ELSEVIER

European Journal of Political Economy
Vol. 12 (1996) 565–579

European Journal of
POLITICAL
ECONOMY

The core disagreement between Pigou, the profession, and Coase in the analyses of the externality question

Harold Demsetz

UCLA, Department of Economics, 405 Hilgard Avenue, Los Angeles, CA 90024, USA

Received 15 July 1995; revised 15 December 1995; accepted 15 January 1996

Abstract

The source of disagreement between Pigou, the profession, and Coase in regard to the externalities is thought to be transaction cost. Coase shows that the traditional prescription for remedying externality problems can be wrong if transaction cost is positive. But Pigou did recognize that positive transaction cost played a role in creating externality problems even though the profession later failed to do so. The present paper documents this, and it suggests instead that the core disagreement was in Pigou's willingness to rely on an omnicient State to implement policy and Coase's refusal to do so. In a comparison of these two views, Coase's zero transaction cost model plays a more important role than that commonly assigned it.

JEL classification: D62; A10; B20; B31; K11

Keywords: Coase; Pigou; Externities

1. Introduction

'The Problem of Social Cost' (Coase, 1960) is R.H. Coase's most cited and most influential work. It is noted for, among other things, demonstrating the importance of incorporating transaction cost into the analysis of externalities and into the analysis of markets more generally. This theme, that markets are not free, is also found in the classic 'The Nature of the Firm' (Coase, 1937), so that, taking the perspective offered by both works, transaction cost turns out to be important whether one is analyzing allocation through the price system or through the firm.

PII S0176-2680(96)00025-0

Coase in fact views his emphasis on transaction cost as an important part of his work. Noting the unrealism of the zero transaction cost model that precedes his discussion of the positive transaction cost model, he interprets the former as only a device by which to lead the reader, as it were by the hand, to the more complicated analysis of the latter. The profession joins him in this evaluation, but I do not. Instead, I argue the following here:

1. Pigou was not neglectful of transaction cost although he definitely failed to perceive its general analytical significance.
2. It was not Coase's observations on the importance of transaction cost but his 'privatization' of the externality problem that constitutes the main methodological advance in his work.
3. Coase was guided toward privatization of the interaction between parties by his refusal to accept Pigou's and the profession's idealized State as a solver of the externality question.

The result of the above conclusions is to make Coase's zero transaction cost model much more important in the debate about externalities than is suggested by the purely pedagogical role assigned to it by Coase. In this reassessment of Coase's contribution, I take the validity of his demonstrations as a given. [1]

2. Privatization and the responsibility issue

Prior to Coase's article there was an unquestioning presumption as to where responsibility for externality costs (and benefits) should rest. This is true of Pigou's initial discussion of externalities and also of the profession's doctrine toward externalities at the time Coase wrote. The owner of the factory from which soot-filled smoke rises is held responsible, without question or analysis, for the increased cost of washing cloths in the neighboring laundry on which the soot falls. The owners of the ranch from which cattle stray to surrounding corn fields and of the railroad from which sparks fly are similarly held responsible for damage done to crops. This presumptive judgment made it difficult to recognize that the social value of the activities of the interacting parties might, in sum, be greater if the harmed party is left to bear the damages. If this possibility is not recognized, the inclination to take an analytical view toward the transaction cost variable is repressed, for the importance to be attached to transaction cost becomes apparent only on a genuine comparison of alternative assignments of responsibility.

The rationale for this asymmetrical approach is not in the neglect of transaction cost, but, rather, in a second implicit presumption made by Pigou and the

[1] For a more critical discussion of the role of transaction cost in causing firms to exist, see the first commentary in Demsetz (1995).

profession – an omniscient and omnipotent government. The tax policy of an all-knowing, well-motivated state results in corrective adjustments for externalities that accord with the economist's prescription; this obviates the need for considering alternative assignments of responsibility. The problem is analyzed as if the state is a perfect agent through which the blackboard plans of economists can be brought to fruition. Ignoring State-associated costs of errors, implementation, and improper motivation, rather than ignoring the cost of using of markets, is the root cause of the asymmetrical approach brought to the assignment of responsibility. As we shall see, Pigou's analysis does recognize a positive transaction cost barrier to a market resolution of externality problems, but because he presumes an ideal state his analysis is nonetheless deficient. Coase does not adopt a state-devised solution in his analysis, and he is compelled to recognize a need for comparing alternative assignments of responsibility to private parties. He thus privatizes the externality problem. The comparison of private alternatives enters the analysis of externalities in a substantive way for the first time with the appearance of Coase's article.

However, it is not the privatized responsibility approach but positive transaction cost that is now judged as Coase's primary theoretical innovation. This is because Coase's analysis shows that resource allocation is unaffected by a policy toward private responsibility if transaction cost is zero. Positive transaction cost defines the context in which the responsibility issue is important if this is to be judged by impact on resource allocation. I shall argue below for another standard of importance, but the theoretical point involved here, that positive transaction cost is needed before the assignment of private responsibility makes a difference, cannot be deduced by a mind that has conjured an idealized state and obviated the need for considering alternative private responsibility solutions. Moreover, the more important quantitatively is transaction cost, the easier it is to argue against consideration of a privatized solution and for a Pigou-prescribed intervention by the state.

3. Responsibility in a positive transaction cost setting

If Pigou did not grasp the analytical importance of transaction cost, he did recognize that transaction-like obstacles to market solutions gave rise to the externality problem. [2] He writes:

> "[T]he essence of the matter is that one person A, in the course of rendering some service, for which payment is made, to a second person B, incidentally

[2] I discovered after completing this paper that Victor P. Goldberg (1981) had already uncovered the fact that Pigou's did take note of the need for markets to be unworkable if private cost were to deviate from social cost. In his discussion of this, Goldberg even selected some of the same quotations from *The Economics of Welfare* (Pigou, 1960) that I favored for the present paper.

also renders services or disservices to other persons (not producers of like services), of *such a sort that payment cannot be exacted from the benefited parties or compensation enforced on behalf of the injured parties*''. [3] (Italics added.)

Pigou describes three sources of the externality problem. These are distinguished by the positions of the person(s) who suffer the consequences of an externality and those who, according to Pigou, cause it. One case refers to a theme of Marshall's that discusses the advantages of subsidizing increasing returns industries and taxing decreasing returns industries. Marshall's ideas about this no doubt motivated Pigou's own thinking about externalities, but Marshall's theme, which confuses pecuniary and non-pecuniary effects, is not of interest to the present paper. A second case involves non-pecuniary externalities in which the interacting parties are already engaged in exchange. Here Pigou raises a question as to how land use is affected by differences in the time horizons of renters and landowners. He discusses this question in a context where both parties are already involved in contractual negotiations involving the renting of the land. This context distinguishes the second case from the third. The third involves non-pecuniary externalities in situations in which persons are not already involved in contractual negotiations. Pigou, as an example of this third case, refers to the quantity of resources allocated to parks. Here the private provider of a park for his own use in the midst of a city is viewed as overlooking the benefits, such as freshening the air, that others derive from its existence.

In his discussion of the second case, involving land owner and renter, Pigou finds a potential externality in the discrepancy between the tenant's interest in making improvements and the owner's and society's interest in having these improvements made. The tenant's interest is affected by the period of his tenancy, but the owner's and society's interest extends over the full life of the assets to which improvements are or can be made. The tenant's private return, because of this limited time horizon, is less than the social return, and results in too few or too short-lived investments. Pigou calls for legislation bearing on both owner and tenant to create better incentives for the making of these investments. His treatment explicitly recognizes that the divergence between the tenant's and owner's returns to improvements is ''larger or smaller in extent according to the

[3] Pigou (1960, p. 183). (Note: References made to Pigou's *The Economics of Welfare* are to the 1960 printing. This printing contains revisions adopted by Pigou in 1934.) It is not entirely clear from his discussion whether he rules out a market solution because of what we would now call transaction cost or because of the absence of property rights in some scarce resources. The absence of ownership in 'common pool' problems may be what he had in mind. Since the absence of property rights exacerbates the transaction cost problem, and would not be a source of inefficiency if transaction (plus information) costs were zero, we may interpret Pigou as recognizing, at least implicitly, that markets do not function without cost. As we shall see, his recognition of this is not incidental.

terms of the contract between lessor and lessee'' (Pigou, 1960, p. 175), and in a footnote (Pigou, 1960, pp. 176–177) he mentions contractual arrangements that might mitigate the problem. He goes so far as to acknowledge that

> ''The deficiency of the private, as compared with the social, net product... can be mitigated in various degrees by compensation schemes... In its simplest form [this] consists in monetary penalties for failure on the part of tenants to return their land to the owner in 'tenantable repair''' (Pigou, 1960, p. 177).

Insofar as tenancy is concerned, Pigou is clear that agreements struck between the interacting parties can reduce the difference between private and social cost. These agreements belong to the realm of the possible because owners and tenants are already involved in negotiating a contract, and this contract might be amended readily to take account of what we now call agency considerations. However, even in this case Pigou doubts the perfection of contractual resolution. He goes on to claim that imperfections of one sort or another in such contractual arrangements bar the complete reconciliation of principal and agent interests. His notion that government, though some law, can rectify the situation easily is naive in the extreme. Still, without using Coase's terminology, Pigou writes of this situation as if it were one where positive transaction cost bars a satisfactory market-determined resolution of the agency problem. Pigou easily could have been brought to agree that market negotiations would completely eliminate the divergence in the absence of these contractual impediments, but he insists that these impediments are present in sufficient degree to cause a divergence between private and social cost. [4]

It is in regard to the third case of externalities that Pigou gives life to the traditional externality doctrine that was to evolve from his work. This is the source he has in mind in the first quotation given above, in which he refers to exchange between A and B that results in consequences for other parties. In this quotation, Pigou rejects the possibility of contractual arrangements by which to mitigate the divergence between private and social returns. Unlike the tenancy case, no contractual interactions between the externality-affected parties and A or B are already in place. For Pigou, this seems to rule out privately devised contractual

[4] Surprisingly, after discounting without reservation the ability of private parties to negotiate an appropriate contractual solution, Pigou seems to have no doubt that the State can improve the situation without difficulty. What the State should and should not do depends not only on narrow economic doctrine, but also on the theory of political-bureaucratic behavior that is brought to the policy table. A demonstration of economic inefficiency is not sufficient to establish the necessity for political action. Sidgwick (1883) was aware of this distinction; although he was Pigou's precursor insofar as he clearly recognized and described the externality problem, he explicitly rejected an automatic call for state intervention, noting that this might make matters worse.

improvements such as might seem plausible between the landlord and tenant who are already tied into a contract.

> "It is plain that divergences between private and social net product...cannot, like divergences due to tenancy laws, be mitigated by a modification of the contractual relation between any two contracting parties, because the divergence arises out of a service or disservice rendered to persons other than the contracting parties. It is, however, possible for the State, if it so chooses, to remove the divergence in any field by 'extraordinary encouragements' or 'extraordinary restraints'... The most obvious form...are, of course, those of bounties and taxes" (Pigou, 1960, p. 192).

He refers to private parks that improve a city's air quality, investment in lamps at the doors of households, the light from which also illuminates the street, smoke from factory chimneys, and resources devoted to fundamental problems of scientific research, the perfecting of inventions, and improvements in industrial processes, all of a sort that they can "neither be patented nor kept secret". He also refers to Sidgwick's observation that "it may easily happen that the benefits of a well-placed lighthouse must be largely enjoyed by ships on which no toll could be conveniently levied". A clever person might be able to devise pragmatic methods for joining the interests of the such parties through the device of market negotiations, and Coase (1974) has made the case that even the services of lighthouses can be and have been paid for, but clearly these cases do suggest prohibitively high transaction cost.

However, since prohibitively high transaction cost does not accompany all cases that fit the type three group, Pigou's classification of type three cases is incomplete. Farmer–rancher and the factory–laundry interactions, for example, involve persons not already linked into landlord–tenant types of contracts but do not obviously involve transacting cost so high as to bar negotiations between the parties. That third parties are not already involved in pertinent negotiations, as they are in landlord–tenant type situations, carries no implication that it would be very costly to bring them into relevant negotiations. Because cases such as these are not discussed by Pigou, we may surmise either that he overlooked real possibilities of using markets to resolve externality-type problems or that he meant to be theorizing specifically about situations in which transaction costs are prohibitively high.

The importance of transaction cost, even at the superficial level of the recognition given to this cost by Pigou, ceased to be noticed at all in the professional view that prevailed when Coase wrote. The Meade (1952) modeling of the interaction between a bee keeper and an apple grower may be a major reason the profession lost sight of positive transaction cost, for the model presumed the lack of a market without justifying the presumption. The bee–apple situation was not described in a manner that would seem to convert it into a public good fraught with free rider

problems, yet Meade assumed the absence of a price linking the apple grower's activities to the bee-keeper's activities. Meade's discussion offers a good example of the dangers inherent in what Coase has called 'blackboard economics'. Had Meade investigated bee keeping and apple growing, he would have discovered not only that there could be a market link between these activities, but that the market actually existed. [5]

Pigou's greater awareness of the significance of transaction cost makes it tempting to believe that his view, unlike the post-Meade profession's view, is innocent of neglecting transaction cost. There is analytical significance to Pigou's recognition of the difficulty in making payment. If nothing is done about an externality because the cost of market negotiations is too great, too much of the good that Pigou presumes to be the cause of the externality is produced and too little of the adversely affected good is produced. This is as compared to the efficient solution that Pigou believes the state can secure via its tax policy. One mix of outputs prevails in the absence of explicit corrective policy, and this is readily interpreted as the mix that results if the 'offending' party is not held responsible for the interaction. The second mix results if the offending party is held responsible and taxed accordingly.

But Pigou nonetheless fails to see the full significance of the responsibility issue in a positive transaction cost setting. His neglect is at least partly due to his extreme naivete in regard to the state's ability to set the matter right. If he would have ruled out state action on grounds of impracticality or politics, or if he would have recognized that the common law offered potential corrective action even if the state did not act, he would more likely have been led, as Coase was, to consider the consequences of assigning responsibility to either party to the interaction. The possibility that the value of output is greater if responsibility is not assigned to the party producing the 'offending' good would have been more obvious. The hidden presumption of an omniscient, omnipotent state breaks this chain of investigation because it allows one to pretend that the 'ideally efficient solution' is easily obtained through state action. The conditions that must be satisfied by the state's action, derived through pure blackboard manipulation of curves and symbols, was taken to be sufficient to demonstrate that policy could achieve an ideal solution. The costs of using the state were implicitly assumed to be zero.

Pigou thus fails to examine the analytical consequences of positive transaction cost even though he recognizes that barriers to negotiations blocked an efficient market solution from emerging. He does not deduce the best that might be achieved in the presence of high transactions cost, and he does not recognize that negotiations of some sort might be pursued by the parties after the state imposes

[5] The factual resolution of the problem is discussed by Cheung (1973) and Johnson (1973).

its tax; these negotiations would undermine the ideally efficient solution that the tax was to have brought about (see footnote 8).

The profession's 1960 view, of course, also exhibited this weakness, but, because it took no note at all of transaction cost, it failed to see that transaction cost is relevant to the existence of an externality. The externality problem was viewed by the profession as a technological problem, not a market problem. Soot from a factory changes the productivity of the laundry's operation. No question was raised about what the laundry owner might do about this.

4. Responsibility in a zero transaction cost setting

The approach of the profession just before Coase wrote was to take note of the existence of efficiency-impairing interactions between production functions and to call for corrective action by the state. The possibility of a negotiated resolution simply was unrecognized. Stigler (1952, pp. 104–105), in the revised edition of his then influential text *The Theory of Price*, writes:

> "[T]here can be real differences between the alternative product of a resource to society and to an industry or firm or, in Pigou's terminology, between the marginal social product and the marginal private product. A bundle of productive services may add $10 to the receipts of the firm, this is its marginal private product. If in addition it causes a loss to others of $3 (perhaps by contaminating a stream), its marginal social product is only $7".

> "...Some of the disharmonies between private and social product are large and important, and they are dealt with by a variety of techniques such as taxes and subsidies, dissemination of information, and the police power (for example, zoning)".

The article 'Anatomy of Market Failure' (Bator, 1958) is the only treatment I have uncovered that mentions costs that are the equivalent of transaction cost, but like Pigou, he shows no appreciation for how transaction cost can undermine the traditional externality doctrine.

> "In its modern version, the notion of external economies...belongs to a more general doctrine of 'direct interaction'... Such interaction...consists in inter-dependencies that are external to the price system, hence unaccounted for by market transactions" (Bator, 1958, p. 358).

> "This is what I would call an *ownership* externality. It is essentially Meade's 'unpaid factor' case. Non-appropriation, divorce of scarcity from

effective ownership, is *the* binding consideration. Certain 'goods' (or 'bads') with determinate non-zero shadow-values are simply not attributed. It is irrelevant here whether this is because the lake where people fish happens to be in the public domain, or because 'keeping book' on who produces, and who gets what, may be impossible, clumsy, or costly in terms of resources. For whatever legal or feasibility reasons, certain variables, which have positive or negative shadow value are not 'assigned' axes'' (Bator, 1958, p. 364).

''In the end, however,...it is not easy to think of many significant 'ownership externalities' pure and simple. Yet it turns out that only this type of externality is really due to nonappropriability'' (Bator, 1958, p. 365).

Coase attributed the profession's incorrect analysis of the externality problem to the strong tendency of economists to analyze allocation problems with a mind set that implicitly treated markets as free to use, but I think this is not quite an accurate depiction. If they had taken markets to be free, they might have seen that productivity interactions do not defeat an efficient resource allocation. What is true of the profession's mind set is that it simply ignored the market interactions that would arise as a result of these productivity interactions, and it did so, like Pigou, because of the appeal to blackboard intervention by an idealized state. The wearing of this particular set of blinders is consistent with Pigou's inability to translate the existence of barriers to negotiation, clearly perceived by him, into a correct analysis of the problem.

It is not surprising that Coase, who devoted much of his life to convincing the profession of the importance of positive transaction cost, should attach greater significance to his positive transaction cost analysis of the externality problem than he attaches to his zero transaction cost model. Indeed, from Coase's perspective the zero transaction cost model seems to serve mainly the pedagogical purpose of bringing readers of his article to the point where they can face the responsibility issue in the context of the more complicated positive transaction cost world in which externality problems must be resolved. This, I believe, is Coase's view of the role of the zero transaction cost model, and the model does perform this task. But the impact of this model goes well beyond pedagogy. More than does the positive transaction cost model, it challenges the political agenda of many of those who saw in the externality problem an important lever for an expanded government role in resource allocation. [6]

[6] Coase (1988, pp. 174–175) writes: ''The world of zero transaction costs has often been described as a Coasian world. Nothing could be further from the truth. It is the world of modern economic theory, one which I was hoping to persuade economists to leave''.

The externality question as viewed by Pigou and many of his followers did not stand apart from the question of the role to be played by the state in economic affairs. The rationale for limiting the economic role of the state is found in conclusions drawn from self-interested, competitive interactions of the 'invisible hand' variety. Smith's debate with the mercantilists demonstrated the allocative power of the invisible hand. Monopoly offered one counter-argument to this demonstration, but monopoly rejects the applicability of competition, it does not refute logical deductions made from competition. The empirical significance of monopoly might be debated, but shortly after the turn of the century, and after Darwin's writings, most economists believed competition could not be contained. From this belief it followed, as a practical matter, that the justification for a larger role of the state must be based on grounds that logically could co-exist with competition. The search for such grounds seems to have been an important mission of Pigou. He devotes a prominent portion of *The Economics of Welfare* to the task of showing that competition does not automatically yield an efficient outcome. One short quotation follows:

> "The source of the general divergences between the values of marginal social and marginal private net product that occur under *simple competition* (italics added) is the fact that, in some occupations, a part of the product of a unit of resources consists of something, which, instead of coming in the first instance to the person who invests the unit, comes instead, in the first instance (i.e., prior to sale if sale takes place), as a positive or negative item, to other people" (Pigou, 1960, p. 174).

The desire to reject the conclusions usually drawn from competition no doubt motivated many of Pigou's followers also, and to Pigou and followers alike the externality issue must have seemed the ideal conceptual vehicle for accomplishing this mission. Externalities seem to be consistent with competition yet they undermine the efficiency conclusions drawn from competition. Markets for laundry services and for steel products can be competitive yet suffer from externality-caused inefficiencies.

Judged from this perspective, we may consider which of Coase's two models – the positive and the zero transaction cost models – best approximates the notions economists held when judging the efficiency consequences of competition. Perfect competition requires that prices and technologies be known to all. This is reasonably interpreted to mean that buyers and sellers have access to information that would be unavailable to them if transaction costs were positive. The perfect competition model is used to see how the price system solves the allocation problem. Accordingly, the exercise proceeds by assuming that prices of all goods are known. Transaction cost may be interpreted as a barrier to the universal possession of such knowledge, and, if so, as violative of perfect competition's assumptions. Transaction cost, like monopoly, simply violates a plausible version

of the competitive condition presumed to exist when efficiency conclusions are drawn, and, in this respect, is more a rejection of the assumptions than of the logical deductions drawn from competition.

The zero transaction model avoids this problem. If one were to represent the competitive economy by something like perfect competition, the zero transaction cost model is the more appropriate model by which to determine whether externalities allow one to reject theoretical deductions from competition. With very little difficulty, one can make and document an argument that the profession in 1960 was using externalities to undermine conclusions drawn from perfect competition. There is difficulty in doing this for Pigou because perfect competition was not a well-defined concept at the time he wrote. Whether his concept of competition did or did not resemble perfect competition cannot be determined. This is unfortunate, because a determination of whether the externality concept undermines the conclusions drawn from competition depends in part on a clear specification of what is meant by competition.

Not being able to decipher Pigou's notion of competition forces us to adopt the profession's 1960 view. If this view did not explicitly couch externalities within the perfect competition model, it relied on something very much like perfect competition. Assuming that perfect competition is the standard to which we have reference when discussing competitive resource allocation, it behooves us to analyze the externality problem by applying the Coase model that is most in agreement with the assumptions of perfect competition. This model is the zero transaction cost model, not the positive transaction cost model. The analysis is therefore kept much more in the relevant context of the theoretical-political debate by the zero transaction cost model. In the present discussion, this context is not one of pure science; it is not one of providing a theory to explain externality-related phenomena. Neither is it one of providing a positive theory of government action. The positive transaction cost model would be more appropriate for these purely scientific tasks, as would public choice theory. In the present discussion, it is logic that is it at issue, logic contained in a history of thought perspective of the great debate about the role of government. Empirical phenomena are not at issue. Fortunately, today's debate about the role of the state rests more heavily on a positive science perspective. This involves positive transaction cost, but also much more.

The debate about externalities between Coase and those who preceded him, although it sometimes touches on actual behavior, especially in Coase's recitation of court cases and legislation, is nonetheless more accurately described, surprise of surprises, as an exercise in blackboard economics. Is the validity of deduction made from the perfect competition model undermined by the concept of externalities? The zero transaction cost model allows Coase's analysis to refute the 'yes' answer that the profession had been giving to this question. Social and private cost are necessarily equal if competition is perfect; there are no externalities.

Coase's critics focused on the zero transaction cost model. Perhaps they did so

because it offers the simpler and clearer analysis. One can say precisely what the outcome from Coase's reasoning is if transaction cost is zero. This is a luxury not available to an analysis based on positive transaction cost. But perhaps, without critics realizing it, the zero transaction cost model became their favorite target because it represents the perfectly competitive situation best. By concentrating on the zero transaction model and virtually ignoring the positive transaction cost model, they acted as if they were prepared to accept the latter but not the former. They raised questions about the indeterminacy of a negotiated solution when this is made between two isolated negotiators (Samuelson, 1963), about the necessity for the interacting parties to be receiving enough economic rent to cover whatever their liabilities might be as a result of the interaction (Wellisz, 1964), and about the model's neglect of long-run profit consequences (Calabresi, 1965). Their criticism of *Coase's article* was rather exclusively concerned with his zero transaction cost model. [7]

The profession simply did not, and, I think, does not yet regard Coase's positive transaction cost model as a serious attack on the state's involvement in the resolution of externality problems. The recognition that transaction cost is positive

[7] Responses to these criticisms may be found in Demsetz (1972a,b,Demsetz, 1979)). Only one question that was asked pertained to the positive transaction cost model. Coase had claimed that both parties to a costly interaction should bear a tax or a liability for an interaction (externality) cost if transaction cost is prohibitively high, but his lack of clarity about what measure of the tax he had in mind led to confusion about this. This last issue aside, the overwhelming reaction of critics was to ignore the positive transaction cost model and attack the zero transaction cost model. The desire to preserve a role for the State is not the only 'larger issue' involved in the attack on the zero transaction cost model. Criticism of what were perceived to be ethical implications of Coase's reasoning were raised by a few Austrian–Libertarian economists who cannot be described as favoring State intervention. Rather, their intent was to protect a particular view of the ethics of property rights. This sees legitimate rights as emerging from the mixing of effort with as yet unowned resources, and proponents of this view interpreted the conclusion of the zero transaction cost model as an assertion that the assignment of rights is a matter of indifference. No weight can be given to efficiency considerations by Coase's analysis of zero transaction cost. Some economists, such as myself, might give great weight to efficiency considerations in the assignment of rights, and a good argument for a particular assignment of rights on this basis could be made if transaction cost is positive. Wishing to avoid such argument, critics chose to focus on the zero transaction cost model. The expression, by economists such as myself, of indifference in regard to right assignment in this case from the perspective of economics, was attacked as unethical (Block, 1977). Criticism came from those who viewed the factory's issuance of smoke as an invasion of the legitimate property rights of the laundry's owner. Of course, considerations other than externalities may influence how society does or should define rights, and in a broad inquiry into ownership these considerations should be taken into account. But the externality issue as raised by Pigou and followers was an efficiency issue, not an ethical one, and not one concerned with the legitimate origin of rights. To presume the existence of rights according to a not well-worked out theory of original mixing of effort with unowned resources is to presume away one of the central questions regarding policy toward externalities and, presumably, one of the central considerations of a grander theory of the ethics of ownership. How should the rights of the interacting parties be defined if the answer is to be determined solely on the basis of obtaining an efficient solution to a technical externality problem?

might aid the state in its formulation of policy, as might recognition of the imperfection of the state as a tool for allocating resources. But in truth, the positive transaction model is not an attack on the principle of state involvement. Transaction cost blocks interacting parties from privately negotiating a solution that takes full account of the externality. Coase's analysis of positive transaction cost made it clear that error can result from a policy that treated the choice of the responsible party in ad-hoc fashion, but this error can be avoided if the state's policy is modified so as to take the responsibility issue and transaction cost seriously. One consequence of this would be to move analyses away from blackboard economics toward an examination of fact. Investigation of fact, however, is a time-honored activity of the State. Those who wished the State to become more involved in the economy could see no serious threat emanating from Coase's positive transaction cost analysis, for Coase's analysis, as distinct from expressions of his belief in this regard, was not an attack on the state as a problem solving institution. His analysis calls for more careful comparison of alternatives, but it does not demonstrate the superiority of the market over the state in making this comparison. Analyses impugning the state's motivation and ability spring from different literatures, but mainly those emanating from Buchanan, Tullock, and Stigler.

The zero transaction cost model, on the other hand, leaves no room for special State intervention. The function of the State is reduced to and remains that of defining and enforcing property rights, tasks that are already endorsed by laissez faire policy. The zero transaction cost model allows the perfect competition model to resolve would-be externality problems in the same way that it resolves resource allocation problems generally – through markets. Efficiency results from a clear definition of ownership rights. Moreover, as Coase shows, serious consideration of the responsibility issue reveals, if transaction cost is zero, that efficiency results no matter which party is held responsible for a costly interaction. No opportunity for government action beyond that of defining property rights is created, as the same output mix results from either assignment of responsibility by the legal system. The case for laissez-faire in the blackboard economics debate that characterizes the history of thought on this topic is not weakened by the costly interactions between activities; there is no barrier to a market accounting of all costs and benefits. The state cannot be brought to the externality question not by a logic that shows it can improve resource allocation. The logic that progresses from competition to efficiency remains intact and becomes much more clear in the externality problem because of Coase's zero transaction cost model. This forces a comparison between the solutions offered by Pigou and the profession, implicitly relying as they do on an idealized state, and the solutions offered by a market that is comparably idealized. The mythical state must not be compared to actual markets in which negotiations and information are costly; nor should the mythical perfect market be compared to actual political institutions. In a comparison between idealized market and idealized state, there is no intervention by the state that

results in an efficiency improvement over what the market achieves in the zero transaction cost case. If both idealized market and the idealized state are analyzed correctly, this is the only conclusion that can be reached. The choice between market and state then rests on considerations of freedom and wealth distribution. [8]

The comparison of actual market and actual state is, of course to be preferred, but this is not the way the externality problem has been put historically. Moreover, such a comparison is difficult to achieve because we have only begun to treat public choice and positive transaction problems seriously. I attempt no such a comparison here. My intent is only that of setting before the reader a somewhat different interpretation of history of thought aspects of this great debate. If we are to judge the importance of a contribution by how much it impacts this debate, a higher mark than is usually awarded is merited by Coase's zero transaction cost model. [9]

Acknowledgements

Comments by Judge Richard Posner are much appreciated. The author, of course, remains responsible for the views expressed here.

References

Bator, F., 1958, The anatomy of market failure, Quarterly Journal of Economics, 351.

Block, W., 1977, Coase and Demsetz on private property rights, Journal of Libertarian Studies, Spring, 111.

Calabresi, G., 1965, The decision for accidents: An approach to nonfault allocation of costs, Harvard Law Review, 713.

Cheung, Steve N.S., 1973, The fable of the bees: An economic investigation, Journal of Law and Economics, April, 11.

Coase, R.H., 1937, The nature of the firm, Economica, 4.

[8] Policy proposals put forward to guide state intervention sometimes analyzed these idealized alternatives incorrectly. This is particularly true for tax policy. The idealized market achieves an efficient allocation of resources, so the correct policy for the state is to refrain from levying a tax. But, since the efficient allocation generally involves some positive amount of soot, of sparks, or of cattle, and some damage to neighboring activities, it is easy to slip into the mistake of prescribing a tax to be levied on 'the responsible party', such tax seeking to force this party to take the damage to neighboring activities into account when deciding how much of its own good to produce. This leads to inefficiently small output of its own good and too much output of goods from neighboring activities.

[9] Adopting this history of thought perspective, we may conclude with an observation about the appropriateness of the three assumptions that underlie the zero transaction cost model. Transaction cost, or at least its information cost component, should be zero if we are debating the perfect competition model. Income or wealth effects should be ignored; these have nothing to do with allocative efficiency. And, of course, the markets in which parties negotiate externalities should be competitive.

Coase, R.H., 1960, The problem of social cost, Journal of Law and Economics, Oct., 1.
Coase, R.H., 1974, The lighthouse in economics, The Journal of Law and Economics, Oct., 357.
Coase, R.H., 1988, The firm, the market, and the law (The University of Chicago Press, Chicago, IL).
Demsetz. H., 1972a, When does the rule of liability matter? Journal of Legal Studies, Jan., 1.
Demsetz, H., 1972b, Wealth distribution and the ownership of rights, Journal of Legal Studies, June, 11.
Demsetz, H., 1979, Ethics and efficiency in property rights systems, In: M.J. Rizzo, ed., Time, uncertainty, and disequilibrium (Lexington Books, Lexington, MA) 97. (Reprinted in: H. Demsetz, Ownership, control, and the firm (Basil Blackwell, Oxford, 1988, 261).
Demsetz, H., 1995, The economics of the firm: Seven critical commentaries (Cambridge University Press, Cambridge).
Goldberg, Victor P., 1981, Pigou on complex contracts and welfare economics, Research in Law and Economics, 39.
Johnson, D.B., 1973, Meade, bees, and externalities, Journal of Law and Economics, April, 35.
Meade, J.E., 1952, External economies and diseconomies in a competitive situation, Economic Journal.
Pigou, A.C., 1960, The economics of welfare, Fourth edition (Macmillan, London) (First edition 1920 and first publication of the fourth edition 1932).
Samuelson, Paul A., 1963, Modern economics: Realities and individualism, The Texas Quarterly, Summer, 128 (Also in: The collected scientific papers of Paul A. Samuelson, Vol. 2 (MIT Press, Cambridge, MA, 1966, p. 1411)).
Sidgwick, H., 1883, The principles of political economy (1st ed. 1883).
Stigler, George J., 1952, The theory of price (Macmillan, New York) 104 (Third printing 1954, revised 1952).
Wellisz, Stanislaw, 1964, On external diseconomies and the government-assisted invisible hand, Economica 31, Nov., 345.