

1966 AND ALL THAT: CODIFICATION, CONSOLIDATION, CREEP, AND CONTROVERSY IN THE EARLY HISTORY OF THE COASE THEOREM

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The year 1966 was central to the history of the Coase theorem debates, featuring the entry of the idea of a 'Coase theorem' into economic discourse and the eruption of the controversy over the the correctness of Coase's negotiation result. This paper examines economists' treatments of Coase's result in 1966 and through the remainder of the decade, a period during which its place in the professional discourse began to solidify and three 'camps' began to develop around it: those who believed Coase's result correct but of limited real-world applicability, those who found it relevant for explaining and devising policy with regard to a wide swath of externality-related phenomena, and those who argued and purported to demonstrate that this result was simply incorrect or wrong-headed on one or another grounds.

I. INTRODUCTION

At approximately 9:00 in the morning on December 26, 1966, Professor Robert Haveman, then an assistant professor at Grinnell College, addressed a joint session of the American Economic Association (AEA) and the American Farm Economic

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Association devoted to the topic “Economic Analysis of Water Resource Problems.”¹ His assigned task was to comment on Michigan State University professor A. Allan Schmid’s (1967) paper, “Nonmarket Values and Efficiency in Public Investments in Water Resources.” In the course of his comments, Professor Haveman informed the audience that “standard externality theory holds that public intervention may be necessary to achieve a welfare maximum” in the case of Pareto-relevant externalities, but he qualified this statement by noting that this is true “only if the Coase theorem is inoperative” (1967, p. 191). This remark, published in the May 1967 *Papers and Proceedings* issue of the *American Economic Review*, is noteworthy because it represents the first use of the term ‘Coase theorem’ in the journal literature. Indeed, it is one of only two uses of the term in this literature during the 1960s, the other coming in G. Warren Nutter’s article, “The Coase Theorem on Social Cost: A Footnote,” published in the *Journal of Law and Economics* in 1968.

But Haveman’s invocation of a “Coase theorem” is noteworthy for at least two other reasons. The first is that he stated the term without any elaboration or explanation of its meaning—as if his academic audience would know what he meant by the term without his having to define it. Second, Haveman seemed to take it as a *given* that the theorem is correct, and that the only issue was whether it would be “operative” under the circumstances in question. And, in providing no defense for his assertion, he seems to have been of the mind that the audience would view the matter in the same way.

What makes Haveman’s remark all the more interesting is the fact that there is only one published use of the term ‘Coase theorem’ prior to his invocation of it, that coming from George Stigler in the third edition of his textbook, *The Theory of Price*, which appeared in 1966, and thus, at most, months before Haveman’s comment at the AEA meetings. Stigler is almost universally credited, including by Ronald Coase himself,² with coining the term, but the details of the term’s origins remain a mystery. We know from Stigler’s various retrospective comments that he was enamored of Coase’s negotiation result going back at least to the informal seminar on the subject that took place in Aaron Director’s living room in 1959 or 1960.³ But Stigler did not write it down, at least for consumption by others, until 1966, and there is no record in his personal papers of his making any other reference (in his correspondence, etc.) to the term during this period. Haveman’s use of the term, though, suggests that it was ‘in the air’; he had obviously heard it somewhere, and in a context or set of contexts that led him to toss out the term at a conference. While Stigler’s text is one possible source, Haveman has discounted that idea.⁴ He had spent 1964–65 at Resources for the Future (RFF), an environmental economics think-tank, and may have encountered the term there, though Allen Kneese, another RFF economist who made occasional reference to Coase’s negotiation result during the 1960s,⁵ did not invoke the term. And even if it was at RFF that Haveman heard mention of the term, we remain without an explanation for how it migrated from George Stigler’s mind to RFF’s home in Washington, DC.

¹Haveman had received his PhD from Vanderbilt University in 1963 and spent much of his early career working on issues in environmental and public economics. He moved to the University of Wisconsin in 1970, and his research agenda progressively moved into the fields of labor economics and the economics of poverty.

²See, e.g., Coase (1988, pp. 14, 157). Nonetheless, one continues to see in the literature, even to this day, references to “Coase’s theorem.”

³See Kitch (1983, p. 221) and Stigler (1988, ch. 5) for Stigler’s recollections of that evening’s ‘seminar.’

⁴Correspondence with the author, January 8, 2007.

⁵See, e.g., Kneese (1964), Kneese and Bower (1968), and Ayres and Kneese (1969).

Though we must be content, at least for the present, to leave this little transmission mystery unsolved, the lesson to be taken from it is that it reinforces the claim made elsewhere by the present author that, by the mid-1960s, Coase's negotiation result, though not widely discussed in the literature to that point, was gaining attention and a measure of acceptance as a theoretical proposition.⁶

The second half of the 1960s brought with it an increasing degree of attention to Coase's result, an attention that included, from certain quarters, a reinforcement of its edifice and an expansion of its domain. But this period also witnessed the initiation of the long-running controversy over the *correctness* (as opposed to applicability) of Coase's result—a controversy that would belie the certitude found in Haveman's remarks but also eventually reinforce the result's status as a 'theorem.' It is difficult to say where the roots of all of this lay. On the one hand, the literature treating this result had started to snowball a bit, meaning that it was being encountered by a wider array of scholars in journals such as *Economica*, the *American Economic Review*, *The Economic Journal*, and the *Southern Economic Journal*—that is, beyond the (then) relatively narrow confines of the readership of the *Journal of Law and Economics*. But there can also be little question that its treatment in one of the prominent textbooks of the period played a role in broadening the group of individuals who encountered Coase's result. This was only reinforced by *the way* in which it was discussed in this text—an almost over-the-top sort of treatment that fit with the outsized personality of the textbook's author and the creator of the term 'Coase theorem': George Stigler.

The year 1966 was central to the history of the Coase theorem debates, featuring Stigler's codification, Haveman's invocation, and the eruption of the controversy over the the correctness of Coase's result. The purpose of the present paper is to examine economists' treatments of Coase's negotiation result in 1966 and through the remainder of the decade, a period during which its place in the professional discourse began to solidify and those favorably disposed to its applicability or the extension of its logic to real-world economic phenomena, as well as those critical of it, began to stake out their respective positions. What emerges from this analysis is that the late 1960s in many ways set the tone for subsequent discussions of the Coase theorem, both through the codification of Coase's negotiation result as a theorem and through the development of what one might call the three 'camps' that developed around it: those who believed Coase's result correct but of limited real-world applicability, those who found it relevant for explaining and devising policy with regard to a wide swath of externality-related phenomena, and those who argued and purported to demonstrate that this result was simply incorrect or wrong-headed on one or another grounds.

II. CODIFICATION: CREATING THE 'COASE THEOREM'

It goes almost without saying that George Stigler was one of the brightest lights in the history of Chicago economics. He received his PhD from Chicago in 1938, studying under Frank Knight, and he returned to Chicago as a professor in 1958—joining his good friend and sometimes co-author Milton Friedman on the Chicago faculty. Though

⁶See Medema (2014c).

Stigler is often classed a “neoliberal” by modern critics of Chicago economics,⁷ this is an oversimplification—as many labels are. Stigler was incredibly complex. The force of his personality always made it clear where he stood on a particular issue; yet, connecting the dots that made up George Stigler with a view to arriving at a coherent whole requires more than a bit of work and, in fact, really has not been done in any sort of satisfactory way to date. As it happens, the Coase theorem story is illustrative of the hazards associated with trying to pigeonhole Stigler and his view of the world.⁸

Stigler’s introduction of Coase’s analysis and the Coase theorem to his readers in the 1966 edition of *The Theory of Price* was not his first treatment of the externality problem, a subject that was analyzed in relatively straightforward Pigovian fashion in each of the previous editions of his textbook.⁹ While some might be surprised by the credence that Stigler gave to the Pigovian approach, particularly given the strident criticism of Arthur C. Pigou laid out by his mentor, Frank Knight,¹⁰ we should not be. The Pigovian approach to externalities was solidly entrenched in the professional discourse of the period, and while there are hints in Stigler’s treatment of a less than complete satisfaction with Pigovian remedies, he would have been hard pressed to present an alternative view of things—at least one that was grounded in some version of neoclassical economics.¹¹

Although it took roughly six years after the publication of “The Problem of Social Cost” for Stigler to mention Coase’s treatment of externalities in print, when he did, the impact that Coase’s analysis had on Stigler’s thinking was clear.¹² Stigler began his analysis with a standard two-paragraph overview of what it means for private and social costs to diverge, but rather than concluding that this results in the non-optimal output levels and prices, as he had in his earlier editions, Stigler now put the matter in the form of a *question*: “One of the most tendencious questions in economics has been: when social and private costs diverge appreciably, will competition lead to correct amounts (and prices) of goods?” (1966, p. 110).¹³ He attempted to answer this question

⁷See, for example, a number of the essays in Mirowski and Plehwe (2009) and in Van Horn, Mirowski, and Stapleford (2011).

⁸On this point, see the extensive discussion of Stigler and the Coase theorem in Medema (2011a). The present analysis draws on a portion of that discussion.

⁹See the chapters on costs in Stigler (1942, 1946, 1952).

¹⁰See Knight (1924). Stigler made no mention of Knight’s work in this vein in his own discussion, however, although he did cite the article in his “Recommended Readings” at the end of the chapter in each edition of his textbook.

¹¹It is worth noting that Stigler did, at one point, allow for the possibility of private solutions to externality problems, achieved through cooperation, but this was simply a reference to Pigou’s own statements regarding the possibility of negotiation between landlords and tenants to mitigate divergences between private and social cost rather than any sort of premonition of Coase’s result. See Stigler (1942, p. 107) and Pigou (1932, pp. 177–182). Stigler actually *eliminated* this discussion in the 1952 edition of his text.

¹²What is also clear is that this impact seems to be several steps removed from what Coase had been trying to tell economists in “The Problem of Social Cost” (1960). See Coase (1988) and Medema (2009). On the role that the negotiation result played in Coase’s works, see the preceding references and Bertrand (2010).

¹³Note that Stigler is also referencing only situations where social and private costs diverge “*appreciably*.” It is not clear what Stigler thought about situations where the divergence is not appreciable or the magnitude of the divergence necessary to meet the standard of “*appreciably*.” One possibility is that he considered such situations close enough to efficient to be labeled as such—some support for which can be found in Stigler’s discussion of perfect competition, which we take up below.

by invoking Coase's illustration of the farmer and the cattle rancher, noting that his discussion was "based upon the *profound* article of Ronald Coase, 'The Problem of Social Cost'" (p. 111n8, emphasis added).

Stigler asked the reader to contemplate a situation in which a cattle raiser comes into an unfenced area occupied by grain farmers and demonstrated how wandering cattle impose costs on the farmers through crop destruction, thereby creating a divergence between the private and social costs associated with raising cattle. When he came to the issue of how to efficiently resolve this externality situation, Stigler pointed out very matter-of-factly that "In our case of roaming cattle, it is clear that a legal requirement that the cattle raiser bear the cost of fencing or damage to crops will make private and social costs equal" (pp. 111–112). So far, then, Stigler's treatment of the problem was completely in keeping with the received (Pigovian) view. Stigler went on to point out that, according to the conventional wisdom, a law that imposes liability on the farmer would not seem to have the same effect. Yet, he said, if we consider a situation in which a farmer enters previously unfenced land devoted to cattle ranching, it becomes clear that there is an essential symmetry here. The conclusion in this case is that the *farmer* should be liable for damages, including any costs that his arrival imposes on the ranchers. That is, the assignment of liability to the farmer internalizes to him all relevant costs and so equates the private and social costs associated with the conflicting land use, just as does the assignment of liability to the rancher. Stigler then proceeded to illustrate this "fundamental symmetry" (p. 112) with a numerical example akin to that used by Coase, based upon which he concluded that "The manner in which the law assigns liability will not affect the relative *private* marginal costs of cattle and grain" and that this "obviously leads to the correct *social* results—the results which would arise if the cattle and grain farms were owned by the same man" (p. 113, emphases added).

It is at this point that Stigler laid out the profound import of this result, and, in doing so, gave this idea its name: "The *Coase theorem* thus asserts that under perfect competition private and social costs will be equal" (p. 113, emphasis added). Stigler was quick to point out the original and surprising nature of this idea for his student audience, informing them that the theorem "is a more remarkable proposition to us older economists who have believed the opposite for a generation, than it will appear to the young reader who was never wrong here" (p. 113). Perhaps more enlightening is Stigler's elaboration on this result. He allowed that the conclusion that output levels are not impacted by the assignment of liability "seems astonishing." Yet, he said, "it should not be," as it is the consequence of basic economic analysis widely accepted within the profession. To support this, he compared the Coase theorem's symmetry result to another standard economic result—the symmetry of a sales tax, the effects of which on price and output are identical whether the tax is levied on the buyers or the sellers (p. 113). For Stigler, then, the Coase theorem was a revolutionary result that should not have been revolutionary. It was simply basic economics upon which all economists should agree.

While Stigler was clearly enamored of the theorem, he was not so enthralled that he believed it applicable to any and all externality situations. Citing the example of air pollution, he suggested that when large numbers of parties are affected by an activity, the costs of working out an agreement "may be prohibitive." As a result, he said, "only statutory intervention [i.e., Pigovian remedies] may be feasible" (p. 114).

However, Stigler qualified this, too, by pointing to the difficulties involved in achieving and maintaining the socially optimal level of pollution reduction through statutory remedies, owing to changes over time in the technology of abatement and the number of people being impacted by the pollution (p. 114).

Stigler's codification of a 'Coase theorem' is interesting for several reasons, one of which is the distinction between it and Coase's own statement of the negotiation result on which Stigler's "theorem" was based.¹⁴ For example, Coase states that the outcome will be efficient and invariant, whereas Stigler argued simply that private and social costs will be equal. Now, it is clear that Stigler's statement embodies Coase's efficiency claim, though Stigler seemed to think the efficiency claim less surprising than did Coase. Indeed, Stigler's discussion of the outcome of the negotiation process emphasizes the invariance result and thus the resulting generality of the efficiency proposition.

A second interesting feature of Stigler's statement relates to the assumptions that give rise to this result. Coase explicitly assumed some assignment of property rights and zero costs of transacting, whereas Stigler assumed perfect competition and nothing more. Are these equivalent? The answer would seem to lie in what Stigler meant by 'perfect competition,' a topic that he took up in chapter 5 of *The Theory of Price* and which sheds light not only on the nature of the assumptions underlying his Coase theorem, but also on his larger view of it. Here, Stigler noted that "A competitive market is easily defined only for a perfect market," one in which buyers and sellers cannot influence the price at which the good is bought and sold (1966, p. 87). He then set out four conditions under which a perfectly competitive market "will normally arise": perfect knowledge, large numbers, product homogeneity, and divisibility of the product (pp. 87–88). Regarding perfect knowledge, he said: "If there is not perfect knowledge, there will be an array of prices at which transactions will take place, and almost all real markets display such an array. There will often be scope for higgling, and to this extent a situation termed bilateral monopoly arises. But if the scope for higgling is small, the departure from competition is small" (p. 88). Under Stigler's version of perfect competition, then, perfect knowledge precludes the sort of bilateral monopoly situation that could interfere with the bargaining process contemplated by the Coase theorem and so obviated the criticism that Paul Samuelson (1963, p. 141 n) had lobbed against Coase's result a few years earlier.¹⁵

Stigler never explicitly stated in this chapter that perfect competition implies zero transaction costs or the assignment of rights over relevant resources.¹⁶ It may simply be that he did not perceive the need to more explicitly reconcile his analysis of perfect competition with his discussion of the Coase theorem, or that it did not occur to him to

¹⁴Coase's statement was this: "It is necessary to know whether the damaging business is liable or not for damage caused since without the establishment of this initial delimitation of rights there can be no market transactions to transfer and recombine them. But the ultimate result (which maximises the value of production) is independent of the legal position if the pricing system is assumed to work without cost" (1960, p. 8).

¹⁵Samuelson's comment appeared in a footnote to an article in *The Texas Quarterly*. It has been cited only a handful of times, and it is unlikely that Stigler was aware of it.

¹⁶Coase himself argued in a subsequent commentary that the perfect competition assumption is unnecessary in a world of zero transaction costs (1988, pp. 174–175). Of course, this is a somewhat different matter from whether perfect competition implies zero transaction costs.

do so. Or, it may be that he considered the specification of property rights inherent in perfect competition and that zero transaction costs is covered by the perfect knowledge assumption, given that knowledge imperfections give rise to the bargaining costs that Coase mentions in his article.¹⁷ Or, it could simply be that Stigler did not ponder all of this in the depth that we find in the work of subsequent commentators on (and, in particular, critics of) the Coase theorem. While there is no way of knowing with certainty what Stigler had in mind here, each of these would be a reasonable conjecture.

The picture is further complicated by the fact that Stigler went on to acknowledge the highly restrictive nature of the assumptions underlying perfect competition, in light of which it makes sense to ask why Stigler would choose to ground his statement of this revolutionary theorem in a framework that is so unrealistic. An answer can be found in his defense of the model of perfect competition, where Stigler (1966, p. 89) argued that the model is not a depiction of reality but a tool for analysis, one that combines “clarity and efficiency” with “empirical relevance,” the latter because it gives rise to empirically testable propositions—a hallmark of Chicago price theory during this period.¹⁸ The same could be said of his view of the Coase theorem. Moreover, given his claim that the existence of a competitive environment does not necessitate strict satisfaction of the four criteria elaborated above, Stigler likely believed that he was on solid footing in presenting a theorem that could be used to explain real-world outcomes. Though Stigler did not elaborate on the applicability of the theorem to the real world here, the fact that the only qualification he offered was for situations in which the externalities involves large numbers of parties (“When a factory spews smoke on a thousand homes” [1966, p. 113]) seems to suggest that he considered the theorem at least somewhat applicable to externalities involving small numbers.¹⁹

None of the foregoing discussion, though, answers what may be the most interesting question surrounding this episode: why did Stigler do it? What was it that led him to fixate on this idea of Coase’s, label it a “theorem,” and then trot it out to the world in a textbook, of all places? It is difficult to think of a similar moment in the history of economics. Unfortunately, none of Stigler’s other published references to the theorem shed any light on this, nor does an exhaustive search of his voluminous archives at the University of Chicago.²⁰ Harold Demsetz, who was Stigler’s colleague at Chicago during this period, has noted to me in correspondence that he “never observed Stigler engaged in much discussion about Coase’s work, and discussion and debate was the ‘game’ at Chicago in those days.” Demsetz went on to suggest that the coining of the

¹⁷See Dahlman (1979) and Medema and Zerbe (2000) for more recent arguments regarding the link between perfect information and zero transaction costs.

¹⁸See, for example, Friedman (1953), Reder (1982), and Medema (2011b).

¹⁹It is worth noting that Stigler’s 1966 discussion of “The Problem of Social Cost” went no further than the Coase theorem result. In particular, there was no mention of the larger concerns raised by Coase—those that Coase was later to accuse economists of ignoring in their fixation on the negotiation result. Some analysis of the question of why Stigler gave Coase such a narrow reading in this 1966 treatment can be found in Medema (2011a).

²⁰There is no material pertaining to the preparation of the 1966 edition of Stigler’s textbook in the Stigler Papers archive at the University of Chicago, and Claire Friedland, Stigler’s long-time assistant, has suggested that this material was discarded at some point along the way. The author has also consulted the archives of a number of other individuals with whom Stigler interacted, and these, too, shed no light on this question.

term may well have “reflected Stigler’s literary cleverness in distinguishing the 3rd edition [of his price theory text] from the 1st and 2nd more than it did a well-worked out Stigler conclusion.”²¹ Whether all of this was a matter of literary cleverness or something deeper, it may be that Stigler saw in Coase’s insight a parallel to the First Fundamental Theorem of Welfare Economics, which holds that a competitive equilibrium is Pareto-optimal. Indeed, this may explain Stigler’s terse wording (as against Coase’s more lengthy exposition of his result) as well as his desire to codify the result as a ‘theorem.’ The First Fundamental Theorem assumes away externalities on the grounds that they are a barrier to efficiency; the Coase theorem suggests that externalities are no such thing. (This may also explain why Stigler chose to couch the Coase theorem in the assumption of perfect competition.) Unlike the First Fundamental Theorem, however, the Coase theorem did not come with a proof. And, where the First Fundamental Theorem commanded pretty much unanimous assent, the Coase theorem was to have a far different fate.

III. CONSOLIDATION AND CREEP

Stigler’s sentiment that the Coase theorem should not have been a surprising result is reflected in the views of many of the economists who discussed it in the second half of the 1960s. Though a number of authors felt compelled to explain the underlying logic of the result upon invoking it, there was little sentiment expressed indicating that the result was in any way radically at odds with accepted doctrine. And, while the detractors were beginning to make their presence felt, as we shall see below, the cadre of those supporting Coase’s result seems to have been even larger—at least using the measuring stick of commentaries on it made in economics journals. But there was something of a tension here, as most of those found to be supporting Coase’s result, though convinced of its wide applicability *in theory*, were not convinced that this would hold up *in practice*. The issue behind this divergence between correctness and applicability lay in the role played by transaction costs. Though the early work supporting the negotiation result implicitly assumed that all beneficial trades would be willingly consummated and that there were no transaction-cost-related barriers to such trades,²² the role played by these costs of negotiation was much more central for those taking up Coase’s result during the latter half of the 1960s. For most of these commentators, transaction costs constituted a barrier to the efficiency-enhancing magic of Coase’s result. For others, however, these costs, combined with Coase’s negotiation logic, provided a rationale for why any number of outcomes generally considered to be inefficient were anything but.

Acceptance—with Qualifications

If one were to judge by the literature of this period, the Coase theorem had almost limitless potential. Scholars suggested that, in theory at least, Coase’s solution could be applied to problems as diverse as water pollution (Kneese and Bower 1968); urban

²¹Harold Demsetz to this author, June 29, 2012.

²²On this point, see Medema (2014c).

transport, schools, and public utilities (Davies 1965); commuter railroad financing (Bowman 1966); noise externalities (Hirsch and Shapiro 1967); hospital congestion (Long and Feldstein 1967); road congestion (Moore 1968); air pollution (Ayres and Kneese 1969); driving safety (Lave 1968); and knowledge externalities (Baldwin 1969). That these economists were on board with the possibility of efficient negotiated settlements to externality problems under certain conditions is very clear from their comments on their respective subjects. For example, Robert Baldwin (Wisconsin), when discussing the claim that firms lack sometimes the incentive to acquire new productive knowledge (because competitors would immediately copy it without having to incur the R&D costs), noted that “in industries where there are a small number of firms, interfirm negotiations are likely to result in arrangements that offset the [knowledge] externality problem” (1969, pp. 297–298). John H. Moore (Virginia) argued that Coase had shown that the market can effect Pareto improvements in the presence of externalities “if the costs of using it were sufficiently low” (1968, p. 163). Ward Bowman (Yale Law School) asserted that “private negotiation has much to recommend it” over remedies such as taxes, subsidies, or regulations in externality situations “because it leads to the ‘right’ amounts of output,” and such a result “is most likely when the beneficiaries or sufferers from the private conduct are few and identifiable and where the cost of carrying out the necessary negotiating process is not excessive” (1966, p. 51).

Though the foregoing illustrations went only to the idea of efficiency-enhancing negotiations, Coase’s invariance claim was very much in the mix. Witness the discussion of Werner Hirsch and David Shapiro of the University of California, Los Angeles (UCLA), who instanced the case of a boisterous alcoholic neighbor. An efficient resolution of this conflict, they said,

could be brought about by assigning the rights of quiet to the offended neighbor, therefore necessitating the purchase or lease by the alcoholic neighbor. It could also be brought about by assigning the rights to pollute the atmosphere (by sound) to the boisterous alcoholic. In this case, the more sober neighbor would have to purchase the right of quiet from the alcoholic. Provided that transactions costs do not render this impractical, efficiency would be served equally well by either assignment.... This approach to the externality problem is a fairly recent one, first presented by Ronald Coase. (1967, p. 1315)²³

Perhaps the most extreme invocation of Coase’s negotiation result during this period came from Lester Lave of Carnegie-Mellon, who informed his readers in his commentary on automobile safety that, “As noted by Coase, I can enhance my safety by driving more carefully, by protecting my property, *and* by bribing others to cause fewer accidents. If making and enforcing contracts were costless, and if all individuals knew their preferences, contracts would arise which would tend to optimize safety” (1968, p. 517). To illustrate this process at work, he continued by noting that, “As Coase argues, those drivers who might be struck by cars with bad brakes would be motivated to bribe the offending drivers to fix the brakes” (p. 518).²⁴ Of course, Coase said no

²³Hirsch and Shapiro (1967, p. 1315) went on to note, however, that “where the rights are assigned is crucial, insofar as equity is concerned.”

²⁴Lave went on to suggest that automobile insurance is a transaction-cost-minimizing mechanism “for collecting and dispensing these bribes” (1968, p. 518).

such thing, but Lave's comments provide us with an excellent illustration of how far some people were willing to push Coase's logic in this formative period.

The clear impression conveyed by this literature is that the authors believed Coase's analysis to be correct, both in theory and in the sense that if transaction costs were low enough, efficient bargains *would* regularly be consummated in situations of externality. The alert reader will have noted that Moore and Bowman explicitly allowed for the possibility that efficient bargains will be struck even in the presence of *positive* transaction costs, so long as these costs are sufficiently low,²⁵ and that Baldwin seems to suggest the same for situations in which there are a small number of involved firms. Coase had not gone this far in "The Problem of Social Cost," but this was a wedge that others, slowly but surely, introduced into the literature on negotiated solutions to externality situations. The reasons for this departure from Coase's assumption of costless transacting are unclear, though it may have been to make the negotiation result operational by allowing for its functioning when the gains are significant relative to the costs of attaining them. But whatever the underlying reason, there seems to have been a sense that Coase's negotiation result would hold true in a world that was not too far removed from the world of costless transacting—perhaps not unlike economists' sense, reflected in Stigler's above-noted position, that competitive market outcomes can obtain even outside of the rarified assumptions of perfect competition.²⁶

The oddity here, though, is that while each of these authors thought the negotiated solutions *could* work, when it came to the actual *utilization* of this framework to deal with the specific policy issues that concerned these authors, they were all of the mind that the costs of transacting (due mainly to large numbers and information costs) posed a nearly insuperable obstacle, making the possibility of negotiated settlements, in the words of Hirsch and Shapiro (1967, p. 1315) "rather remote."²⁷ Allen Kneese and Blair Bower of Resources for the Future provided what is perhaps the most representative assessment of the felt problems with implementing Coase's negotiation result when they wrote that,

Although it is possible for market transactions to take externalities into account under certain circumstances, transactions of this kind are rarely organized. The damaging effects of waste discharges may be widespread and diffuse, and the linkages between dischargers and damaged parties are so technically complex, especially in highly developed areas, that establishing a market which would systematically take account of external costs would be a very complex and expensive procedure. (1968, p. 84)²⁸

As Hirsch and Shapiro (1967, p. 1316) pointed out, if private mechanisms were able to internalize the externalities, "there would be no need for the city planner;" yet, these planners are consistently required to manage externality-related issues in urban

²⁵Neither Bowman nor Moore make reference to the work of Demsetz on efficiency in the presence of transaction costs, which is discussed below.

²⁶The fact is that the invariant wealth-maximizing result contemplated by Coase can be achieved in a world of non-zero transaction costs only if the externality is of the "all or nothing" sort and the gains from exchange available to each party exceed each party's transaction costs. As such, all statements of Coase's result that loosen the assumption of zero transaction costs are incorrect.

²⁷See also Pearce and Sturmev (1966).

²⁸Kneese, of course, was one of the pioneering figures in the field of environmental economics.

settings.²⁹ Thus, despite the many claims that Coase's result did, in fact, have some measure of applicability, none of these authors was able to identify an actual situation to which they were willing to apply it.³⁰

Although large numbers of affected parties and the costs of information were said to be common impediments to negotiated solutions, David Davies of Duke University suggested a further obstacle, one that would pose problems for Coase's result even in situations of zero or negligible transaction costs: human nature, or, at least, the "American" version of it. Whereas Coase and others had assumed, implicitly or explicitly, that people will pursue opportunities for gain when they present themselves, Davies countered that, in America at least, "our mores seem to dictate against" negotiated solutions to the type of problems described by Coase. Rather than negotiate a mutually satisfactory agreement to resolve a dispute over, say, noise levels, as posited by Werner Hirsch and David Shapiro (1967), Davies argued that people tend to either call in the police or "grin and bear it," even though, strictly speaking, there may be some "price that the raucous group would be willing to pay in order to buy the disturbed individual's acquiescence, or vice-versa, depending on the status of the legal property right in noise" (1965, p. 133). Though not putting it in these terms, Davies was essentially suggesting that social norms often impact behavior in the realm of nuisance.³¹ The underlying argument here, however, was much larger—that the economist's assumptions regarding behavior in the marketplace for goods and services do not migrate smoothly to non-market contexts, an issue that was to loom large in the coming debates over 'economics imperialism' as well as in the debates over the Coase theorem.

Acceptance—and Extension

While most of the commentary on Coase's result presented transaction costs as a barrier to the attainment of efficient negotiated or market solutions to externality situations, this view was not universally held. The logic underlying Coase's result was utilized by Harold Demsetz and by Steven Cheung to suggest that transaction costs were not necessarily or inevitably the impediment to efficiency that many thought them to be. Though the voices actually *promoting* this use of Coase's result during the 1960s were few in number, at least in the published literature, the work of Demsetz and Cheung had a significant bearing on subsequent reactions to the Coase theorem—in part because of the support lent to Coase's result per se, but perhaps even more for the use that they made of it in a context outside of the zero-transaction-costs domain in which Coase had embedded it. Put slightly differently, though the voices were few, they were loud

²⁹Hirsch and Shapiro's argument, in a nutshell, was that the city planners and their outputs represent an efficient response to the inability of private mechanisms to efficiently resolve externality issues.

³⁰Interestingly, however, even with this awareness of the practical problems with the Coasean bargaining solution, we do not see a widespread inclination among these authors to fall back on the Pigovian approach for a solution. Instead, we find repeated emphasis on Coase's point that some externalities should not be corrected, because the costs of bringing about such a change, whether via the market or state action, outweigh the benefits. See, e.g., Davies (1965) and Bowman (1966).

³¹Having said that, we should point out that Davies's analysis was done in the context of consumer choices whereas Coase's discussion dealt almost exclusively with externalities between firms, where motivations other than the pursuit of gain may be expected to play a lesser role. But see Ellickson (1991) on relations between farmers and cattle ranchers and the role of social norms in structuring their interactions.

enough, and the conclusions drawn radical enough, to fundamentally impact the literature in the 1970s—particularly within the emerging field of environmental economics.

Where Coase's result (and Stigler's Coase theorem) had emphasized the possibility of efficient negotiated solutions in a frictionless world, Demsetz devoted much of his effort during the 1960s to probing the implications of Coase's framework for a world in which transaction costs are positive—all with the goal of illuminating the role played by property rights and transaction costs in operation of markets.³² Educated at Northwestern, Demsetz had spent several years at UCLA prior to coming to Chicago in 1963. Until penning his first article on property rights in 1964, Demsetz had worked almost exclusively on problems of market structure and industrial organization. Though it is difficult to discern what caused Demsetz to shift gears into the study of the impact of property rights and transaction costs, we do know that UCLA economist Armen Alchian (1961) began applying economic analysis to property rights issues in the early 1960s and that the Lilly Endowment made a significant grant to UCLA during this time to support research on property rights and behavior. This funding extended well into the 1970s, and it supported some of the earliest work on property rights, including that undertaken by Alchian, Demsetz, and Steven Cheung. But it is equally clear that Demsetz's Chicago sojourn, which ran from 1963 to 1971, had an important influence on his thinking, with George Stigler in particular prodding him to continue the development of this line of analysis (Demsetz 1968, p. 33).

Demsetz was convinced of the validity of Coase's result, a point that he made on multiple occasions³³—going so far as to assert that Coase had “shown” that “divergencies [sic] between private and social cost *cannot exist* in a regime of zero contracting cost” (1969, p. 171, emphasis added). But he had noted in his 1964 article “The Exchange and Enforcement of Property Rights” that “the provision of a market is itself a costly service” (1964, p. 13) and focused his efforts on developing a framework for analyzing the influence of transaction costs and property rights on market outcomes. Demsetz's genius lay in the integration of these two insights and in the conclusions that he was able (or willing) to draw from them, taken in combination—both in terms of theoretical analysis and in the evaluation of market outcomes.

Both Demsetz and Coase stressed the necessity of property rights for Coase's negotiation result to work its magic, but Demsetz, even more than Coase, emphasized how the absence of property rights or the incomplete specification thereof worked as a barrier to the development or full flowering of the exchange process generally. In the essay “Some Aspects of Property Rights” in 1966, Demsetz noted that, “Although the proposition that property rights will find their most valuable use turns out to be a standard deduction from economic theory [note the echo of Stigler here], it is a very important variant.” Specifically, this proposition “calls to our attention the possibility that the solution of many problems may be arrived at by a more complete [or more appropriate] specification of property rights” (1966, p. 64). Demsetz's invocation of the military draft in this context is just one example of the expansive domain that he ascribed to Coase's negotiation result (1967, pp. 348–349). The draft, he argued, represented a basic externality situation in that it did not impose the full costs of military service on the taxpayers. A voluntary system, a bribe to enter a system, or a system that

³²One could argue that, in doing so, Demsetz was following up on the ‘real message’ of Coase's 1960 analysis. But that issue is beyond the scope of the present discussion. See, e.g., Medema (2009).

³³See Demsetz (1964, p. 12; 1966, pp. 62–64; 1967, p. 349; 1968, p. 33; 1969, p. 171).

conscripts everyone but allows people to buy their way out, in contrast, would all serve to internalize these costs. The problem here was not transaction costs per se, according to Demsetz, but a property rights structure that effectively forbade negotiation and so made the cost of transacting infinite.

But a focus on property rights alone was not sufficient, said Demsetz. The costs of transacting must also be part of the theoretical mix: “A world without exchange or police costs can only be a starting point for analyzing the implications of alternative property right systems,” the reason being that when these costs are positive, “alternative assignments of property rights will generally imply different mixes of output” (1966, p. 64). Demsetz, though, did not see the presence of exchange and enforcement costs as an inherent barrier to negotiation or even to efficient and invariant negotiated solutions.³⁴ Neither, he argued, are these costs exogenous, as more complete specifications of property rights may well reduce the costs of transacting and thus make negotiated solutions more feasible. Reciprocity lay at the heart of Demsetz’s approach here, as he rejected the idea of privileging one set of interests (e.g., ‘victims’ of pollution) over others a priori in the analysis of policy questions. Efficiency analysis, for Demsetz, mandated an empirical approach, as there could be no other way to determine *the* least-cost method of resolving externality issues.

This, though, was only one part of the story. Where his former Chicago colleague Stanislaw Wellisz (1964) had suggested that the propensity of disputants to file lawsuits in order to resolve claims provided evidence *against* the feasibility of Coasean bargaining, Demsetz argued that the prospective opportunities afforded by Coase-theorem-type bargains *drive* the emergence of new property rights (which often emerge only through and because of lawsuits) and reflect “the desires of interacting persons for adjustment to new benefit-cost possibilities” (Demsetz 1967, p. 350). This led him to conjecture that the origins of rights can be explained using basic price theory—that these rights emerge out of the actions of private agents acting on incentives. Specifically, he said, “property rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization” (p. 350). The establishment of such rights would in itself resolve certain of the externality problems, and the cost of negotiating over those that remain “will be reduced greatly” (p. 356), meaning that, under a private property regime, “*most externalities*” can be internalized “at rather low cost” (p. 357, *emphasis added*).

The culmination of this line of analysis came in Demsetz’s 1968 article “The Cost of Transacting”—an article that he wrote only after Stigler’s “incessant prodding” (1968, p. 33). Here, Demsetz moved beyond the relationship between property rights and transaction costs to the implications of transaction costs for the application of welfare judgments to market outcomes and, in doing so, effectively expanded the domain of the Coase theorem’s logic. Against the argument that high transaction costs preclude bargaining and thus necessitate the use of Pigovian instruments to deal with externalities, Demsetz made the rather bold assertion that “*the existence of positive transaction costs has no direct relevance to economic inefficiencies.*” Instead, he said, the appropriate question is “whether or not the cost is appropriately economized” (p. 33, *emphasis added*). Demsetz’s logic here was straightforward. Once we allow for

³⁴In a 1969 commentary prepared for the US Congress, Demsetz noted that the invariance result “does not follow *necessarily* if transaction costs are positive” (1969, p. 172).

the presence of transaction costs, it becomes clear that negotiated solutions to problems traditionally conceived of as market failures—e.g., externalities or monopoly—are efficient in some cases and not in others, the operative issue being the relative magnitudes of transaction costs and the gains from exchange (net of transaction costs). Where negotiated changes are not efficient, the persistence of externalities or monopoly is “consistent with efficiency” if the costs associated with remedial government action are greater than the transaction costs that are precluding negotiation (pp. 33–34). In short, the absence of a bargain that takes us to the ostensibly optimal (nirvana) solution provides a signal that what is may well be efficient. Coase’s message that efficiency-enhancing bargains will be consummated is simply applied in reverse here: the failure of parties to consummate bargains suggests that the status quo is efficient in the sense of representing the most cost-effective way of managing the situation in question.

While Demsetz had focused on the development of a theoretical framework for evaluating the efficiency of market outcomes in the face of positive costs of transacting, Steven Cheung attempted to assess the extent to which the predictions that one would associate with Coase’s result held true in reality. Cheung, like Demsetz, also had close links to UCLA and Chicago, and became one of the most forceful proponents of the Coase theorem and its explanatory utility. Cheung wrote his PhD thesis on the theory of share-tenancy contracting under the direction of Armen Alchian and Jack Hirshleifer at UCLA, which, by this point, was developing a reputation as something of a ‘Chicago West,’ and his thesis, with its emphasis on property rights, transaction costs, and negotiated solutions to the externalities that accompany tenancy situations, bore an unmistakable Coasean imprint. Coase’s article had resonated with Alchian, who referenced it approvingly in his 1965 essay on the economics of property rights, and with Hirshleifer, who was attempting to nudge policy makers toward the use of market instruments for allocating water resources, just as Coase had done with broadcast frequencies in his 1959 article on the Federal Communications Commission that was a prelude to “The Problem of Social Cost.”³⁵ It is reasonable to assume that one or the other of them introduced Cheung to Coase’s analysis, and the article obviously struck a chord with Cheung, who later reported that he, upon meeting Coase for the first time in 1967, informed Coase that “I spent three years reading your paper on social cost.”³⁶

Cheung left UCLA in 1967 and spent 1967–68 as a post-doctoral fellow at Chicago. He became quite close to Coase during that time and also credits Demsetz and Stigler with having a significant role in helping him develop the 1969 article “Transaction Costs, Risk Aversion, and the Choice of Contractual Arrangements,” which became one of the foundational chapters of the book *The Theory of Share Tenancy* that emerged from his UCLA thesis (Cheung 1969a, p. xiv). Like Coase and Demsetz, Cheung was convinced of the need to integrate the effects of transaction costs and property rights into economic analysis, but, more than either of them, he also found significant explanatory power in the Coase theorem.

³⁵See, e.g., Alchian (1961, 1965) and Hirshleifer, Milliman, and de Haven (1960). Though Hirshleifer did not make reference to Coase’s work in his analyses of water supply during the 1960s, he gave significant play to the Coase theorem in his intermediate microeconomics text, the first edition of which was published in 1976 (Hirshleifer 1976).

³⁶See <http://spontaneousorder.blogspot.com/2009/12/professor-steven-n-s-cheung-on-ronald.html>. Accessed 29 April 2014.

Cheung's analysis of land tenancy shares with "The Problem of Social Cost" the attempt to overturn a story of ostensible market failure long-entrenched within economic analysis. The traditional economic story here was that sharecropping leads to inefficient outcomes, largely because the incentive structure engendered by share tenancy inhibits productivity-enhancing agricultural investments. Cheung believed otherwise, and his first foray on this front was an article entitled "Private Property Rights and Sharecropping," published in the *Journal of Political Economy* in 1968.³⁷ Against the received view, Cheung (1968, p. 1107) argued that the claims of inefficiency are "illusory"—that under a private property regime, the same allocation of resources will emerge regardless of whether "the landowner cultivates the land himself, hires farmhands to do the tilling [i.e., a wage contract], leases his holdings on a fixed rent basis, or shares the actual yield with his tenant" (pp. 1107–1108).³⁸

The connection between Cheung's analysis of tenancy arrangements and Coase's negotiation result is straightforward. Under land tenancy, the two basic types of contract that can be employed are fixed rent and share tenancy. The former fixes the level of rent that the tenant will pay to the landlord, meaning that the tenant has every incentive to invest in improvements to the land that will allow him to increase the amount of output, as all of the surplus accrues to the tenant. Under a share-tenancy contract, in contrast, the landlord and the tenant negotiate over the *share* of the produce that will accrue to the landlord and who will make what investments in the land. While the received (neoclassical) view argued that share tenancy results in underinvestment, Coase's negotiation result suggests otherwise, that the structure of law—in this case, the form of the contract—will not impact the final allocation of resources and thus that we should observe the same amount of investment in the land under fixed- and share-tenancy contracts (assuming that the relevant assumptions are satisfied).

To demonstrate the validity of his assertion, Cheung assumed a system in which private property rights obtain, agents attempt to maximize wealth, and the costs of contracting are zero (1968, p. 1110).³⁹ Given his assumed framework, Cheung was able to make his case for the equivalence of fixed-rent and share contracting in straightforward fashion.

³⁷This article was reprinted as chapter 2 of Cheung (1969a) with the title "A Theory of Share Tenancy." The 1968 article, though listing Cheung as affiliated with the University of Chicago (which he was at that point), was written while he was an assistant professor at California State College, Long Beach—that is, before he took up the fellowship at the University of Chicago.

³⁸Cheung was apparently unaware of the fact that Ralph Turvey (1957) had made a similar argument roughly a decade earlier, invoking a line of reasoning strikingly similar to that adopted by Coase a few years later. See Medema (2014b) for a discussion.

³⁹While this is squarely in line with Coase's framework, Cheung felt compelled to point out that he was consciously substituting the assumption of zero transaction costs "for the sometimes dubious assumption of 'pure' competition" (1968, p. 1110n4). Curiously, Cheung was taking the opposite tack of Stigler (1966), who, in laying out the Coase theorem, eschewed transaction-cost discussions entirely in favor of the assumption of perfect competition. It is not clear whether Cheung was attempting to loose himself from Stigler's Coase theorem framework or from the perfectly competitive framework generally. One conjecture is that in employing the more narrowly drawn assumption of zero transaction costs, Cheung may have been hoping to avoid the charges of unrealism associated with the framework of "pure competition" and the highly restrictive set of assumptions that had come to attend it (as against a more generalized notion of a competitive environment, which he did assume). Cheung's costless contracting assumption was squarely in line with that of Demsetz (1964), however, in positing that "the costs of negotiating and the costs of enforcing the stipulations in the contract" are zero (Cheung 1968, p. 1110n4).

The set of constraints under which agents make decisions is the same for fixed-rent and share contracts in a world of costless contracting. As there is a unique wealth-maximizing farm size and employment of inputs, the presence of identical constraints means that “the same resource use is implied,” regardless of the contract structure employed (1968, p. 1119)—an outcome that Cheung demonstrated using a bit of differential calculus. The landlord thus will structure the tenancy contract to accomplish that wealth-maximizing result and, in doing so, overcome the problems associated with the potential for tenant underinvestment (pp. 1118–1119). Given this, said Cheung, “[i]t does not matter whether the landowner stipulates that the tenant is to invest more in land and charges a lower rental percentage or whether the landowner invests in the land himself and charges a higher rental percentage; the investment will be made if it leads to a higher rental annuity” (p. 1121).⁴⁰

Of course, all of this analysis was done under the assumption of costless transacting. The problem, as Cheung allowed, is that “transaction costs exist in the real world” (1969b, p. 23). But, unlike those authors discussed elsewhere in this paper who saw transaction costs as a barrier to the attainment of efficient and invariant outcomes, Cheung’s study of land-tenancy arrangements in Asia led him to conclude that Coase’s result had a significant measure of real-world applicability. His data on agricultural productivity showed that share-tenancy arrangements generated output levels and other production characteristics equivalent or superior to ostensibly more efficient contracting arrangements (1969a, ch. 3), and this led Cheung to assert that his theory of land tenancy “succeeds in explaining *much* of the observed farming behavior” that he had encountered in his study of actual tenancy arrangements (1969a, p. 157, emphasis added). While one could reasonably counter that Cheung was claiming too much for his evidence—essentially suggesting that data *consistent* with his theory gave his theory explanatory power—the validity of his claim is not what is important for present purposes. What matters, rather, is that Cheung was asserting that Coase’s negotiation result was operative *even when transaction costs are non-zero*.

Having established, at least to his own satisfaction, that efficiency can obtain under varying contractual arrangements, the next question that Cheung faced was why, within a competitive system characterized by private property rights, we observed both fixed-rent and share-tenancy contracts. Drawing on Stigler’s (1961) work on information and Demsetz’s (1964) analysis of property rights, Cheung suggested in a follow-up article, “Transaction Costs, Risk Aversion, and the Choice of Contractual Arrangements” (1969b), that the answer lay in the transaction costs associated with negotiating and enforcing contracts, and in the presence of risk and the agents’ attitudes toward it.

As far as transaction costs are concerned, Cheung’s position (reasonably enough) was that negotiation and enforcement costs (particularly the latter) are higher for share contracts than for fixed-rent and wage contracts. Share contracts tend to have more terms over which to haggle and they bring with them monitoring costs for the landlord that are not present when the tenant’s payment to the landlord is fixed. Thus, share contracts will never be preferred to fixed-rent contracts in a world of positive transaction costs (1969b, pp. 25–26). How, then, does one explain their real-world prevalence? The introduction of risk, and of risk-averse agents, into the analysis provided Cheung

⁴⁰It bears repeating that Turvey (1957) had made a similar claim roughly a decade earlier.

with a possible solution. Under a fixed-rent contract, the tenant bears the largest share of the risk, while the landlord bears most of the risk under a wage contract. The conclusion that Cheung drew from this was that the share contract can be explained as a device for risk sharing in a situation where both parties are risk-averse (1969b, pp. 26–27).

Having established transaction costs as a basis for explaining the existence of fixed-rent contracts and risk aversion as a basis for explaining the existence of share tenancy, Cheung was able to derive a rationale for the simultaneous existence of multiple forms of tenancy contracts through the interaction of transaction costs and risk. When one allows for the presence of *both* risk *and* positive costs of transacting, he said, “the choice of contracts is determined by weighing the gains from risk dispersion and the costs of contracting associated with different contracts” (1969b, p. 29).⁴¹ When transaction costs are high, relative to the degree of perceived risk, we would expect to observe fixed-rent contracts, whereas when risk is the larger issue, we expect to observe share contracts. Cheung marshaled various pieces of empirical data to provide support for this hypothesis—for example, that wheat yields were more variable than rice yields in China (implying greater risk in wheat farming), and share tenancy was more common in wheat regions than in rice regions. Share rents in China also tended to be slightly greater than fixed rents, which he suggested could be explained as a premium to landlords associated with the assumption of the additional risk that attends share contracts (1969b, pp. 28–29). All of this led Cheung to conclude that “Different contractual arrangements do not imply different efficiencies of resource allocation as long as property rights are exclusive and transferable” (1969b, p. 41)—a conclusion that is little more than a restatement of the basic conclusions of Coase’s result.

The beauty of Cheung’s analysis lies in the integration of the insights drawn from the frameworks of costless transacting and positive transaction costs. The ‘zero transaction costs tenancy’ theory shows the efficiency and invariance that attends share and fixed-rent contracts. The ‘positive transaction costs’ framework shows that there are efficiency-based reasons for the choice of one form of contract over another. When one combines the second insight with the first, the conclusion that emerges is that the choice of contractual arrangements that is efficient for the agents in question is, in fact, efficient for society as a whole. In short, the ostensible market failure associated with share tenancy is shown to be non-existent. The implications of this analysis, though, go beyond a century-plus debate over the efficiency of alternative tenancy arrangements. As Cheung (1969a, p. 161) pointed out, share contracts are found in a wide range of areas, including “retail stores, beauty salons, gasoline stations, amusement-park rentals, and even the much-regulated oil and fishing industries,” suggesting to Cheung that presumed inefficiencies across the economy needed to be re-evaluated.

There are various problems with Cheung’s analysis, including a seeming confusion of correlation and causation (often wrapped in language to the effect that the data “cannot falsify” his hypotheses), the somewhat casual or less than thorough empiricism, the tendency to ignore competing explanations or to deeply probe data that are not consistent with his hypotheses (e.g., why are not *all* wheat-tenancy contracts share contracts?), and to tautologically use the theory to explain what others might perceive

⁴¹Interestingly, in his 1969 book, Cheung replaces the expression “costs of contracting” with the term “transaction costs” (1969a, p. 71).

as deviations from the theory.⁴² Our concern, however, is not with the validity of the claims made by Cheung, or by Demsetz, but with how they attempted to use Coase's negotiation result. What emerged from their respective analyses was the extension of Coase's assertions regarding negotiations over rights in a world of costless transacting to one in which transaction costs are positive. In the process, another blow had been landed for the view that economists had erred significantly in their proclamations of market failure.

IV. CONTESTING INVARIANCE

There can be no question that Coase's negotiation result was finding a warm reception in many quarters during the second half of the 1960s, but this attitude was by no means universal. The year 1966 is important here as well, for though it had given us Stigler and Haveman's affirmations of the Coase theorem, it was also the year during which the debate over Coase's result began to gain steam—a debate that went both to its underlying logic and to the normative issues that were beginning to surround it.

The earliest discussions of Coase's result, undertaken almost exclusively by its supporters, revolved largely around the efficiency proposition, with relatively little attention being paid to Coase's assertion that the result of the negotiation process would be invariant across alternative assignments of rights (or liability).⁴³ The reason for this early emphasis on efficiency alone is unclear, though a good case can be made that the answer lies in the focus of many of these writers on the basic claim, against the Pigovian tradition, that private mechanisms can efficiently resolve externality problems. Differently put, demonstrating the efficiency of the market as against the Pigovian theory of market failure was the big fish here, in the eyes of some. It was less important that the result was unaffected by to whom rights were assigned than that direct government intervention—in the form of, e.g., taxes on, or regulation of, offending activities—was not necessary for efficiency to obtain.

The relative amount of attention given to the invariance proposition began to change, though, midway through the decade, and it became the first serious line of attack on Coase's result. The invariance proposition, in retrospect, was almost a guaranteed target for criticism. At a basic theoretical level, it simply said that an efficient result obtains no matter to which party rights are initially assigned. But, from a policy perspective, it seemed to imply two possibilities. For some, it appeared to legitimate the idea of making the "victim" liable for the harm that they suffered at the hands of others—an idea that was anathema to many. Why, after all, should people whose crops are trampled by the cattle of the next-door rancher or whose air is fouled by polluters be forced to pay the generators of these offending acts to induce them to desist?⁴⁴ Needless to say, this attitude had powerful rhetorical resonance. For others, the invariance proposition could be interpreted as a justification of the status quo: if the status

⁴²See Stiglitz (1974) for a more detailed critique of Cheung's conclusions.

⁴³See Medema (2014c) for evidence on this score.

⁴⁴This was to become a major theme of the criticisms of Coase's result made by environmental economists in the 1970s. See Medema (2014a).

quo (in the absence of formal law) was taken as a situation of de facto victim liability, and if one assumed that people exhaust potential gains from trade, then the existing situation must be efficient.⁴⁵ That is, if it was worthwhile for the parties to negotiate a different outcome, they would already have done so. As such, there is no efficiency-related justification for transferring liability to the party causing the harm. Simply put, the invariance proposition was ideologically loaded when it came to the matter of applying it on the policy front.

Invariance in Theory

Interestingly, however, the *origins* of the increased focus on invariance in the mid-1960s had little to do with any of this, though the ideological cast no doubt added to the topic's attractiveness once the debate got rolling. The unwitting source of one of the controversies over the invariance proposition was Allen Kneese, who, in his 1964 book *The Economics of Regional Water Quality Management*, claimed that there was no efficiency-based reason to prefer the use of either taxes or subsidies to deal with externalities—that the effects of properly specified taxes and subsidies on the level of the externality and on levels of output in the relevant industries would be identical (1964, pp. 56–62, 90–98).⁴⁶ Though Kneese made this argument in the context of Pigovian instruments, when Morton Kamien, Nancy Schwartz, and F. Trenery Dolbear, all of the Carnegie Institute of Technology, took on Kneese's conjecture in an article published in *Water Resources Research* in 1966, they expanded the scope of the discussion to “bribes and charges” generally, including those attending alternative assignments of rights in a Coasean bargaining context (Kamien, Schwartz, and Dolbear 1966).

Kamien, Schwartz, and Dolbear admitted that bribes and charges are formally equivalent in theory, but they argued that, under reasonable assumptions regarding the knowledge possessed by the relevant agents, the adoption of a bribes scheme will result in a greater level of the externality and would obtain under a system of charges. The explanation for this asymmetry, in simple terms, is that the bribe scheme—which equates to victim liability in a Coasean bargaining context—may, under certain conditions, give the polluter the incentive to increase its output in order to secure a larger bribe. As such, the level of the externality under a victim liability will be at least as high (and perhaps higher) than that which will obtain under a system of polluter liability.⁴⁷ The upshot of this argument, then, was that the invariance claimed by Coase is not guaranteed, even if transaction costs are zero.

As it happened, however, there was more to Kamien et al.'s analysis than the authors themselves seem to have realized, as David Bramhall and Edwin Mills (1966) pointed out in a note that appeared in *Water Resources Research* in that same year. Kamien et al.

⁴⁵This is an implication that some drew from Buchanan and Stubblebine (1962), as well as from the work of Demsetz.

⁴⁶The tax solution would penalize the polluter for his emissions, whereas the subsidy solution would pay the polluter to reduce emissions.

⁴⁷Kamien, Schwartz, and Dolbear consciously avoid commenting on the welfare implications of these alternatives, choosing instead to focus solely on relative levels of the externality—that is, on the invariance issue (1966, p. 147). It should be noted that their invariance critique is in line with Wellisz's (1964) concern about people creating a nuisance for no other reason than to collect bribes, though Kamien et al. made no reference to Wellisz's article and thus apparently were not aware of this similarity.

had demonstrated that bribes and charges schemes give rise to different profit levels for the affected firms, even in situations in which all parties have full information—that is, even under conditions where, according to their analysis, the invariance result would hold true. As Bramhall and Mills pointed out, however, the differing levels of profit that accompany these alternative assignments of rights have important implications for long-run behavior in a competitive industry. Translating their findings into Coasean bargaining language, victim liability will result in higher profits for polluters than would obtain under a system in which polluters were liable, owing to the revenue that accrues from the bribes. Moreover, these profits will exceed those that obtained prior to any assignment of liability. As such, they will trigger entry into the polluting industry in the long run, driving down the price of the good in question. Likewise, the higher costs (due to compensation payments/bribes paid to victims or the installation of abatement equipment) that attend an assignment of liability to the polluters will reduce polluter profits and thus trigger exit from that industry in the long run. This, in turn, will drive up the price of the good in question. Because relative prices differ under these alternative assignments of liability, said Bramhall and Mills, so, too, will equilibrium output levels. As such, Coase's claim of invariance appeared to be refuted at a second, and one might say stronger, level.⁴⁸

The critique of the Coase theorem based on long-run entry effects became a *debate* when University of Virginia professor G. Warren Nutter entered the fray in 1968 with his brief article “The Coase Theorem on Social Cost: A Footnote” (1968). Nutter had been Milton Friedman's first PhD student in the late 1940s at the University of Chicago, and his career's work focused largely on the study of monopoly-related issues and on the Soviet economic system. What led Nutter to take up the Coase theorem is something of a mystery, though it could simply be a manifestation of exchange-based ideas such as Coase's negotiation result's being very much in the air at Virginia during the late 1950s and the 1960s.⁴⁹ The story behind the actual content of Nutter's article, while perhaps apocryphal, is humorous and worth relating here.

Nutter arrived at the University of Virginia from Yale in the mid-1950s, and so had been a colleague of both Coase and Buchanan—the latter of whom had cited Coase's article approvingly on several occasions in the early 1960s. Their collegiality apparently did not extend to agreement on the Coase theorem, however, for it seems that Nutter was engaged to give a seminar at the University of Rochester during which he would explain why the Coase theorem was *wrong*. On the first leg of his flight to Rochester, he happened to be seated next to Milton Friedman and the two of them discussed Nutter's critique of the theorem. As the story goes, by the time that the plane had landed, Friedman had convinced Nutter of the error of his argument and Nutter continued on to Rochester to give a seminar showing that the Coase theorem was correct.⁵⁰ That it was Friedman who was the source of Nutter's conversion makes the

⁴⁸Freeman (1967) added yet another twist to this debate, one that sets the problem in a dynamic context. Here, invariance requires that the parties are using the same rate of discount, and efficiency requires that this discount rate be the “correct” one. This thread was not picked up to any extent in the subsequent literature, perhaps because the informational context necessary to generate different rates of discount would seem to violate the assumption of zero transaction costs.

⁴⁹See Medema (2014c).

⁵⁰This story is related in Stigler (1988, pp. 212–213).

story just that much more interesting; he was Coase's fiercest critic in the debate over the negotiation result that took place in Aaron Director's living room nearly a decade earlier, but, like the biblical Saul/Paul, the persecutor had turned evangelist.⁵¹ As for Nutter himself, he said nothing beyond an introductory note to the effect that he was "grateful" to Coase, Friedman, and Stigler "for helping to get [his] thinking straight on the problem discussed here" (1968, p. 503).

Nutter's analysis is interesting for the entry debate not only because of the result produced or because he was only the third person to label Coase's result a 'theorem' in print, but because it illustrates the many layers that can attend price-theoretic arguments and how the simple elegance of price theory can lead one astray if one fails to probe deeply enough—an issue that is not uncommon in the debates over the Coase theorem. His focus was the suggestion made by Bramhall and Mills, and also in the legal literature by Guido Calabresi (1965), that bribes and charges have effects on entry and exit that produce asymmetric results. Nutter's insightful parry here involved backing up a step to examine the origin of an externality. He asserted that an externality cannot come into existence in a perfectly competitive system unless the value of output rises by at least enough to compensate for it, and he proceeded to demonstrate as much by reference to a situation in which a single owner controls all relevant resources—e.g., the two adjoining plots of land in Coase's farmer-rancher example. If the activity on one plot of land negatively impacts that on another plot, the willingness of the owner to continue to work both plots of land demonstrates that there are rents being earned from each of them. Whether the owner charges the damage to one plot or to the other does not impact the allocation of resources between them or the total rent—only the distribution of rent as between the two plots.⁵²

But what of the case in which the two plots are owned by different individuals? Nutter argued that the result is unaffected. If, under competitive conditions, there are two owners rather than one, he said, it must be because "the sum of managerial and transaction costs are lower for two entrepreneurs than managerial costs alone are for a joint enterprise" (1968, p. 507).⁵³ But again, the assignment of liability will have no impact on resource allocation—only on the distribution of rents. In short, the assignment of liability has no effect on the allocation of resources as long as rents exist. Stanislaw Wellisz (1964) had previously argued the necessity of rents for the Coase theorem to hold in long-run competitive equilibrium,⁵⁴ but whereas Wellisz had used this as an argument *against* the Coase theorem because of the presumed absence of rents in the long run, Nutter showed just the opposite. This result, said Nutter, is perfectly consistent with a competitive environment involving an externality because, absent rents, the externality would not exist in the first place in a competitive market. So, for the time being, at least, Nutter had rescued the theorem from questions about its validity in interfirm externality contexts.⁵⁵

⁵¹See Stigler (1988) and Kitch (1983) for discussions of this seminar.

⁵²This, of course, parallels Coase's argument on p. 17 of "The Problem of Social Cost" (1960).

⁵³Note that this argument utilizes Coase's (1937) analysis of the firm, though Nutter does not cite Coase's article.

⁵⁴See the discussion in Medema (2014c).

⁵⁵For more on the bribes vs. charges debate, see, e.g., Baumol (1972), and the overviews of this debate in Kneese and Mäler (1973) and Baumol and Oates (1975).

The other significant critique of the invariance during this period went to externalities to which consumers are party and dealt with the role played by income effects. This line of argument—which, like the entry/exit debate, was not to disappear quickly—picked up steam in 1967 following the publication of articles by the London School of Economics' (LSE) Ezra J. Mishan and by F. T. Dolbear of the Carnegie Institute of Technology. While Chicago and LSE bloodlines seemed to generate a predisposition toward the Coase theorem during the 1960s, Mishan was a prominent exception. Mishan, who received his PhD from Chicago in 1952 and spent most of his subsequent career at the LSE, was to become one of the Coase theorem's strongest critics between the mid-1960s and the mid-1970s. But this attitude was not much in evidence when, only two years earlier, he penned a set of "Reflections on Recent Developments in the Concept of External Effects" for the *Canadian Journal of Economics and Political Science* (1965). "The Problem of Social Cost" was treated alongside several other works on the subject that had appeared over the previous two-plus decades, and Mishan found very little in Coase's analysis with which to quibble—describing Coase's article as "A learned paper, replete with case law" (p. 29). Indeed, Mishan virtually ignored Coase's negotiation result and focused instead on his emphasis on the costs of transacting and on the importance of finding the least-cost method of dealing with externalities.

Two years later, however, we see a very different Mishan, one who took on Coase's invariance proposition directly in an article entitled "Pareto Optimality and the Law" (1967a). Here, Mishan devoted some thirty pages to arguing that property rights do, in fact, impact the allocation of resources. Though two of his arguments—the presence of positive transaction costs and the impact of different rights assignments on long-run costs, and thus output levels—dealt with issues that had already been raised by others (including, in the case of transaction costs, by Coase himself), a third went to the concern that alternative property rights assignments have differential impacts on the consumer's willingness to pay (WTP) and willingness to accept payment (WTA). Both the supporters of Coase's result and its detractors had recognized from the outset that the assignment of rights impacts the distribution of income. As Mishan pointed out, however, changes in the distribution of income affect the involved parties' respective WTP and WTA (or compensating and equivalent variations, to use Mishan's terminology). Moreover, Mishan continued, the value that individuals place on a right will differ according to how it is assigned, with WTA exceeding WTP for any particular right. Taking the case of the victim of pollution, the amount that he will demand in payment to allow the polluter to foul his air will be greater than the amount that he is willing to pay to induce the polluter to reduce emissions. As such, the price at which a bargain is made will likely differ, depending on to which party rights over the air are assigned, and this price difference, in turn, will give rise to different equilibrium output and externality levels. These divergences between WTA and WTP, then, give rise to different Pareto-optimal solutions under different assignments of rights, thereby negating Coase's invariance proposition. Of course, this critique depends on the presence of income effects, meaning that it is relevant only for externalities to which consumers are a party. Nevertheless, it had the effect of invalidating, at least in the minds of some, Coase's invariance claim when the externality is not of the interfirm variety (1967a, pp. 256–257, 269ff; 1965, p. 29n45).⁵⁶

⁵⁶It should be noted that we are not attempting to pass judgment on the theoretical validity of the critiques here. Those interested in these debates should consult Medema and Zerby (2000).

Dolbear took a similar tack in his 1967 article “On the Theory of the Optimum Externality,” pointing out that for externalities to which consumers are party, the assignment of rights may generate “an ‘income effect’ which will be of some consequence *vis-a-vis* the amount of the externality” (1967, pp. 90–91). To get at this issue, Dolbear employed a modified form of the Edgeworth box analysis—he was the first to illustrate Coase’s result using this tool—and used it to show that different starting points/different assignments of rights affect the final allocation of resources via income effects (pp. 95–97).

The analytics here are straightforward. The budget line GG in Figure 1 reflects the distribution of income between X , who produces heat (with smoke as a byproduct), and Y , who produces bread. If the law prohibits X from producing smoke, then the initial equilibrium is at E_2 , the inefficiency of which is revealed by the absence of a tangency between the indifference curves of X and Y . The gains from exchange are indicated by the shaded lens between E_2^X and E_2^Y , and the parties will negotiate to some efficient position within this range. If X has the right to pollute, however, the starting point for negotiation is E_1 — X ’s profit-maximizing output of heat (and thus smoke). The gains from exchange associated with this equilibrium position are shown by the shaded area between E_1^X and E_1^Y , and the negotiated solution will lie somewhere within this range. Because these areas of potential gains from trade do not overlap, invariance will not obtain here.

Thus, Dolbear concluded, the invariance result cannot bear the weight of the claims made for it, since “only as a special case would the amount of externality ... be unaltered” by alternative assignments of rights (p. 97).⁵⁷ That said, Dolbear was not willing to write off entirely the idea of utilizing negotiated solutions to externalities on these grounds alone. Like virtually every other commentator on Coase’s result, Dolbear acknowledged that bargaining can be problematic in large numbers situations. In the two-person case, however, he argued that “negotiations (bilateral bargaining) would seem to be *the most appropriate method* for ameliorating the effects of an externality” (p. 97, emphasis added), even though the resulting outcomes are likely to be impacted somewhat by the decision as to which party is to bear the liability for the harm.⁵⁸

Invariance in Practice: Equity and the Hostility to the Notion of Reciprocity

The attention given to the Coase’s invariance proposition went beyond its theoretical validity to encompass much more charged questions of equity, derivative of an increasing sense that Coase’s result had the potential to move beyond the realm of theoretical curiosity and into that of policy. As noted above, the invariance proposition raised the specter of victims’ having to buy off harm-causing agents in order to get them to reduce damage levels, and this, in turn, led to a discussion of whether it was appropriate to use

⁵⁷Ashley, Kleinsorge, and Kunreuther (1967, pp. 375–376) also made the income effects criticism of invariance in comments on Demsetz (1967) and Davis and Whinston (1967).

⁵⁸The reader may wonder how Coase’s result came to be on the radar at Carnegie. The explanation for this likely lies in the person of Toby Davis, who, in papers published with Andrew Whinston, treated Coase’s result on multiple occasions during the 1960s. Davis had earned his PhD from Virginia in 1960, working under James Buchanan, and it was during his time there that Coase, who himself was still at UVA at that point, wrote the two articles that brought the negotiation result to life. Davis joined the faculty at Carnegie Institute of Technology, as it was then known, in 1960.

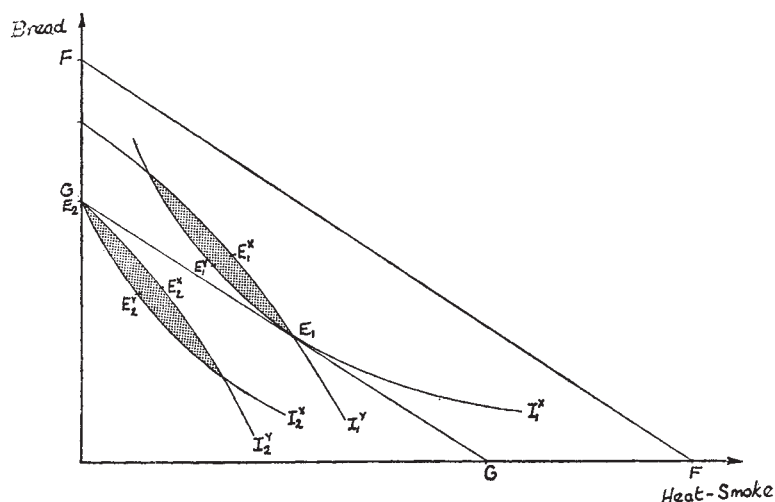


FIGURE 1. Dolbear's Negotiation Diagram.

Source: Dolbear (1967, p. 95).

the invariance result and the attendant notion of the reciprocal nature of harm as a grounding for decisions to hold, or to even countenance holding, those widely considered to be "victims" of externalities liable for the harms they incurred.

The idea of victim liability for externality damage was something not generally contemplated by those working within the Pigovian framework. While the literature gave a nod of the head to the possibility of utilizing Pigovian subsidies, the fact is that economists generally contemplated remedies for negative externalities in terms of regulating or (if feasible) taxing the offending activity.⁵⁹ Yet, when Coase argued, against the Pigovian view, that the externality problem is inherently reciprocal, he was not the first to do so.⁶⁰ John R. Commons (1924), perhaps the foremost exponent of the institutionalist approach to law and economics during the interwar period, had emphasized the reciprocity notion in his work,⁶¹ but the tenor of the Pigovian approach shows that Commons's sentiments did not make their way into the neoclassical approach to externalities. Even so, it might seem that in the wake of the publication of Lionel Robbins's *Essay on the Nature and Significance of Economic Science* (1932), which had pushed the subject increasingly away from the realm of value judgments, economists would have been more willing to countenance the notion of reciprocity raised by Coase and thus offer less in the way of normative objections to victim liability than one might have seen a half-century earlier—particularly given that the reciprocity notion and its

⁵⁹It is worth noting that the relative lack of attention paid to the subsidy remedy has roots similar to the hostility to 'victims pay'—the idea that harm-causing agents should not be paid (even out of general tax revenues rather than by the victims per se) to do the 'right' thing.

⁶⁰Coase described the situation as follows: "The traditional approach has tended to obscure the nature of the choice that has to be made. The question is commonly thought of as one in which A inflicts harm on B and what has to be decided is: how should we restrain A? But this is wrong. We are dealing with a problem of a reciprocal nature. To avoid the harm to B would inflict harm on A. The real question that has to be answered is, should A be allowed to harm B or should B be allowed to harm A?" (1960, p. 2).

⁶¹Commons, in turn, was influenced by Wesley Hohfeld's (1913) theory of jural correlatives.

invariance principle cousin do not say that victims *should be* made liable. While one finds some evidence of what one might call the “modern scientific attitude” reflected in the 1960s literature on Coase’s result,⁶² the passage of time brought more and more in the way of normative critique of the reciprocal view. What may or may not be significant here is that the early criticisms on this front came from the UK.

One of the concerns raised regarding the use of negotiated solutions to externalities was the prospect of different degrees of bargaining power across parties to the negotiations. David W. Pearce and S. G. Sturmev (1966, p. 156) of the University of Lancaster, for example, were troubled by this possibility, arguing that it could result in what they deemed “exploitation”—specifically, insufficient compensation to the victims of the externality. This problem, they suggested, may be exacerbated by the difficulty of properly monetizing certain reductions in utility caused by harmful acts,⁶³ which could result in the failure of victims to demand payment at least sufficient to compensate them for the totality of their perceived losses—monetary and otherwise. This, of course, represented a view of the exchange process that was very different from that laid out by Coase or subscribed to by those who were on board with the theorem.

Pearce and Sturmev also expressed significant qualms about the very *idea* of victims compensating those causing harm in order to induce them to forgo further harmful acts. Where Demsetz (1964, p. 25) had gone to some lengths to equate pollution-induced harms and other types of externalities with more benign market-related impositions of costs, Pearce and Sturmev went in the opposite direction, arguing that “we cannot speak of *compensating* someone for not creating further trouble any more than we could speak of compensating a murderer for not committing a second or third crime” (p. 155). It may seem a rather extreme leap for Pearce and Sturmev to draw a parallel between negotiations among parties to an externality and between a murderer and his potential victims, but their analogy is illustrative of the difficulty that some economists had in coming to grips with even the *discussion* of victim liability, to say nothing of fully divorcing ethical concerns from the evaluation of analytic constructs.⁶⁴ Moreover, this was by no means the last time that this comparison to criminals and their victims was made in the Coase theorem literature. Needless to say, Pearce and Sturmev’s position represented an out-and-out rejection of Coase’s idea that harm is inherently reciprocal in nature and that this reciprocity should inform economists’ understanding of externalities and externality policy.

Mishan, too, assailed Coase’s result on equity grounds, raising two further equity-related objections to the possibility of victim liability. First, he suggested that those goods whose production generates significant externalities are often “purchased by and earn income for the wealthier groups in the community” (1967, p. 278). As such, these groups, rather than the victims (who would be less wealthy on average) should be assigned liability for externality damage. But even more important, he said, “is the inequity *per se*” of laws that would allow one party to inflict harm on others without

⁶²Davis and Whinston (1965), for example, commented that the determination of the appropriate legal assignment of rights (based upon which bargaining could subsequently take place) belongs “more to the realm of ethics” than of economics and that the “socially correct” conception of responsibility or blame, rather than economic considerations, should perhaps drive judicial decisions on that score.

⁶³Wellisz (1964) had raised a related concern two years earlier.

⁶⁴Ironically, Stigler (1943) had invoked the case of thieves and their victims in discussing compensation tests in his 1943 note on welfare economics.

providing for compensation of the victims (p. 278)—a prospect that he labeled “a depressing fact” (p. 279).

For Mishan, as for Pearce and Sturmev, the concept of reciprocity, so central to Coase’s result and to its application, was offensive.⁶⁵ The “conflict of interests” that characterizes externalities, he said, “does not arise ... from *reciprocal* effects and does not imply equal culpability.” Rather, it “arises from the damage inflicted by only one of the parties on the other” (p. 280). It goes almost without saying that, in adopting this position, Mishan was not negating Coase’s reciprocity claim per se, but instead was pushing it to the side by effectively privileging one set of interests over another—assigning zero weight to the harm caused to, say, the polluter, if its costs are increased by being held liable for damage imposed on others through its actions. Of course, this same perspective informed the Pigovian approach, as Coase had pointed out. For Mishan, though, the case was clear, as were the implications for Coase-theorem-related value judgments:

It follows that unless the law is altered to provide comprehensive safeguards for the citizen’s right to certain fundamental amenities, the range of voluntary agreements that are, or might be, entered into within the existing legal framework cannot be vindicated, at least not on ethical grounds, by reference to invisible hand arguments. (p. 280)

The market outcome, then, could be legitimate only if it flowed out of what he considered to be the proper initial structure of rights. And, for Mishan, the proper course was clear: the cause of equity (and efficiency) would be served only by “putting the burden of compensation squarely on the incidental destroyers of amenity without exception” (p. 278).

The challenge to received thinking caused by the reciprocal view was to play no small part in the debates over the Coase theorem in the ensuing decades. While some of this went to issues of theoretical logic—as with the debate over the symmetry of bribes and charges—the ethical issues that it raised loomed much larger. Indeed, it is fair to say that the reciprocity issue—and, by extension, the invariance thesis—did more than anything to bring the ideological element into the debates over the Coase theorem. University of Toronto economist John H. Dales, who drew upon aspects of Coase’s analysis (though not his negotiation result)⁶⁶ in his development of a theory of marketable pollution permits in the late 1960s,⁶⁷ was well aware of the inertia generated by the traditional views of harm-causing activities—perhaps because he ran into similar issues when promulgating his own ideas:

Ideological hang-ups on concepts of property rights and ownership are understandable because such concepts touch the very roots of society. We have not yet learned how to discuss such matters unemotionally. Though we are inclined to take a condescending view of medieval man’s distrust of full property rights in land, we tend to become quite agitated when valuable government-granted rights (licenses to import, for example) are traded in the marketplace, or when suggestions to extend property rights to air and

⁶⁵Mishan even went so far as to dismiss the use of the Pareto criterion to evaluate alternative assignments of rights on the grounds that higher ethical principles are involved.

⁶⁶See Medema (2014a).

⁶⁷See Dales (1968a, 1968b).

water are put forward for discussion. Property and prices still raise ancient fears that “the rich will eat out the poor.” (1968b, p. 797)

The irony in the value-laden critiques of reciprocity and invariance is that Coase’s negotiation result did not suggest that liability *should* be placed on victims. In fact, its logic suggested that one could indulge ethical preferences of the Mishan variety without efficiency-related sacrifices. Moreover, when it came to real-world issues, Coase had not overlooked the import of issues of equity, esthetics, and morals, either in “The Federal Communications Commission” (1959, p. 27n54) or in “The Problem of Social Cost” (1960, p. 43). That economists overlooked these aspects of Coase’s negotiation result and of his larger discussion speaks to the attention-grabbing power of his negotiation result in the professional mind and to the profound challenge that it posed to the traditional analysis of externalities—as well as to the ways in which others were attempting to use Coase’s result.⁶⁸

V. CONCLUSIONS

The literature dealing with Coase’s negotiation result prior to 1966 was relatively thin, and those discussions that did take place indicated, with one or two exceptions, that the authors were fully on board with the idea that negotiated solutions to externality problems were possible in theory and perhaps even in reality. As we move through the second half of the 1960s, however, we see the literature treating Coase’s result pick up steam, both in terms of the amount of attention given to it and in the nature of the discussions themselves. In the former case, we witness a significant uptick in the number of articles and authors treating Coase’s result, including the initial appearances of Coase’s result in a book written for the layman—Mishan’s *The Costs of Economic Growth* (1967b)—and in work directed explicitly toward government policy makers.⁶⁹ As to the nature of the discussions, the literature reveals an interesting divergence, with (i) increasing credence given to Coase’s result, including a vast expansion of the contexts in which its insights were deemed relevant, and, at the same time, (ii) the development of multiple significant lines of argument against this result, both on theoretical grounds and on what one might call ethical (or even ideological) grounds.

How do we account for these trends and, in general, for the fact that the Coase theorem began to get legs in the literature during the second half of the 1960s? Though the *Journal of Law and Economics*, in which Coase’s article was published, had rather limited circulation circa 1960, the treatment of Coase’s result by others in articles published in the profession’s leading journals during the first part of the decade provided this result with a significant additional measure of exposure—even though these articles were relatively few in number.⁷⁰ Stigler’s 1966 textbook treatment, of course, served only to further the extent of this exposure. All of this was undoubtedly aided by the fact that externalities—pollution in particular, but also other growth-related externalities—were gaining an increased place in the public and professional

⁶⁸See Medema (2009) for a discussion of this point.

⁶⁹See Davis and Kamien (1969) and Demsetz (1969).

⁷⁰See Medema (2014c).

consciousness as we moved through the 1960s. As Coase's analysis emerged onto the profession's radar, it slowly but surely became part of the theoretical framework for discussing externality-related policy options.

None of this, of course, explains the more-or-less simultaneous emergence of the extensions of Coase's analysis, on the one hand, and the onset of the debate over its correctness and potential application, on the other. One possibility is that the explanation here is simply 'theoretical.' Proponents of Coase's result may have seized upon its congruence with the standard theories of markets and exchange in the belief that this result offered an important new insight into the theories of externalities and of externality policy—whether as replacement for, or supplement to, the Pigovian approach. On the flip side, the challenges to Coase's result may have been little more than a reflection of the deeply ingrained nature of the Pigovian approach to externalities. That is, though Coase's result may have seemed, on its face, to be logically correct, it conflicted sufficiently with the economist's intuition regarding externality-related market failure (the idea that "everyone *knows* that externalities can be efficiently resolved only through government intervention") that some felt that it must be incorrect, and that the issue was simply one of finding the weak point in the logical armor—the fatal flaw that would confirm this intuition. Such an attitude, in turn, may have led the critics to probe Coase's result more deeply than had some of those who seemed content to accept Coase's logic. Stigler's decision to codify Coase's result as a "theorem" may also have played a role here, though none of the critics actually applied that term to Coase's result and, in spite of Haveman's remarks, it is unclear how widespread was the professional knowledge of the term and Stigler's explication of the "theorem" at this stage.

A second force that may factor into the explanation is ideology, but such things are notoriously difficult to pin down, either among proponents of an idea or among the critics. That said, it is reasonable to conjecture that, at a minimum, those more favorably disposed to market solutions and opposed to what they considered to be "government interference" would find Coase's result congenial to their way of thinking and so attempt to provide it with validation and reinforcement. In like manner, economists convinced that agents whom they perceived to be the cause of an externality problem should be made liable and/or should be forced to reduce the level of the harm that they cause would be inclined to attempt to refute Coase's result or to argue against its application in favor of Pigovian remedies that would impose appropriate costs or other restrictions on those they perceived as the cause of the harm.

One way to get at this issue, albeit an imperfect one, is to examine the affiliations and education of those on the two sides of this debate, the data regarding which are presented in Table 1, below. As we can see from the table, those who fell into the "Proponents" camp—those who endorsed Coase's result in theory, at least—can hardly be described as a representative sample of the profession. The vast majority of those affirmatively invoking this result had connections to one or more of Chicago, Virginia, and UCLA.⁷¹ The Chicago–Virginia links in particular represent the continuation of a trend in the commentary on Coase's result from the first half of the decade

⁷¹The curious absence here is the LSE, attachments to which were prevalent in favorable commentaries on Coase's negotiation result in the first half of the decade. See Medema (2014c).

Table 1. Authors Referencing Coase's Negotiation Result

Name	Education	Affiliation	Prior Affiliation
<i>Proponents</i>			
Baldwin	Harvard	Wisconsin	UCLA
Bowman	Chicago (J.D.)	Yale	
Cheung	UCLA	Chicago	
Davies	UCLA	Duke	
Demsetz	Northwestern	Chicago	UCLA
Dolbear	Yale	Carnegie Institute of Technology	
Feldstein	Chicago	Michigan	
Kneese	Indiana	Resources for the Future	
Lave	Harvard	Carnegie-Mellon	
Long	Chicago	Chicago	
Moore	Virginia	Virginia	
Nutter	Chicago	Virginia	
Stigler	Chicago	Chicago	
<i>Critics</i>			
Bramhall	U of Pennsylvania	Johns Hopkins	
Mills	Birmingham (UK)	Johns Hopkins	
Freeman	U of Washington	Bowdoin College	
Kamien	Purdue	Carnegie Institute of Technology	
Schwartz	Purdue	Carnegie Institute of Technology	
Dolbear	Yale	Carnegie Institute of Technology	
Mishan	Chicago	LSE	
Pearce	LSE	Lancaster	
Sturmey	Manchester	Lancaster	

and illustrate that these influences were beginning to replicate.⁷² That said, others were slowly joining the chorus. Those who argued against the theorem's correctness, in contrast, came from a much more diverse set of backgrounds.

But one should be careful about reading too much into this data. Mishan, as we have already noted, received his PhD from Chicago and was on the LSE faculty. Pearce, too, had an LSE background, and one might think that these connections would have made them *sympathetic* to the theorem—though the LSE was, in fact, a very diverse place in the 1960s. Likewise, Davies, like Demsetz, Cheung, and Baldwin, had a strong UCLA connection but still managed to question the entire behavioral system underlying Coase's result.⁷³ And then there was Dolbear, who was both critic and supporter—arguing that the income-effect critique invalidated the theorem's invariance claim but nonetheless supporting the use of negotiated exchange solutions for two-party

⁷²Given the propensity to associate Coase with Chicago, it bears mentioning at this point that he was on the University of Virginia faculty when he wrote "The Problem of Social Cost."

⁷³Davies had certain sympathies for the property rights approach and for public choice analysis but did not go all the way with the Chicago–Virginia–UCLA view, as Thomas Borchering has pointed out. See Borchering's comments at <http://econ.duke.edu/uploads/assets/dje/2001/Memories%20of%20David%20George%20Davies.pdf>. Accessed 29 April 2014.

externalities.⁷⁴ Judging ideology from context, then, can be a hazardous enterprise. All that said, it is difficult to resist the conclusion that those having significant exposure to the Chicago–Virginia–UCLA traditions were far more disposed to favorably countenance the Coase theorem than were those outside of these traditions.⁷⁵

There can be no doubt that much of the attraction to, and hostility toward, the Coase negotiation result has resulted from its perceived implications for the use of the market as opposed to more direct governmental controls to deal with externality problems. And these were more than just matters of abstract theory. Mishan thought this new approach worrisome enough that he attacked it not just in the scholarly literature, but in a *popular* book, setting out for the lay reader in simple language the income-effects-related critique and the equity-based arguments that he had emphasized in his scholarly writings and taking a swipe at the “*laissez-faire* proponents,” such as Demsetz, who would argue that market outcomes are efficient in the presence of transaction costs that preclude bargaining (1967a, p. 64). The fact that the scholarly literature was not abuzz with references to Coase’s result during this period might lead one to wonder what the fuss was all about. But this is illustrative of the ways in which confining one’s focus to the scholarly literature can be misleading. Coase’s result was very much in the air, as they say, and, by the early 1970s, one heard in the hallways of economics departments the argument that the Clean Air Act was unnecessary because the Coase theorem had shown that the market could efficiently resolve pollution problems—and perhaps already had.⁷⁶

In sum, as discussions of the theorem began to proliferate in the second half of the 1960s, they brought with them both what we might call ‘Coase theorem creep’—the extension of Coase’s negotiation result to the world of positive transaction costs—and the onset of what became a very robust debate, which continues to this day, over the correctness of the theorem and the appropriateness of applying its insights to real-world phenomena. The table for much of the controversy over the Coase theorem that began to rage in the 1970s was set in 1966 and the years immediately following, when several of the issues on which subsequent discussions would center came to the fore. In the process, other themes that Coase considered more central to the message of “The Problem of Social Cost”—themes that had factored prominently into the treatment of Coase’s article during the first half of the decade—were pushed to the side. It is fair to say, then, that 1966 is the year that “The Problem of Social Cost” became an article about the Coase theorem. That the theorem was at least as much Stigler’s as Coase’s, and that Coase himself considered this entire turn “unfortunate,”⁷⁷ is simply one facet of what makes the larger story of the Coase theorem such an interesting chapter in the history of economic ideas.

⁷⁴It should also be noted that Wellisz, who, in 1964, became the first to criticize the theorem in print, was on the faculty at the University of Chicago Graduate School of Business when he wrote up his critique—although he had moved to Columbia by the time that the paper was published.

⁷⁵I have been able to identify two course reading lists from the late 1960s that included Coase’s article. Both were courses in price theory, one taught at Chicago and the other at Stanford. Coincidentally, the professors were both Harvard PhDs—Donald (now Deirdre) McCloskey and Hayne E. Leland (Anonymous 1969).

⁷⁶I would like to thank Alan Randall for alerting me to this point and Emery Castle and Robert McCormick for confirming it. See Medema (2014a).

⁷⁷Quoted in Sarah Galer, “Ronald Coase Still Stirs Debate at 101.” http://www.uchicago.edu/features/20120423_coase/. Accessed 29 April 2014. See also Coase (1988).

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