusion albeit for the wrong reasons: because he incorrectly maintained that lighthouses supported by governmentally coerced payments were private businesses in the relevant sense of the word "private."[3] However, in "Social Cost," although by maintaining that in cases of negative externalities, *all* costs, both those involved in using the market (transactions costs) and those involved in using government to deal with the problem, need to be considered when deciding the proper course of action, he seems to think he is promoting the market, but de facto he undermines the vary basis of the private enterprise system; to wit, the institutions of the system of private property.[4,5] There is a second difference we see between these two Coasian articles, which is overlooked by Bertrand: we see the main error in her "Lighthouse" publication to be one of not distinguishing the voluntary from the coercive, and in his "Social Cost" an erroneous view of the doctrine of private property rights.

---

[2] For our views on Van Zandt (1993), see Barnett and Block (2007).

[3] Although the profits may have gone into private pockets, the firms were not dependent upon the market for the revenues thereby raised; rather, the revenues were generated by government coercion.

[4] It would take us way too far afield to even begin to defend this very much of a minority claim. For support of it, see Block (1977, 1995, 1996), Cordato (1989, 1992a, 1992b), Krecke (1996), McGee (1997), North (1990, 1992, 2002), Rothbard (1982a), Stringham (2001).

[5] This is reminiscent of Keynes thinking he was saving capitalism while stating: "I, conceive, therefore, a somewhat comprehensive socialization of investment will prove the only means of securing full employment: though this need not exclude all manner of compromises and devices by which public authority will co-operate with private initiative" (Keynes 1936, p. 378).

3.3

Here is an assessment of Coase (1974) by Bertrand (2006, p. 395, emphasis added) with which we take issue: "…Coase does not claim that lighthouse financing must always be private, but only that it *could have been* in the past, contrary to the economists' assessments." In our view, Coase (1988, p. 212) took the rather different position that "The early history shows that, contrary to the belief of many economists, a lighthouse service can be provided by private enterprise…The lighthouses were built, operated, financed, and owned by private individuals…" Bertrand (2006, p. 401, emphasis added) repeats this error: "Coase *attempts to show* that the lighthouse service could have been 'private'[6] in England."

3.4

We part company from Bertrand (2006, p. 396) in her characterization of Trinity House as a "private organization." Trinity House was no more private than the Federal Reserve Banks.[7] Bertrand (2006, p. 399) in contrast speaks of "the public interest represented by Trinity House."

3.5

Bertrand (2006, p. 396–397, footnote omitted) states:

> According to Coase, property rights in lighthouses had a sole specificity. They 'were unusual only in that they stipulated the price that could be charged' (Coase 1974, p. 212). Having bargained with the patentee, the King fixed the dues for each lighthouse. This point deserves more attention than Coase and Van Zandt pay to it. It recognizes the peculiarity of lighthouse service (whose marginal cost is equal to zero), and the possibility of strategic behaviour in bilateral bargaining between a shipowner and a lighthouse 'owner' (the problem raised by Arrow 1969). Price fixing avoids this bargaining and protects the user from strategic behavior on the part of the single provider.

Bertrand seems to think the only possible relation between these two parties is one of bargaining each time the ship-owner wants the lighthouse light lit. Moreover, in such a situation, strategic behavior by ship-owners is also possible. In such situations, provided the expected benefits of the service exceed the costs, the parties will find it in their own interests to evolve institutions, in this case, contracts, perhaps involving creditable commitments and the use of "hostages," to make the service viable. (Williamson 1985, pp. 163–205). But this does not at all exhaust the possible range of contracts. At the very least, it is hardly necessary to create an agreement, de novo, every time a ship-owner wants to avail himself of lighthouse services. Surely, there could also be contracts calling for monthly or annual payments. As well, the market would tend to radically reduce such strategic behavior, provided there was respect for private property and contract rights.

[6] We are at a loss to explain Bertrand's continual use of quote marks around the word "private" of which this is but one example.

[7] Bertrand (2006, p. 396, emphasis added) approvingly quotes Taylor: " 'Trinity House was a *private* corporation, but performed a *public* role which would otherwise have *had* to be performed by a central government agency' (Taylor 2001, p. 767)."

3.6

Bertrand (2006, p. 397) claims there is a "peculiarity of the lighthouse service ... [since its] ... marginal cost is equal to zero ..." Cost is the value that an individual places on the most highly valued of the alternatives he thinks he is foregoing any time he acts, and as such it is necessarily subjective (Buchanan 1969; Buchanan and Thirlby 1981). Bertrand has no reason to believe that they are zero at all times and places. Suppose an owner of a lighthouse takes serious objection to a would-be free rider. Who are we third-party economists to tell this property owner that he suffers no cost at this injury/insult? If nothing else, part of his cost is any revenue he considers himself to be foregoing if he turns the light on for non-payers (Barnett and Saliba 2003). Secondly, even if we employ the usual "objective cost" considerations beloved of neoclassical economists, the lighthouse is still by no means unique or "peculiar." Rather, many goods for which there is less than 100% capacity utilization have a "marginal cost ... equal to zero." For example, it "costs" (virtually) nothing, in this mistaken mainstream view of costs, for a theater owner to fill an empty seat, if, as is reasonable, we can ignore the trivial additional wear and tear on the seat. Moreover, whether the marginal "objective cost" is zero depends upon the decision under consideration. Although once a lighthouse has its light lit for a storm there may be no such "costs" that arise from the use of the service by additional vessels, costs may well be incurred in turning the lights on in the case of a storm during the day. For this requires manning the lighthouse on a continuous basis. The operators may prefer to be elsewhere earning money during the day, as their job does not require them to be awake during the entire evening, but only to turn the light on and off at the beginning and end of the night.[8]

3.7

Bertrand takes what can be characterized as several anti-market positions which seem incorrect, or at least unproven. Relying on a House of Commons report of 1834 "quoted by Coase," she (2006, p. 398) complains that

> light dues were too high in comparison with what was sufficient to maintain lighthouses and even to build and maintain new ones. The levels of dues and their modes of collection showed lack of uniformity. Contrary to Coase, the confusion which prevailed in this field at the beginning of the nineteenth century actually motivated the centralization ... allowed for standardization and the constant lowering of dues.

But these were not market prices; rather, they were monopoly prices set by government. Absent market prices, there is no way to know if the prices were too high or too low.[9] Given that the prices were set by the government, and the government shared in the profits, it is a reasonable assumption that they were set above the levels which would have obtained in a free market.

[8] This is similar to the case of many firemen who are allowed to sleep in the firehouse while on duty and/or who have other jobs. Were they required to be awake during their entire shift they would demand higher pay.

[9] Free-market prices are neither too high nor too low, rather they are what they are. Should the profits earned by the least profitable firms be "too high" either the firms in the industry will expand or new entrants will be induced. If "too low," insufficiently profitable firms will leave the industry.

3.8

Bertrand (2006, p. 398, footnote 1) interprets problems she sees with lighthouse pricing as an indication of the "opposition between private and public interest."[10] This bespeaks an unjustified rejection of Adam Smith's "invisible hand," through which people are led to do that which is in the public good by consultation with their own private selfish interest in profit-seeking.[11] It also ignores the findings of the Public Choice school of thought (Buchanan and Tullock 1962), according to which men do not suddenly grow angel's wings when they take up "public" service.

3.9

Bertrand (2006, p. 398) takes umbrage at the fact that a "violin-maker" constructed a lighthouse. But, why not call this person an *ex* violin maker, since he is *now* involved in lighthouse construction? In any case, entrepreneurs are not properly typecast as belonging to any specific industry. Carriage makers were the first to manufacture automobiles.[12] This author, moreover (2006, p. 399) contradicts herself when she concedes that a "silk mercer," presumably as far removed from lighthouses as the violin maker, was responsible for a "much more solidly" built lighthouse.

3.10

Bertrand (2006, p. 399) supports governmental regulations and inspections, and sees "poor quality (as) partly due to the search for maximum profits ..." But market certification institutions, such as Moody's, Standard and Poor, Underwriters Laboratories, Good Housekeeping, Consumer Union, are more reliable sources of security in products, whether for consumer or capital goods. At least they can be bankrupted in case of error.[13] Any such tendency in government "service" is greatly attenuated. The search for maximum profits leads to poor quality? Much the reverse is true.

3.11

Bertrand (2006, p. 398) states: "Several sources agree in insisting that the English lighthouse system, in the seventeenth and eighteenth centuries, operated with problems." She

[10]This seems strange as on the next page she explains that; "The 'private' lighthouses had to wait until these entrepreneurs offered to share the profits with the sovereign ..." Certainly this is not a case of the free market in action, where the Crown's governmental power to confer the right to build a lighthouse is exercised in the private interest of the Crown.

[11]Bertrand (2006, p. 399) allows this frontal attack on the invisible hand to pass without demur: "In 1580, Queen Elizabeth I refused to grant Gwen Smith the right to build a lighthouse on the Goodwin Sands. She thought his interest was only in financial gain and not in the welfare of sailors." Not us.

[12]The fact that most carriage makers failed in the auto business does not gainsay this claim.

[13]The real problem with Katrina and its aftermath was *not* that the Army Corp of Engineers and FEMA, between them, killed some 1,500 New Orleanians; it is that these organizations *still* remain in "business." Were they private, this would not be the case. See on this Stringham and Snow (2008), D'Amico (2008), Vuk (2008), Dirmeyer (2008).

mentions several: "it was difficult to distribute the dues to the different lighthouse owners,"[14] "complexity of the system", "inefficiency of management", "high collection costs", "wide variation in the charges for light", "lights worked poorly". But such problems do not stem from free enterprise lighthouses, but, rather, come about because lighthouses were governmentally regulated, and especially because the revenues received by for the lighthouses were coerced from the ship-owners.[15]

3.12

Bertrand (2006, p. 399) refers to several cases in which lighthouses were destroyed and rebuilt. The causes were, variously, a lighthouse "swept away by the sea in 1703" and "A fire destroyed the lighthouse in 1755." She then states: "This repeated rebuilding suggests that technical control of the quality of buildings was insufficient. Lighthouse construction, as well as maintenance, was not always closely inspected, largely owing to lack of regulations. Once again, this poor quality was partly due to the search for maximum profits, helped by collusion with the Crown." But this misunderstands the matter. First, in a free market the construction and maintenance would have been closely supervised by the owner and/or his agents out of self-interest. There would be no need for "regulation," here understood to be governmental. Without "collusion with the Crown," the "search for maximum profits" would not have resulted in poor quality, because in a free-market periods during which the light was inoperable, whether because the structure was destroyed and in the process of reconstruction, or because of poor maintenance, or because it was not lit, would undoubtedly be times during which no revenues were generated. Moreover, these two examples, some 50+ years apart seem weak reeds upon which to condemn the quality of 18th century construction and maintenance. Even in the 21st century we witness the power of the sea as it destroys well-built structures. (Hurricane Katrina destroyed the Ship Island replica of the Biloxi, MS lighthouse.) And fires consume sturdy structures every day.

3.13

Bertrand (2006, p. 400) states: "Since protecting ships [by means of lighthouses] could sometimes be less profitable than plundering them [if they were wrecked], we are less confident than Coase on this matter: individual initiative alone might not be sufficient to lead to the building and maintenance of lighthouses." This greatly confuses analysis by not distinguishing among the players. Associating the honorable term "profits" with plunder misconstrues the situation. It puts dishonest earnings on a par with honest income. Regarding the protection of ships the only alternatives Bertrand considers are truly private lighthouses or intervention in the form of governmentally sponsored lighthouses. She does not consider

[14] Bertrand (2006, p. 398) approvingly quotes Taylor (2001, p. 756) that the "charges attracted much criticism both from merchants, who argued that high light dues inhibited foreign trade, and ship-owners who complained that in a period when shipping was 'dull and unprofitable,' the high fixed costs of light and other dues prevented them from cutting back their expenditure." Bertrand does so without noting that businessmen, including both merchants and ship owners, are known for crying poor-mouth and trying to shift costs of doing business to others.

[15] The whole issue of "public goods" and their provision as per Bertrand's discussion is reminiscent of another so-called "market failure", "natural monopolies". There, also, government is involved to the hilt, whether as provider or regulator of a "private" provider. And, there also arise problems of excessively high prices and the poor-quality services.

discouraging looting by more and better efforts to: (1) prevent criminals from incapacitating or destroying lighthouses, and then looting ships; (2) catch and convict looters engaging in any of those activities; and (3) impose greater penalties for any such activities. If there are any legitimate functions of government, they are the protection of rights to life, liberty, and property. Were government to reduce the incentives for such illegal and nefarious activities by doing its job and protecting these rights, the choice would not be between more "profitable" looting and less profitable free-enterprise lighthouses, but, rather between the latter and governmentally sponsored lighthouses. The choice would then be clear: private lighthouses, because they would be built and operated to the extent they provided useful services. Poorly constructed and maintained ones, and high-cost governmentally privileged lighthouses, would not be warranted.

3.14

In her concluding remarks, Bertrand (2006, p. 401) maintains that her analysis results in qualifying Coase's conclusions in six particulars. We take issue with all of them.

3.14.1

"Dues for 'private' lighthouse services, collected by public officers," could only be obtained with state coercion. Her case is not proven. She merely showed that the dues *were* collected in this way, and not that revenues *could not have been* generated by voluntary payments. In fact, Bertrand (2006, p. 397, emphasis added) herself contradicts this point: "In the competition for Royal privileges, Sir John Clayton obtained no less than five patents, all with voluntary contributions. Among the five lighthouses built, only two were lit (in Corton) since the dues remained unpaid ... We see here the *difficulty* of obtaining payment for 'private' lighthouse services ..." Apparently dues were collected for the two lighthouses that were lit, else, whence did the revenues to operate them arise? Moreover, there is a difference between difficulty and impossibility. Economic reasoning would tend to draw us to the conclusion that payments were made voluntarily to the two lighthouses that were lit because they provided services worth the expense to the ship-owners, whereas payments for the services of the other three were not supported because their services were not worth while.

3.14.2

"Construction and maintenance of a lighthouse by a private individual were made profitable by fixing a high price, granting a monopoly, and guaranteeing the obligation of payment." Although this is true, it is misleading, for it implies that without governmental favoritism lighthouses would have been unprofitable. Arguments regularly arise that such and such an industry would go out of existence were it not for some special privilege afforded to it by government. Of course, the privileges are never removed, so the case is never exposed. Suffice it to say that in a free market any firm and industry will survive provided it generates benefits, in excess of costs, to its customers.

3.14.3

"Private lighthouses ended in failure and required centralization, which favoured the uniformity of the dues system, their abatement and the control of the buildings' and lights' quality ..." That the system of governmentally sponsored lighthouses encountered many and growing problems should come as no surprise. The conclusion that what was required was centralization; i.e., even more control by government is, however, unwarranted. Economic analysis and the history of governmental intervention leads us to the very opposite conclusion; what was required was for the government to refrain from having anything to do with the lighthouse business, save, possibly, for enforcing property rights, contracts, etc.

3.14.4

"Government's role thus appears more clearly: it made the provision of the service *profitable*, but it did not make it *efficient*." Again, true, but misleading. Although it may have made it more profitable, this is not to say that it would have been unprofitable as a truly private venture, although, no doubt, profits were higher because of the requirement that they be shared with the government. (One might look at such excessive profits resulting from necessarily coercive action as a form of looting; i.e., the government joined with its privileged lighthouse gang to loot the private sector via dues extracted form ship-owners.) Misleading, also, is the idea that government made lighthouse services efficient. The implication is that fee-market services were, or would have been, inefficient, and governmental intervention was necessary to correct this problem. Actually, governmental intervention causes inefficiency in the first place.

3.14.5

Bertrand maintains: "However, returning to this period of history, we have encountered, almost paradoxically, all the practical elements explaining how the production of a public service, whose marginal cost is equal to zero, cannot be entrusted to exclusively private initiative." The implication is that the free market would not have provided lighthouse services, but thanks to governmental intervention, they were made available. It would be better to say: "However, returning to this period of history, we have encountered, almost paradoxically, all the practical elements (the necessity of a government patent, governmentally set prices, and mandatory profit-sharing with government) that explain how the production of any service, regardless of marginal cost, cannot be entrusted in any degree to government."

3.14.6

The implication is that, unfortunately the necessary governmental intervention resulted in some problems for which the only solution was more intervention. That governmental intervention resulted in more problems is to be expected. That more intervention would improve the situation is wishful thinking. As Mises (1969, 1977) teaches (see also Ikeda 1997; Lavoie 1982; Rothbard 1982b), every intervention has undesirable consequences that the political class understands as necessitating yet more intervention. Needless to say, the problems created by the subsequent interventions are always worse than those created by prior interventions, resulting in ever greater growth of government and ever more problems.

4 Conclusion

Contrary to the widely popular view, Coase (1974) did *not* succeed in showing that for-profit enterprise had supplied lighthouses to the market. He confused market with government provision of these services. Bertrand (2006) *did* succeed in demonstrating this failure of

Coase's, but in so doing committed a whole host of errors. The lighthouse is *not* an example of a public good; the supposed market failures of excludability and rivalrousness can be overcome by sufficiently clever entrepreneurs with credible threats against free riders. If governments were to stick to their traditional role of protector of private property rights and contracts, and not engage in compulsory safety regulations, there is good and sufficient reason to believe that markets could function in this area of the economy.

Acknowledgements We are indebted to two unusually active, incisive and articulate anonymous referees and editors of this journal for urging us to write much of the material in our first section, as well as for turning around the focus of an earlier version of this paper into its present direction. Their attention to detail was very thorough, to the great improvement of this paper. Needless to say, but we say it anyway, all remaining errors in this paper are solely the responsibility of the authors.

References

Arrow, K. J. (1969). The organization of economic activity: issues pertinent to the choice of market versus non-market allocation in U.S. Congress, joint economic committee, subcommittee on economy in government, 91st Congress, 1st Session. *The analysis and evaluation of public expenditures: the PPB system*, *1*, at 47, 58.

Barnett, W. Jr., & Block, W. (2007). Coase and Van Zandt on lighthouses. *Public Finance Review*, *35*(6), 710–733.

Barnett, W. Jr. & Saliba, M. T. (2003). Traditional marginal cost: conceptual problems and some implications. Unpublished manuscript.

Bertrand, E. (2006). The Coasean analysis of lighthouse financing: myths and realities. *Cambridge Journal of Economics*, *30*, 389–402.

Block, W. E. (1977). Coase and Demsetz on private property rights. *Journal of Libertarian Studies: An Interdisciplinary Review*, *I*(2), 111–115.

Block, W. E. (1995). Ethics, efficiency, Coasean property rights and psychic income: a reply to Demsetz. *Review of Austrian Economics*, *8*(2), 61–125.

Block, W. E. (1996). O.J.'s defense: a reductio ad absurdum of the economics of Ronald Coase and Richard Posner. *European Journal of Law and Economics*, *3*, 265–286.

Buchanan, J. M. (1969). *Cost and choice: an inquiry into economic theory*. Chicago: Markham.

Buchanan, J. M., & Thirlby, G. F. (1981). *L.S.E. essays on cost*. New York: New York University Press.

Buchanan, J. M., & Tullock, G. (1962). *The calculus of consent*. Ann Arbor: University of Michigan Press.

Coase, R. H. (1960). The problem of social cost. *Journal of Law and Economics*, *3*, 1–44.

Coase, R. H. (1974). The lighthouse in economics. *Journal of Law and Economics*, *17*(2), 357–376.

Coase, R. H. (1988). The lighthouse in economics. In *The firm, the market, and the law* (pp. 187–213). Chicago: University of Chicago Press. Reprinted from Coase (1974).

Cordato, R. E. (1989). Subjective value, time passage, and the economics of harmful effects. *Hamline Law Review*, *12*(2), 229–244.

Cordato, R. E. (1992a). Knowledge problems and the problem of social cost. *Journal of the History of Economic Thought*, *14* fall.

Cordato, R. E. (1992b). *Welfare economics and externalities in an open-ended universe: a modern Austrian perspective*. Boston: Kluwer.

D'Amico, D. J. (2008). Who's to blame for all the heartache? a response to anti-capitalistic mentalities after Katrina. *International Journal of Social Economics*, *35*(8), 590–602.

Dirmeyer, J. (2008). The futile fight against (human) nature: a public choice analysis of the US army corps of engineers—special focus on hurricane Katrina. *International Journal of Social Economics*, *35*(8), 627–638.

Ikeda, S. (1997). *Dynamics of the mixed economy: toward a theory of interventionism*. London/New York: Routledge.

Keynes, J. M. (1936). *The general theory of employment, interest, and money*. Harcourt: Brace & World.

Krecke, E. (1996). Law and the market order: an Austrian critique of the economic analysis of law. *Journal des Economistes et des Etudes Humaines*, *7*(1), 19–37.

Lavoie, D. (1982). The development of the Misesian theory of interventionism. In I. Kirzner (Ed.), *Method, process and Austrian economics: essays in honor of Ludwig von Mises* (pp. 169–183). Lexington: D.C. Heath.

Leeson, P. T. (2007). An-*arrgh*-chy: the law and economics of pirate organization. *Journal of Political Economy*, *115*(6), 1049–1094.
McGee, R. W. (Ed.). (1997). *Commentaries on law & economics*, 1997 Yearbook, pp. 86–109.
North, G. (1990). *Tools of dominion: the case laws of Exodus*. Tyler: Institute for Christian Economics.
North, G. (1992). *The Coase theorem*. Tyler: The Institute for Christian Economics.
North, G. (2002). Undermining property rights: Coase and Becker. *Journal of Libertarian Studies: An Interdisciplinary Review*, *16*(4), 75–100. http://www.mises.org/journals/jls/16_4/16_4_5.pdf.
Rothbard, M. N. (1982a). Law, property rights, and air pollution, *Cato Journal 2*(1). Reprinted (1990). In W. Block (Ed.), *Economics and the environment: a reconciliation* (pp. 233–279). Vancouver: Fraser Institute. http://www.mises.org/rothbard/lawproperty.pdf.
Rothbard, M. N. (1982b). Interventionism: comment on Lavoie. In I. Kirzner (Ed.), *Method, process, and Austrian economics* (pp. 185–188). Lexington: Lexington Books.
Stringham, E. P. (2001). Kaldor-Hicks efficiency and the problem of central planning. *Quarterly Journal of Austrian Economics*, *4*(2), 41–50. http://www.mises.org/journals/qjae/pdf/qjae4_2_3.pdf.
Stringham, E.P. & Snow, N.A. (2008). The broken trailer fallacy: seeing the unseen effects of government policies in post-Katrina New Orleans. *International Journal of Social Economics*, *35*(7), 480–489.
Taylor, J. (2001). Private property, public interest, and the role of the state in nineteenth-century Britain: the case of lighthouses. *Historical Journal*, *44*(3), 749–771.
Van Zandt, D. E. (1993). The lessons of the lighthouse: 'government' or 'private' provision of goods. *Journal of Legal Studies*, *22*(1), 47–72.
von Mises, L. (1969). *Omnipotent government*. New Rochelle: Arlington House.
von Mises, L. (1977). *A critique of interventionism*. New Rochelle: Arlington House. http://www.mises.org/etexts/mises/interventionism/contents.asp.
Vuk, V. (2008). Taking advantage of disaster: misrepresentation of housing shortage for political gain. *International Journal of Social Economics*, *35*(8), 603–614.
Williamson, O. E. (1985). *The economic institutions of capitalism*. Free Press.