

**Rethinking Market Failure:
The Early Reception of the Coase Theorem in the Economics Literature**

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Introduction

In 1960, Ronald Coase laid out a prospectus for rethinking the theory of externalities—or what, owing to his distaste for the term “externality,” he labeled “The Problem of Social Cost” (1960). The idea most closely identified with this article in the professional mind is the Coase theorem, an idea that eventually wove its way into the frameworks of economics and law. But in 1960, and indeed until 1966, there was no “Coase theorem.” The “theorem,” such as it is, owes its existence to George Stigler (1966). The purpose of the present paper is to explore the reception of “The Problem of Social Cost” among economists over the period 1960-1965—that is, in the “pre-Coase-theorem” era in order to ascertain how economists viewed Coase’s contribution, with particular attention to their treatment of the negotiation result that now goes by the name, “Coase theorem.”

It is important to bear in mind that Coase’s message in “The Problem of Social Cost” was targeted at economists and their methods of analyzing social cost—or externality—problems. Over time, the article’s impact went well beyond these narrow confines, but that is another part of our story. And the confines *were* narrow indeed. The literature on externalities was miniscule at the time of Coase’s writing, and economists’ attitude toward them was something of a benign neglect—that externalities were an aberration, or, as Tibor Scitovsky put it in 1954, “exceptional and unimportant” circumstances (1954).¹ Their existence was barely remarked upon, if at all, in the textbooks, and journal literature included only a small handful of articles on the subject. By the early 1970s, in contrast, the proliferation of articles dealing with the analysis of externalities was sufficient to warrant a lengthy survey article in the *Journal of Economic Literature* (1971), one that analyzed more than two dozen articles on the subject.

That the literature on externalities mushroomed following the publication of Coase’s article is indisputable, and a portion of the increased interest in the topic can certainly be ascribed to the influence

¹ Scitovsky goes on to note that the use of what he labels “bucolic” examples such as bees and apple orchards—the illustration used by Meade (1952)—is “no accident,” the reason being that “it is not easy to find examples [of technological externalities] from industry” (1954, p. 145).

of Coase's article. Two aspects of Coase's analysis stand out here. First, the nature of his discussion and, in particular, the range of illustrations employed had the effect of making economists aware of the extensive range of externality-type situations. Whether one wished to label them externalities, spillovers, or divergences between private and social costs/benefits, one could not read Coase's article without coming away with the impression that such phenomena were pervasive within economic and social relations. In short, the prevailing attitude, described by Scitovsky, was simply incorrect. Second, Coase's article posed a fundamental challenge to the dominant Pigovian approach to externality theory and policy and this, in turn, stimulated work both in support of and in opposition to Coase's challenge.

The forces at work here, however, were not confined to internalist moves by economists. Coase's analysis of legal cases played no small role in broadening economists' understanding of the pervasiveness of externalities, and this aspect of his discussion was reinforced by the publication, in 1961, of Yale Law School Professor Guido Calabresi's "Some Thoughts on Risk Distribution and the Law of Torts" (1961) and several subsequent works by Calabresi on this topic. Taken together, Coase and Calabresi showed both the economist and the lawyer that certain traditional legal questions—e.g., accident law—had an externality component to them, and their analyses generated increasing interest in the possibility of exploring these questions using the tools of economic analysis—as well as controversy over the propriety of doing so.² But there was also a larger social force at work. This was the period during which the subject of environmental pollution and its effects was looming increasingly large in social and political discussions, and economists responded to this by devoting increasing attention to the economics of air and water pollution. The vehicle for their analysis was the theory of externalities, as it was the piece of the economist's toolkit which lent itself naturally to such analysis.³ The attention given to Coase's analysis in the 1960s, then, was a product both of fortuitous timing and of the challenge that it posed to received thinking.

² See, e.g., Marciano and Medema (2011).

³ On the treatment of the Coase theorem by environmental economists in the 1960s and 1970s, see Medema (2012).

But if Coase's article was revolutionary in its insights and implications, and it was, the actual revolution was very slow in coming. From the time of its publication in 1961⁴ through 1964, there were only a ten references to "The Problem of Social Cost" in the economics literature, and all of these came from individuals with close connections to one or more of the London School of Economics (LSE), the University of Virginia, and the University of Chicago—Coase's past, present, and future homes. That Coase's argument would resonate at Chicago, Virginia, and the LSE seems natural. Coase's analysis, and the negotiation result in particular, appeared to provide additional ammunition for those disposed to "the Chicago view," with its the basic belief in the efficacy of markets and the suspicion of government intervention. This stance had for some time been associated with the Chicago economics faculty and was reflected in the emerging sense of a "Chicago School."⁵ The economics faculty at the University of Virginia, of course, had deep Chicago roots and, through the new Thomas Jefferson Center for Studies in Political Economy, were making no bones about their interest in the study and promotion of a free-market system.⁶

It was not just that economists at Chicago and Virginia *were* taking up Coase's analysis, however; we also find that precious few others were doing so, particularly to respond to the challenge laid down by Coase with a defense of the Pigovian approach. One explanation for this lack of rebuttal to or critical commentary on Coase may be that much of the profession was simply unaware of Coase's contribution. This, if true, could be ascribed in no small part to the outlet in which Coase's article appeared. The *Journal of Law and Economics* was at that time a very new journal—the 1960 issue in which Coase's article was published being only its third⁷—and its circulation at that time was very limited. Its readership likely consisted primarily of those disposed to its particular flavor of legal-regulatory analysis, one that was heavily imbued with the Chicago view of the world. Indeed, the vast majority of the articles

⁴ Though carrying a 1960 date, the issue of the *Journal* in which Coase's article was published did not appear until the spring of 1961. See Kitch (1983, p. 221).

⁵ On the emergence of a "Chicago school within the professional consciousness, see Miller (1962), Bronfenbrenner (1962), and Coats (1963) from the early 1960s and the somewhat more recent treatment by Reder (1982).

⁶ On this, see Medema(2000) and Medema (2009, chapter 6)

⁷ The *Journal of Law and Economics* was founded in 1958 and published only one issue per year until 1968.

published in the journal's first several issues were authored by current and former Chicago faculty and alumni—including George Stigler, Reuben Kessel, Gary Becker, Gale Johnson, Lester Telser, Simon Rottenberg, Jack Hirschleifer, James Buchanan, and Warren Nutter. The journal's readership, then, was likely to be less favorably disposed to the traditional regulatory approaches than would be the members of a representative sample of academic economists. It may also be that those holding to the dominant Pigovian viewpoint did not feel threatened by Coase's work, though Stanislaw Wellisz (1964) suggested just the opposite already in 1964—that the idea that markets could efficiently resolve externality problems was riding high in the profession as a result of the work of Coase and others. This, though, is almost certainly an overstatement on Wellisz's part and may well reflect the viewpoints expressed in the few articles that *did* invoke Coase's arguments rather than the views of the larger profession.

While it might seem natural for economists of the Chicago and Virginia persuasions to latch onto Coase's negotiation result, with its emphasis on the possibility of private or market resolutions to externality problems—after all, this was the part of Coase's analysis that attracted the attention of Chicago economists in the first place when Coase originally laid out this proposition in “The Federal Communications Commission” (1959)—the fact is that there was very little attention paid to this aspect of Coase's analysis in the years immediately following the publication of “The Problem of Social Cost.” Instead, much of the commentary focused on the idea, emphasized in both “The Federal Communications Commission” and “The Problem of Social Cost,” that, in contrast to the analysis and prescriptions promulgated by the mainstream Pigovian approach to welfare economics, there are no “ideal” solutions to social cost problems—that both markets and government are imperfect coordination mechanisms and that the determination of the appropriate mechanism for dealing with externality problems can only be found through the application of comparative institutional analysis to each situation as it arises.

A World of Imperfections: The Comparative Institutional Approach

Though George Stigler is often credited with raising the larger professional consciousness to Coase's analysis through his naming and discussion of the Coase theorem in his textbook, *The Theory of Price*, in

1966, he was actually something of a late-comer to the party. In the early 1960s, it was Coase's University of Virginia colleague James Buchanan who, over the period 1962-1963, published no less than four articles that referenced Coase's discussion and also accorded it treatment in *The Calculus of Consent*, a book co-authored with another University of Virginia colleague, Gordon Tullock⁸ and which attracted significant attention among both economists and political scientists.⁹ But this was not an instance of Buchanan playing Peter to Coase's Christ, as Buchanan had already established for himself a prominent place in the profession (e.g., serving as President of the Southern Economic Association in 1962-63) through his work in public finance. Buchanan had earned his Ph.D. at Chicago in 1948 under the direction of Frank Knight, regarded as one of the founding fathers of the Chicago school and who himself had penned a scathing attack on Pigou's analysis of social cost problems in the early 1920s (1924). Buchanan's research to that point had focused on issues in public finance, and one prominent theme of his work in this vein was the integration of a theory of government behavior within the analysis of the economic policy making process.

One of the central tenets of the Virginia approach to the analysis of the role of government in the economy was that the operation of government is both costly and imperfect, an insight that was more or less lost on economic theorizing at that time, and which both drove and reinforced the public choice movement that emanated from the University of Virginia in the early 1960s. This theme, of course, reverberates through Coase's analysis in "The Federal Communications Commission" and, especially, "The Problem of Social Cost," but it had been a hallmark of Coase's analysis for many years, going back at least to his studies, undertaken in the 1940s and 1950s, of the BBC broadcasting monopoly and the nationalization of public utilities in Britain.¹⁰ This suspicion of state action, then, was not a point of view that Coase picked up at Virginia, but his sensibilities clearly resonated with the Virginia view, so it is not at all surprising that it was this aspect of Coase's analysis, more so than his negotiation result, that

⁸ Tullock, like Buchanan, was a University of Chicago graduate—in his case, from the Law School, and cut his teeth on price theory under the influence of Henry Simons.

⁹ See Medema (2000, pp. 294-302).

¹⁰ See, for example, Coase (1939) and Coase (1950).

Buchanan and others at Virginia focused on in their early discussions of and references to “The Problem of Social Cost.” As we shall see below, Buchanan by no means neglected Coase’s negotiation result, but his understanding of the core message of “The Problem of Social Cost” lay elsewhere.

Like Coase, Buchanan located the perceived shortcomings of the received theory of market failure in the Cambridge welfare tradition and, specifically, in the writings of A.C. Pigou (1932). As Buchanan repeatedly pointed out, the Pigovian approach assumed that government agents could costlessly and efficiently implement the policy prescriptions developed by economists to correct market failures of various types—whether goods not provided at efficient levels by the market (public goods), maldistributions of income, or externalities. As Buchanan put it in 1962, “Since Sidgwick and Marshall, and notably since Pigou’s *The Economics of Welfare*, economists have accepted the presence or absence of external effects in production and consumption as a primary criterion of economic efficiency” and suggested that these inefficiencies “can be reduced or eliminated by the shift of an activity from market to political organization” (1962). Buchanan’s take on mainstream welfare theory was not so much that Pigou and those who later drew on his work erred in pointing to the imperfections associated with markets as it was with their attendant assumptions regarding state action.¹¹ Against this, Buchanan pointed to the information problems associated with determining the appropriate governmental response—e.g., the tax rate that would generate the efficient level of the externality—and the costs associated with the bureaucratic processes necessary to implement the tax or regulatory remedies. It means nothing, he said, to assert that a particular market solution is inefficient as against some absolute standard—some ideal level of output that exists only in a theoretical world; rather, the efficiency of a particular outcome can only be assessed as against feasible alternatives. In this, Buchanan was adopting an opportunity cost approach common among those who hewed to an Austrian conception of costs, as against the “real cost”

¹¹ In point of fact, Pigou himself was well aware of the potential pitfalls associated with government action, something apparently lost on both his admirers and his critics. See, e.g., Medema (2009) and Backhouse and Medema (2012).

approach that characterized Marshallian system and which was dominant in Anglo-American economics (including, as it happens, at Chicago).¹²

Acknowledging the imperfections associated with government action, for Buchanan, was about more, though, than a simple awareness that market failure has its counterpart in government failure. The implications went to the heart of welfare economics: *one could no longer argue, a priori, that the existence of an externality implies inefficiency*. And absent inefficiency, the justification for state action is removed. The argument was straightforward. If the costs associated with the governmental “cure” for, e.g., pollution exceed the costs associated with the pollution damage, no government intervention is called for—at least on efficiency grounds. It is only when state action reduces the aggregate level of costs, said Buchanan, that such intervention can be justified. But this viewpoint was effectively absent from the literature of the day, and Buchanan thus welcomed Coase’s analysis as “a notable exception” to the dominant view that government intervention is called for whenever private and social costs diverge (1962, p. 17 at n.2).

Buchanan continued to hammer away at this theme in a series of articles dealing with externality problems published over the course of the 1960s.¹³ In doing so, he repeatedly pointed to Coase’s emphasis on the need for a comparative institutional approach for the determination of efficiency-enhancing solutions to externality problems and the need, in doing so, to bear in mind both the costs of government intervention and the reciprocal nature of externalities—the latter as against the “undue concentration on the decision calculus of the firm or individual that is observed to be generating the external effects” (1969, p. 177).¹⁴ As was the case for Coase, Buchanan’s message was less about market success than about government failure, but the end result was to call into question economists’ estimation of the relative possibilities of market and state when markets do not generate the idealized efficient outcomes contemplated by economic theory.

¹² The opportunity cost approach was one that, in Anglo-American economics, was most closely associated with the London School of Economics.

¹³ See below, as well as Marciano (2012) .

¹⁴ See also Buchanan (1966, pp. 35-36). Buchanan uses the term “bilateral” where Coase employs the term “reciprocal.”

Buchanan was by no means the only economist for whom Coase's attack on mainstream externality theory and, indeed, welfare economics generally struck a chord. London School of Economics economist Jack Wiseman, for example, noted in 1963 that, based on the work of Coase and Buchanan, it could no longer be assumed that the analysis of and policy solutions for externality problems were "free from ambiguity" (1963, p. 41)—echoing a stance that he himself had taken several years earlier when commenting on the ability of economists to provide advice to governments on the appropriate price to be charged by public utilities (1957). Charles Plott, a former student of Buchanan's at Virginia put the point even more strongly, arguing that it was "careless" to claim, as most economists did, that it is appropriate to levy a tax on externality generating activities (1966, p. 811 at n.2).

But it was not simply a matter of economists failing to account for the problems associated with state action. Coase had argued that recognition of the reciprocal view changes one's entire approach to measuring externality damage. As E.J. Mishan (1965, p. 32) and A.R. Prest and Ralph Turvey (1965, p. 729) pointed out, the reciprocal view informs us that the social cost of an externality is not inherently given by the damage caused by the harmful effect as the traditional view, with its focus on the actions of the party "causing" the harm, suggested. If, for example, the victim could avoid \$500 in pollution damage at a cost of \$100, whereas it would cost the polluter more than \$100 to mitigate damages, then the social cost of the externality is \$100 and, from a policy perspective, the legal remedy should force the victim to take the necessary steps to avoid the harm.

These early responses to "The Problem of Social Cost," then, reflect a very favorable disposition toward Coase's central thesis. It bears emphasizing, however, that these reactions reflect something in the way of the choir's response to the preacher. Like Buchanan, Wiseman, Prest, Turvey, and Plott were associated with one or more of Chicago, Virginia, and the LSE—all schools with which Coase had been or would be associated and that, at this time, had a reputation for being critical of the Pigovian and other interventionist approaches (e.g., Keynesian analysis). Wiseman, in fact, had been a student of Coase's, as well as of Lionel Robbins and F.A. Hayek, at the LSE in the immediate post-WWII period, and, like many others associated with the LSE, employed a subjectivist, opportunity-cost based approach—one that

lent itself nicely to this line of thinking. Like Coase, Wiseman worked on issues in public utility pricing and the nationalization of industries; he also befriended Buchanan during the latter's visit to the LSE in the early 1960s and became a regular visitor to the Center for Study of Public Choice.¹⁵ Though one could easily leap to an ideology-related explanation for this attraction to Coase's work, things are not as straightforward as they might appear. Remember that the enthusiasm we have witnessed here was directed toward the notion of a comparative institutional approach to policy making, not toward Coase's negotiation result. If the ideology of the market were such an important factor in this work, one might expect that the emphasis of a group of scholars with such affiliations would be on the idea that private, market-like solutions could be used to resolve externality problems. But this was not, it seems, what these scholars saw as the central insight to be drawn from Coase's analysis.

Coase as Wicksellian: Buchanan and Negotiated Solutions to Externality Problems

Though Buchanan saw the central message of "The Problem of Social Cost" as something other than the Coase theorem, he did not ignore Coase's negotiation result, invoking it over the course of the 1960s in the contexts of political bargaining, the evaluation of the optimality of social rules, the analysis of public goods provision, and the appraisal of externalities in situations of monopoly. In each case, he took Coase's argument as a given—as an obvious truth rather than something to be contested. But there is more to this than two people thinking along similar lines. As Buchanan noted in conversations with this author, the negotiation process contemplated by Coase was very much "in the air" at Virginia during the 1950s and 1960s, and he ascribed some of his own thinking on this subject to a "continuing 'community of discourse' in which several persons"—among whom he lists Coase—"have participated at various times" (1962, p. 341 at n.1).

The roots of Buchanan's attraction to exchange-based frameworks for the analysis of policy issues such as Coase's negotiation result had their origins in his affinity for the writings of Swedish economist Knut Wicksell (1896), who argued that government policy proposals (e.g., the provision of

¹⁵ Wiseman was also an early participant in the Institute for Economic Affairs (IEA), a British think-tank commonly associated with market-favoring reforms. See Hartley (2000).

goods and services through the public sector or redistributions of income) can only be presumed to enhance social welfare if they are put into place through a democratic voting process that requires unanimous consent. If all voters signal their approval of a particular policy measure, it must be that each of them is better off—or at least no worse off—than under the status quo. Thus, there can be no question of anyone incurring costs in excess of benefits received or of the total cost associated with a policy exceeding the total benefit. If total benefits exceed total costs for society, the approval of each voter can be garnered if the distribution of benefits and costs (e.g., taxes) is structured appropriately.¹⁶ It was this Wicksellian perspective and its harmonization with the Pareto efficiency criterion that informed Buchanan's approach to questions of public finance and public policy, an approach that was perhaps most forcefully laid out in *The Calculus of Consent* (1962).

The Calculus of Consent represented an attempt by Buchanan and Tullock to ground the analysis of political decision-making and, in particular, the formation of constitutional rules in economic thinking, with the Wicksellian unanimity criterion playing a featured role. The connection between Coase's negotiation result and the unanimity criterion was made clear by Buchanan and Tullock: "The unanimity test is, in fact, identical to the compensation test [as in Coase's negotiation result] if compensation is interpreted as that payment, negative or positive, which is required to secure agreement" (1962, p. 91). That is, both represent frameworks for reaching Pareto optimal agreements via negotiation/exchange processes that apportion benefits and costs so as to secure the agreement of all parties involved. But there was a normative thrust to Buchanan and Tullock's discussion that is absent in Coase's negotiation analysis. Whereas Coase had argued that, under certain assumed conditions, an efficient negotiation solution would be reached, Buchanan and Tullock asserted that "if decision-making costs are neglected, [the unanimity] test must be met if collective action is to be judged '*desirable*' by any rational individual calculus at the constitutional level" (p. 91, emphasis added).

¹⁶ Recognizing that a rule of unanimity would be unworkable in practice—effectively reifying the status quo—Wicksell argued that, at a minimum, a significant supra-majority should be required to pass legislation, thereby increasing the likelihood that the policy put into place would be efficiency-enhancing.

Buchanan and Tullock proceeded to illustrate this point using the example of an industrial plant that pollutes the air and, in doing so, imposes costs on residents in the surrounding area. “If this represents a genuine externality” (that is, an externality that leaves the parties in an inefficient state), they note, “either voluntary arrangements will emerge to eliminate it or collective action with unanimous support can be implemented” (p. 91). As respects collective action,

If the externality is real, *some* collectively imposed scheme through which the damaged property owners are taxed and the firm’s owners are subsidized for capital losses incurred in putting in a smoke-abatement machine can command the assent of all parties. If no such compensation scheme is possible (organization costs neglected), the externality is only apparent and not real. (p. 91)

That is, the presence of a real externality implies an inefficiency, meaning gains from exchange are available. As such, it is possible to alter the level of the relevant activities via the policy process without harm to either of the parties if relevant accompanying compensation payments are made. If such moves are not possible, then no gains from exchange exist and the externality situation is itself optimal.

In the case of voluntary private solutions, said Buchanan and Tullock,

The same conclusion applies ... Suppose that the owners of the residential property claim some smoke damage, however slight. If this claim is real, the opportunity will always be open for them to combine forces and buy out the firm in order to introduce smoke-abatement devices. If the costs of organizing such action are left out of account, such an arrangement would surely be made. (p. 91)

For Buchanan, then, the Coase theorem and the unanimity criterion were little more than two examples of how the exchange process works itself out in a world without frictions. In such a world, all externalities that represent an inefficient allocation of resources “would be eliminated through either voluntarily organized private action or unanimously supported collective action, with full compensation paid to parties damaged by the changes introduced by the removal of the externalities” (p. 91). In the former case,

affected parties will negotiate to a welfare-improving position in the face of an externality, while in the latter case members of society will work together to adopt those rules (and only those rules) that enhance the collective welfare.¹⁷

The difficulty, of course, neither collective action nor the voluntary exchange process are costless. As such, Buchanan and Tullock noted,

The choice between voluntary action, individual or co-operative, and political action, which must be collective, rests on the relative costs of organizing decisions, on the relative costs of social interdependence. The costs of organizing voluntary contractual arrangements sufficient to remove an externality or to reduce the externality to reasonable proportions may be higher than the costs of organizing collective action sufficient to accomplish the same purpose. Or, both of these costs may be higher than the costs of bearing the externality, the spillover costs that purely individual behavior is expected to impose. (p. 48)

As such, the appropriate response to externalities cannot be determined *a priori*, and we are back to the need for comparative institutional analysis to determine the efficient course of action. But the prism through which all of this is to be evaluated is the individual exchange process, and here collective action is little more than the Coase theorem writ large.

Buchanan and Tullock's discussion of negotiated solutions to externalities in *The Calculus of Consent* has received almost no attention in the literature, but the distinction made there between "real" and "apparent" externalities brings us to what is perhaps Buchanan's most important contribution to externality theory, and its relevance and import lies squarely at the intersection with Coase's negotiation result. The analytics and intuition underlying the real vs. apparent dichotomy were set out by Buchanan

¹⁷ Buchanan and Tullock were aware that that the latter point represented a new and rather different way of thinking about externalities: "Since the conclusions here are not immediately apparent, additional comments may prove helpful. Assume that an industrial plant emits smoke which imposes real costs on local residents. Insofar as these residential property owners must undergo costs which the plant owners do not undergo, the capital value of the plant to the group of residential owners must exceed the capital value of the plant to its current owners. Mutual gains from trade exist, and, if we disregard all decision-making costs, trade will take place. The new owners may not find it profitable to introduce complete smoke abatement. However, since internal marginal costs of production will be increased, some reduction in output will be undertaken, provided that we assume the initial position was one of disequilibrium. For an interesting discussion of many of these points, see Ronald Coase, 'The Problem of Social Cost,' *The Journal of Law and Economics*, III (1960), 1-44" (pp. 356-47 at n.2).

and University of Virginia colleague (and former student) W. Craig Stubblebine in an article bearing the simple title, “Externality” (1962). This article represented Buchanan’s attempt to reformulate the theory of externalities—“to clarify the notion of externality by defining it rigorously and precisely”—and to do so in light of the concept of Pareto optimality (p. 371).¹⁸

At the heart of Buchanan and Stubblebine’s reformulation was the belief that external effects should be evaluated not based upon their presence or absence, but on their *relevance*, and that evaluations of relevance should be grounded in efficiency—specifically, the Pareto criterion. Toward this end, they introduced the notions of “Pareto relevance” and “Pareto irrelevance,” consciously moving the discussion and evaluation of externalities into the realm of gains from exchange around the externality and thus to the world of negotiation and compensation. Buchanan and Stubblebine defined a “Pareto-relevant” externality as existing

when the extent of an activity may be modified in such a way that the externally affected party, *A*, can be made better off without the acting party, *B*, being made worse off. That is to say, ‘gains from trade’ characterise the Pareto-relevant externality, trade that takes the form of some change in the activity of *B* as his part of the bargain. (p. 374)

The Pareto-relevant externality, then, corresponds to the “real” externality of *The Calculus of Consent* and reflects the context within which Coase’s negotiated solutions take place. A Pareto-irrelevant externality, on the other hand, is one for which no such move is available; all gains from exchange have been exhausted, if any were available in the first place. In such a situation, there would be no incentive for the parties to engage in the type of bargaining contemplated by Coase.

The implications of the Pareto-relevance notion for standard welfare economics analysis are significant, as Buchanan and Stubblebine pointed out. In the technical language of welfare economics, externalities are Pareto relevant when the parties marginal rates of substitution (MRS’s) diverge, “*provided that we neglect the important element involved in the costs of organising group decisions*” (p. 377, emphasis added). The divergence in the MRS’s reflects the fact that there are unexploited gains from

¹⁸ On Buchanan’s larger approach to the analysis of externalities, see Marciano (2012).

exchange and hence an element of inefficiency in the resulting equilibrium situation. But the traditional story neglects the impact of transaction costs on the equilibrium position attained. When these costs are positive, argued Buchanan and Stubblebine, the traditional MRS criterion is liable to point the economist in the wrong direction. While an MRS divergence suggests that gains from exchange are available and unexploited, the failure to exploit these potential gains may owe to the presence of transaction costs (with which Buchanan and Stubblebine include “uncertainty and ignorance”) that exceed the gains from exchange per se. In short, the traditional welfare criterion may suggest that gains from exchange exist when they in fact do not once we account for the costs of achieving them (p. 377).

The introduction of this distinction between Pareto relevance and irrelevance had two significant implications for the analysis of and response to externalities—implications that contradicted certain received views of the externality problem. First, as Buchanan and Stubblebine pointed out, negotiations that exhaust all gains from exchange may not eliminate the presence of the harmful effect. That is, “a position maybe classified as Pareto-optimal or efficient despite the fact that, at the marginal, the activity of one individual externally affects the utility of another individual” (pp. 380-81). The externality persists because the cost of further reductions in it—whether of abating the harm or of engaging in further negotiations—are greater than the gains that would result—hence the unwillingness of the parties to engage in exchange to the point where the externality is completely eliminated.

Second, and turning to the realm of externality policy, Buchanan and Stubblebine’s analysis suggested that the mere observation of external effects cannot tell us whether the existing state of affairs should be modified. Invoking Pigou’s language from *The Economics of Welfare*, they note that there “is not a *prima facie* case for intervention in all cases where an externality is observed to exist”—the reason being that the gains from the harm-generating activity may exceed the damage that this activity imposes on others (p. 381, emphasis added).¹⁹ The implication, then, is that market outcomes may well be *efficient*, even when external effects are present—meaning that government intervention that reduces the

¹⁹ Pigou’s statement was, “In any industry, where there is reason to believe that the free play of self-interest will cause an amount of resources to be invested different from the amount that his required in the best interest of the national dividend, there is a *prima facie* case for public intervention” (1932, p. 331).

level of the harm-causing activity would make matters worse, from an efficiency perspective, rather than better.

The Buchanan and Stubblebine analysis represented a somewhat different take on the negotiation result than we find in Coase's own writing. Whereas Coase's analysis was targeted at what one might call "unresolved" externality problems—suggesting that where there is an existing inefficiency owing to a lack of well-defined rights over certain resources an assignment of such rights will generate an efficient and invariant solution to the problem, without the need for governmental tax or regulatory instruments—Buchanan and Stubblebine never suggested using exchange-based mechanisms to resolve externality problems. Rather, their analysis went to the *evaluation* of market outcomes and makes, in a sense, an *ex post* argument: externality situations which *appear* to be inefficient may not be; it may simply be that the cost of internalizing the externality (through private or collective processes) outweighs the attendant benefits. This unique twist on Coase's argument opened the door to its use to justify status quo outcomes. If a better solution was available, it would have been exploited by the parties involved, since, as we know, people pursue opportunities for gains from exchange when they are available. This transaction-costs-based approach to the evaluation of externalities led many scholars in the coming years, both theorem supporters and opponents, to believe that the Coase theorem tells us that what is, is efficient—that those externalities which do exist do so because they *should* exist, on efficiency grounds, and thus that government intervention is not necessary to deal with them. It goes almost without saying that this view became the source of some significant controversy.

It is also important to recognize that Buchanan and Stubblebine were working within a different welfare framework than was Coase and that these two frameworks can give rise to divergent policy implications. Coase's comparative institutional approach was premised on the notion that one can measure the dollar-valued benefits and costs associated with alternative courses of action. The prescription that emerged from his analysis was that, if efficiency is the goal, one should choose the option (private exchange, collection of activities under the control of a single owner, government regulation, or allowing the problem to persist) that generates the greatest value of output for society—the wealth-

maximizing approach. Buchanan and Stubblebine, in contrast, couched their discussion in the Paretian conception of efficiency, one in which welfare improvements are measured not by increases in value, but by the willingness of all affected parties to move away from the status quo—a position derivative of Buchanan’s subjectivist approach to questions of valuation. A simple example can illustrate how these two frameworks can generate to divergent results. Suppose that the least-cost method of dealing with an externality is for the government to regulate it out of existence. Coase’s approach would recommend exactly this because it is the cost-minimizing way of dealing with the problem. But such a move will only satisfy the Pareto criterion if the party generating the harmful effect is fully compensated for the costs associated with that regulation and so would consent to have it imposed, whereas Coase’s approach would approve of the regulation with or without compensation.²⁰ Thus, the Buchanan and Stubblebine approach gives greater deference to the status quo than does Coase’s approach.

One could argue, then, that Buchanan and Stubblebine’s take on the problem had in some sense strengthened Coase’s argument against the profession’s default toward what it believed was efficiency-enhancing government regulation. Private or market mechanisms could provide Pareto efficient resolutions of externality situations not only in a world of zero transaction costs, but where transaction costs are positive. If the damaged party has no incentive to seek an alteration in his circumstances, either through private negotiation or via collective action, it must be that the status quo is efficient.

Although Buchanan and Stubblebine limited their focus almost exclusively to the issue of efficiency, they did briefly take up Coase’s assertion regarding invariance—that *the same* efficient outcome would obtain regardless of the initial assignment of rights. At this point, however, they parted company with Coase, at least in part. Buchanan and Stubblebine acknowledged that his invariance claim was correct as respects inter-firm externalities, where firms adjust to competitively determined prices. But if consumers are party to the externality, they said, one cannot make invariance-related assessments, owing to the non-comparability of consumer utility functions (p. 383). That is, a Pareto efficient outcome,

²⁰ To take this a step further, it may be that the costs associated with negotiating and making such a compensation payment would reduce aggregate wealth as compared with a situation in which this compensation payment was not made.

but not an invariant one, is all that guaranteed in the inter-consumer case. This, too, was to become a significant issue in the debate over the Coase theorem in the coming years.

While the Buchanan and Stubblebine article was targeted at the guts, so to speak, of externality theory, other articles on the subject published by Buchanan during the 1960s were suggestive of the potentially wide-ranging applicability of Coase's negotiation result. For example, another article published by Buchanan in 1962 saw him drawing on this result when examining the application of the Pareto criterion to the formation of societal rules. The question to which Buchanan applied Coase's insight was that of how far a society should allow freedom of contract. This would appear to be fertile ground for the invocation of Coase's result, given its suggestion that free contracting will generate efficient outcomes. But Buchanan took the discussion in a very different direction, arguing that traditional applications of the Pareto criterion to the contracting process are liable to mislead. The problem arises when a voluntary agreement between two parties has adverse spillover effects on third parties—those not involved in the formation of the agreement in question.

Buchanan instances rules prohibiting voluntary mergers, which were put into place because such mergers could lead to higher prices and therefore harm consumers—the spillover effect. From an efficiency perspective, this interference with the companies' ability to take advantage of economies of scale would seem to violate the Pareto criterion because these rules prohibit firms from achieving optimal size. Invoking Coase, Buchanan asserted that higher prices and the resulting harm to consumers are not inevitably the result of such mergers: "Provided freedom of contract is present, and provided that the cost of organizing voluntary agreements can be neglected," he said, "there is *no damage* that may be inflicted on third parties" (1962, p. 349, emphasis added). That is, following Coase's logic, if there were no transaction costs, consumers would organize to enter the merger negotiations so as to prevent any uncompensated harm, and the negotiated outcome would reflect the scale economies made possible by the merger without attendant consumer exploitation. In such situations, then, the rules prohibiting mergers would be obviously inefficient and, beyond that, would have no beneficial equity effect.

The implication of this argument, for Buchanan, is that rules restricting voluntary agreements can only be optimal *a priori* if there are both spillovers from the mergers and costs associated with the negotiation process. As emphasized, however, these concerns may be highly relevant; in particular, the costs to firms of agreeing on a merger tend to be very low relative to the costs to consumers of organizing and negotiating with the firms (pp. 349-50). The presence of these relatively high costs of consumer coordination, then, may provide a legitimate efficiency-based reason for a merger prohibition rule that, based upon traditional welfare thinking, would appear to violate the Pareto criterion. While particular applications of the rule could well generate suboptimal results by preventing mergers that had a minimal impact on consumers both in absolute terms and relative to the efficiency gains on the production side, the transaction cost asymmetries would make the existence of such a rule optimal if the aggregate gains to society from its existence outweighed the associated costs.

Buchanan, writing with Milton Kafoglis (1963) also found Coase's negotiation result relevant for the analysis of the supply of public goods, invoking it to argue that the traditional story that public goods cannot be provided through the market is not necessarily correct. Central to their argument was the fact that public goods, as conceived of by economists, are essentially extreme instances of goods whose provision is attended by externalities—in this case, wide-spread spillover benefits. As such, the Coasean negotiation framework should be applicable. As Buchanan and Kafoglis note, "If negotiations among all parties to the externality relationship are allowed to take place—that is, if side-payments in interpersonal markets are introduced—the 'optimal' solution will be reached through the emergence of private agreements" (p. 412). That said, the authors do not offer market solutions as any sort of panacea here or suggest that most public goods can be provided via the market; rather, they suggest that the traditional public goods story, while not wholly incorrect, is incomplete and potentially misleading in its suggestion that the market *cannot* provide such goods.

What is perhaps most striking about Buchanan and Kafoglis's position is that they were convinced that Coase's negotiation result *is* relevant for small numbers situations. They inform us that the type of negotiations envisioned by Coase "will surely take place to some extent in any case, and

especially when the interacting group is reasonably small.” When the group is large, however, the situation is altered, as “the costs of attaining voluntary agreements may become prohibitive.” This, they note, would preclude the optimal provision of the good in question, meaning that efficiency-enhancing improvements via collective action may be called for (p. 412). Such judgments, though, require that one weigh the relative merits of the private and collective outcomes, with the latter analysis accounting for imperfections in the governmental process. The problem with the traditional (Pigovian) story, said Buchanan and Kafoglis, is that it is misleading because “there is no a priori way of determining whether or not the ‘optimal’ solution may be approached” via state action (p. 412). Coase’s contribution here, they suggested, is that he pointed to “the failure of [Pigovian policy] analysis to have considered adequately the nature of the externality relationship” (p. 413) and, in doing so, for neglecting the possibility that voluntary mechanisms will bring about efficient solutions in certain instances.

Buchanan returned to this same melding of Coasean negotiation and comparative institutional analysis insights in 1969 when discussing the difficulties posed by the Pigovian analysis of externalities in situations where the firm engaged in the externality-generating activity is a monopolist. Though the publication of this article lies outside of the time period under consideration in this paper, it is worth a mention because it reinforces the themes that underlie Buchanan’s use of Coase’s negotiation result. It was well established that the output of a competitive industry will be supra-optimal if the production of the good in question generates harmful spillovers—hence the attendant calls for government intervention to restrict the activity of the externality-generating party or parties and thereby move the market toward efficiency. When the supplier is a monopolist, however, the situation is altered. Absent externalities, the monopolist’s profit-maximizing level of output falls short of the social optimum; as such, Buchanan pointed out, when harmful effects are present we cannot say a priori whether or not the monopolist is producing an inefficiently high, inefficiently low, or socially optimal amount of the good. In particular, it may be that the monopolist’s profit-maximizing level of output is sub-optimal, even when external effects are taken into account. If this is the case, Pigovian tax or regulatory remedies, by forcing the monopolist

to further restrict its output, will actually push the market *away from* rather than toward the social optimum (1969, pp. 176-77).

Both the inefficiency caused by the monopoly per se and the inefficiency generated by the externality give rise to potential gains from exchange. But, said Buchanan, there is no way of ascertaining a priori the relative magnitude of these gains (which point in opposite directions) and thus whether efficiency dictates higher output, lower output, or no change in output. It is at this point that Buchanan brings the Coasean bargaining process into the picture, noting that, under costless bargaining conditions, pollution victims, consumers of the product produced by the monopolist polluter, and the monopolist polluter itself could engage in a three-way bargaining process that would generate an efficient resolution of the twin problems of monopoly and pollution. Buchanan's point here was not that such a negotiation scheme offers a realistic remedy for the efficiency problem, but simply that the bargaining process would reveal what moves are Pareto-better. In contrast, the information and related problems that attend the government's regulatory process call into question the ability of policy makers to identify and design remedies that will move the market to Pareto-better points. The basic problem with the Pigovian approach, for Buchanan, was that there is not way of determining whether the government tax or regulatory solution actually moves us to, or even near to, the "optimal" solution. The Coasean negotiation process, in contrast, shows us exactly what the optimal outcome is; indeed, it is really the *only* mechanism the results of which assure us that the optimal outcome has been obtained.

* * *

Three themes emerge from Buchanan's various treatments of treatment Coase's analysis. The first is that he clearly considered Coase's negotiation result non-controversial, which may be a manifestation of the congruence of Coase's analysis with the views about the utility of the exchange framework that were "in the air" at Virginia in the late 1950s and early 1960s. This, in turn, may have served to provide Coase's negotiation result with a measure of professional legitimacy, and the fact that Buchanan published these pieces in widely-read outlets certainly exposed a much larger group of scholars to Coase's analysis.

Second, and perhaps derivative of the first point, Buchanan considered this negotiation framework to be applicable, either conceptually or realistically, to a rather wide range of market-failure phenomena. For Buchanan, Coase's negotiation result was, at its heart, simply a manifestation of the exchange process (catallactics) that Buchanan considered to be properly at the heart of economic analysis. As such, his attempts to apply Coase's result beyond the realm of externalities proper should not surprise.

Third, even when invoking Coase's negotiation result, Buchanan emphasized the costs of transacting, and with this the costs of state action and the need for a comparative institutional approach to determine the appropriate mechanism for dealing with each situation of externality—in stark contrast to the Pigovian view with its default toward tax/subsidy and regulatory solutions. One question that emerges from this work by Buchanan is how one reconciles his emphasis on comparative institutional analysis with the credence given to Coase's negotiation result, a result which implies that institutions do not matter. The answer, it seems, lies in the *possibilities* revealed by the negotiation framework. As Buchanan was always quick to point out, there are circumstances in which efficiency dictates that government intervention is necessary and appropriate for dealing with externality problems. But the negotiation framework showed that it was also possible that private action could efficiently resolve externalities—both in the zero-transaction-costs world posited by Coase and, as the Buchanan and Stubblebine analysis asserts, in situations where transaction costs are present. For Buchanan, then, the Coase's negotiation result was more than a fiction; it was an idea with prescriptive validity and relevance, and one whose insights could be expanded to situations in which transaction costs were non-negligible.

Consolidating and Formalizing the New View

Taken together, Coase and Buchanan and Stubblebine had posed a serious challenge to the received view of externalities, particularly as regards the possibilities of markets and private exchange—whether evaluated *ex ante* or *ex post*. Added to this was a further set of issues raised against the Pigovian approach by Otto Davis and Andrew Whinston (1962), themselves former students of Buchanan at Virginia, who utilized a bit of game theory to show (i) that there exists a significant incentive for firms to merge in

situations where one imposes externalities on the other and that the promotion of such mergers may represent the efficient response to certain externality situations;²¹ and (ii) that there is good reason to question whether an efficient tax/subsidy equilibrium could obtain, and, indeed, whether an equilibrium solution even exists in important cases. The combined force of these challenges led Ralph Turvey of the London School of Economics to attempt to “synthesise and summarise” the main ideas contained in these three articles in a paper entitled, “On Divergences between Social Cost and Private Cost,” published in *Economica* in August of 1963 (1963). Turvey’s motivation for writing this brief article was more or less educational, as opposed to bringing “new” ideas to the table: he felt that these three recent pieces had shown that the Pigovian tax/subsidy approach was “too simple a notion” (p. 309), but their complexity and combined length suggested to him that a synthetic summary treatment was in order, one that clearly and concisely illustrated both the feasibility of the bargaining solution and the problematic nature of the Pigovian system.

To accomplish this, Turvey invoked the typical two-party externality example where *A* emits smoke that damages *B*. He assumed that *A* and *B* attempt to maximize profits, that they know about the options available to them, and that “they are able and willing to negotiate.” Under these very standard assumptions, Turvey said, the parties “will achieve the optimum without any government interference” (p. 310). This will be accomplished either via merger, as Coase and Davis and Whinston had suggested, or by *B* paying *A* to reduce the extent of his harmful activity, *à la* Coase and Buchanan and Stubblebine. If, on the other hand, the law protects *B* against harm caused by *A*, *A* will pay *B* to endure a certain amount of the damage. In either case, however, the optimal level of the relevant activities will obtain.

Though this might seem to be little more than a restatement of Coase’s negotiation result, there are four aspects of Turvey’s analysis here that are of particular interest. The first is that he pointed out—and was the first to do so with any degree of depth of analysis—that a potential complication that arises if

²¹ Of course, Coase (1960, pp. 16-17) had previously emphasized the possibility of the merger solution.

A and *B* are individuals rather than firms.²² The complication arises from the possibility that the amount which an individual is willing to pay (WTP) for something may vary from the amount that she would be willing to accept in payment to give up that same thing. In the case of pollution, for example, the amount that *B* would be willing to pay for clean air (when the air is already polluted) might be less than the amount that he would be willing to accept in payment (WTA) to allow *A* to foul his clean air.²³ Turvey rightly (for the time) pointed out that WTP and WTA will be identical only if the individual's marginal utility of income is constant.²⁴ However, he was of the mind that it is reasonable to assume constant marginal utility of income in situations where the magnitude of the payments is not large relative to income, meaning that, in such situations, we would indeed observe the same efficient result regardless of whether *A* was bribing *B* or *B* was bribing *A*. This question of the effect of potential divergences between WTP and WTA was later to become a significant bone of contention in the Coase theorem debates—particularly when economists began to conduct experimental tests of these phenomena in the 1980s.²⁵

A second interesting feature of Turvey's analysis is that he appears to implicitly reject Coase's contention that *some* assignment of liability is necessary for negotiation to occur. In particular, he seems to assume that the existence of an externality situation in which rights have *not* been assigned to the *victim* is sufficient to induce payments from the victim to the polluter, so long as the parties are "able and willing to negotiate." That is, it is not necessary for rights to be formally assigned to the polluter in order for victims to be willing to offer bribes. The question as to whether property rights are necessary for Coase-theorem-type negotiation processes to take place—to provide a formally recognized starting point for negotiations—was an issue that cropped up at various points over the next several decades, as scholars began to explore the nexus between property rights and transaction costs. What makes Turvey's

²² Buchanan and Stubblebine had alluded to the non-comparability of consumer utility functions in their assessment of the invariance claim, as noted above, but they did not pursue this at any length.

²³ This was to become a major criticism of the invariance result of the Coase theorem, with critiques ranging from the theoretical to the experimental. See below, as well as Medema and Zerbe (2000).

²⁴ As recent work has shown, this divergence can also exist if individual behavior includes certain non-rational elements, such as endowment effects. See, e.g., Kahneman, Knetsch, and Thaler (1990).

²⁵ Mishan (1965, p. 29 at n.45) was the next to raise this issue, and he was not as optimistic about invariance in the consumer case as was Turvey. For more on the WTA vs. WTP issue in a Coase theorem context, see Medema and Zerbe (2000).

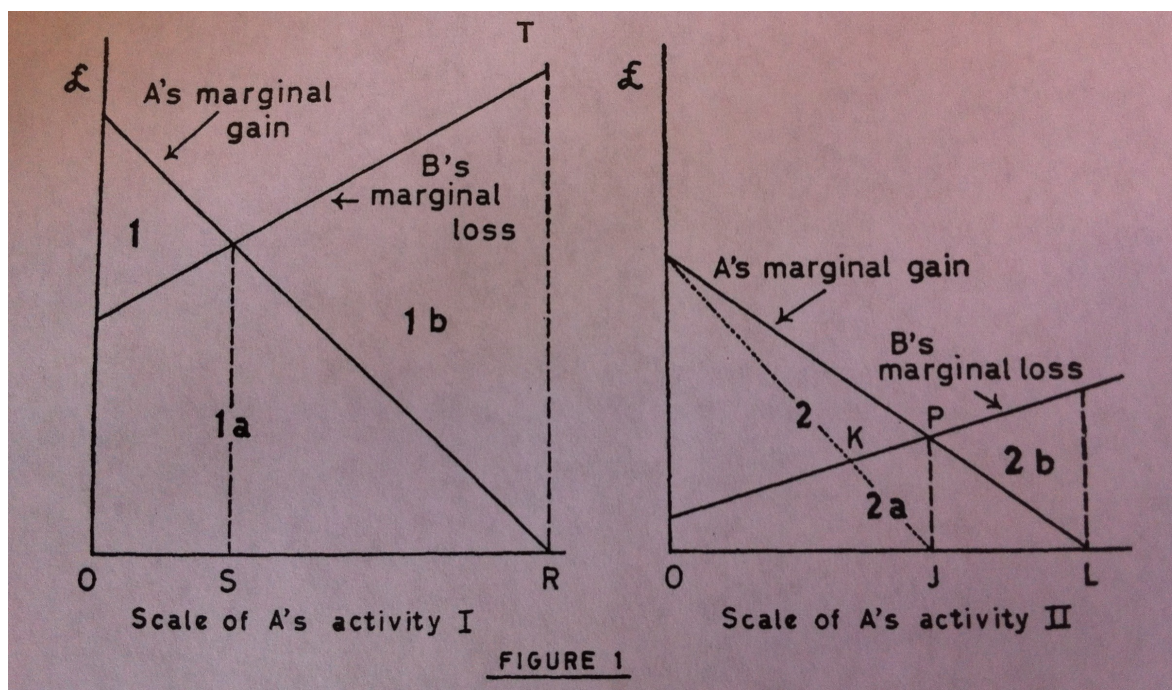
assumption all the more interesting is that Coase had provided him with comments on a draft version of the article. It would appear, then, that Coase either did not notice this aspect of Turvey's analysis or, if he did, his position was rejected by Turvey.²⁶ The relevance of this is both theoretical (Will the result hold absent property rights?) and practical (Will the negotiation processes inevitably proceed absent property rights?). But it also has what one might call an ideological implication. It is this absence of property rights that allows Turvey to accurately claim that the efficient result will be achieved "without any government interference"—a claim often made in error in discussions of the theorem but one that certain economists found congenial to their way of thinking. The error here is quite elementary: As government is the creator or source of property rights, the act of assigning rights in externality situations constitutes "government interference" no less than does a tax or a regulatory remedy. This gives the lie to the claim often made in subsequent debates over the Coase theorem that the theorem shows us that government intervention is unnecessary. But Turvey's discussion is not susceptible to this charge because he assumes that the theorem's processes will work in the absence of property rights.

Turvey's treatment of transaction costs is also noteworthy, as he departed from the explicit zero transaction costs assumption of Coase and the conscious "neglect" of them by Buchanan and Stubblebine in favor of a scenario in which the parties are "able and willing to negotiate" and are aware of the available alternatives. Though one could interpret Turvey's language in such a way as to make it consistent with the zero transaction costs assumption, Turvey's wording does not seem to foreclose the possibility—and even appears to suggest that—the parties will regularly reach efficient negotiated solutions even in the presence of such costs. The problem with this suggestion is that it is incorrect: the presence of transaction costs will often lead to *different* efficient negotiated results, thereby negating the invariance proposition. Strangely enough, this error was to become something of a commonplace in the Coase theorem literature for reasons that we have explored elsewhere.²⁷

²⁶ One could also posit that Coase changed his mind about this point. But a 1970 commentary by Coase suggests otherwise. See Coase (1970, esp. p. 36).

²⁷ See Medema (2012).

Finally, it is worth noting that Turvey was the first to attempt to capture the seeming simplicity of the Coasean bargaining solution in the form of a diagram—perhaps derivative of his desire to strip away the “complexity” that he felt characterized the previous treatments of these issues.



(Source: Turvey 1963, p. 311)

The left panel Turvey’s diagram, the whole of which is reproduced above, became the standard depiction of the theorem. It also had the effect of generalizing the explanatory analytics of the argument to the continuous case, moving the analysis beyond the discrete quantities of cattle and crops dealt with by Coase in his classic illustration.

The intuition behind Turvey’s diagram is quite straightforward. Left to its own devices, *A* will pursue activity level *OR*, which is the point at which its marginal gains (additional profit opportunities) are exhausted. But at *OR*, the marginal loss to *B* is greater than the marginal gain to *A*. As such, *B* will be willing to pay *A* an amount up to *RT* to incrementally reduce its activity level below *OR*. More generally, the value of the marginal loss to *B* exceeds the marginal gain to *A* at all points between *R* and *S*, with the gains from exchange amounting to triangle *1b* in the diagram. Given this, the amount that *B* will be

willing to pay to avoid the loss associated with each unit of activity between R and S is greater than the gain that A would receive from producing those units. As such, a mutually beneficial bargain will be struck that involves B bribing A to reduce its activity level to OS . Likewise, if the law gives B the right to be free from harm, there is scope for a mutually beneficial bargain that would allow A to operate at activity level OS , since A 's gains from producing up to that point exceed B 's associated losses (the gains from exchange being represented by triangle “ I ” in the diagram). In short, regardless of whether A is given the right to pollute or B the right to be free from pollution, we will end up at activity level OS , which is efficient in that it equates A 's net marginal benefit with B 's net marginal cost and so minimizes the overall costs associated with the activity in question. The basic analytics underlying Coase's verbal argument, then, were demonstrated via a diagrammatic approach that was commonplace in professional discourse.

Because Coase's negotiation analysis had shown that efficiency will be achieved via negotiation regardless of to which party property rights are initially assigned, said Turvey, there is no basis *in economic theory* for the assertion that action should be taken against the agent ostensibly generating the externality—the polluting factory, the noisy neighbor, etc. That most of the profession believed otherwise was due solely to the failure of the Pigovian approach to grasp the reciprocal nature of externalities. But once this is understood, he said, the question of “whether or not society should prefer the imposition of a liability on A [the polluter] for damages caused” becomes “a matter of *fairness*, not of resource allocation” (p. 311, emphasis added). Turvey suggested that a variety of considerations may influence these fairness judgments, and some may point to holding A liable. Efficiency, though, dictates the imposition of liability on A “only if we can show that inertia, obstinacy, etc. inhibit A and B from reaching a voluntary agreement” (p. 311).

On the face of it, then, Turvey appeared to give substantial credence to the possibility of negotiated solutions. When he did talk about potential roadblocks to them, he said that these will “in most cases result from A and/or B being too large a group for members to get together” (p. 312)—thus implicitly allowing that negotiated solutions are very feasible for small-numbers externality problems.

The latitude that he was willing to countenance the application of Pigovian remedies, in contrast, seems to have been far more circumscribed. These, he argued, are relevant only when three conditions are satisfied: (i) when *A* and *B* are unable to negotiate; (ii) when the state is able to determine what the optimum is and to move the market to it at a cost that is less than the associated gain (which he believes will not be true in “many cases”); and (iii) if such a policy does not have “unfavorable effects” on the distribution of income (p. 312). For Turvey, then, the negotiated solution is the preferred one, that to which the government should default unless it can be shown not to work. That the work of Coase and others had effectively dismantled Pigovian theorizing from where Turvey stood is made crystal clear from the close of his article: “To sum up,” he said, “when negotiation is possible, the case for government intervention is one of justice not of efficiency; when it is not, the theorist should be silent and call in the applied economist” (p. 313).

That Turvey was enamored of Coase’s analysis goes almost without saying. One could argue that he took things farther than Coase himself would have—and certainly farther than Coase did in “The Problem of Social Cost”—in terms of a willingness to apply the negotiation framework to the real-world problems. Given the propensity of LSE economists of this era to look favorably on market solutions and their suspicion of the solutions proposed by the more interventionist Cambridge school, it is not a great shock to find Turvey supporting private or market-based treatments of externality problems. But like Buchanan, Turvey did not come to Coase’s analysis as a convinced Pigovian. In fact, Turvey had already tangled with the Pigovian approach several years before, and a clue as to his priors on this front can be found in his 1957 book, *The Economics of Real Property* (1957, pp. 94-98).

Mid-way through this relatively slim volume, Turvey takes up the issue of land tenancy and the contractual relationship between landlord and tenant. This was a subject that had been treated by Pigou in *The Economics of Welfare*, and Pigou’s take on the problem, as with externalities generally, had become the prevailing professional viewpoint. Turvey took issue with Pigou’s assertion that legislation is needed ensure that tenants receive an appropriate return on the value-enhancing improvements that they make to the landlord’s property during the tenancy period. Otherwise, said Pigou, the tenants will have no

incentive to make these value-enhancing investments, and society will thus lose out on the resulting (cost-justified) increase in value (1932, pp. 174-83).²⁸ Turvey, though, was of the mind that Pigou's analysis was incomplete, and that his argument "appears to overlook an important possibility," one rooted in the presence of mutual gains in this externality situation:

In the cases in question, where the value of the social product exceeds the cost, the present value of the gain which will accrue to the landlord if the improvement is undertaken will exceed the present value of the loss the tenant incurs by undertaking it. It follows that both parties could gain by revising the existing lease in such a way that the improvement becomes profitable to the tenant. (1957, pp. 95-96)²⁹

How, then, might this play out? Turvey suggested that there are several possible options:

According to the circumstances, they might agree to a reduction in rent for the remainder of the term; an extension of the term; a contribution to the cost by the landlord or an increase in rent, the whole cost being borne by the landlord. If the value of the social product exceeds costs (by more than necessary legal expenses), there is a gain to be shared and so the improvement will be undertaken if both parties are prepared and able to act in their own interests. (p. 96)

The implication, of course, is that the landlord-tenant contracts in existence will have accounted for the value of prospective tenant improvements, or if the existing contract does not, that a revision will be forthcoming. As a result, according to Turvey, "there is no necessity for compulsory compensation unless either landlord or tenant is unwilling or unable to agree to what would benefit him" (p. 96)—a stance virtually identical to that which he took six years later in "Divergences" and one that, by its very wording, suggests that Turvey viewed such situations as outliers. After all, why would a landlord or a tenant not agree to contractual terms that would benefit him?

²⁸ The concerns here were two: that non-renewal of the lease or a renewal at a higher rent charge (reflecting increased productivity) would deprive the tenant of an appropriate return on investment.

²⁹ This actually mis-characterizes Pigou's position. Pigou was of the mind that these problems could "be mitigated by a modification of the contractual relations between" landlord and tenant (Pigou 1932, p. 193).

As in his discussion in “Divergences,” Turvey allowed that there may exist barriers to negotiations between landlord and tenant—for example, “uncertainty of expectations may make either party too unsure of the gain to be had from revising the lease to be prepared to offer terms sufficiently attractive to the other party” (1957, p. 96). In such cases, there will be no agreement, and perhaps no resulting improvements made to the land by the tenant. However, Turvey continued, such an outcome does not automatically imply an inefficient allocation of resources once one understands that “uncertainty—or rather the cost of reducing it—is a social cost” (p. 96). Here, then, we find Turvey going a step beyond what he would say in “Divergences,” plumbing territory that, as we have seen, was to be exploited to important effect by Buchanan and Stubblebine in 1962 and then (as we shall see) by Harold Demsetz a few years after that. Turvey’s argument, in essence, was that the evaluation of the efficiency of a given outcome must factor in the relevant transaction costs. More to the point, the frictionless world does not define the optimal solution; optimality is relative to the world that exists rather than to some abstract ideal. If the costs associated with negotiation make movements from the status quo inefficient, then the status quo is indeed efficient—in contrast to the standard story—unless it can be demonstrated that state action can accomplish a reallocation of resources the benefits of which outweigh the costs (p. 96).

Turvey acknowledged that his conclusions about the landlord-tenant contracting process rested on a particular set of behavioral assumptions—assumptions that, as it turns out, were left unstated by Coase when he made a similar argument in “The Problem of Social Cost.” “It has been supposed,” said Turvey, “that landlords and tenants will accede to any proposals which are to their advantage, that they display the foresight that may be expected of intelligent men who know their business, and that subject to the convenience of custom they are prepared to modify the terms of their offers in order to reach mutually beneficial agreements” (pp. 98-99). That is, Turvey was arguing that all that is required here is that the individuals involved be good businessmen.³⁰

³⁰ He did admit that, “in practice, foolishness, bloody-mindedness and incompetence play their part,” but these are clearly, for him, non-standard behaviors (1957, pp. 98-99).

To jump forward a bit in time, it would be interesting to know how the reaction to Coase's analysis might have been different had he been as explicit as Turvey regarding his behavioral assumptions. One of the artifacts of the adoption by economists of a more hard-nosed rational choice framework in the 1960s and 1970s was the emergence of several criticisms of the Coase theorem (coming from game theory and elsewhere) on the grounds that rationality pointed toward solutions other than that presented by Coase—that there is more to all of this than simple presence gains from exchange to the division of which the parties involved will readily assent. Not having stated clearly his assumptions, Coase was vulnerable to attack by those who later read their own behavioral premises into this vacuum. Of course, the critics would still have been able to challenge Coase on the validity of his assumptions, but the theorem itself would have been more immune from assault on “correctness” grounds.

One might be tempted to conclude at this point that Turvey actually had the Coase theorem (or one version of it—that negotiations can be used to remedy many divergences between private and social cost) several years before Coase first put forward this idea. This would be going too far, though, since Turvey's claims lack the generality of Coase's.³¹ What thickens the plot even further here is that Turvey does not claim originality for these ideas. Rather, he says that this important insight about landlord-tenant negotiation was suggested to him by Sir Arnold Plant—Coase's mentor at the LSE (1957, p. 95). Given Coase's long association with Plant over the course of the two-plus decades that he spent at and around the LSE and his repeated claims that Plant had taught him the workings of the pricing system and the virtues thereof,³² one is left to wonder what inspiration Plant may have contributed to the development of the Coase theorem.³³

³¹ Turvey also appears to suggest that alternative legal structures pertaining to leases *would* impact the allocation of resources, which implies that the invariance result does not hold here (1957, p. 98).

³² Coase said of Plant, “I attended his lectures on business administration but it was what he said in his seminar, which I started to attend only five months before the final examinations, that was to change my view of the working of the economic system, or perhaps more accurately was to give me one. What Plant did was to introduce me to Adam Smith's ‘invisible hand’. He made me aware of how a competitive economic system could be co-ordinated by the pricing system. But he did not merely influence my ideas. My encountering him changed my life” (1991).

³³ Turvey recalled in correspondence with this author (Feb. 12, 2012) that Plant mentioned this point during a conversation in the Staff Common Room at the LSE. (Coase, having left the LSE in the early 1950s, was almost certainly not present.) Unfortunately, a search of Plant's papers at the LSE turns up no information that would provide any additional hints on this score, either as respects Turvey's discussion or Coase's analysis.

While Turvey's diagrammatic approach had bumped the analytics of Coase's negotiation result up a notch, it was Davis and Whinston who first attempted to solidify Coase's negotiation result by couching it in a formal mathematical framework, doing so in a 1965 article entitled, "Some Notes on Equating Private and Social Cost." Their goal was to add a measure of theoretical sophistication to the discussion by explicitly analyzing "certain aspects of" the externality problem "which were handled only implicitly in previous treatments." In particular, they wanted to dig into the type of bargaining processes that Coase had contemplated, where the number of affected individuals is "few" and thus "the relative ease of coordination and communication make bargaining a more likely possibility" (1965, p. 114). This decision to focus on the properties of feasible negotiation contexts led them to rule out large numbers situations, where "the bargaining alternative does not seem either realistic or reasonable" (p. 113).

The issue that Davis and Whinston faced in pursuing a formal, mathematical treatment of the bargaining process was that of the framework in which to model the interaction. They rejected non-cooperative game theory as the framework on the grounds that it was more germane for situations in which there are large numbers of parties involved and with rather diverse interests (p. 113). They also rejected the use of cooperative game theory, even though, as they noted it might seem at first glance to lend itself naturally to the analysis of Coasean bargaining. The cooperative models emphasize the status quo point as the starting point for negotiation, and the parties proceed to divide the gains from exchange based on moves from that status quo point. Given that the Coasean bargaining process relies on a status quo point determined by the assignment of property rights, from which point mutually beneficial bargains are made, the marriage of cooperative game theory and Coasean bargaining would seem a natural one. But, said Davis and Whinston, cooperative game theory also assumes that the players know each other's utility functions and that some arbitrator (e.g., a judge, a governmental regulatory body) knows the utility functions of all players. This, they said, "obviously will not do," as such assumptions "ignore the crux of the problem"—that the various agents do not, in fact, know the relevant utility functions (p. 115).³⁴ As a result, Davis and Whinston rejected the game-theoretic models entirely and moved forward assuming

³⁴ This also illustrates Davis and Whinston's Virginia school heritage in the subjective utility tradition.

simply that agents know only their own utility functions and that the bargaining process would provide each agent with information about the preferences of the others.³⁵

Based on these assumptions, Davis and Whinston were able to show, using a bit of differential calculus, that, except in very unusual (Giffen-paradox-type) situations, attempts to deal with externalities via bargaining will generate the Pareto optimal allocation of resources, one that is not impacted by the assignment of rights to one party or the other or the extent to which the initial rights assignment allows the externality to persist.³⁶ The move from the inefficient status quo point to the optimum would proceed via an iterative, Tatonnement-like process, where information is provided through a series of offers and adjustments until an equilibrium position is found, with the only impact of the decision regarding the assignment of property rights being on the distribution of income.

Davis and Whinston, then, had given us what amounts to the first formal demonstration of the Coase theorem—though with the minor qualification noted above. They did not label this demonstration a “proof,” but then Coase’s result had not yet been labeled a “theorem.” This formal demonstration, though, provided Davis and Whinston with the confidence to make the bold claim (echoing Turvey) that economic analysis offers no basis upon which to recommend one assignment of rights over another. Given that the distribution of income is the only outcome at issue, they suggested that decisions regarding the initial assignment of rights belong “more to the domain of ethics” than of economics and that they perhaps should reflect larger societal views as to the proper designation of responsibility or blame for the problem (p. 125). Mishan (1965, p. 29 at n.44) made an identical argument, noting that it is only by bringing in distributional criteria that one can create a basis for preferring one set of rights over another here. The one clear normative conclusion that *did* emerge from the economic analysis, for Davis and Whinston, was that, whatever these larger ethical or social considerations might suggest, legal rights

³⁵ It is interesting that Davis and Whinston considered and then rejected game-theoretic approaches, given that game theory was to become the source of many of the most serious challenges made against the Coase theorem in the years to come—at least in the minds of those who leveled them. See Medema and Zerbe (2000).

³⁶ As Davis and Whinston demonstrate, the existence of a Giffen-type situation would also impact the ability to reach optimal outcomes via Pigovian instruments.

should not be defined in a way that prevents parties from engaging in post-decree negotiations, lest those rights work as a barrier to welfare-improving exchange.³⁷

From Theory to Practice

Though, as we have seen, there was more than a bit of credence given early on to the idea that private mechanisms could be employed successfully to resolve externality problems, the voices actually examining the potential applicability of the negotiation result to real externality problems, or promoting the use of market-type solutions to them, were few.

The two exceptions to this purely theoretical thread in the early 1960s came from the emerging field of environmental and natural resource economics. The source of the first was an article by Jerome Milliman entitled, “Can People be Trusted with Natural Resources?” that was published in *Land Economics* in 1962. Milliman, then an associate professor of Public Administration at Indiana University, was one of the first to apply economic principles to questions of water supply and had authored an influential article/monograph on the subject with Jack Hirschleifer and James de Haven (1960). Milliman was also the first author to make published reference to “The Problem of Social Cost, when he suggested that Coase’s analysis—an the negotiation result in particular—offered a useful approach to the resolution of natural resource problems, such as water use. Milliman was disturbed by the fact that “there is very little acceptance of the thesis that the market system and private property rights can be used to deal effectively with many of our natural resource problems,” whether among “twentieth century liberals and progressives” or even among “groups and individuals usually opposed to infringements upon private property and a ‘free’ economy” (1962, p. 200). To remedy this, he set out, in part, to “examine some of the premises upon which one might base a choice of public versus private decision-making for natural resource use and development” (p. 200). The orientation that informed his analysis was not disguised: He consciously assumed that “it is desirable to have a democratic society based upon individual choice” and “the goal of society is to satisfy or carry out individual preferences” (p. 208).

³⁷ This subject—whether and to what extent rights should be alienable—was taken up by Calabresi and Melamed (1971) in the early 1970s.

Milliman, like Coase, located the “heart” of the externality problem in the absence of property rights over the resources in question and saw a potential solution in the creation of such rights: “In general,” he said,

the solution to a technological spillover problem is to expand the scale of decision-making to correspond with the effects of the action. Very often this can be done by coordinating fragmented property rights as in the case of unitization of oil pools and ground water basins. An incomplete definition of property rights is usually at the heart of the matter. Changes in these property rights either to make them more specific or to enlarge the scale of action, are often called for. (p. 215)

Once the appropriate rights structure has been established, he argued, “*Very often* the pricing system itself may take into account many types of spillover losses and gains” (p. 215, emphasis added), adding that Coase had made this point “in convincing fashion in a critique of modern welfare economics related to the problem of externalities” (p. 215 at n. 350).

Though convinced of the utility of expanding the scope of market solutions to natural resource problems, Milliman did allow that “In some cases direct government intervention is the only available solution.” For example, when the resource in question is a river basin or an ocean, he said, “the scale of action is too large to be encompassed by ordinary property rights.” In other instances, such as air pollution, it may be impossible to construct a system that provides private resource owners with the incentives needed to take spillover effects into account (p. 215). Milliman, then, seemed to consider the negotiation result quite applicable to small-scale natural resource problems, but less so to problems such as large-scale pollution of the air or major bodies of water.

A rather different view, though, can be found in the writings of Allen Kneese, another pioneer in the analysis of the economics of water supply, whose path breaking book, *The Economics of Regional Water Quality Management* (1964), examined the possibilities of using economic analysis for the examination of environmental issues and the development of potential policy solutions thereto. Kneese took Coase’s negotiation argument seriously enough to devote some three pages to it in a chapter on “Water Pollution and Resource Allocation by Private Markets.” After laying out the traditional view of

externality-induced market failure, Kneese informed the reader that “Free markets do not inevitably result in the neglect of downstream costs by waste disposers” (p. 43), and he illustrated the logic underlying the negotiation result using a numerical example of how negotiation could internalize damage that a polluter causes to a downstream commercial fishing enterprise. The outcome of these negotiations, he said, would be both efficient and unaffected by whether property rights are assigned to waste disposers or downstream water users; the only differential impact would be on the distribution of income (pp. 43-44).

Kneese, then, was clearly on board with the theoretical validity of both the efficiency and invariance claims made by Coase. Having gone this far, however, he proceeded to raise two concerns. The first was that of equity, where Kneese suggested that “on equity grounds it might be considered justifiable to compensate the fisherman for his loss of fish,” as opposed to having the fisherman pay the polluter to induce a reduction in or the elimination of pollution emissions (p. 44). This, of course, would impact the decision regarding the assignment of property rights over the use of the water. The second issue raised by Kneese went to the costs of transacting in the context of environmental conflicts—an issue he found somewhat problematic. Although “it is possible for market transactions to avoid the resource misallocations that could result from externalities,” he said, “such transactions are not always easy (inexpensive) to organize” (p. 45). The organizational difficulties result from the fact that the damage caused by water pollution is often very widespread and diffuse, particularly in highly developed areas. As a result, “establishing a market which would permit the minimization of production costs at optimal output would be very complex (expensive),” and thus, “[a]s a rule, such markets do not become established.” (p. 46). In light of this, Kneese moved in other, more traditional directions for the analysis of water pollution policy.

What accounts for the divergent positions arrived at by Milliman and Kneese? It is difficult to say. Both were of the mind that Coase’s negotiation result represented a *potentially* fruitful avenue for dealing with externalities related to water use, but only Milliman gave it much practical credence. It could be that Milliman was simply more confident in the possibilities associated with private solutions than was Kneese; his rhetoric is certainly more market affirming. But it may simply be that the difference lies in

their respective foci: Milliman seemed to be concerned with smaller-scale issues and Kneese with larger-scale ones. The effect of transaction costs could well be very different in these two contexts, and the smaller-scale problems emphasized by Milliman would be the more natural contexts for the application of the negotiation approach.

Probing Transaction Costs

Though the potential role played by transaction costs in influencing the applicability of the negotiation result had been touched upon by virtually all of the early commentators on “The Problem of Social Cost,” it had to this point received next to nothing in the way of systematic exploration. These costs were viewed, variously, as a potential barrier to negotiated solutions or as costs that should factor into the evaluation of the efficiency of market outcomes, but their form and influence had been little remarked upon. This began to change in 1964, when University of Chicago economist Harold Demsetz penned the first in a series of articles that attempted to build upon Coase’s analysis by illuminating the role played by transaction costs and property rights in operation of markets.

Demsetz’s article, “The Exchange and Enforcement of Property Rights,” was published in the October 1964 issue of the *Journal of Law and Economics*, and its stated purpose was to examine the costs associated with exchange and with government action in order to “establish both the importance and the wide role of these costs in economic life” (1964, p. 11). Demsetz’s particular concern in this article, like Coase’s in “The Problem of Social Cost,” was with situations of externality, or what Demsetz labeled “side effects,”³⁸ and the mechanisms to most appropriately deal with them.

Demsetz took as his starting point Coase’s demonstration that, once property rights have been assigned, the outcome that maximizes the value of output will be obtained via a bargaining process regardless of to which party those property rights are initially assigned (1964, p. 12). Though Demsetz was fully committed to the validity of Coase’s negotiation result, his primary concern lay elsewhere—in

³⁸ Demsetz, like Coase, eschewed the use of the term “externality.” Coase was of the mind the use of this term meant that something needed to be done about the supposed problem and he thus rejected it. Demsetz took a similar position, noting that the terms externality suggests problems of which “no account *seems* to be taken in the market place,” a proposition that his analysis was to suggest is wrongheaded (1964, p. 11).

the domain in which exchange costs are positive. Here, he noted, Coase has “advanced” the previous treatment of externalities by showing that “if exchange costs are positive, it is necessary to ask whether government can take the harmful effects into account at less cost than can the market, or, indeed, if the resulting resource alignment is worth the cost of taking side effects into account at all” (p. 12). For Demsetz, then, the import of Coase’s analysis was in its implications for a world *with* frictions, not a world without them.

Though Demsetz made no mention of Buchanan and Stubblebine’s article, “Externality,” his analysis has much in common with certain facets of their discussion—particularly in his use of the transaction costs framework to explain why market outcomes may be efficient in spite of their lack of congruence with the optimality conditions of welfare economics.³⁹ Demsetz agreed with the received view that the failure of the market to satisfy these optimality conditions in the presence of side effects owes to the existence of an unpriced resource—the absence of a price meaning that the incentives do not exist to properly economize on the use of that resource. But the move to attach the label, “inefficient” to such an outcome, he said, “fails to take account of the fact that the provision of a market (for the side effect) is itself a valuable and costly service” (p. 13). If the costs of creating a market, and thus a price, for the side effect exceed the benefits that would result from the existence of such a market, the presumed inefficient situation is indeed efficient, in spite of what the traditional optimality conditions might imply.

As Demsetz framed the issue, then, efficiency does not require the universality of markets claimed by welfare economics. Coase’s negotiation result was consistent with the optimality conditions precisely because it assumed that markets and prices could be created at zero cost. But this is not the case in reality, said Demsetz. Because both markets and government intervention are costly, “If we insist either that all actions (services or commodities) be priced in the market or that the government intervene, we are insisting that we do not economize on the cost of producing exchanges or government services” (p. 14). Thus, where Meade (1952) had found market failure in the unpriced interaction between beekeepers and

³⁹ Like Buchanan and Stubblebine, Demsetz refers explicitly to the misleading nature of the MRS conditions as deployed in the typical welfare economics analysis of externalities.

orchard owners, Demsetz asserted that the orchard owners provided nectar free of charge because the costs of accounting for the services provided to the beekeepers exceed the associated benefits (1964, pp. 15-16).

But there was a second factor that Demsetz identified as relevant to the feasibility of the exchange process—property rights, and the costs of policing them. Demsetz emphasized that the value of what is actually traded on the market “depends crucially on the rights of action over the physical commodity and on how economically these rights are enforce” (p. 17). If extant rights do not afford sufficient protection against appropriation of the commodity by others, or if the costs of policing these rights are sufficiently high, values will be greatly diminished—perhaps even to zero. If the costs of properly defining and protecting property rights exceed the benefits that would be realized, we are left with a situation in which a zero price is efficient. Again, Coase’s negotiation environment avoids this issue by virtue of its underlying assumptions.

Thus, sufficiently high exchange costs or policing costs (or a combination of them) justifies the absence of a market in certain resources, such as side effects. The situation is not one of market failure, as the traditional story suggests, but rather a “market” outcome that generates the absence of a market. Demsetz does not go so far, however, as to assert that such an outcome justifies leaving the market to its own devices. Like Buchanan and others, he takes a comparative institutions view, allowing that government intervention may be appropriate, but only if the costs associated with the remedial action are less than the exchange and policing costs and less than the costs associated with allowing the side effect to persist unaltered (p. 23). That said, when one reads between the lines, it is difficult to avoid the conclusion that Demsetz believed that allowing the side effect to persist was the efficient course of action in far more instances than was commonly believed.

If Coase’s negotiation result can be summarized as saying that, in a world of zero transaction costs, externalities can be efficiently resolved through the market, just as is the allocation of most other resources, Demsetz was suggesting exactly this—but in a realm where transaction costs are *positive*:

Essentially, we have argued in this paper that there exist no qualitative differences between side effects and what we may call “primary” effects. The only differences are those that are implicitly based on quantitative differences in exchange and police cost. Suppose a factory invents a new more efficient furnace which can burn a cheaper grade of coal than can existing furnaces. The burning of cheap coal, we will assume, dirties homes in the neighborhood. We label this effect as side or neighborhood or external, but its real economic implication is to reduce the wealth of nearby homeowners. If this same factory, by virtue of its new furnace, successfully forces a nearby competing firm out of business, and if the resulting decline in demand for housing reduces the wealth of neighborhood homeowners, we do not become concerned. Why the difference in our attitudes toward these two situations which have the same effect on homeowners? (p. 25)

In the latter instance, the decrease in the wealth of homeowners in the area is more than offset by an increase in wealth—accomplished through the market mechanism—elsewhere in the economy, and the economist recommends no remedial action. The fact that such a mechanism does not exist in the pollution case owes to its cost, and thus, unless it can be demonstrated that the cost of remedial action undertaken by government is lower than the cost of the harm to the homeowners, there is no rationale for treating the former situation any differently from the latter, just as there is not in the world of Coase’s negotiation result.

Defending the Pigovian Approach

Looking back on the state of play circa the fall of 1964, we find that no serious objection had been raised to the Coase theorem; indeed, far from it. Other than references to the fact that large numbers of involved parties may limit its applicability—a point that Coase himself recognized (1960, p. 18)—those who saw fit to comment on Coase’s negotiation result had been uniformly non-critical. The effect of Coase’s analysis, both in and of itself and as reinforced and in certain ways expanded by Buchanan and Stubblebine, Davis and Whinston, and Turvey, was to present a fundamental challenge to the received

view of externalities as phenomena that demand corrected via direct government intervention if an efficient allocation of resources is to be realized.

But this challenge to received thinking did not go uncontested for long. It was Stanislaw Wellisz (1964), a professor of economics at Columbia University and former member of the faculty at the University of Chicago's Graduate School of Business, who fired the first salvo in the November 1964 issue of *Economica*, defending what he labeled the "modern" Pigovian approach against the "modern-old" attack made by Coase *et al.* (1964, p. 345).⁴⁰ Wellisz attached the "modern-old" moniker to the anti-Pigovians because, though they were his contemporaries in time, he felt that their analysis harkened back to the classical economists' belief that markets translate the pursuit of self-interest to the best interests of society, with a minimum of government interference being required.⁴¹ Wellisz summed up the distinction between these two positions quite succinctly: The modern view holds that the presence of externalities inevitably entails a departure from Pareto optimality that can only be remedied via direct state action. The modern-old position, in contrast, informs us that "the private market *can* lead to a Pareto optimum despite externalities, since it is possible to establish a market in rights" (p. 347).

What was Wellisz's rationale for challenging the "modern-old" view? After all, if Coase and Buchanan are to be believed, the Pigovian view was completely entrenched within the professional consciousness, though, given that the number of journal articles dealing with externalities published during this period was minimal, we get from the literature no strong sense for the professional consensus. Yet, Wellisz painted a very different picture, one that suggested quite strongly that the modern-old approach was having an impact on economists' views of the externality problem. He tells us that, after the challenges put forth by Coase *et al.*, "it now seems that the modern theory is dead and that the modern-old

⁴⁰ Wellisz's links to Chicago are reflected in his acknowledgment of the assistance of Chicago faculty members Lester Telser, Harry Johnson, Harold Demsetz, and Merton Miller, and his remark that Telser "To all intents and purposes ... is a co-author of this paper" (1964, p. 345 at n.1). This suggests that some at Chicago remained less than fully convinced of the utility of Coase's approach at this time.

⁴¹ Of course, this is an erroneous caricature of the classical viewpoint. See, for example, Robbins (1952), Samuels (1966), O'Brien (2004), and Medema (2009).

triumphs all along the line” (p. 345).⁴² Wellisz, though, was not content to accept the primacy of the modern-old position and so mounted the first sustained challenge to Coase’s negotiation argument.

Wellisz’s attitude toward Coase’s contribution, unlike that of many of the critics who followed him, was by no means dismissive, as he allowed that “The Problem of Social Cost” was a “rigorous and original article” (p. 347). But it was not, in his mind, one without serious flaws, and he attacked on two fronts—first, on Coase’s own terms (that is, granting Coase’s assumptions) and then on the grounds of relevance, the extent of which had not to that point been called into serious question, at least beyond the large numbers situations and some potential information problems.

The critique on the merits invoked two basic price-theoretic arguments. The first was that the outcome of the Coasean negotiation process will not be optimal if one or more of the parties is a monopolist, since, as was well known by this time, monopolists *qua* monopolists produce sub-optimal levels of output. Given this, said Wellisz, the attainment of optimality in an externality situation to which one or more monopolists is party requires that one “attack the problem along Pigovian lines” (pp. 349-50). This, as we have already seen, was a challenge that Buchanan would answer, effectively, five years later.⁴³

Having disposed, or so he thought, with the case of monopoly, Wellisz turned his attention to situations in which the market is perfectly competitive. This, said Wellisz, gives rise to a different set of problems. Under the usual assumptions of economic theory, firms in a perfectly competitive market earn no economic profit—or rents, in Wellisz’s terminology—in the long run. All revenues go toward covering the costs associated with the production of the good or service in question, allowing for a normal rate of return to ownership. The implication of this for Coase’s negotiation result was straightforward and,

⁴² Nor does the textbook literature does not provide any support for Wellisz’s claim. But this is not surprising given that textbook content includes a substantial element of inertia and thus tends to lag the broad acceptance of new ideas in both the professional mind and the journal literature. As we shall see when we come to the discussion of the treatment of the Coase theorem within environmental economics during the 1970s, Wellisz’s sense that economists were latching onto the Coase theorem and the possibility of market solutions to externalities has some real credence.

⁴³ One wonders, though, whether Wellisz’s point led Stigler to introduce the “perfect competition” qualification in his 1966 statement of the theorem (1966, p. 113). We should also note that in a world of zero transaction costs, inefficient monopolies would not exist—as both Demsetz (1968, p. 33) and Stigler (1972, p. 12) later pointed out.

it would seem, devastating: A firm assigned liability for damages would have no resources with which to bribe the other firm to alter its activities. As such, the negotiation process contemplated by Coase could only proceed if the competitive firm was somehow able to earn long-run rents sufficiently high to pay the necessary bribe—e.g., through the presence of some non-transferable rent-generating resources. Absent such rents, the firm made liable for damages would incur costs (because of the bribes) in excess of those incurred by other firms in the industry, which, in turn, would force that firm to charge prices higher than those charged by its competitors—in which case it would lose all of its customers—or to hold the line on price and incur losses. The effect of either of these situations would be to force the firm’s exit from the industry.⁴⁴ Though one could concoct theoretical scenarios in which the presence of such rents is not required, such scenarios, he said, “have only a faint bearing on reality” and lead to some rather unusual conclusions (p. 352).

The force of these arguments was not sufficient to cause Wellisz to reject Coase’s negotiation result *in toto*—only to qualify it with requisite assumptions: an absence of monopoly and the presence of Ricardian rents. Granting these two qualifications, Wellisz found the Coasean bargaining solution “technically unexceptionable” (p. 352). The important question for Wellisz, though, was the extent to which all of the necessary assumed conditions map onto reality and, specifically, whether Coase’s result was “a mere curiosity or whether it is broadly applicable to externality problems” (p. 352).

Two issues in particular caused Wellisz to express serious qualms about relevance and applicability. The first was the incomplete information problem. Where Davis and Whinston had assumed that all necessary information would be revealed through the negotiation process, Wellisz suggested that information issues likely will pose significant if the externality relationship is a bilateral one, where both *A* and *B* engage in activities that cause harm to the other—a situation that creates interdependencies that are problematic in theory and practice for the attainment of an optimal solution (p. 353). But Wellisz was also concerned about the additional problem of large numbers that attends many externality situations and

⁴⁴ This claim, too, can be shown to be incorrect. See Medema and Zerbe (2000). Note that this assumes that other or most other firms in the industry are not parties to this externality problem. Kamien, Schwartz, and Dolbear (1966) analyzed this issue in an industry-wide setting two years later, about which more below.

brings with it both coordination costs and the potential for free-riding problems. This concern about large numbers, as we know, had been raised in previous commentaries on negotiated solutions by the “modern-old” economists, but Wellisz appears to attribute a more expansive scope to this problem than did they. Given that the benefits associated with negotiated agreements over widely diffused externalities were likely to be non-rival and non-exclusive, he was particularly concerned about the free-riding issue, in light of the significant incentives that would exist for parties to decline to participate in the financing of any settlement while simultaneously reaping the advantages of it (pp. 353-54). The merit of this argument is apparent when one recognizes that phenomena such as pollution abatement are ultimately public goods, with the same sort of optimal private provision problems that we find for classic public goods such as national defense and police and fire protection.⁴⁵

Thus, where others had asserted the potential relevance of Coase’s negotiation result in small numbers externality situations, Wellisz had serious issues with both the small numbers and large numbers cases. Given the restrictive conditions necessary for an optimal solution via the negotiation process, he argued that, “far from being a universal panacea, the private bargain solution to external diseconomies applies only to exceptional cases,” and, what is more, these cases are “of little interest to the policy maker” (p. 354).⁴⁶ The fact that parties to an externality so often resort to litigation to settle disputes, he said, is “proof” enough of the costs that attend negotiated settlements and thus of the limited applicability of Coase’s result (p. 361). Yet, in this he seems to miss Coase’s emphasis on the necessity for there to be some assignment of property rights over the resources in question,⁴⁷ the establishment of which often requires litigation. This is another clue—as with Turvey—that economists had not yet come to grips with the importance of well-defined property rights.

⁴⁵ This argument is not unlike that made by Milliman (1962) in allowing that market solutions may not apply to large-scale natural resource problems, such as air and water pollution, discussed above.

⁴⁶ Invoking Coase’s own words, Wellisz contends that “The policy maker must cope with situations in which ‘payment cannot be exacted from the benefited parties or compensation enforced on behalf of the injured parties’, that is, with situations where private bargains fail” and where less than perfectly competitive conditions obtain (p. 351).

⁴⁷ See also Wellisz (1964, p. 349).

Wellisz's conclusion, then, was that the Coasean bargaining solution "lacks, unfortunately, the necessary generality to be of policy importance" (p. 361).⁴⁸ Even where negotiated solutions are possible, though, he expressed suspicion about the appropriateness of relying on them, largely on the grounds of "equity." Wellisz was a bit uneasy at the prospect of taking a position grounded in equity, given his sense that, "economists abandon their scientific detachment when they start moralizing" (p. 361).⁴⁹ (This was something about which environmental economists seem to have had no qualms when discussing the Coase theorem.)⁵⁰ Wellisz's concern on the equity front was that negotiated solutions open the door to threat-making and extortion on the part of the agent generating the externality. The irony that he pointed to was delicious: all of this "opens up magnificent business prospects," as "any activity can be turned to a profit as long as it is sufficiently annoying to someone else." One conjures up images here of factories increasing pollution levels or of homeowners creating noise externalities that annoy the neighbors, simply to secure a bribe that would induce them to cease and desist. Moreover, if the activity does not absorb any resources—if, as Wellisz so eloquently put it, "the blackmailers maintain amateur standing"—there is no inefficiency involved and thus "the economist who refrains from social judgment can find no fault with the situation" (p. 353). A system that allows for such possibilities, he argued, rewards threat-makers: the offending party can, in effect, blackmail the victim into compensating him to reduce the harm that he is causing. Wellisz was willing to go a ways with the modern-old economists' concern that there is a problem with the propensity of the courts to compensate victims in such a large share of externality-related cases, but he would go only so far, as "one can hardly claim that threat-making deserves a reward" (p. 361).

While Wellisz's blackmail critique may appear on the face of it to be a *reductio ad absurdum* argument (Would people actually do these things simply to secure a (larger) bribe?), it turns out to have

⁴⁸ Though critical of those who would attempt to ascribe any sort of broad applicability to negotiated solutions, Wellisz does not give the Pigovian tradition a free pass. He said that Coase *et al.* had "done us a great service" in pointing to problems with the Pigovian approach, on both the theory and policy analysis fronts, and allowed that Pigou should have more tightly drawn his assumptions regarding the need for state action (Wellisz 1964, p. 361).

⁴⁹ See Robbins (1932) for the classic exposition of the idea that "economic science" does not allow the economist to make value judgments.

⁵⁰ See Medema (2012).

significant theoretical validity, and on the efficiency front as well as on the equity front that concerned Wellisz. It so happens that Coase himself was well aware of these blackmail (or, in modern language, rent seeking) possibilities and the associated inefficiencies, having made note of them in his initial discussion of the negotiation result in “The Federal Communications Commission” (1959). In elaborating the variety of ways in which the structure of law *would* impact the efficiency of negotiated results to social cost problems, Coase included, along with transaction costs and other factors, a note that “a waste of resources may occur when the criteria used by the courts to delimit rights result in resources being employed solely to establish a claim” (1959, p. 27 at n.54), and so he ruled them out by assumption.⁵¹

Having more or less dispensed with the negotiated solutions framework, Wellisz went on to demonstrate that the Pigovian tax-subsidy approach, “unlike the modern-old bargains, applies to the broad spectrum of externality cases”—in light of which he was perplexed that, in spite of its greater applicability, the Pigovian approach remained “repugnant to the modern-old economists” (1964, p. 360). Though acknowledging that Pigovian solutions are not a panacea, Wellisz believed that, given the limitations of market/negotiated solutions, “the modern-old counter attack has left us just about where we were before it was made” (p. 362), meaning that, “whether we like it or not, we must try to design a workable Pigovian system of taxes or subsidies, or we must live with the externalities in our non-optimal world” (p. 361). For Wellisz, if not for the modern-old economists, the latter seemed to be a decidedly inferior alternative in many instances.

Conclusion

As we approached the middle of the decade, Coase’s negotiation result, which would not have attracted wide attention early on given the limited circulation of the *Journal of Law and Economics*, had, via the

⁵¹ Wellisz seems to have been unaware of Coase’s 1959 statement and, for whatever reason, Coase did not restate this point in “The Problem of Social Cost.” The rent-seeking critique of Coase was raised again some three decades later by Jung, Krutilla, Viscusi, and Boyd (1995). See also Medema (1997). This is just one of several examples of scholars failing to revisit Coase’s earlier analysis to understand what he was on about in “The Problem of Social Cost.” All of this said, there is an additional efficiency-related concern related to Wellisz’s blackmail claim, as was to become apparently not long after Wellisz raised the issue. The problem goes to the incentives for entry in a competitive market when externality-generating firms are able to earn additional profits because of the bribe revenue. See Medema and Zerbe (2000).

work of others (all of whom were connected to one or more of Chicago, Virginia, and the LSE), been discussed and in certain respects validated in leading journals such as the *American Economic Review*, *Economica*, and the *Economic Journal*. Coase himself had played no direct role in these discussions beyond his original contribution, nor had his new colleagues at Chicago, save for Demsetz, entered the fray at this point.⁵²

But what emerges from the early literature is a view of Coase's contribution that is somewhat at odds with the later tendency to equate "The Problem of Social Cost" with the Coase theorem. Much of the discussion during the period 1960-1965 emphasized not the negotiation result, but the challenge to the Pigovian tradition posed by Coase's emphasis on the reciprocal nature of harm and the imperfections associated with *all* institutional structures—markets, firms, and government. The conclusion drawn from this was that economists' default toward holding liable those parties traditionally perceived as causing harm to others was unlikely to represent the efficient response in many instances and that it was incumbent upon economists and policy makers to adopt a comparative institutional approach, one that countenanced the possibility that the efficient solution may be the persistence of the status quo. This, of course, was what Coase emphasized in later commentaries as the "real" meaning of "The Problem of Social Cost." There was also a clear sense expressed that if only the rest of the profession understood the soundness of this reasoning, the attachment to the Pigovian approach would wither away.

As we have seen, however, the negotiation result was the subject of a not insignificant amount of discussion, several features of which stand out. First, those discussing this result tended either to accept it as a truism, either *a priori* or after demonstrating its essential theoretical validity. Even E.J. Mishan, who was to become one of the Coase theorem's staunchest critics in the late 1960s and early 1970s, could find nothing to question in the negotiation result (save for the WTP/WTB issue) in his 1965 *Canadian Journal of Economics and Political Science* survey of recent contributions to externality theory. Indeed, there was only a single voice—Wellisz's—questioning the correctness of Coase's negotiation result. It turns out

⁵² University of Chicago law faculty members Walter Blum and Harry Kalven had also referenced Coase's negotiation result, rather unfavorably, in the accident law context, but our focus here is on the treatment by economists. For more on Blum and Kalven, see Marciano and Medema (2011).

that each of the criticisms raised by Wellisz is likely invalid in a world of zero transaction costs,⁵³ but we were still living in a “pre-Coase-theorem” era when Wellisz penned these objections in 1964 and the literature had not yet begun to cope with the implications of the strong version of the zero-transaction-costs assumption.

Second, in addition being considered correct in theory, the negotiation solution was generally viewed as applicable to small numbers externality problems. Though the discussion of transaction costs was very imprecise in this early literature, we are left with the sense that the supporters of the negotiation result believed that, in these situations, transaction costs likely would not be so high as to prevent agents from negotiating their way to efficient solutions, and that agents would pursue such opportunities for gain. Davis and Whinston (1965, p. 312) even went so far as to suggest that the negotiation result may manifest itself in a very common legal phenomenon: “This line of thinking,” they said, “gives a certain rationale to the ‘out-of-court’ settlement. Each party, agreeing on how the court would rule in a case, realizes that a negotiated solution can be beneficial to both (perhaps even using the expected verdict as a status quo point).” Of course, this does not tell us anything about Coase’s invariance claim (nor do the authors claim as much) or whether the result of such settlement negotiations is efficient—save for the almost tautological viewpoint that the cessation of such negotiations means that no further improvements are possible and thus the result is Pareto efficient. But it did suggest that the idea of negotiation processes around (real or mutually perceived) property rights had some empirical validity and so could not be waved aside as fantasy-world thinking.

Third, the negotiation result was used as a vehicle for explaining and even justifying market outcomes attended by externalities in a world of *positive* transaction costs. The most prominent examples of this line of thinking are found in the contributions by Buchanan and Demsetz, but Turvey made similar claims, and Davis and Whinston’s commentary on out-of-court settlements goes to this same point. Where Coase had shown the potential for markets in a frictionless world, others used his result to argue for the efficiency of markets in a world filled with frictions.

⁵³ See Medema and Zerbe (2000).

Fourth, the earliest discussions of Coase's negotiation result focused heavily on the efficiency proposition, with rather less attention being paid to Coase's assertion that the result of the negotiation process would be invariant across alternative assignments of rights (or liability). The reason for this emphasis on efficiency is unclear, though it may have something to do with the focus of many of these commentators on the basic claim, against the Pigovian tradition, that private mechanisms can efficiently resolve externality problems. Differently put, the efficiency of the market 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 government intervention—in the form of, e.g., taxes on or regulation of offending activities—was not necessary for efficiency.

Fifth, while concerns about equity loomed large in the later debates over the Coase theorem, they are not much in evidence during the period considered here.⁵⁴ Part of the explanation for this may be attributed to a measure of uneasiness among economists about dealing with such normative issues (as seen, for example, in the comments made by Wellisz and by Davis and Whinston), though, if this was the case in the early 1960s, it would not be for long. Or, it may simply be that those discussing the negotiation result during this period were less concerned about equity issues than were others—particularly on the critics side—who would take up the debate over the Coase theorem in the years to come.

This last point brings us to the issue of ideology, one that is no doubt germane given that much of the attraction to and hostility toward Coase's analysis was the result of its potential implications for the use of the market as opposed to government. While it likely comes as no surprise to the reader to find that so much of the early non-critical and even affirmative treatment of Coase's negotiation result came from scholars associated with Virginia, Chicago, and the LSE—all of which were associated in the professional mind with an affinity for private/market solutions and a dim view of government intervention—the fact is that the discussions of Coase's negotiation result by these individuals during the 1960s were, for the most part, theoretical parallels to the Pigovian arguments, with both sides marshaling

⁵⁴ Interestingly, Coase himself did not entirely neglect equity concerns. See Coase (1959, p. 27 at n.54; 1960, p. 43).

their economic logic to argue their respective cases. This is not to say that some did not view the Coase theorem as pointing the way toward an expanded use of markets to deal with externalities or toward an acquiescence in market outcomes on the grounds that such outcomes *reflect* the efficient resolution of externality problems. While it is irresponsible to attribute scholarly ideas to ideological consideration—at least absent some sort of “smoking gun”—there can be no question that Coase’s negotiation result provided, or at least was interpreted as providing, ammunition for those who were favorably disposed to market outcomes and/or wished to limit the extent of the State’s regulatory reach.

What is clear is that the treatment of Coase’s work at the hands of others had brought increasing attention to the negotiation result and to the challenge that it posed to long-entrenched views. Though Wellisz’s critique of Coase’s negotiation result was widely cited in the years following its publication, it by no means settled the debate. Indeed, the debate was just beginning—aided and abetted by George Stigler (1966), who, at the stroke of a pen, arguably forever changed economists’ perceptions of Coase’s result by transforming it from an interesting theoretical result into a “theorem.”

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