SMU | Dedman School of Law

SMU Law Review

Volume 44 | Issue 3 Article 4

January 1990

A Synthesis of Law and Economics

John Cirace

A SYNTHESIS OF LAW AND ECONOMICS

by

*John Cirace**

I. INTRODUCTION

THE purpose of this Article is to effect a synthesis of law and economics that is acceptable to both lawyers and economists; in other words, a synthesis acceptable to those who think like[1] and have values[2] of lawyers as well as those who think like[3] and have values[4] of economists. Section One discusses the criticisms that lawyers and economists make of each other's values and methodology, and outlines a way to synthesize these conflicting values and different methodologies.

---

* Professor of Economics, The City University of New York; Adjunct Professor of Law, Brooklyn Law School. Harvard University, B.A., 1962; Stanford Law School, J.D., 1967; Columbia University, Ph.D., 1975. I wish to thank the students in my Law & Economics classes at Brooklyn Law School, Spring, 1989 and Spring, 1990; their unremitting criticism of economic analysis of law for its nearly total disregard of equitable considerations continually forced me to rethink my assumptions and approach.

1. "The basic pattern of legal reasoning is reasoning by example. It is reasoning from case to case." The accompanying footnote contains a quotation from Aristotle who concludes deductive reasoning is reasoning from whole to part, inductive reasoning is reasoning from part to whole, and reasoning by example is reasoning from part to part. E. LEVI, AN INTRODUCTION TO LEGAL REASONING 1 (1948). Each profession of lawyers and economists select and organize the raw data of reality in terms of concepts and purposes accepted by the profession. Malone, *Ruminations on Cause-In-Fact*, 9 STAN. L. REV. 60, 61-64 (1956-57).

2. "[I]f wealth maximization is only to be an instrumental value . . . then there must be some independent moral claim for the rights that wealth maximization recommends. These rights cannot have a moral claim on us simply because recognizing those rights advances wealth." R. DWORKIN, A MATTER OF PRINCIPLE 252 (1985).

3. "As economists know, thinking about a problem like an economist means building a 'model' of it—either verbally, graphically, or mathematically—to distill the essence of the relationships being studied." A. POLINSKY, AN INTRODUCTION TO LAW AND ECONOMICS xiii (2d ed. 1989). "[T]he basic methodology used in microeconomics . . . is much the same as that used in any other type of scientific analysis. The basic procedure is the formulation of models. A model is composed of a number of assumptions from which conclusions—or predictions—are deduced." E. MANSFIELD, MICROECONOMICS: THEORY AND APPLICATIONS 13-14 (6th ed. 1988).

4. "[T]he things that wealth makes possible—not only luxury goods but also leisure and modern medicine, and even departments of philosophy—are major ingredients of most people's happiness, so that wealth maximization is an important—conceivably the only effective—social instrument of utility maximization." R. POSNER, ECONOMIC ANALYSIS OF LAW 14-15 (3d ed. 1986).

> [T]he term *efficiency* will refer to the relationship between the aggregate benefits of a situation and the aggregate costs of the situation; the term *equity* will refer to the distribution of income among individuals. In other words, efficiency corresponds to "the size of the pie," while equity has to do with how it is sliced. Economists traditionally concentrate on how to maximize the size of the pie, leaving to others—such as legislators—the decision how to divide it.

A. POLINSKY, *supra* note 3, at 7 (footnotes omitted).

Section Two demonstrates that total social wealth depends upon both distributional equity and efficiency, and not just efficiency alone. After this demonstration, the value conflict between lawyers and economists is easily resolved by construction of a criterion, called "wealth maximization", which is both efficient and has a strong claim to distributional equity.[5]

Section Three contains a synthesis of the legal and economic methodologies; that is, general versus particular and efficiency versus equity. A methodological synthesis, called the hard case paradigm, employs the bilateral monopoly model; this model is used in an extended analysis of a representative hard common law case. Such a case presents problems because issues of distributional equity and efficiency are interrelated and difficult to disentangle. The bilateral monopoly model is able to explain when and how distributional equity and efficiency considerations are related in such hard common law cases.

A true synthesis of law and economics, as opposed to an economic analysis of law,[6] must include a method for analyzing distributional consequences as well as efficiency consequences of decisions by courts and legislatures. Section Four contains a discussion of the principles by which government (courts and legislatures) can achieve maximum social wealth. Section Five concludes the article.

A. Resolving The Value Conflict Between Lawyers and Economists

A major impediment to the construction of a synthesis of law and economics concerns the clash of values between lawyers and economists. Lawyers often react with hostility to the economic analysis of law. This hostility exists because lawyers cannot accept that the concept of efficiency, which economists developed in order to analyze voluntary transactions between individuals in competitive markets, should be *the* criterion to decide all legal issues of a predominantly economic character,[7] most of which involve governmental coercion of individuals in dispute (usually nonmarket) situations.[8] Lawyers object to the use of the efficiency criterion as the rationale for governmental coercion because the efficiency concept eschews considerations of horizontal equity and distributional fairness, concepts that lawyers regard as

---

5. We may try to show that the decisions that seem to maximize wealth are required, not as instrumental decisions seeking to produce a certain state of affairs, of social wealth, utility, or any other goal of policy, but rather as decisions of principle enforcing a plausible conception of fairness. We might aim, that is, at an explanation of principle, instead of an explanation of policy.

R. DWORKIN, *supra* note 2, at 266.

6. *See* R. POSNER, *supra* note 4.

7. Coleman, *Efficiency, Utility, and Wealth Maximization*, 8 HOFSTRA L. REV. 509, 550-551 (1980); Leff, *Economic Analysis of Law: Some Realism About Nominalism*, 60 VA. L. REV. 451, 462-464 (1974); R. DWORKIN, *supra* note 2, at ch. 13.

8. This doing of something about disputes, this doing of it reasonably, is the business of law. And the people who have the doing in charge, whether they be judges or sheriffs or clerks or jailers or lawyers, are officials of the law. What these officials do about disputes is, to my mind, the law itself.

K.N. LLEWELLYN, THE BRAMBLE BUSH 3 (1960); *See* Rose-Ackerman, *Law and Economics: Paradigm, Politics, or Philosophy*, LAW AND ECONOMICS 234-35 (N. Mercuro ed. 1989).

indispensable elements in the concept of law. Because of this value conflict between lawyers and economists, when lawyers compare their conception of law (which includes considerations of distributional equity) to an economist's efficiency analysis of law, lawyers can be excused for thinking that the efficiency view relates to their view as the surrealistic distortion of a Salvador Dali painting relates to reality.

Economists, on the other hand, often criticize lawyers for refusing to accept the implication of the First Theorem of Welfare Economics,[9] which implies that any attempt to interfere in competitive markets based on motives of distributional equity is self defeating because such interference impairs the efficiency of markets. Second, economists criticize lawyers on the ground that lawyers often espouse absolutist values in a morally relative world in which benefits from achieving any value must be weighed against costs, in terms of alternative values or opportunity cost,[10] that must be sacrificed in order to achieve the former value.

Consider the following: An economist would argue whether and to what extent government should subsidize litigation, by charging low filing fees for law suits so that ostensibly every person can have his or her day in court, depends upon a determination that using government resources to subsidize litigation is superior (based upon some criterion) to using these resources to subsidize competing ends such as education, medical care, poverty reduction, or even national defense. An economist also would argue that before the state makes a decision to redistribute income via an increase in welfare payments, the purpose of which is to alleviate poverty and promote the value of equality, one must ask: first, whether the benefit from such payments is not outweighed by the disincentive effects on work effort from such payments, both to those who receive them and to those who must be taxed in order to provide them; and second, whether a more cost effective method exists by which to reduce poverty, for example increased spending on education or social services, such as free prenatal care or Head Start programs.[11]

In Section Two, a synthesis of these competing values of lawyers and economists is effected by demonstrating that total social wealth is a function of both efficiency and distributional equity. Once this demonstration is made, it is easy to establish that a criterion for evaluating governmental action of a predominantly economic character, wealth maximization, will have the desired properties of efficiency and a strong claim to distributional equity.

B. The Hard Case Paradigm: A Synthesis of the General and Particular, Efficiency and Equity

A second major impediment to the construction of a synthesis of law and economics is the fact that both lawyers and economists maintain that the

9. *See infra* notes 68-76 and accompanying text.

10. "Cost to the economist is 'opportunity cost'—the benefit forgone by employing a resource in a way that denies its use to someone else." R. POSNER, *supra* note 4, at 6.

11. 42 U.S.C.A. §§ 701-709 (1983 & Supp. 1990).

other profession's methodological approach to law is superficial. With respect to the lawyers' methodological criticism of economists, a thoughtful legal scholar has stated that economic analysis of law is "insightful but not useful."[12] In the specific cases that lawyers argue and courts decide, economic theory's interpretation[13] is relevant and insightful but often does not fit[14] well enough to be material or dispositive. Why not?

One reason usually given is that economic theory, which is methodologically deductive and stated in terms of the general case, may not apply in particular cases if the assumptions underlying the theory differ significantly from the facts. If a theory's assumptions do not fit the facts, there is no guarantee that the interpretation of the facts implied by the theory is relevant and material.[15] In *Lochner v. New York*[16] Justice Holmes expressed this view in his epigramatic style: "General propositions do not decide concrete cases."[17] It is well known, however, that one of the problems with

---

12. Conversation with Professor Arron Twerski of Brooklyn Law School (1988).

13. [L]egal practice is an exercise in interpretation not only when lawyers interpret particular documents or statutes but generally. . . . [W]e can improve our understanding of law by comparing legal interpretation with interpretation in other fields of knowledge, particularly literature. I also expect that law, when better understood, will provide a better grasp of what interpretation is in general.

R. DWORKIN, *supra* note 2, at 146. R. DWORKIN, LAW'S EMPIRE ch. 2 (1986).

14.

> [T]here are two dimensions along which it must be judged whether a theory provides the best justification of available legal materials: the dimension of fit and the dimension of political morality. The dimension of fit supposes that one political theory is *pro tanto* a better justification than another if, roughly speaking, someone who held that theory would, in its service, enact more of what is settled than would someone who held the other. . . . It will be rare, I think, that many lawyers will agree that neither provides a better fit than the other.

R. DWORKIN, *supra* note 2, at 143 (footnote omitted) (emphasis in original); R. DWORKIN, LAW'S EMPIRE 230-232 (1986).

15. "[T]he confidence of economists in the science of political economy is based on direct and rather casual confirmation of its assumptions, not on serious test of their implications." Hausman, *Economic Methodology in a Nutshell*, 3 J. ECON. PERSP. 115, 116-117 (1989). Hausman attributes this view to John Stuart Mill and concludes that this is the "view to which, I suggest, most orthodox economists (regardless of what they may say in methodological discussion) still subscribe." *Id.* at 117 (footnote omitted). With respect to the instrumentalist view that theories should be tested by whether their predictions are accurate rather than by whether their assumptions are realistic, expressed in M. FRIEDMAN, THE METHODOLOGY OF POSITIVE ECONOMICS (1953), Hausman says:

> Unrealistic assumptions (in the sense of false assumptions) will always result in false predictions, except, perhaps, in the case of assumptions concerning unobservables. . . .
>
> Yet even if one fully grants Friedman's view of the goals of science, one should still be concerned about the realism of assumptions. For there is no good way to know what to try when a prediction fails or whether to employ a theory in a new application without judging one's assumptions. Without assessments of realism (approximate truth) of assumptions, the process of theory modification would be hopelessly inefficient and the application of theories to new circumstances nothing but arbitrary guesswork.

Hausman, *supra*, at 144, 149-150. "It will be a step forward when economists come to regard Friedman's essay only as an historically interesting document." *Id.* at 124.

16. 198 U.S. 45 (1905).

17. *Id.* 198 U.S. 45, 76 (1905) (Holmes, J., dissenting) "The decision will depend on a judgment or intuition more subtle than any articulate major premise."

Holmes' style is that the deceptive simplicity of his epigrams conceals latent ambiguities. Therefore, let us examine Holmes' epigram set out in *Lochner* more critically.

Lawyers are most concerned about hard and concrete cases.[18] Because reasonable people differ with respect to which conflicting principles or theories should prevail, these hard cases often rise to the top of the legal system, the highest appellate courts. Hard cases are interstitial in character in the sense that they are in between cases that clearly ought to be decided by one principle and those that clearly ought to be decided by another conflicting principle.

Dworkin[19] would probably argue, I think correctly, that a literal reading of Holmes' epigram in *Lochner* is wrong; general propositions or principles do decide concrete hard cases.[20] The problem in hard cases is that reasonable people can differ as to which of several conflicting general principles ought to control.[21] The decision maker must choose the principle which provides an interpretation that both fits the specific case and provides the best justification for previous decisions, as far as that is possible, so that the law is "the best it can be."[22] On the other hand, if Holmes' epigram means that general principles often cannot be dispositive of a hard case, it is correct. As to this proposition, Dworkin would probably agree.[23] Let us interpret Holmes' epigram in *Lochner* in this second sense.

In *Lochner* the United States Supreme Court held that a New York law which prohibited bakery employees from working more than ten hours per day or sixty hours per week violated the Constitution of the United States.[24] In the context of early twentieth century jurisprudence, *Lochner* represented a hard case — it involved a conflict between the principle of competitive markets, which maintains that individuals should be free to make contracts of their choice, and a principle that government has a right to make laws protecting the health, safety, and welfare of its citizens.[25] In dissent, Justice

---

18. "[A] hard case, when no settled rule dictates a decision either way, . . ." R. DWORKIN, TAKING RIGHTS SERIOUSLY 83 (1977).

19. *Id.*

20. "Judicial review insures that the most fundamental issues of political morality will finally be set out and debated as issues of principle and not political power alone . . . ." R. DWORKIN, *supra* note 2, at 70.

21. R. DWORKIN, LAW'S EMPIRE 15-30 (1986).

22. "The judge's decision — his postinterpretive conclusions — must be drawn from an interpretation that both fits and justifies what has gone before, so far as that is possible." *Id.* at 239. "I offer. . .this general and very abstract characterization of interpretation: it aims to make the object or practice being interpreted the best it can be." *Id.* at 77.

23. Dworkin says:

> I have insisted that in most hard cases there are right answers to be hunted by reason and imagination. Some critics have thought I meant that in these cases one answer could be *proved* right to the satisfaction of everyone, even though I insisted from the start that this is not what I meant, that the question whether we can have reason to think an answer right is different from the question whether it can be demonstrated to be right

R. DWORKIN, LAW'S EMPIRE viii-ix (1986); R. DWORKIN, *supra* note 2, at ch. 5.

24. Lochner v. New York, 198 U.S. 45, 64 (1905).

25. "A reasonable man might think it a proper measure on the score of health." *Id.* at 76.

Holmes argued that general principles or theories of competitive markets are not dispositive as to whether particular social welfare legislation is constitutional nor is good economic policy.[26] Holmes argued, therefore, that Congress should be free to choose between the two principles.[27]

Although involving the constitutionality of a statute, *Lochner* is similar to the hard common law case of *Boomer v. Atlantic Cement Co.*[28] These cases have as a central issue the question whether government action by legislatures or courts, which alters the distributional consequences of economic activity, will impair efficiency or increase social wealth.[29] As shown below, in hard common law cases, issues of distributional equity and efficiency are interrelated and difficult to disentangle. In short, hard common law cases are hard precisely because they involve potential conflicts between principles of equity and efficiency.

A second reason economic analysis of hard common law cases often does not provide an interpretation that fits well enough to be either material or dispositive is the fact that most economists eschew issues of distributional equity even though distributional equity-efficiency conflicts are the essence of hard common law cases and much legislation. In order to justify the apparent total disinterest in the distributional implications of their theories, economists make assumptions about the relationship between distributional equity and efficiency in different institutional contexts that are often mutually inconsistent and lacking in rigor. Consider the assumptions economists make about the relationship between income distribution and efficiency in three institutional contexts: competitive markets, courts, and legislatures.

Competitive markets are efficient, regardless of the income distribution resulting from such markets. Any governmental interference in competitive markets for the purpose of achieving goals of distributional equity is self defeating because it impairs the raison d'etre of competitive markets, efficiency.[30] The First Theorem of Welfare Economics implies these two statements which are not controversial.[31]

When analyzing nonmarket decisions in hard common law cases that have significant distributional consequences, such as the declaration or alteration of property rights, as exemplified by nuisance in tort law,[32] eminent domain

---

26. *Id.* at 75 (emphasis in original). "The Fourteenth Amendment does not enact Mr. Herbert Spencer's Social Statics. . . . [A] constitution is not intended to embody a particular economic theory, whether of paternalism and the organic relation of the citizen to the State or of *laissez faire*." *Id.*

27. *Id.*

28. 26 N.Y.2d 219, 257 N.E.2d 870 (1970). *See infra* notes 171-83 and accompanying text.

29. Sections 2, 3, and 4, demonstrate that government action by courts or legislatures may alter distributional consequences of economic activity in a way which will increase total social wealth.

30. W. BAUMOL & A. BLINDER, ECONOMICS: PRINCIPLES AND POLICY 64-69 (4th ed. 1988); E. MANSFIELD, *supra* note 3, at 42-47.

31. H. VARIAN, INTERMEDIATE MICROECONOMICS: A MODERN APPROACH 495 (1987) *See infra* notes 67-75 and notes 189-94 and accompanying text.

32. PROSSER AND KEETON ON THE LAW OF TORTS ch. 15 (5th ed. 1984).

in property law,[33] and specific performance issues in contract law,[34] economists assume that distribution and efficiency are totally separate and independent of each other. The Coase Theorem claims that "[i]f transaction costs are zero the structure of the law does not matter because efficiency will result in any case."[35] Articles by Baumol[36] and Cooter[37] have proven false this claim of the Coase Theorem, that decisions by courts altering property rights have distributional effects only or that distribution and efficiency are independent of each other.

When analyzing the economic impact of legislative decisions, the purposes of which are to achieve greater income equality through government taxes and transfers, economists often make disingenuous statements to the effect that a "trade-off" between distribution and efficiency exists.[38] Such statements are disingenuous in two senses. First, economists justify ignoring the distributional consequences of competitive markets because the Second Theorem of Welfare Economics[39] implies that legislatures can, in principle, deal with issues of distributional equity separately and independently from issues of efficiency.[40] At the same time, however, economists maintain that in practice legislative action invariably results in a trade-off between distribution and efficiency.[41] Second, the proponents of these statements usually allege a trade-off between the degree of income inequality and total social wealth.[42] In this sense, the statement is disingenuous because the perceived trade-off is based upon an improper definition (misspecification) of the variables and functional relationships involved. Section Two will show that when correctly specified, total social wealth is a function of both distributional equity and efficiency.[43] In this context, a movement toward income equality will, up to a point, increase social wealth. Beyond that point, however, further movement toward income equality will decrease social wealth.

On the other hand, economists may make three primary criticisms of the legal method of analysis. First, no matter how fact-specific and closely reasoned legal analysis of hard cases appears to be, legal analysis is based on the sandy foundations of semantics and linguistics, which contain all sorts of

---

33. R. POSNER, *supra* note 4, at 49-53.

34. E. FARNSWORTH, CONTRACTS ch. 12B (1982).

35. Cooter, *The Cost of Coase*, XI J. LEGAL STUD. 1, 16 (1982) (citing Polinsky, *Economic Analysis as a Potentially Defective Product: A Buyer's Guide to Posner's Economic Analysis of Law*, 87 HARV. L. REV. 1165 [sic], 1655, 1665 (1974)).

36. Baumol, *On Taxation and Control of Externalities*, 62 AM. ECON. REV. 307, 312, 315 (1972).

37. *Cooter*, *supra* note 35, at 1, 15. *See infra* notes 230-49 and accompanying text.

38. A. OKUN, EQUALITY AND EFFICIENCY: THE BIG TRADE OFF 1 (1975); P. SAMUELSON & W. NORDHAUS, ECONOMICS 809-13 (13th ed. 1989).

39. "The Second Welfare Theorem implies that the problems of distribution and efficiency can be separated." H. VARIAN, *supra* note 31, at 502-03. *See* A. POLINSKY, *supra* note 3, at ch. 2.

40. *See infra* notes 90-109 and accompanying text.

41. *See supra* note 39 and *infra* note 42.

42. "Calabresi speaks of a trade-off or mix of wealth and distribution." R. DWORKIN,; *supra* note 2, at 268. Calabresi, *About Law and Economics: A Letter to Ronald Dworkin*, 8 HOFSTRA L. REV. 553, 553, n.1 (1980).

43. *See infra* notes 64-138 and accompanying text.

unanalyzed value judgments, biases and hidden logical traps; consider Marxist,[44] legal realist,[45] critical legal studies,[46] feminist,[47] and deconstructionist[48] criticisms of law. Economists can argue that their value judgments and logic, however much criticized, are at least explicit and rigorous.[49] Second, economists can assert that legal analysis, unlike economic analysis, which elucidates the deep underlying structure of law, emphasizes superficial discontinuities. Legal analysis tends to portray law as mere collections of interstitial or hard cases which have no right answers according to the legal realist view,[50] and which exist in separate and distinct fields, such as contracts, torts, and property. Third, economists can claim that legal analysis appears to satisfy a purely critical function — lawyers seem to think that asking questions is sufficient.[51] Because legal analysis offers no inherent method for suggesting solutions to problems, solutions suggested by lawyers are ad hoc in character. Since economic analysis does have an internally consistent method for generating solutions to problems, economists are fond of saying that economics, no matter how much criticized, is "the only game in town."[52]

With respect to the charge of superficiality, the criticisms of both professions have some merit. A non-superficial synthesis of law and economics is one that combines the rigorous analysis and generality of economics with the highly fact-specific, hard-case approach of law; a synthesis combines the economists' concern for efficiency with lawyers' concern for distributional equity. In such an approach, the effectiveness of an economic theory, stated in terms of the general case, will be tested by its ability to provide an inter-

---

44. P. PHILLIPS, MARX AND ENGELS ON LAW AND LAWS (1980).

45. L. KALMAN, LEGAL REALISM AT YALE, 1927-1960 (1986).

46. MINDA, *The Law and Economics and Critical Legal Studies Movements in American Law*, LAW AND ECONOMICS (1989). Hutchinson & Monahan, *Law, Politics, and the Critical Legal Scholars: The Unfolding Drama of American Legal Thought*, 36 STAN. L. REV. 199 (1984).

47. C. MACKINNON, FEMINISM UNMODIFIED: DISCOURSES ON LIFE AND LAW (1987).

48. "[T]he word carries with it a certain absence or indeterminacy of meaning. Literary language foregrounds language itself as something not reducible to meaning: it opens as well as closes the disparity between symbol and idea, between written, sign and assigned meaning." Geoffrey Hartman, Preface, in Harold Bloom, DECONSTRUCTION & CRITICISM vii-viii (1979). *See* R. DWORKIN, *supra* note 2, at ch. 6.

49. Economists often quip that the wedding of economics to mathematics has introduced so much rigor into economics that it now has rigormortis.

50. R. DWORKIN, LAW'S EMPIRE 36-37, 161-62 (1986). Dworkin, of course, believes that hard cases do have right answers. R. DWORKIN, *supra* note 2, at ch. 5. *See supra* note 23. This author finds his view persuasive.

51. This author is acquainted with a law professor, who shall remain nameless, who takes great pride in stating that while teaching, he only asks questions and *never* gives answers. In fairness to this professor, it must be said also that he is a master of the Socratic teaching technique.

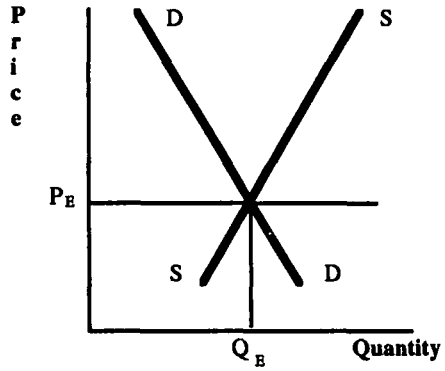
52. Nobel Laureate Lawrence Klein made this statement in an econometrics course he taught as a Visiting Professor at the Graduate Center of The City University of New York, Spring, 1982. Professor Klein made this statement in response to a student's criticism that econometric models were not useful because they usually failed to predict accurately the turning points of business cycles. By this statement, he meant that econometric models may be far from perfect, but they are the only available technique with which to engage in economic forecasting.

pretation of hard common law cases that both lawyers and economists would recognize as resulting in a good fit.

Economists attempt to make general economic theory[53] fit specific cases

53. The fundamental tool of general economic theory is the theory of supply and demand which is constructed from fundamental assumptions about the behavior of individuals and production technology. First, the theoretical derivation of demand is based upon three fundamental behavioral assumptions: 1) Individuals or firms prefer more of anything to less; 2) Given any two bundles of "goods" such as two oranges or three apples, an individual is able to compare and rank them to determine whether he or she is indifferent to them or prefers one over the other; 3) Individual preferences are transitive. For instance if an individual prefers bundle X to bundle Y, and bundle Y to bundle Z, then the individual must prefer bundle X to bundle Z. Given these three behavioral assumptions about individual preferences plus a budget constraint, which limits the amount of money an individual or firm can spend, it is possible to derive the law of downward sloping demand. If an individual's income remains constant and if the prices of all goods remain constant, except one which varies, almost invariably an inverse relationship will exist between the price of that good and the quantity demanded. H. VARIAN, *supra* note 31, at chs. 2-6; E. MANSFIELD, *supra* note 3, at chs. 3-5 (6th ed. 1988).

The theoretical derivation of supply curves is based upon the following laws and assumptions: The law of scarcity holds that resources or factors of production, land, labor, capital and entrepreneurial ability, which people use to produce goods and services, are scarce because society does not have enough resources to fulfill its seemingly endless wants. Given existing technology and the limited resources at any firms disposal, the more of any one good the firm produces the less of another it will be able to produce. In other words, the opportunity cost of any good or decision is the forgone good or value of the next best alternative. The principle of increasing costs holds that as the production of a good expands, the opportunity cost to produce another unit generally increases. This principle is not a universal fact (witness economies of scale), but it does seem to be a technological regularity that applies to a wide range of economic activities. The principle of increasing costs has two explanations: First resources tend to be specialized, at least in part, so that they lose some of their productivity when transferred from doing what they are relatively good at doing to what they are relatively bad at doing. For instance, machines that manufacture leather shoes are not easily transformed into machines that produce synthetic athletic shoes. Second, the law of diminishing returns, states that if one input into a production process remains fixed in amount and equal increments of a variable input are added to the production process, the resulting increments of the product or marginal output will eventually diminish. For instance, if one adds equal additional amounts of labor to a farm of fixed size, at some point the extra output from an additional unit of labor will decrease. Thus, expansion of output will causes costs to rise. The law of increasing costs explains that in order to induce the supply of a greater quantity, one must increase price. Thus, the quantity of a product supplied is usually positively related to price. W. BAUMOL & A. BLINDER, *supra* note 30, at 34-56; P. SAMUELSON & W. NORDHAUS, ECONOMICS *supra* note 39, at 25-35, 59-62.



better by employing models,[54] which are constructed by choosing assumptions with relevance limited to specific sets of facts.[55] Just as models are more specific than general theory, paradigms are still more specific than models.[56] Paradigms literally are examples composed of stylized facts, the underlying assumptions of which are implicit rather than explicit. A commodity or stock exchange, which is one paradigm of the competitive model, will be discussed below. In sum, general economic theory is made more specific by the use of models, which in turn are made still more specific by the use of economic paradigms. In reverse perspective, paradigms are embedded in models which are in turn embedded in general theory.[57] The stylized fact patterns used in economic paradigms are very much like the stylized fact patterns employed in legal analysis in general[58] and legal hypotheticals in particular. Legal hypotheticals, however, are much more ad hoc in character than economic paradigms because the logical structures underlying legal hypotheticals are usually implicit, at best, and because the behavior assumed in legal hypotheticals is often idiosyncratic and may be inconsistent with more general behavioral assumptions.[59]

For ease and clarity of exposition, this Article will use economic paradigms in the text, and relegate models, theory, and explicit assumptions that underlie these paradigms to footnotes as much as possible. The synthesis of law and economics presented in this Article combines the generality of an economic paradigm with the specificity of hard common law cases to form the hard common law case paradigm, or in short, the hard case paradigm.

Section Three contains an extended analysis of a representative hard common law case, *Boomer v. Atlantic Cement Co.*[60] Hard common law cases consist of those cases in which issues of distributional equity and efficiency are interrelated and difficult to disentangle. Then, the question is asked,

---

In principle, a free market allows the forces of supply and demand to select an equilibrium price, P_E, and an equilibrium quantity, Q_E, toward which, in practice, actual price and actual quantity may gravitate. At that price and quantity, the amount buyers wish to buy is equal to the amount that sellers wish to sell. W. BAUMOL & A. BLINDER, *supra* note 30, at 56-58. P. SAMUELSON & W. NORDHAUS, *supra* note 39, at 62-63.

54. For instance, economic models include competition oligopoly, monopoly, etc.

55. *See supra* note 53 for brief description of general economic theory and the assumptions which support it. *See infra* note 189 for four additional assumptions necessary to generate the competitive model and the model itself; *see infra* note 198 for the monopoly and bilateral monopoly models and their assumptions.

56. T. KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS 174-76, 187-91 (2d ed. 1970).

57. For example, Section 3A.1 states a commodity or stock exchange paradigm of a competitive market. *See infra* note 189 for a discussion of the paradigm embedded in the competitive model and note 55 for an analysis of the competitive model embedded in general economic theory.

58. What are the facts? . . . And is it not clear further when you pick up the facts. . . which do seem relevant, you suddenly cease to deal with them in the concrete and deal with them instead in categories which you, for one reason or another, deem significant? It is not a particular pale magenta Buick eight, by number 732507, but 'a motor car', and perhaps even 'a vehicle'.

K. N. LLEWELLYN, *supra* note 8, at 47-48.

59. *See* Section 2C for a discussion on the distinction between legal hypotheticals and economic paradigms in the context of an analysis of a particular legal hypothetical.

60. 26 N.Y.2d 219, 309 N.Y.S.2d 312, 257 N.E.2d 870 (1970).

which of two competing economic paradigms, competition or bilateral monopoly, gives an interpretation that best fits such cases. Section Three will show that bilateral monopoly provides an interpretation that fits hard common law cases better than competition. In order for the competitive model to fit the facts, each party to a potential transaction must have myriad alternative opportunities to transact with others, so that neither party has economic power over the other, nor can take advantage of the other. Such a model does not fit the facts of a lawsuit in which two parties must deal with each other and cannot prevent each other from seeking unfair advantage by threatening to deal with others. The bilateral monopoly model, in which two parties must deal with each other, best fits the facts of hard common law cases. The bilateral monopoly model demonstrates that in hard common law cases, courts have some, but not complete, freedom to alter distributional consequences without impairing efficiency.[61]

This Article will also show that the bilateral monopoly interpretation fits the facts and conclusions of law in hard common law cases like *Boomer* better than does the Coase Theorem interpretation. Moreover, the analysis of this Article is supported by both Baumol's demonstration that the Coase Theorem's extreme assertion that courts are free to alter distributive consequences of economic activity without impairing efficiency is generally incorrect,[62] as well as Cooter's demonstration that "the central version of the Coase Theorem cannot be deduced from economic assumptions."[63]

II. TAKING WEALTH MAXIMIZATION SERIOUSLY[64]

This section begins with a discussion of the Pareto criterion of efficiency, which economists use to evaluate whether and how well consumers' interests are served by markets having different structures such as competition, oligopoly, and monopoly, or restrictions including price controls, subsidies, and taxes. The Pareto criterion of efficiency allows economists to demonstrate that voluntary transactions by individuals acting in free, competitive markets best serve consumers' interests.

Pareto efficiency relies entirely on voluntary transactions and cannot be used to evaluate non-market, government action requiring involuntary transfers. The Kaldor-Hicks[65] criterion of efficiency employs hypothetical transactions to determine when involuntary transfers are justified. In the well

61. *See* the discussion in Sections 2B-2D. "The problem of bilateral monopoly created by injunctive remedies is not limited to specific performance in contract cases. . . For example, in *Boomer v. Atlantic Cement Co.*, the plaintiffs were seeking an injunction against pollution from defendant's plant." (footnote omitted). R. POSNER, *supra* note 4, at 119. Although Posner states that *Boomer* involves a bilateral monopoly problem, and indeed makes frequent mention of the bilateral monopoly problem in his book, he does not explain the concept and avoids any discussion of how issues of distributional equity and efficiency are interrelated and difficult to disentangle in bilateral monopoly.

62. Baumol, *supra* note 36, at 312.

63. Cooter, *supra* note 35, at 1, 15. *See infra* notes 229-49 and accompanying text.

64. This section title paraphrases the title of a book I greatly admire. R. DWORKIN, TAKING RIGHTS SERIOUSLY (1978).

65. *See infra* note 80 and accompanying text.

known book, ECONOMIC ANALYSIS OF LAW, Judge Richard Posner popularized the Kaldor-Hicks criterion of efficiency under the name of wealth maximization.[66]

Taking the goal of wealth maximization seriously, however, one cannot equate any criterion of efficiency to wealth maximization because the total amount of wealth a society generates depends upon both the efficiency and the distribution of income. Once the functional relationship between social wealth, efficiency, and distributional equity is correctly specified, a resolution of the value conflict between lawyers and economists, concerning the criterion that should be used to evaluate governmental coercion of a predominantly economic character, is easily affected. When the social wealth function is correctly specified, wealth maximization results in a solution that is both efficient and has a strong claim to distributional equity.

A. The Pareto Criterion of Efficiency[67]

The paradigm of the competitive market process that will be used to explain the Pareto criterion of efficiency is: a single bilateral transaction entered into voluntarily, for instance when one buys a loaf of bread.[68] Thus, each party is better off as a result of the transaction or a voluntary transaction would not have taken place; both the baker and the buyer must gain from the trade. A single, voluntary transaction is the basis of the criterion of Pareto superiority, which is used to determine when a change from one state to another is an improvement. Stated as a principle, "change which harms no one and which makes some people better off (in their own estimation) must be considered an improvement."[69]

The paradigmatic transaction is just one of the many billions of Pareto superior transactions occurring in a market economy. If all markets are competitive, no party to any one of these billions of Pareto superior transactions can get a better deal than the deal he or she actually makes by rearranging trading partners. What limits the number of Pareto superior transactions that can occur in a competitive economy? The maximum number of Pareto superior transactions is achieved at a state when it is impossible to find two additional parties who are willing and able[70] to make another voluntary transaction. No additional transaction can occur in this state because the only individuals who want to make an additional transaction are either potential sellers, wanting to sell at a price which exceeds the price at which potential buyers are willing to pay, or potential buyers, want-

66. R. POSNER, *supra* note 4, at 13, 15. R. POSNER, THE ECONOMICS OF JUSTICE 60-76, 88-115 (1981).

67. An Italian economist, Vilfredo Pareto, first formulated the modern economist's central evaluative concept.

68. *See infra* note 189 for the competitive model and its underlying assumptions.

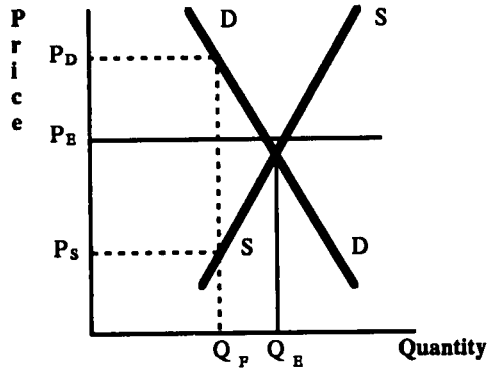
69. W. BAUMOL, ECONOMIC THEORY AND OPERATIONS ANALYSIS 527 (4th ed. 1977). Assuming, of course, that the subject of the transaction is legal and involves no market failures such as externalities, public goods, indivisibilities, or instabilities.

70. An individual must have money to make his or her demand for a good an effective demand.

ing to buy at a price which is less than the price at which potential sellers are willing to sell. If an additional transaction is made, the buyer or seller actually would be worse off in his or her estimation. In other words, supply and demand is in equilibrium in all competitive markets.[71] Stated as a principle, a Pareto efficient state is one in which it is impossible to make a change without making at least one person worse off.[72]

If supply and demand are in equilibrium in all competitive markets, then one can conclude that individuals have exhausted all possible gains from trade. Known as the First Theorem of Welfare Economics,[73] this conclusion says nothing about the distribution of economic benefits. The market equilibrium might not be a "just" allocation; if a person initially owned everything, then that person would own everything even after trade. Although efficient, it probably would not be very fair.[74] The First Theorem says that "any competitive equilibrium is Pareto efficient."[75] This theorem and its implications are not controversial. The Second Theorem of Welfare Economics,[76] discussed below, implies that it is theoretically possible to separate

71. Consider the figure below: At any amount of output less than the competitive quantity, Q_E or Q_F, someone exists who is willing to supply an extra unit of the good at price, P_S, which is less than the price that someone is willing to pay for an extra unit of the good, P_D. If the good were produced and exchanged between these two people, for any price between the demand price and supply price, both would benefit economically. Thus, an amount less than the equilibrium amount cannot be Pareto efficient, since at least two people will exist who could be made better off in their own estimation.



COMPETITIVE INDUSTRY

Similarly, at any output larger than Q_E, the amount someone would be willing to pay for an extra unit of the good is less than the price that it would take to get it supplied. Only at the market equilibrium Q_E would a Pareto efficient amount of output occur, because at that amount, the willingness of buyers to pay for an extra unit is equal to the willingness of sellers to supply an extra unit. Thus, the competitive market produces a Pareto efficient amount of output. H. VARIAN, *supra* note 31, at 306.

72. B. ACKERMAN, ECONOMIC FOUNDATIONS OF PROPERTY LAW xii (1975).

73. "The First Welfare Theorem guarantees that a competitive market will exhaust all of the gains from trade: an equilibrium allocation achieved by a set of competitive markets will necessarily be Pareto efficient. . . ." H. VARIAN, *supra* note 31, at 495 (1987).

74. *Id.* at 496.

75. *Id.* at 500. "There are hardly any explicit assumptions in this theorem—it follows almost entirely from the definitions." *Id.*

76. *See infra* notes 90-109 and accompanying text.

questions of distributional equity from efficiency; application of this Theorum has led economists to ignore the distributional impact of their theories.

B. The Pareto Criterion of Efficiency Which Does Not Permit Involuntary Transfers Unduly Restricts Government Action

Consider the following legal hypothetical[77] constructed by Ackerman in order to demonstrate the restrictive character of the Pareto criterion as a test to evaluate government action:[78] Assume that the government of a two-person society must determine how to distribute the single source of sustenance, manna. Under Policy A, one citizen, Glutton, will receive 100 grains of manna and the other citizen, Starvation, will receive none. Under Policy B, however, both Glutton and Starvation will each receive 99 grains of manna because Policy B uses social resources more productively.

Given the restrictive definition of Pareto superiority, one cannot say that Policy B is preferable to Policy A. Even though Policy B would greatly improve Starvation's position, Glutton's position would slightly deteriorate. Since a Pareto superior change is one that harms no one and makes some people better off in their own estimation, Policy B would only be Pareto superior to Policy A if Policy B permitted Glutton to retain 100 grains while giving manna to Starvation. Moreover, assuming that the government must choose between Policies A and B, whichever policy the government adopts first would be Pareto efficient or optimal; if the government adopts Policy A, it is not possible to change to Policy B without harming Glutton. The same problem exists if the government initially adopts Policy B. Thus, the Pareto criterion is a very restrictive criterion to evaluate government activity because it does not allow interpersonal utility comparisons. One cannot tax a gluttonous rich person even one dollar for the benefit of a starving poor person.

This hypothetical example deliberately emphasizes the restrictive character of Pareto criterion as a guide to government policy. This example, however, is somewhat misleading because it makes the Pareto criterion appear unduly restrictive and trivial. As the hypothetical example shows, the Pareto criterion is not normally used to evaluate government policy changes that are global in character, but is best suited to evaluate which of the millions of possible marginal changes are preferrable in a competitive market economy. Moreover, the enduring appeal of the Pareto criterion is due to its strong moral foundation — it forbids coercion of any kind and does not allow any interpersonal comparisons or evaluations. It is hard to think of a reason to reject a rule which makes some people better off and no one worse off. Thus, economic analysis indicating that one policy is Pareto superior to another, provides a very strong argument for adopting that policy over its

77. Although in practice it is often difficult whether to classify an example as an economic paradigm or a legal hypothetical, this example is classified as a legal hypothetical because it has no implicit support from an underlying theory of production or government action.

78. B. ACKERMAN, *supra* note 72, at xi-xii.

"Pareto inferior" alternative.[79]

C. *The Kaldor-Hicks Criterion of Efficiency Justifies Involuntary Transfers*[80]

By definition, the Pareto criterion of efficiency requires entirely voluntary transactions. The criterion, therefore, cannot be used to justify any governmental action that requires involuntary transfers. The Kaldor-Hicks criterion of efficiency justifies governmental action that mandates involuntary transfers because it allows government to make interpersonal utility comparisons,[81] for instance, taxation of one person for another person's benefit. The Kaldor-Hicks criterion of efficiency is therefore a less restrictive guide on which to base governmental action, than is the Pareto criterion of efficiency.

Consider the following hypothetical constructed by Polinsky[82] to explain the Kaldor-Hicks criterion: suppose the government must decide whether to build a dam. The Dean and a professor at Stanford Law School are the only two individuals affected by this governmental decision. Without the dam, the Dean's income is $65 and the professor's income is $35, so that their total income is $100. The dam would cost $30 to build, consisting of $30 worth of the professor's labor but none of the Dean's. The dam would create benefits worth $40, which would go only to the Dean because the location for building the dam happens to be on his property. If the dam is built, the Dean would have $105 and the professor would have $5, so their total income would be $110. According to the Kaldor-Hicks criterion of efficiency, the government should build the dam because it creates benefits worth $40 to the Dean and costs of only $30 to the professor resulting in a net social gain of $10.[83] As a principle, "the Kaldor-Hicks criterion states that a change is an improvement if those who gain evaluate their gains at a higher figure than the value which the losers set upon their losses."[84]

Applying the Pareto criterion of efficiency in this hypothetical example, the dam would not be built unless the professor agreed voluntarily to build the dam with his labor. The professor may not be willing to provide his labor at any price. If this is the case, the dam should not be built according to the Pareto criterion. If the professor demanded more than $40 to build the dam, the parties could not reach an agreement because such agreement would result in a social loss; the cost of building the dam would be greater than the total benefit from the dam. If an actual agreement is made, the Kaldor-Hicks criterion is superfluous. Unlike the Pareto criterion, however, which requires that an actual transaction take place, the Kaldor-Hicks criterion requires only that such transactions be hypothetically possible. Hypothetically, the Dean could fully compensate the professor for his $30 loss and

79. *Id.* at xii.

80. J.R. Hicks and Nickolas Kaldor were British economists who made seminal contributions to the theory of welfare economics.

81. W. BAUMOL, *supra* note 69, at 530.

82. A. POLINSKY, *supra* note 3, at 8-9.

83. *Id.* at 8.

84. W. BAUMOL, *supra* note 69, at 529.

still have a gain of $10 to divide between them. The net gain of $10 could be distributed between the Dean and the professor in a number of ways, all to the Dean, all to the professor, $5 to each, or $3 to the Dean and $7 to the professor. Again, the Kaldor-Hicks criterion does not require such compensation, it only requires that it be hypothetically possible. "The Kaldor-Hicks concept is also and suggestively called potential Pareto superiority."[85]

In the dam hypothetical, Polinsky points out that the distributional implications of the Kaldor-Hicks criterion may strike many as unfair.[86] Polinsky notes the conflict between efficiency and equity: building the dam is more efficient but less equitable than not building the dam.[87] "If promoting equity is very important, it might be desirable to sacrifice some efficiency for more equity by not building the dam (in other words, 'damn' the Dean)."[88]

Although Polinsky asks whether the government should adopt the Kaldor-Hicks criterion and build the dam in view of the conflict between efficiency and distributional equity, Polinsky does not ask whether the government could force the professor to comply with its directive to build the dam if it adopted the Kaldor-Hicks criterion. In other words, would the professor comply and supply his labor or would he head off to Berkeley or points east or southwest? This question illuminates one of the main differences between an economic paradigm and a legal hypothetical. Economic paradigms are supported by a rich context of models, theory and behavioral assumptions. Legal hypotheticals, on the other hand, are ad hoc in character and usually lack such supporting logical structure and may contain idiosyncratic behavioral assumptions often inconsistent with the norm. If the government adopted the Kaldor-Hicks criterion and decreed that the dam be built, would the professor comply with this government directive which not only exacerbates the existing income inequality between the Dean and himself, but which also confiscates the professor's labor? The behavioral assumptions underlying this legal hypothetical are far from clear.

Economists often emphasize that the government's tax and expenditure policy, which attempts to reduce income inequality by transfers of income from rich to poor, runs grave risks of creating severe negative effects on the incentive to work. The taxes affect both those who are taxed and those who receive the transferred income.[89] Economists are not, however, so zealous in pointing out that governmental policy which increases income inequality

85. R. POSNER, *supra* note 4, at 13. In terms of the Calabresian categories of entitlements, property rights and liability rules at *infra* notes 207-09 and accompanying text, using the Pareto criterion is equivalent to giving the Professor an entitlement to his labor protected by a property right. Alternatively, if the government *actually* rather than hypothetically required the Dean to compensate the Professor for his $30 loss and share the net gain between $0 and $10, that would be equivalent to giving the Professor an entitlement to his labor protected by a liability rule. In the context of this hypothetical example, the Kaldor-Hicks rule is government confiscation of the Professor's labor.

86. A. POLINSKY, *supra* note 3, at 8-9.

87. *Id.*

88. *Id.*

89. A. OKUN, *supra* note 38, at 96-98; P. SAMUELSON & W. NORDHAUS, *supra* note 39, at 809-13; Calabresi, *supra* note 42.

may also have severe disincentive effects on effort. The dam hypothetical is a case in point. The next subsection addresses whether governmental action, or inaction, that exacerbates income inequality actually reduces total social wealth as much as some governmental action which attempts to eliminate income inequality. In other words, the next subsection considers the question of how distributional equity, efficiency, and social wealth relate to each other.

D. Social Wealth Depends Upon and Is A Function Of Both Distributional Equity And Efficiency

If one takes the goal of wealth maximization seriously, at least two reasons exist why one cannot equate efficiency to wealth maximization. First, an efficient economy is not necessarily a full employment economy in the sense of maximum possible resource use. Second, and more important, the total social wealth a society generates depends upon distributional equity as well as upon efficiency.

Early in the study of elementary economics one learns that an "efficient" economy is usually identified as an economy fully employing its resources.[90] These elementary discussions, however, never explicitly explain that full employment in terms of efficiency criteria has no necessary relation to maximum possible use of resources. A "fully employed" economy when evaluated according to the Pareto or Kaldor-Hicks criteria of efficiency may be far from fully employed in the sense of maximum possible use of resources. For example, if everyone in a competitive economy voluntarily chooses to work 20 hours per week instead of 40 or 60 hours per week, each person foregoes the opportunity to earn additional wages because he or she values the gain of an additional hour of leisure more than the loss of foregone income from an additional hour of work. Even though such an economy is not making maximum possible use of its resources, it is both efficient and fully employed when evaluated by Pareto or Kaldor-Hicks criteria.

Over the last century in the United States, the average work week has declined from over 55 hours per week to less than 40 hours per week.[91] Recall that in 1905, the Supreme Court held in *Lochner* that a New York law prohibiting bakery employees from working more than 60 hours per week violated the United States Constitution.[92] On the other hand, during the last twenty-five years, the labor force participation rate of women has increased dramatically.[93] Clearly, satisfaction of an efficiency criterion is not

90. Full employment and efficiency are usually discussed in the context of the production possibility curve in order to illustrate the law of scarcity and opportunity cost. P. SAMUELSON & W. NORDHAUS, *supra* note 39, at 25-35. W. BAUMOL & A. BLINDER, *supra* note 30, at 37-43.

91. I. RIMA, LABOR MARKETS, WAGES, AND EMPLOYMENT 53 (1981). "Between 1900 and 1940, the full-time work week declined approximately 35 percent." *Id.* at 52.

92. *Lochner*, 198 U.S. at 64.

93. "The single most important development in the labor market since World War II has been the growth in the percentage of adult women who are working or seeking work." D. HAMERMESH & A. REES, THE ECONOMICS OF WORK AND PAY 11 (3d ed. 1984).

sufficient to guarantee that a society's wealth will be maximized in any absolute sense. Thus, the first caveat with respect to the goal of social wealth maximization is that the maximum amount of wealth a society can produce has an elastic upper limit, dependant upon, among other things, how individuals in society value additional leisure against additional income and wealth. In other words, Pareto or Kaldor-Hicks efficiency may be a necessary condition of wealth maximization, but it is not a sufficient condition.

As indicated, the First Theorem of Welfare Economics states that regardless of income distribution, a competitive equilibrium will result in a Pareto efficient allocation of resources.[94] What about the other way around? The Second Theorem of Welfare Economics says that given a Pareto efficient allocation of resources, in principle it is possible to find a competitive equilibrium for some appropriate initial premarket income distribution.[95] Although the First Theorem and its implications are not controversial, the Second Theorem, implying that the problems of distributional equity and efficiency can in principle be separated,[96] has led economists to unwisely ignore the distributional impact of their theories. On the basis of the Second Theorem, economists argue that distribution and efficiency can theoretically be separated. These economists argue that it is possible, in principle, to tax individuals so as to avoid changing their behavior with respect to how hard and how long they work.[97] Revenue derived from so-called lump sum taxes, which have no disincentive effect on labor because the taxes are independent of how hard a person actually works, could theoretically be transferred to other individuals so that the government could achieve any desired income distribution.[98] The net result would be an efficient economy in which individuals are working as hard as before such taxes and transfers. To be sure, the competitive markets after taxes and transfers would probably produce different goods for different individuals than the competitive markets before such taxes and transfers. On balance, however, everyone would be working as hard as before. "[T]he message of the Second Welfare Theorem is important. Prices should be used to reflect scarcity. Lump sum transfers of wealth should be used to adjust for distributional goals. To a large degree, these two policy decisions can be separated."[99] Thus, economists justify the

94. A society that organizes its activity through competitive markets is efficient even if it has a highly unequal distribution of income. H. VARIAN, *supra* note 31, at 496.

95. *Id.* at 498-500 .

96. The Second Welfare Theorem implies that the problems of distribution and efficiency can be separated. *Id.* at 503.

97. *Id.* at 502-03.

98. We could *imagine* a mechanism for levying this kind of tax. Suppose that we considered a society where each consumer was required to give the money earned in 10 hours of his labor time to the state each week. This kind of tax would be independent of how much the person actually worked—it would only depend on the endowment of labor, not on how much was actually sold. Such a tax is basically transferring some part of each consumer's endowment of labor time to the state. The state could then use these funds to provide various goods, or it could simply transfer these funds to other agents.

Id. at 503.

99. *Id.* at 503.

lack of attention to distributional equity by concentrating on the efficiency of competitive markets in the belief that legislators will establish distributional equity through lump-sum taxes and transfers.

In practice, distributional equity and efficiency cannot be separated for three reasons. First, unlike theoretical lump-sum taxes, substantial real world taxes, such as income, sales, and property taxes, do have significant potential impact on work incentives.[100] Second, if one considers statements by economists, that a trade-off exists between distribution and efficiency, as legitimate,[101] then in practice, economists do not believe that issues of distribution and efficiency are separable. Third, as shown above, nothing is sacred about the current level, or any given level, of work effort and resource use; these levels are the product of a society's wealth, culture and government policy.

Since all economists acknowledge that real-world government taxes and transfers that significantly alter the distribution of income do significantly affect work incentives, it is necessary to consider such effects. The First Theorem of Welfare Economics says that each and every premarket distribution of income can result in a different efficient economy.[102] Thus, an infinite number of possible efficient economies exist, each of which is functionally derived from a different distribution of income.[103] It is highly improbable, with a probability arbitrarily close to zero, that these infinite number of possible efficient economies all generate the same work effort, Gross National Product (GNP), income, and social wealth.

Consider three examples. In case E (E for equality), assume that government taxes and transfers are used to redistribute income, resulting in complete income equality before the individuals commit resources to any particular production route. For instance, every family is given the same pre-market income regardless of whether and how much they work. There is no despute amoung economists that such pre-market income equality would have serious negative effects on incentives to work; many individuals would opt for leisure rather than work if their income was guaranteed to be equal to every one else's income. An economy with low GNP, income, and wealth would result. Nevertheless, such an economy, if competitive, would be efficient according to the First Theorem.

In Case I (I for inequality), an income distribution of great inequality would result in a competitive economy that has low GNP, income, and social wealth. Society would lack skilled individuals due to loss of opportunity for self-improvement. Economists call investment in education and training

100. "It would appear, then, that assuming the government can pursue an optimal lump-sum redistribution policy is heroic in the extreme." R. TRESCH, PUBLIC FINANCE: A NORMATIVE THEORY 45 (1981). *See* R. MUSGRAVE & P. MUSGRAVE, PUBLIC FINANCE IN THEORY AND PRACTICE (4th ed. 1984).

101. A. OKUN, *supra* note 38, at 51. P. SAMUELSON & W. NORDHAUS, *supra* note 39, at 809-13; Calabresi, *supra* note 42, at 553 n.1; R. DWORKIN, *supra* note 2, at 267-68.

102. *See supra* note 94.

103. Mathematically, E = f(D). Efficiency is the dependent variable in a function in which distribution, D, is the independent variable.

human capital.[104] The economy, however, would be efficient according to the First Theorem. Moreover, as the income distribution becomes more unequal, crime, a negative externality,[105] may rise and cause a further reduction in an economy's income, GNP, and social wealth. Finally, there must exist a Case M (M for maximum wealth) somewhere in between Case E (complete income equality) and Case I (extreme income inequality) such that the work effort and social wealth generated by that income distrubution are greater than either extreme case or any other case in between those extreme cases. Therefore, depending upon the assumed income distribution, some efficient economies must generate more work effort, GNP, income, and social wealth than others.

The mathematical statement which expresses the cause and effect relationship between social wealth, distribution, and efficiency is $W = f(D,E)$. This equation represents two independent variables, distribution (D) and efficiency (E), which act through some unspecified functional process (f), and thereby determines the value of the dependent variable, social wealth (W). In short, this mathematical equation constitutes nothing more than a statement that wealth depends upon both income distribution and efficiency, not just efficiency alone.[106] Those who argue that efficiency is the only significant determinant of social wealth are guilty of what econometricians[107] call a specification error. A specification error occurs when one omits from consideration relevant variables, called material variables by lawyers.[108] Properly specified variables that materially determine social wealth include both distribution and efficiency. The social wealth function, which contains three variables (points W, D, and E) can be represented graphically.[109]

---

104. W. BAUMOL & A. BLINDER, *supra* note 30, at 801-02.

105. *See* the discussion of the economic theory of crime in Section 2E. *See infra* note 234 for discussion of externalities.

106. Although the function $W = f(D,E)$ is probably multi-valued for any given Gini coefficient (defined in footnote 109) used as the value of D in the social wealth function, for instance a given D may map into more than one level of total social wealth, a continuous set presumably bounds the social wealth function because some maximum W exists for any given D. Case M, where the function of total social wealth is maximized, follows from Rolle's Theorem of calculus. "If f is a continuous function in the closed interval [a,b] and if $f(a) = f(b)$, then f has at least one critical number in the open interval (a,b)." R. JOHNSON & F. KIOKEMEISTER, CALCULUS WITH ANALYTIC GEOMETRY 122 (2d ed. 1960).

107. [E]conometrics is the branch of economics concerned with the empirical estimation of economic relationships. The "metric" part of the word signifies measurement; and econometrics is basically concerned with measuring economic relationships. Econometrics utilizes economic theory, as embodied in an econometric model; facts, as summarized by relevant data; and statistical theory, as refined into econometric techniques, in order to measure and to test empirically certain relationships among economic variables, thereby giving empirical content to economic reasoning.

M. INTRILIGATOR, ECONOMETRIC MODELS, TECHNIQUES, & APPLICATIONS 2 (1978) (emphasis omitted).

108. "There are several types of possible errors in specifying the model. Among them are the exclusion of relevant variables, the inclusion of irrelevant variables, an incorrect form of the relationship (e.g., treating a nonlinear model as if it were linear), and an incorrect specification of the stochastic disturbance [error] form. . ." *Id.* at 187.

109. As demonstrated in Figure a, below, it is possible to simplify the three-dimensional graph by viewing a cross section (the end slice in bold outline) from Figure a. The cross

E. The Recipe for Wealth Maximization

Economists often make disingenuous statements to the effect that a

section's two variables, social wealth and income distribution (points W and D) can be represented as shown in Figure b.

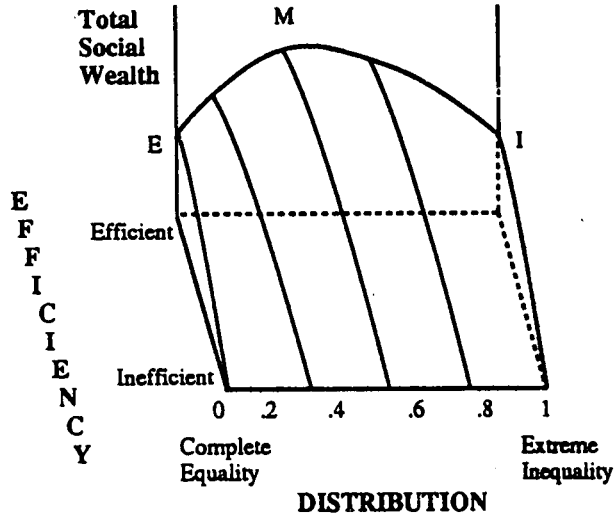


Figure a

Wealth is a function of distribution and efficiency W = f(D,E). Additionally, the First Theorem of Welfare Economics implies that a function relates efficiency and distribution for every distribution of income. E = g(D) where g is used instead of f in order to indicate that the function for E and the previous function for W are different. Therefore, since wealth is a function of both distribution and efficiency, and since efficiency is a function of distribution, a function relates social wealth and distribution W = h(D). Since W = f(D,E) and E = g(D), if one substitutes g(D) in place of E in the function for W, one gets W = j(D,g{D}) or W = h(D).

Although efficiency does not appear directly in Figure b, which relates income distribution to total social wealth, every economy depicted satisfies Pareto or Kaldor-Hicks criteria because this curve represents the end slice of Figure a.

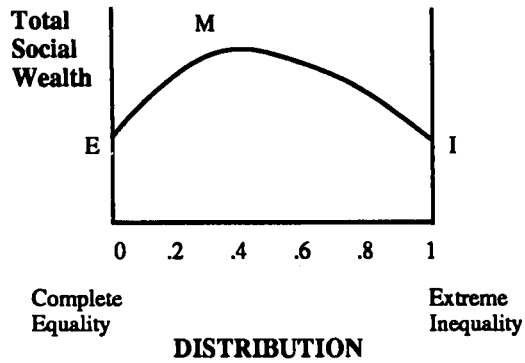
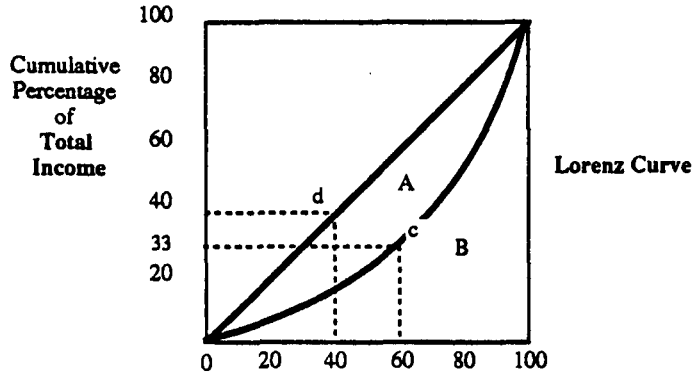


Figure b

"trade-off" exists between distribution and efficiency.[110] As demonstrated previously, such statements are disingenuous in two senses.[111] The same economists who justify ignoring the distributional implications of their theories because the Second Theorem of Welfare Economics implies that in principle distributional equity and efficiency are separable and independent of each other, also maintain that legislative action invariably results in a trade-off between distribution and efficiency in practice. In actuality, the economist is usually alleging a trade-off between the degree of income inequality

---

Figure b depicts the relationship between the degree of income inequality and social wealth. Total social wealth is measured on the vertical axis. Income inequality is measured on the horizontal axis. Economists usually measure income equality on a Lorenz curve. A Lorenz curve represents a particular income distribution at a particular time. In the figure below, the cumulative percentage of total population is ranked from poorest to richest on the horizontal axis. The vertical axis measures the cumulative percentage of total income earned by any given percentage of the poorest people. The diagonal line represents perfect equality; for example, at point d, the poorest 40% of families have 40% of the income. On the Lorenz curve below, point c indicates that the poorest 60% of American families received 32% of total income in 1985.



As the Lorenz bows away from the diagonal line, the distribution of income becomes more unequal. P. SAMUELSON & W. NORDHAUS, *supra* note 39, at 644-48; W. BAUMOL & A. BLINDER, *supra* note 30, at 828-29.

The Gini coefficient of inequality makes it possible to rank all income distributions on a scale from 0 to 1. The Gini coefficient is found by determining the area between the line of equality and the Lorenz curve, labeled A in the Figure above, and dividing that area by the area of the triangle formed by the diagonal line and the bottom-right half of the rectangle, (A+B). Thus, the Gini coefficient = A/(A+B). In the case of income equality, the Lorenz curve is equal to the diagonal line so that area A = 0 and the Gini coefficient is 0/(0+B) = 0. If extreme income inequality exists, in the limiting case, one individual has all the income or wealth, and thereby causes the Lorenz curve to coincide with the bottom and right sides of the Lorenz figure so that B = 0 and the Gini coefficient is A/(A+0) = 1. R. MILLER, ECONOMICS TODAY 448-49 (6th ed. 1988). LEBERGOTT, 7 INTERNATIONAL ENCYCLOPEDIA OF SOCIAL SCIENCES 152-53 (1968).

The next subsection discusses the shape of the function, which relates the degree of income inequality and social wealth. The important social issues concern the shape of the curves in Figures a and b, and how society can achieve point M of maximum social wealth on those curves.

110. A. OKUN, *supra* note 38 at 88-95; P. SAMUELSON & W. NORDHAUS, *supra* note 38, at 809-13.

111. *See supra* notes 38-43 and accompanying text.

and total social wealth.[112]

This thesis implausibly implies a strictly permanent inverse relationship between the degree of income inequality and social wealth.[113] The trade-off thesis implies that no matter how unequal the initial distribution of income, any movement toward income equality will always reduce total social wealth. Conversely, the thesis implies that no matter how unequal the initial distribution of income, any movement toward greater income inequality will always increase social wealth.[114]

Dworkin argues that it is a mistake to think of the relationship between distribution and efficiency in terms of a trade-off in the sense of a "compromise."[115] Dworkin considers distribution and efficiency as two ingredients in a recipe which requires combining the two in the correct amounts, just as a cake requires a proper mix of ingredients.[116] Dworkin's recipe metaphor is an appropriate way to describe the function which relates the degree of income inequality, efficiency, and social wealth. The recipe which maximizes social wealth is composed of the two ingredients, efficiency and a particular degree of income inequality.[117]

As previously discussed, there is no dispute among economists that a government redistribution of income which guarantees complete income equality has serious negative effects on incentives to work and results in an economy with low GNP, income, and wealth;[118] also, little dispute exists among economists that an economy with a highly unequal distribution of income would result in a low GNP, income, and wealth, because there would be few skilled individuals due to society's lack of investment in human

112. "Calabresi speaks of a trade-off or mix of wealth and distribution." R. DWORKIN, *supra* note 2, at 268, Calabresi, *supra* note 42, at 553 n.1.

113. R. DWORKIN, *supra* note 2, at 268-69 (1985). *See* P. SAMUELSON & W. NORDHAUS, *supra* note 39, at 812-15. In terms of Figure b at *supra* note 109, the trade-off thesis implies that the curve must always have a positive slope. The curve must begin low near the left vertex of the Figure and continually rise upward as it proceeds to the right.

114. *See supra* note 113. Considered most charitably, the thesis of a trade-off between distribution and social wealth is correct only if, in the context of Figure b, the speaker is referring to the positively sloped portion of the curve between E and M, on which a leftward movement toward income equality does reduce social wealth.

115. *See* R. DWORKIN, *supra* note 2, at 269.

116. *Id.*

117. In order to maximize social wealth, an efficient economy is required as one ingredient. What are the characteristics of the distributional ingredient? How equal or unequal should income be in order to maximize social wealth? This question is answered by analyzing why the curve in Figure b, *supra* note 109, relating the degree of income inequality to total social wealth, has the shape depicted. As argued below, the curve must have a positively sloped portion (from points E to M) on which a movement toward income equality must reduce social wealth. The curve must also include a negatively sloped portion (from points I to M) on which an increase in income inequality must reduce social wealth. Further, the point of maximum social wealth, point M, is probably located somewhere to the left of the current Gini coefficient for income in the United States. Finally, as a practical matter, it is not necessary to know the exact shape of the curve or exactly where point M is located in order to evaluate specific government policies.

118. This trade-off reasoning accounts for the positively sloped portion, EM, of the curve in Figure b, *supra* note 109. The negatively sloped portion, MI, of the curve in Figure b has a dual explanation. *See infra* text accompanying notes 119-20.

capital through education and training.[119] Second, as the distribution of income gets progressively more unequal, it becomes more likely that the social disorganization characteristic of some African-American and Hispanic ghettos in the United States, would occur generally.[120] The economic theory of crime suggests that such social disorganization would spread to the general population if the income distribution were to become progressively more unequal.

Economists assume that rational self-interested behavior explains most criminal activity.[121] In the context of economic theory, a criminal is someone who has so few opportunities for gainful employment, whether due to lack of training or skill, laziness, or deprived background, that this individual's highest income potential comes from crime. Criminals are individuals whose opportunity costs in terms of income forgone from legitimate employment are very low. Individual self-interest causes such persons to engage in crime. As long as relatively few criminals exists in society, the social fabric will remain stable. At some point, however, as the distribution of income becomes less equal, the percentage of the population finding a rational alternative in crime becomes significant. The social fabric, thus, will begin to unravel.

One can analogize the increase in crime with the "tipping model" used to explain "white flight" in housing integration.[122] Arguably, if only one or several minority families move into an all-white neighborhood, white families will not sell their homes and leave the neighborhood. As long as the percentage of minority families in the neighborhood remains below a certain figure, "white flight" will not occur. Beyond that percentage, "tipping" or "white flight" occurs and nearly all white families leave the neighborhood. In terms of this model, the percentage at which "tipping" occurs is a parameter that can be empirically estimated.

The "tipping" model is probably applicable to the relationship between the degree of income inequality and social wealth. As income becomes progressively more unequal, a point will likely be reached where "tipping" occurs in the sense that social disorganization becomes noticeable because a significant percentage of the population will have an opportunity cost that is low enough to make crime attractive. Certain American inner-city ghettos and third world countries provide good examples of this phenomenon of

---

119. *See supra* note 109 and accompanying text (figures a and b).

120. *See infra* note 234. Recall that in note 106, the social wealth function, although multivalued, is assumably continuous and bounded. Thus, the possibility of externalities, which make it less likely that the upper bound will be achieved, are not inconsistent with the social wealth function as shown.

121. R. POSNER, *supra* note 4, at 205-06. R. COOTER & T. ULEN, LAW AND ECONOMICS 515-23 (1988). Sociologists greatly dispute the assumption that rational self-interested behavior mostly explains criminal activity. Their criticism, however, is not my concern because the argument here addresses distributional equity based on the economists' own methodology and values.

122. Grodzins, *Metropolitan Segregation*, 197 SCIENTIFIC AMERICAN 33-41 (October, 1957).

social disorganization.[123] Thus, as inequality increases beyond the "tipping" point, social wealth will likely decline rapidly due to this externality.

The preceding analysis has shown that the function which relates the degree of income inequality to total social wealth has a maximum somewhere between the two extremes of income equality and great income inequality, and that this function must have both a positive and a negatively sloped portion.[124] What about its shape? Political conservatives may argue that the point of maximum social wealth[125] cannot be achieved without strong work incentives and that only substantial income inequality can provide such incentives. Thus, the curves in Figures a and b[126] should be skewed to the right. Political liberals may argue that the point of maximum social wealth,[127] cannot be achieved unless every individual has a reasonable opportunity to develop his or her talents, and that only substantial income equality can provide such opportunity. Thus, the curves in Figures a and b[128] should be skewed to the left.

Physical traits such as strength, height or girth, and measured mental traits such as intelligence, quotient or tone perception, appear to be not so different among people as are the differences in the current income distribution.[129] Given that inequality of income is greater than inequality of ability, this author believes that the current degree of inequality in the United States

123. There is no necessary inconsistency in the fact that crime rates are frequently low in poor countries, even though inequality of wealth is often much greater in those countries than in wealthier ones. If wealth is highly concentrated, the costs of protecting it from criminals may be low. It is where wealth is more widely distributed that criminals are presented with an abundance of attractive targets.

R. POSNER, *supra* note 4, at 439 n.4.

124. *See infra* notes 110-23 and accompanying text.

125. *See* Point M, figures a & b, *supra* note 109.

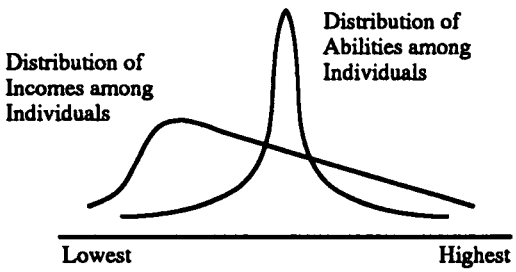
126. *See supra* note 109 (figures a & b).

127. *See* Point M, figures a & b, *supra* note 109.

128. *See supra* note 109 (figures a & b).

129. P. SAMUELSON & W. NORDHAUS, *supra* note 39, at 648.

SPREAD OF INCOME AND ABILITIES



Abilities are much more equally distributed than are incomes

"Human characteristics such as measured intelligence, height, weight, or strength are much more equally distributed than are incomes. While human traits seldom differ by more than a factor of 3, high incomes today are more than 100 times greater than the lowest." *Id.* at 649 fig. 26-4.

is more than enough to provide proper work incentives, but is too great to provide the equality of opportunity[130] necessary for the development of a highly skilled labor force required by an efficient economy in the twenty-first century.[131]

Because competitive markets are efficient by definition, maximum social wealth is likely to be achieved if government action establishes a "level playing field" or rough equality of opportunity. Government policy should strive for a pre-market income distribution, before resources are committed to any particular production route, that guarantees all children will have the resources with which to achieve reasonable minimum standards of education, health and well being, so that as adults, all can effectively compete in markets. This government policy should also foster competition for government subsidies to higher education and professional training which the market forces do not adequately reflect as a social value.[132] For example, encourage individuals to obtain a Ph.D. in medieval literature. Governmental provision should also be available for the handicapped, the aged, and others not able to compete in markets. In a society in which every individual has both opportunity and proper incentives to develop his or her potential abilities, social wealth likely will be maximized. It can be said of such a society, from each according to his or her ability, to each according to his or her productivity, with consumer's surplus for all.[133]

As a practical matter, one need not know the exact shape of the social

130. *See* M. HARRINGTON, THE NEW AMERICAN POVERTY 230-31 (1984).

131. R. MILLER, ECONOMICS TODAY 449 (6th ed. 1988). The point of maximum social wealth, point M, is located to the left of the Gini coefficient for income in the United States which was .369 in 1981.

132. Even conservative economists recognize that "[p]ublic expenditures on higher schooling can be justified as a means of training youngsters for citizenship and for community leadership—though I hasten to add that the large fraction of current expenditure that goes for strictly vocational training cannot be justified in this way, or indeed, . . . in any other." M. FRIEDMAN, CAPITALISM AND FREEDOM 99 (1962).

133. The productivity principle that an individual is entitled to what he creates can be contrasted with Rawls' difference principle that income inequality is justified only to the extent that it benefits the least advantaged. Arrow, *Some Ordinalist-Utilitarian Notes On Rawls's Theory of Justice*, LXX J. OF PHIL. 245, 248 (1973) (Arrow had difficulty in persuading students that the productivity principle is not completely self-evident); J. RAWLS, A THEORY OF JUSTICE 75-80 (1971). The difference principle regards the talents and abilities of every individual as belonging to a common pool shared equally by all. R. PAUL WOLFF, UNDERSTANDING RAWLS 62 (1977).

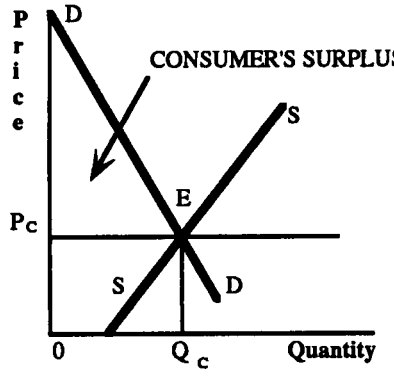
Dworkin, who like Rawls leans more toward the equality principle than the productivity principle, defends a conception called equality of resources. "Equality of resources recognizes, however, that differences in talent are differences in resources, and for that reason it seeks in some way to compensate the less talented beyond what the market awards them." R. DWORKIN, LAW'S EMPIRE 297-98 (1986).

The productivity principle and the equality principle are not as antithetical as they appear to be. The concept of consumer's surplus explains how markets which pay individuals according to their productivity also benefit the common good. In the Figure below, the supply and demand curves of a competitive industry are depicted.

wealth curve[134] or exactly where its maximum[135] is located in order to evaluate specific government policies. It is only necessary to ask whether any governmental action probably increases or decreases income equality, and increases or decreases individual potential, incentive, and social wealth. As examples, subsidized prenatal programs for the poor[136] and the Head Start program,[137] which attempt to enrich the lives of disadvantaged children so that they will be more likely to realize their potential, both probably increase equality and social wealth. On the other hand, with respect to transfers of income to adults, the United States is in the anomalous position in which mothers who work get no income transfers, while mothers who get income transfers do not work.[138] This income transfer program increases income equality but decreases incentives to work and thus decreases the social wealth.

III. THE HARD CASE PARADIGM OF BILATERAL MONOPOLY VS. THE COASE THEOREM

In the leading law & economics textbook, ECONOMIC ANALYSIS OF LAW,[139] Judge Richard Posner argues that "[a] major thrust of common



COMPETITIVE INDUSTRY

The equilibrium price and quantity in this competitive market are P_C and Q_C. Since the demand curve explains what quantity consumers would be willing and able to buy at every price, clearly many consumers would be willing to buy some of this product at prices above the competitive equilibrium price, P_C. The quadrangular area $ODEQ_C$ represents the total amount that consumers would be willing to pay for the quantity Q_C of this good. The rectangular area OP_CEQ_C represents the amount consumers actually have to pay for this good. The triangular area P_CDE is called consumer's surplus and represents the amount that consumers would but do not have to pay. This Figure shows how rewarding individuals according to their productivity also redounds to the common good. H. VARIAN, *supra* note 31, at 242-66.

134. *See supra* note 109 (figures a & b).

135. *Id.*

136. 42 U.S.C.A. §§ 701-709 (1981).

137. 42 U.S.C.A. §§ 9831-9852 (1981).

138. 42 U.S.C.A. §§ 601-615 (1968).

139. R. POSNER, *supra* note 4. "To some, the work of the Chicago school is synonymous with law and economics." The accompanying footnote says "the most comprehensive presentation of this approach is in Posner, . . . [ECONOMIC ANALYSIS OF LAW, 3d ed. (1986)] Part II." Rose-Ackerman, *supra* note 8, at 237, 254 (2d ed. 1989). *See also* L. FRIEDMAN, A HISTORY OF AMERICAN LAW 693 (2d ed. 1985) (noting Posner as a major contributor).

law, as we shall see, is to mitigate bilateral-monopoly problems."[140] The Subject Index in his book, which lists fifteen entries under the heading of Bilateral monopoly,[141] attests to the importance of the bilateral-monopoly problem. The myriad topics which Posner cites as involving the bilateral-monopoly problem include: eminent domain;[142] nuisance, particularly pollution;[143] divided estates in land including landlord-tenant, joint tenancy, and life tenant-remainderman;[144] relations between salvors and disabled ships;[145] mitigation of damages in contracts;[146] penalty clauses in contracts;[147] specific performance issues in contracts,[148] as a cause of increased transaction costs in bilateral negotiations in general;[149] labor-management negotiations;[150] transfer of cable television franchises;[151] lender-creditor relations, and by extension principal-agency relationships in general;[152] closely held corporations;[153] settlement negotiations; as a cause of externalities and obstacle to the Coase Theorem.[154]

To Posner, *Boomer v. Atlantic Cement Co.*[155] illustrates the bilateral-monopoly problem.[156] In *Boomer*, the defendant's production of cement interfered with its neighbors' quiet enjoyment of land and vice versa, land owners' insistence on quiet enjoyment interfered with cement production. A bilateral-monopoly problem, as present in *Boomer*, exists whenever two parties need to coordinate their separate activities without dealing with third parties. Such negotiations are unlike competitive markets in which one can make agreements with numerous third parties, with or without coordinating activities.

Although the large number of references to the bilateral-monopoly problem[157] indicates that Posner sees the problem as nearly ubiquitous, in most of these references Posner merely states but does not explain or analyze the concept. In the few instances in which Posner discusses the concept of bilateral monopoly, the discussion is extremely cryptic.[158] Moreover, in the text, Posner twice coyly hints that the bilateral monopoly interpretation is antithetical to the Coase Theorem interpretation.[159] For example, when discuss-

140. R. POSNER, *supra* note 4, at 55.
141. *Id.*
142. R. POSNER, *supra* note 4, at 49.
143. *Id.* at 54-55.
144. *Id.* at 65-66.
145. *Id.* at 104.
146. *Id.* at 106.
147. *Id.* at 116.
148. *Id.* at 118-19.
149. *Id.* at 232.
150. *Id.* at 300-01, 304.
151. *Id.* at 363.
152. *Id.* at 368.
153. *Id.* at 399-400.
154. *Id.* at 523.
155. 26 N.Y.2d 219, 257 N.E.2d 870 (1970).
156. R. POSNER, *supra* note 4, at 119.
157. *See supra* note 141 and accompanying text.
158. R. POSNER, *supra* note 4, at 54-54, 118-119, 300-01.
159. *Id.* at 106, 600.

ing the economic rationale for the contract doctrine of mitigation of damages, Posner notes:

> To give the supplier any remedy that induced him to complete the contract after the breach would result in a waste of resources. The law is alert to this danger and, under the doctrine of mitigation of damages, would not give the supplier damages for any costs he incurred in continuing production after my notice of termination.
>
> But isn't the danger unreal, if the Coase Theorem is true? There are only two parties, and there is a price for the supplier's forbearing to enforce his contract rights — indeed a range of prices — that will make both parties better off. But of course this is just another example of bilateral monopoly; transaction costs will be high even though (in a sense, because) there are only two parties.[160]

The bilateral monopoly interpretation and the Coase Theorem interpretations cannot both be correct. The Coase Theorem proposes that when two separate activities need to be coordinated, outcome of negotiations will be the same, and efficient, regardless of which party is endowed with the relevant property rights.[161] The bilateral-monopoly interpretation concludes that when two activities need to be coordinated, the party who is endowed with the relevant property rights will have a significant advantage in negotiations; that is, different property right endowments will result in outcomes that are different, each of which is inefficient.[162]

It is apparent from ECONOMIC ANALYSIS OF LAW that Posner chose to minimize technical discussions in order to make the book more readable and palatable to those not well-versed in economic theory. In addition, since the theory of bilateral monopoly can be technically complex, Posner's terse discussion is both understandable and consistent with his minimalist use of theory in general. On the other hand, due to the cryptic nature of Posner's discussion, his non-economist readers will almost certainly not understand the extreme importance of the bilateral-monopoly problem.[163]

A. Boomer v. Atlantic Cement Co.[164]

Boomer is a representative hard common law case because it addresses the interrelated and entangled issues of distributional equity and efficiency.

160. *Id.* at 106.
161. Cooter, *supra* note 35, at 1, 13-15.
162. *See infra* notes 214-15 and accompanying text.
163. Law students in my Law and Economics classes are unable to understand either the substance or the significance of the bilateral-monopoly problem from Posner's text.
164. 26 N.Y.2d 219, 257 N.E.2d 870 (1970).

Other hard tort cases,[165] as well as hard contract,[166] or hard property cases[167] could easily have been chosen. This section then examines which of two competing economic paradigms/models, competition or bilateral monopoly, gives an interpretation that best fits such cases. This section illustrates that the bilateral monopoly paradigm/model provides an interpretation that fits *Boomer*, and by way of generalization, hard common law cases, better than does the competition paradigm/model. This section will also show that the bilateral monopoly interpretation fits hard common law cases better than does the Coase Theorem interpretation. Articles by Baumol[168] and Cooter,[169] who proved that "the central version of the Coase Theorem cannot be deduced from economic assumptions," support Posner's hints and the analysis of this Article.[170]

In *Boomer*, the plaintiffs, neighboring landowners in the vicinity of the defendant cement company, instituted a suit for nuisance, alleging injury to their property from dirt, smoke, and vibration that emanated from the plant. The plaintiffs sought both damages and injunctive relief. The New York Court of Appeals denied injunctive relief and overruled its longstanding doctrine granting an injuction for a nuisance which is substantially proven to damage the complaining party.[171] The court held that granting an injunction literally would cause the cement plant to close at once, even though the total damage to the plaintiff's property was relatively small in comparison with the value of defendant's operation.[172]

Why did the court believe it had to jettison its long-standing doctrine, and

165. *E.g.*, Spur Indus., Inc. v. Del E. Webb Dev. Co., 108 Ariz. 1789, 494 P.2d 700 (1972) (*See supra* note 175 and accompanying text); Copart Indus. v. Consolidated Edison Co., 41 N.Y.2d 564, 362 N.E.2d 968 (1977) (affirming dismissal of complaint of nuisance where defendant power plant's emissions forced plaintiff automobile service business to cease doing business); Sturges v. Bridgman, 11 Ch. 852 (1879) (confectioner had used a motar and pestle on his premises for more than 20 years without disturbing his neighbor, a physician; however, after the physician built a consulting room on his property, the noise and vibration from the confectioner's activity became a nuisance; held, defendant had not acquired an easement).

166. *E.g.*, Jacob & Youngs v. Kent, 230 N.Y. 239, 129 N.E. 889 (1921) (applying difference in value standard rather than cost of replacement in determination of damages where contractor failed to use certain brand of pipe expressly called for in contract to build house); Groves v. John Wunder Co., 205 Minn. 163, 286 N.W. 235 (1939) (using cost of completion standard rather than the difference in the value of land in determining damages where contractor willfully and in bad faith breached by failing to leave realty at a uniform grade as specified in the contract); Peevyhouse v. Garland Coal & Mining Co., 382 P.2d 109 (Okla. 1963) (applying economic benefit rule rather than cost of performance where economic benefit was only $300 and cost of performance would be $29,000), *cert. denied*, 375 U.S. 906 (1963).

167. *E.g.*, United States v. Cors, 337 U.S. 325 (1949) (fair market value of steam tug for purposes of compensation for government requisition should not reflect enhanced value caused by the shortage resulting from such requisitioning program); Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 413 (1922) ("In determining the limits within which values incident to property may be diminished under the police power without compensation, the extent of the diminution is a fact for consideration); Poletown Neighborhood Council v. City of Detroit, 410 Mich. 616, 304 N.W.2d 455, 455 (1981) ("[S]ocial and cultural environments are not matters within purview of statute governing environmental protection and are outside its legislative intent").

168. Baumol, *supra* note 36, at 308.

169. Cooter, *supra* note 35, at 1.

170. *Id.* at 15.

171. Boomer v. Atlantic Cement Co., 26 N.Y.2d 219, 257 N.E.2d 870, 872-73 (1970).

172. *Id.*

why is *Boomer* a hard case? The court implicitly realized that if it granted injunctive power to land owners, the landowners would be in a monopoly or "hold-up" position with respect to defendant cement companies. Landowners then could use the economic leverage inherent in an injunction to demand not only compensation for damages done, but also to demand, as the price of allowing the cement company to operate, all of its profit.[173] This would be in addition to compensation for actual damages, and would allow the land owners to redistribute income from the cement company to themselves.[174]

After denying injunctive relief, the court chose to award the plaintiffs permanent rather than temporary damages.[175] Permanent damages, which become a "servitude on the land,"[176] attempt to compensate landowners for all past and all reasonably anticipated future harms, and thereby save the expense of successive law suits. On the other hand, temporary damages, in this case, would compensate only for past harms and would require the landowners to maintain successive actions at law as further damages are incurred. Temporary damages would thereby give the cement company an incentive to research and develop techniques to alleviate future injury. The court made a crude cost-benefit analysis and chose permanent, rather than temporary, damages because the court did not believe that the cement industry could find techniques to eliminate dust and other annoying by-products of cement production within a reasonable period of time.[177] For the court, the probable reduction of future injury from the temporary damage approach weighed less than the cost of successive suits necessitated by such approach.[178]

The dissenting judge maintained that by overruling the long-established rule of granting an injunction when a nuisance causes substantial continuing damage, "the majority is, in effect, licensing a continuing wrong. It is the same as saying to the cement company, you may continue to do harm to your neighbors so long as you pay a fee for it."[179] Furthermore, the dissent argued that once permanent damages are assessed and paid, the incentive to alleviate the wrong would be eliminated, thereby causing smoke and noise pollution to continue without abatement.[180] Finally, the dissent asserted that it is constitutionally impermissible to impose a servitude on land, without consent of the owner, by payment of permanent damages where the continuing impairment of the land is for private use.[181]

---

173. In economic theory, profit is defined as a return to invested capital that is greater than the long-run competitive rate. The competitive rate is treated as an opportunity cost of doing business such that profit is any return greater than the opportunity cost of capital. H. VARIAN, *supra* note 31, at 321-22.

174. R. COOTER & T. ULEN, *supra* note 122, at 175.

175. 257 N.E.2d at 875.

176. *Id.*

177. *Id.* at 873.

178. *Id.*

179. 257 N.E.2d at 876 (Jasen, J. dissenting).

180. *Id.*

181. *Id.*

Although the court realized some of the difficulties involved in determining an efficient solution, and understood that unfair distributional consequences would be likely if injunctive power was granted to landowners, the court failed to recognize other concerns. For example, the majority did not address the dissenting judge's concern that once the cement company paid permanent damages, it had no incentive to alleviate damage to landowners. Nor did the court seem to realize that both parties, not just the cement company, should be given proper incentives to avoid injuring each other. For instance, landowners could have been given incentives to take action, such as using "sound proofing" or air cleaners, which would minimize the damage done by defendant's operation.[182] Finally, the court apparently did not realize that it had some, but not complete, freedom to alter distributional consequences without impairing efficiency.[183]

One advantage of studying economic models is that these models explain when and how considerations of efficiency and distributional equity are related. The discussion now turns to competition and bilateral monopoly, and asks which of them best fits *Boomer*.

B. A Comparison Of Competition And Bilateral Monopoly

Economists attempt to make the general economic theory of supply and demand[184] fit specific cases by employing models, including the competitive model or monopoly model. The builders of these models choose assumptions, the relevance of which is limited to specific sets of facts.[185] Paradigms are literally examples composed of stylized facts. As mentioned previously, just as models are more specific than general theory, paradigms are more specific than models.[186] Paradigms are models with implicit rather than explicit assumptions.[187] A commodity or stock exchange is the paradigm of the competitive model which this Section will employ. For ease of exposition, the main focus will center around economic paradigms; the models and explicit assumptions that underlie these paradigms will be relied upon only in the discussion of bilateral monopoly where clarity of exposition requires the use of the model.

1. The Competitive Paradigm

The competitive paradigm utilized in this section will be an organized commodity or stock exchange, such as the New York Stock Exchange,

182. Baumol, *supra* note 36, at 311-12; *see infra* notes 251-80 and accompanying text.

183. *See infra* notes 251-80 and accompanying text.

184. *See generally*, H. VARIAN, *supra* note 31, at chs. 2-6 (discussion of budget constraint, preferences, utility, choice, and demand); E. MANSFIELD, *supra* note 3, at chs. 2-5; W. BAUMOL & A. BLINDER, *supra* note 30, at 34-58; P. SAMUELSON & W. NORDHAUS, *supra* 38, at 25-35, 59-63.

185. The competitive model and four assumptions necessary to generate the model are stated *infra* note 189; the monopoly and bilateral monopoly models and their assumptions are stated *infra* notes 195-98.

186. *See generally* T. KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS 174-76, 187-91 (2d ed. 1970) (discussion of the nature of a paradigm as used in the scientific community).

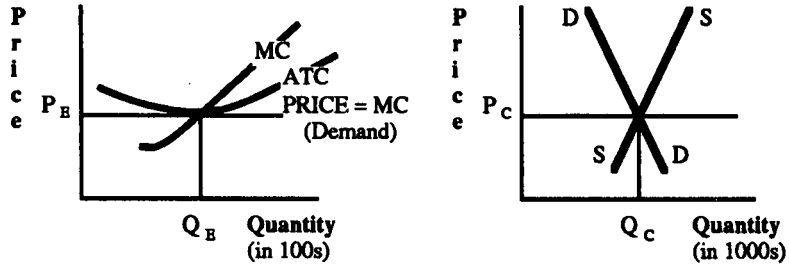
187. *See supra* text accompanying notes 57-61.

where contracts are made to buy and sell a standard commodity or shares of stock.[188] A commodity or stock exchange is considered organized in the sense that all transactions are made according to specific institutional rules by well-informed traders. A competitive market can be characterized as an institution in which bilateral transactions are made under conditions in which each party knows of, and has alternative opportunities to make, other transactions that are indistinguishable in all material respects from the one that actually takes place. Therefore, no party to any transaction has economic power over, nor can take advantage of, any other party. Consider the following three properties of competitive markets.

First, opportunistic behavior whereby one party takes advantage of another is illustrated by fraud, duress, monopoly or strategic hold outs, shirking, and free riding. Perfectly competitive markets[189] rule out this behavior because each party to any proposed transaction always has many alternative

188. *See* Section 3A for a discussion of the organized commodity or stock exchange paradigm of a competitive market. *See infra* note 189 for the assumptions of paradigm embedded in the competitive model. In turn, the competitive model is embedded in general economic theory of supply and demand.

189. In addition to the assumptions of general economic theory discussed *supra* note 53, the model of perfect competition requires four additional and more specific assumptions: 1) an infinite number of buyers and sellers implies that small firms are as technologically efficient as large firms and that no economic agent can exert a perceptible influence on price; 2) standard or homogeneous products; 3) free resource mobility whereby labor and capital encounter no barriers to enter or exit any market; and 4) perfect knowledge such that buyers and sellers are aware of all relevant prices and opportunities. Under perfect competition, all firms are too small in relation to the total market to affect price. Therefore, each firm accepts the price that has been determined in the market, P_E in the left-hand figure below. Note: all firms are price takers. All perfectly competitive firms have horizontal demand curves. Such a firm can double or triple its sales without affecting demand price for its product. Because sales cannot affect price, the equilibrium of a profit-maximizing firm in a competitive market must occur at an output level at which marginal cost (MC) equals the price P_E of the product. In other words, the cost of producing one more unit is equal to the revenue from selling one more unit.



The long-run supply curve of a perfectly competitive firm is the portion of its marginal cost curve that extends above the point where the marginal cost curve intersects the average total cost (ATC) curve, in other words, above the minimum ATC. If the price falls below this point of intersection, the firm's supplied quantity will in the long run drop to zero. The supply curve of a competitive industry is derived by summing horizontally the supply curves of all firms in the industry. Together, industry supply and consumer demand, which is a horizontal summation of all individual consumer's demands, determine the equilibrium price (P_C in the right-hand figure above) and quantity (Q_C) of a competitive industry. *See* W. BAUMOL & A. BLINDER, *supra* note 30, at ch. 25; E. MANSFIELD, *supra* note 3, at ch. 8.

parties with whom to transact on equal or better terms. In other words, "You're not the only seller of widgets." Second, because opportunistic behavior is impossible, competitive markets are efficient[190] in the sense that: "Buyers get what they pay for" because buyers are so well-informed about all possible alternative transactions that they cannot be cheated (shirkers or lazy individuals manufacture products of known lower quality or charge higher prices for the same quality due to wasted time in production). In addition, "Buyers must pay for what they get" because no one can get a free ride or take opportunistic advantage of information generated by someone else's effort.[191]

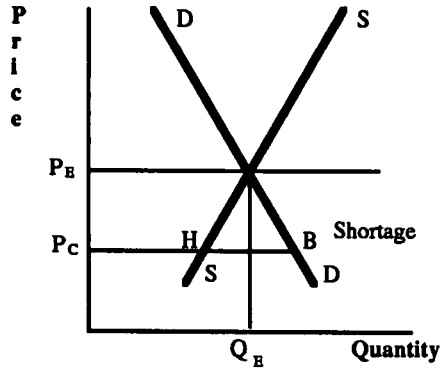
Third, government intervention in competitive markets for the purpose of altering distributional consequences is self-defeating because it impairs the raison d'etre for markets, their efficiency.[192] For example, assume a legislature deems widgets a necessity in a competitive market and decrees price controls in the form of a maximum price on widgets. Widget producers' profits will decline below the competitive level, so the producers will withdraw their investment from the widget market and invest in markets not so controlled. The result of government intervention in the widget market will be a shortage of widgets.[193] Ultimately, if the maximum legal price is far enough below the competitively determined price, widget production will cease altogether. Consider another example: if courts relieve low income debtors from repayment burdens of contracts incurred in competitive markets, low income individuals will, as a class, be charged higher rates of inter-

190. "(1) opportunism refers to a lack of candor or honesty in transactions, to include self-interest seeking with guile; (2) opportunistic inclinations pose little risk as long as competitive (large-numbers) exchange relations." O. WILLIAMSON, MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS 9 (1975).

191. H. VARIAN, *supra* note 31, at ch. 28; E. MANSFIELD, *supra* note 3, at ch. 15.

192. *Id.* at 42-47; W. BAUMOL & A. BLINDER, *supra* note 30, at 64-69.

193. In the Figure below, a shortage will occur if a price ceiling (P_C), which is below the equilibrium price (P_E), is legislated.



At a price of P_C, demanders will wish to purchase a quantity equal to the line segment P_CB whereas suppliers will only be willing to supply a quantity equal to line segment P_CH at that price. Line segment HB represents the shortage. Correspondingly, a surplus will occur if a price floor that is above the equilibrium price is legislated.

est and will find less available or nonexistent credit.[194]

Government intervention in competitive markets for the purpose of achieving distributive goals is functionally equivalent to, even if morally very different from, opportunistic behavior. Competitive markets nullify the efforts of opportunistic individuals or governments to alter distributional consequences inherent in markets, due to the voluntary nature of market transactions, which allow all buyers and sellers to transact in a number of other markets not subject to opportunism or government control.

2. *The Bilateral Monopoly Paradigm*

In order to discuss bilateral monopoly, the terms monopoly and monopsony must be defined. A monopolist is a single seller and a monopsonist is a single buyer. A monopoly market is one in where transactions occur under conditions which allow the single seller to take advantage of many buyers who cannot buy a product from an alternative seller by restricting supply of that product in order to create an artificial shortage and raise its price.[195] Monopoly markets are also distributionally "unfair". Buyers pay more in monopoly market than in a competitive market as a consequence of the monopolist's ability to raise the product's price and thereby unfairly transfer income from buyers to the monopolist.[196]

A monopsony market is one where transactions occur under conditions allowing the single buyer to take advantage of many sellers who cannot sell their products to an alternative buyer, by restricting demand for that product in order to create an artificial surplus and lower the product's price.[197] Monopsony markets are also distributionally unfair. The single buyer pays less in a monopsony market than in a competitive market as a consequence

---

194. Arthur Leff constructed a satiric hypothetical to illustrate this example in his well known review of Richard Posner's ECONOMIC ANALYSIS OF LAW (1st ed. 1972), Leff, *supra* note 7, at 460-61 (1974).

195. H. VARIAN, *supra* note 31, at 414-24 (1987). E. MANSFIELD, *supra* note 3, at 280-91.

In the Figure, *infra* note 198, a monopolist would restrict supply from the competitive quantity, Q_C, the monopoly quantity, Q_M, to in order to raise price from the competitive price, P_C, to the monopoly price, P_M. In order to maximize its profit, a monopolist would produce that output at which the marginal cost (MC) of producing an extra unit of output is equal to the marginal revenue from selling another unit, MR = MC. At any output at which marginal revenue is less than marginal cost, decreasing output increases profit because extra revenue from the last unit sold will be less than its extra cost. The profit maximizing monopoly price and quantity are P_M and Q_M.

196. In the Figure, *infra* note 198, the monopolist's ability to raise price from P_C to P_M allows a transfer of income, measured by the rectangle P_CP_MAB, from buyers to monopolists. In addition to the inefficient reduction of output from Q_C to Q_M and the inequitable transfer of income from consumers to the monopolist, represented by P_CP_MAB, there is a third detrimental effect of monopoly is present. The triangle AEF represents the deadweight loss of monopoly and symbolizes the value of lost output to both consumers and to producers. H. VARIAN, *supra* note 31, at 415-24; E. MANSFIELD, *supra* note 3, at 297-99.

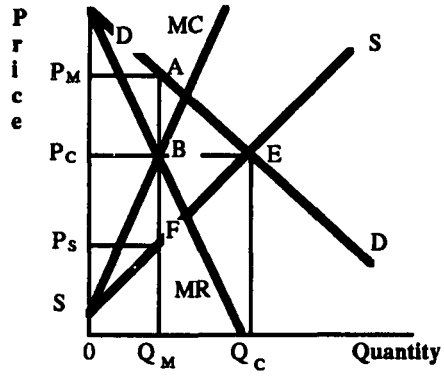
197. H. VARIAN, *supra* note 31, at 439-40;. E. MANSFIELD, *supra* note 3, at 441-20.

In the Figure, *infra* note 198 a monopsonist would restrict demand from the competitive quantity, QC, to the monopsony quantity, QM, and depress price from the competitive price, P_C, to the monopsony price, PS. The analysis of a monopsonist is symmetric with that of a monopolist. In order to maximize profit, a monopsonist would buy that output at which the marginal cost (MC) of producing an extra unit of output is equal to the marginal revenue from another unit (MR = MC). The monopsony price and quantity will be P_S and Q_M.

of the monopsonist's ability to depress a product's price and thereby unfairly transfer income from sellers to the monopsonist.[198]

The most often used bilateral-monopoly paradigm is a contract negotiation between the management of the only factory in town and the representatives of the only union in town.[199] The union of all employees in town is a

198. In Figure 1, the monopsonist's ability to depress price from P_C to P_S allows a transfer of income, measured by the rectangle P_SP_CBF, from sellers to monopsonists. In addition to the inefficient reduction of output from Q_C to Q_M and the inequitable transfer of income from sellers to the monopsonist represented by P_SP_CBF, a third detrimental effect also occurs: lost output to both consumers and producers. The triangle AEF represents the value of this deadweight loss of monopsony. H. VARIAN, *supra* note 31, at 439-40; E. MANSFIELD, *supra* note 3, at 411-20.



The Figure above labels the supply curve as SS and the demand curve as DD. The price and quantity that would result in this market depends upon how many individuals or firms are assumed to participate as sellers on the supply side and how many individuals or firms are assumed to participate as buyers on the demand side. Consider four different assumptions as to the number of participants and the models which result: competition, monopoly, monopsony, and bilateral monopoly.

In a competitive market operating under the assumption that the demand curve is a horizontal summation of many buyers' demands and the supply curve is a horizontal summation of many sellers' supplies, the competitive price and quantity would be P_C and Q_C.

In a monopoly market operating under the assumption that the demand curve is a horizontal summation of many buyers' demands but that the supply curve is the supply curve of the single, monopolistic seller, the price and output would be P_M and Q_M.

In a monopsony market, operating under the assumption that the demand curve is the demand of the single buyer and the supply curve is a horizontal summation of many sellers' supply curves, the price and output would be P_S and Q_M.

In a bilateral monopoly market, the demand curve represents the demand of the single buyer and the supply curve represents the supply curve of the single seller. The price and output that will result in a bilateral monopoly market is indeterminate in terms of economic theory. In other words, a theory based upon profit maximization is unable to yield a specific prediction about price and quantity. E. MANSFIELD, *supra* note 3, at 300-01; W. BAUMOL & A. BLINDER, *supra* note 30, at 812. If legal institutions and bargaining power favor the monopolist or seller, the price and output are likely to be close or equal to P_M and Q_M; if legal institutions and bargaining power favor the monopsonist or buyer, the price and output are likely to be close to P_S and Q_M; if legal institutions are neutral and if the monopolist and monopsonist have equal bargaining power, the price and output are likely to be close to competitive levels, P_C and Q_C.

199. E. MANSFIELD, *supra* note 3, at 300. With respect to the prevalence of bilateral monopoly in the real world, an economist Edwin Mansfield says, "[c]learly, there are few cases of this sort, except perhaps in labor markets." *Id.* On the other hand, the Index to Richard

monopolist because it represents the only seller of labor. The factory's management is a monopsonist because it serves as the only buyer of labor. The monopolist must negotiate a contract with the monopsonist. Bilateral monopoly is a negotiation whereby two parties have no alternative but to deal with each other, yet each party attempts to take advantage of the other. For instance, the union is trying to bring management to its knees so that it can insist on high wages and "featherbedding" work rules; management is trying to break the union and turn the factory into a sweat shop. If the two parties cannot agree, the parties may grant a third party coercive power and allow it to impose a settlement, such as binding arbitration.

Consider the following three properties of the bilateral monopoly: First, in a bilateral monopoly both parties attempt to behave opportunistically. Both parties try to exert monopoly power over the other; the parties have "locked horns". Second, because either party may exhibit opportunistic behavior in bilateral monopoly markets, the results, in terms of price and quantity of output, are indeterminate.[200] Whether bilateral monopoly markets result in the competitive price and efficient quantity of output, or tend toward the monopoly or monopsony price and inefficient output, depends upon the bargaining power of the parties, and whether legal institutions and government intervention favor one party or are neutral. Third, government intervention in bilateral monopoly markets can lead to a variety of possible results. If legal institutions and government intervention favor neither party,[201] and the parties have similar economic strength, the results from bilateral monopoly negotiations, in terms of price and quantity of output, will probably be the same as in competitive markets.[202]

If legal institutions and governmental intervention are biased in favor of one party or the other, the favored party can exert monopoly power and act opportunistically over the other. Biases result if, at one extreme, the union could be enjoined as an illegal conspiracy,[203] or at the other extreme, the union has the legal right to blockade all entrances to the factory during a strike. In general, depending upon which party is favored by the legal institutions and government intervention, the results in terms of price and output will tend toward either monopoly or monopsony, and will therefore be different from competition. In other words, the quantity will be less than the

---

Posner's ECONOMIC ANALYSIS OF LAW lists fifteen entries for bilateral monopoly. R. POSNER, *supra* note 4, at 654. The difference in Mansfield's and Posner's perspectives on the prevalence of bilateral monopolies is that Mansfield, an economist, sees the world in terms of the general or competitive case, whereas Posner, a lawyer, sees the interstitial or bilateral monopoly case as being ubiquitous.

200. E. MANSFIELD, *supra* note 3, at 300-01; W. BAUMOL & A. BLINDER, *supra* note 30, at 812.

201. *See generally*, AMERICAN LABOR POLICY (C. Morris ed. 1987) (collection of essays on the Wagner Act).

202. In terms of the Figure, *supra* note 198, the competitive price and quantity would be P_C and Q_C.

203. *E.g.*, *Labor Conspiracy Cases, 1806-1842 - Philadelphia Cordwainters* 3 DOCUMENTARY HIST. AM. INDUS. SOC'Y. 59 (J. Commons and E. Gilmore eds. 1910) (Philadelphia Cordwainers' Case - 1806).

efficient quantity.[204] In sum, if legal institutions and governmental intervention in bilateral monopoly are biased in favor of one party, the transaction that results can in general be characterized as inefficient and distributionally unfair.

An optimal solution to the coordination of separate activities of two parties, such as labor and management, would require the two parties to possess identical interests. Such optimal coordination could occur if the union, acted as its own boss and owned all of the factory's common stock through its pension fund.[205] In that case, the bilateral-monopoly problem would disappear because the worker-owners would have a unity of interests.[206]

C. *Bilateral Monopoly And* Boomer

Consider a bilateral monopoly interpretation of *Boomer*. The court in *Boomer* first had to decide which party should win the dispute;[207] and second, the court had to decide whether to protect the winning party's entitlement by a property right enforced by an injunction, or by a liability rule enforced by damages.[208]

If a party possesses an entitlement to an object, such as an automobile, a property right legally protects that entitlement. Another party who wants to transfer the legal entitlement to herself can only do so if she pays a price satisfactory to the currently entitled party. The price of the property right includes the monetary equivalent of the entitled party's subjective or sentimental value of the object. Courts enforce property rights with injunctions; the party who is enjoined is forbidden to interfere with another's property right unless he or she pays a price satisfactory to the other party.

---

204. If legal institutions and bargaining power favor one party, it is theoretically possible to achieve results that are the same as competition in terms of quantity of output but different from competition in terms of price. In the Figure, *supra* note 198, if legal institutions and bargaining power favor the monopolist, and if the monopolist can calculate the relevant supply and demand curves, the buyer must buy the quantity Q_C, the competitive and efficient quantity but must pay a lump sum equivalent to quadrangle $ODEQ_C$. Under competition, the buyer could buy Q_C for the lump sum equivalent to rectangle OP_CEQ_C, thus the overcharge amounts to triangle P_CDE. If legal institutions and bargaining power favor the monopsonist, and if the monopsonist can calculate the relevant supply and demand curves, then the monopsonist will require the seller to sell the quantity Q_C, the competitive and efficient quantity, but will only pay a lump sum equivalent to quadrangle $OSEQ_C$. *Id.* Under competition, the seller could sell Q_C for the lump sum equivalent to rectangle OP_CEQ_C such that the undercharge is equivalent to triangle SP_CE. This result is the same as competition with respect to quantity but differs from competition with respect to price. The result, however, appears an unlikely possibility because it cannot be achieved unless bargaining power is extremely one-sided and the relevant supply and demand curves are known, which knowledge is usually very imperfect.

205. *See generally* O. WILLIAMSON, *supra* note 190 (discussion of incentive compatibility within the hierarchical structure of firms).

206. If the labor-management merger produces products which are sold in competitive markets, it is possible to achieve results which are the same as competition in terms of quantity of output but may differ from competition in terms of wages. For example, the worker-owners may voluntarily reduce their remuneration in order to free additional funds for investment to and maximize their long term income. Alternatively, worker-owners may decide to increase their present wages at the expense of future growth and income.

207. Calabresi & Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1089-1090 (1972).

208. *Id.* at 1106-10.

On the other hand, if a party has an entitlement to a an object protected only by a liability rule, another party who wants to transfer the legal entitlement to himself can do so if he pays a price determined by a court. For instance, party who negligently destroys another's automobile must "buy" it at a price set by a court, or a government which uses eminent domain to "take" property for public use must compensate the owner at an amount determined by a court. An entitlement protected by a liability rule usually does not include the entitled party's personal or subjective valuation of the object. "Just as the initial entitlement is often decided upon for distributional reasons, so too the choice of a liability rule is often made because it facilitates a combination of efficiency and distributive results which would be difficult to achieve under a property rule."[209] In sum, an entitlement protected by a liability rule is worth less in monetary terms than one that is protected by a property right.

The *Boomer* court determined that the landowners were entitled to damages,[210] yet refused to protect their entitlement by a property right.[211] The court granted an injunction, but stipulated that the injunction should be vacated upon payment of court-determined permanent damages.[212] The court appartently realized that if it granted landowners an injunction without such an alternative, the landowners would have monopoly power over the cement company. Strictly speaking, the landowners would have had monopsonistic power over the plant because collectively the landowners are the single "buyer" of pollution.[213] Landowners would use their monopoly power not only to set a price that would redistribute income from the cement company to themselves, but also to cause the cement company to reduce its output below the efficient level.

If the court decided that the cement company should prevail, the decision would be tantamount to giving the cement company a right to pollute protected by a property right. The cement company then would have monopoly power over landowners who, in order to reduce pollution, would have to pay a price satisfactory to the cement company. As the single "seller" of pollution, the cement company could use its monopoly power to set a price that would redistribute income from landowners to the company, thereby reducing the rental value and use of landowners' property below the efficient level.[214]

Clearly, a property right solution to the bilateral-monopoly problem gives the party with the property right monopoly power over the other party. Thus, a property right solution to the bilateral-monopoly problem will usually differ from competitive results in terms of price and quantity. Such a result can be characterized, in general, as both inefficient and distributionally

209. *Id.* at 1110.
210. Boomer v. Atlantic Cement Co., 26 N.Y.2d 219, 257 N.E.2d 870, 875, 309 N.Y.2d 312 (1970).
211. *Id.*
212. *Id.*
213. In terms of the figure, *supra* note 198, the price and quantity would be P_S and Q_M.
214. In terms of the figure, *supra* note 198, the price and quantity would be P_M and Q_M.

unfair. The *Boomer* court implicitly realized the monopoly problem inherent in the property right approach, and chose a liability rule approach. The court thus chose to award damages, a remedy which facilitates a combination of efficiency and distributive results usually not attainable by a property rule in situations where bilateral-monopoly problems exist.[215]

Assuming that the *Boomer* court had perfect knowledge, how should it decide the proper entitlement and liability rule? A court with perfect knowledge initially would begin by making a cost-benefit analysis. (a) The court would consider the research and development feasibility to control smoke and noise pollution, and (b) weigh the increased cost of cement production due to the installation of smoke and/or noise pollution control equipment, against the benefit in increased rental value of its neighbors' land caused by a reduction in pollution damage. Finally, (c) the court would weigh the landowner's increased cost to install sound proofing and/or air cleaners, against the benefit of the cement company's increased income from lower pollution damage costs. Because these cost-benefit analyses are interrelated, their efficient values must be determined simultaneously. In other words, the separate activities of cement production and quiet enjoyment of property cannot be efficiently coordinated, unless each party considers the detrimental effect of its activity on the other and takes appropriate action to minimize the cost of such detrimental effects.

It is possible, for example, that the efficient coordination of landowning and cement production requires that the cement company install smoke and

215. Calabresi & Melamed, *supra* note 207, at 1110. In his article, Calabresi points out that since either of the two parties, "injurer" or "victim," to the suit can win and receive an entitlement, and since two possible remedies of property right or liability rule exist, there must be four possible combinations. *Id.* at 1116. The fourth and most difficult combination to imagine is where the injurer is entitled to damages. In terms of *Boomer*, the fourth combination would occur if the cement company, who is the injurer, has an entitlement to pollute which is protected by a liability rule. The victim could restrict the injurer's activity but would have to compensate the injurer for the injurer's damages, such as foregone profits. Although this fourth possibility entitling the injurer to damages is uncommon, the court used this very solution in Spur Indust., Inc. v. Del E. Webb v. Dev. Co., 108 Ariz. 178, 494 P.2d 700 (1972) (en banc). The judge who decided this case apparently was not aware of Calabresi's recently published article. Conversation with Calabresi (Hamline Law School, St. Paul, Minn., academic year 1984-1985).

In *Spur*, a development of suburban homes expanded until it abutted a cattle feed lot that had been built many years prior to the housing development and miles from any habitation. The developer sued, alleging nuisance resulting from the smell and the flies. Despite findings that the developer had "[c]ome to the nuisance", the court enjoined the feed lot operator. *Id.* at 707-08. The court, however, then remanded the case to determine the feed lot operator's damages. *Id.* at 708.

An interesting sidelight to the Mendeleev-like deduction of Calabresi, that a fourth combination and cases like *Spur* that exemplify it must theoretically exist, concerns how Calabresi was lead to this deduction. Calabresi's book, THE COST OF ACCIDENTS is one of the seminal works of modern law and economics. G. CALABRESI, THE COST OF ACCIDENTS (1970). In response to this book, Frank Michelman wrote an article suggesting three rules to pollution problems. Michelman, *Pollution as a Tort: A Non-Accidental Perspective on Calabresi's Costs*, 80 YALE L.J. 647 (1971). In response to Michelman's response, Calabresi said that "the very statement of [Michelman's three] rules in the . . . framework . . ." in which Calabresi discussed them (entitlements, property rights, and liability rules), "suggest[ed] that something is missing." That something is the fourth combination. Calabresi & Melamed, *supra* note 207, at 1116.

dirt pollution control equipment and that landowners install sound proofing. It might be cheaper for the cement company to install scrubbers on its smoke stacks, which prevent soot from polluting the air, than for land owners to paint their houses more frequently and suffer discomfort, increased medical costs, and lost employment due to respiratory disorders caused by air pollution. Thus, the cement company may be the cheapest cost avoider[216] of smoke pollution. Landowners may incur cheaper costs by sound proofing their homes, than those costs incurred by requiring the cement company to redesign its equipment in order to stop vibration and noise pollution. Thus, the landowners may be the cheapest cost avoiders of noise pollution. If the cement factory bears the burden of both smoke pollution and noise reduction, the cost it incurs would probably be greater than the sum of the costs incurred by both parties if the court ordered the cement company to reduce smoke pollution and the landowners to reduce the detrimental effects of noise pollution.

Efficient coordination of land ownership and cement production maximizes the combined income from cement production and land rentals. In addition, efficient coordination of the activities balances the detrimental effect of each activity on the other by minimizing such effects in the cheapest manner. Thus, efficient coordination results in a combined income from the two activities that is greater than the combined income from uncoordinated activities, the difference being a joint-income surplus.

A three dimensional figure would be required to show graphically how the simultaneous determination of the three-prong cost-benefit analysis results in a joint-income surplus. If it is assumed, however, that the court in *Boomer* correctly concluded that research and development would unlikely yield new technology within the reasonably foreseeable future, then this process can be simplified. Simply ignore part (a) of the three-prong cost-benefit analysis addressing research and development and determine simultaneously only the efficient coordination of (b) and (c). This assumption simplifies but does not change the essential nature of the analysis. The simultaneous determination of the remaining prongs of the two cost-benefit analysis, (b) and (c), and the income surplus that results from efficient coordination can be shown in a

216. R. POSNER, *supra* note 4, at 155. *See* G. CALABRESI, THE COST OF ACCIDENTS, *supra* note 215, at 139, 162.

two-dimensional table.[217]

Assuming that the court in *Boomer* correctly concluded that research and development would unlikely yield practical results within a reasonably foreseeable time, the court could have implemented an efficient solution by not requiring the company either to spend money on research and development or to compensate landowners for damage from vibration and noise pollution. Landowners, the cheapest cost avoiders of noise pollution, thus would pay to sound proof their homes as an investment to increase the rental value of their homes. The court would then adopt a liability rule for smoke pollution and thereby give the cement company an incentive to reduce smoke pollution to the efficient level. This level, however, is *not* zero since the total elimination of pollution would probably require unacceptable increases in the price of cement.

The liability rule to reduce smoke pollution performs two functions. First, the rule provides the cement company with an incentive to adopt the efficient solution. Second, the rule distributes the joint-income surplus resulting from the efficient solution. The joint-income surplus results when the mutually interfering activities take account of each other's detrimental effects in the cheapest possible way.[218]

Whether the joint-income surplus from efficient coordination of the cement production and land owning activities is distributed more to landowners than to the cement company, or vice versa, depends upon the liability

217.

	LAND OWNERS			
CEMENT COMPANY	No Pollution Control	Sound Proofing	Air Cleaners	Air Cleaners & Sound Proofing
No Pollution Equipment	0	90	50	70
Smoke Pollution Equipment	90	150	20	100
Noise Pollution Equipment	60	30	130	60
Smoke & Noise Pollution Equipment	80	90	80	50

JOINT-INCOME SURPLUS FROM COORDINATION OF LAND OWNING AND CEMENT PRODUCTION

Table 1

Maximum joint-income surplus occurs if according to Table 1, the cement company specializes in smoke pollution control and landowners specialize in noise pollution control.

218. Cooter, *supra* note 35, at 7-9.

rule or shadow price[219] that the court uses to charge for smoke pollution damage. For example, a rule that charges a high price for smoke pollution damage necessarily will reduce the income from cement production and increase land rental values. Although more than one liability rule for smoke pollution damage that will both coordinate land owning and cement production efficiently and distribute the joint-income surplus from such coordination exists, not all liability rules will efficiently coordinate the two activities. Moreover, if these activities are inefficiently coordinated, joint-income surplus resulting from efficient coordination will not be achieved.[220]

One efficient rule may charge a constant dollar price per pound of carbon residue.[221] Another efficient rule initially may charge a low per pound price for pollutant but then raise the price for each additional pound of pollutant.[222] The two rules, however, yield different distributions of income to land owning and cement production activities.[223] The first rule would shift more of the joint-income surplus to the land owning activity and less to the cement activity[224] and vice versa for rule two.

A third pollution abatement rule, like the first rule, charges a constant dollar price per pound of pollutant, but charges a different price, so that the efficient amount of smoke pollution will not result.[225] Thus, efficient coordination of the two activities and the distribution of the joint-income surplus from such coordination are to some extent, but not totally, independent of each other.[226]

Finally, consider the result if the landowners and the Atlantic Cement Company merged to become one firm called Boomer & Atlantic (B & A, instead of B v. A). If one firm owns both activities, the firm will internalize the mutual or external interference of land owning and cement production

---

219. Shadow prices are theoretically determined "accounting rules" that serve as, but are not, actual prices. *See* H. VARIAN, *supra* note 31, at 506.

220. In order to understand the conclusion that not all liability rules will both efficiently coordinate the two activities and distribute the maximum joint-income surplus, the Figure, *supra* note 198, compares the effects of three smoke pollution abatement rules.

221. In the Figure, *supra* note 198, the constant charge for a pound of pollution could be P_C per pound.

222. In Figure 1, *supra* note 198, the price per pound of pollution rises with the supply curve SS, starting at S per pound and rising for each pound of pollution thereafter according to the slope of SS, so that at a quantity of pollution equivalent to Q_C the price per additional pound of pollution is P_C. Both rules result in the efficient amount of pollution (Q_C pounds of pollutant residue). *Id.*

223. In the Figure, *supra* note 198, the first rule would charge a total damage cost equal to the rectangle OP_CEQ_C, whereas the second rule would charge a lesser total damage cost equal to the quadrangle $OSEQ_C$.

224. The amount of joint-income surplus shifted would be SP_CE. *See supra* note 198 (figure).

225. In terms of the Figure, *supra* note 198, any rule which charges a constant amount per pound of pollutant which is either greater or less than P_C would result in an inefficient amount of smoke pollution — either too little or too much pollution. A liability damage rule that set a price higher than P_C would inefficiently coordinate land owning and cement production because it would make cement production relatively too expensive and land owning too inexpensive; the rule would result in too little pollution. Correspondingly, a constant charge for pollution less than P_C would result in too much pollution in terms of efficient coordination.

226. *See supra* notes 220-25.

activities with each other. Management would coordinate the two activities and internally resolve any disputes within the firm of B & A.

Obviously, B & A are interested in coordinating these activities efficiently so as to achieve the joint-income surplus resulting from such coordination. B & A could coordinate land owning and cement production efficiently and could distribute the joint-income surplus from such coordination[227] by management fiat.[228] A major difference between the institutional context in which a single management merges and coordinates the two activities, and the institutional context in which the court, as in *Boomer*, effects coordination, is that the merged firm generally would have better access to information than a court. Therefore, the firm could more efficiently coordinate the two activities.

As should be clear by now, a great deal of information about and coordination of, the land owning and cement production activities is required in order to achieve efficient coordination and maximization of the joint-income surplus. In cases that involve the bilateral-monopoly problem, courts usually possess insufficient information to coordinate activities efficiently or to achieve the maximum joint income solution. Courts must, therefore, make intelligent guesses as to the general outlines of such solutions. The bilateral monopoly paradigm demonstrates that simplistic property rules cannot in general achieve efficient coordination; damage compensation remedies may have consequences for efficiency and distribution which differ from those of competitive markets. Moreover, the distribution of the surplus income from coordination is to some extent, but not totally, independent of efficiency consequences.

D. Bilateral Monopoly vs. The Coase Theorem

The bilateral monopoly interpretation fits *Boomer* better than the competitive or the Coase Theorem interpretations. This conclusion can be generalized to all cases where parties must agree on how to coordinate separate activities by dealing strictly with each other and not third parties.

1. Bilateral Monopoly Better Fits Boomer*Than Does the Competition*

Although the competitive model fits general laws, run-of-the-mill contract cases, and the institutions that support such contracts in the sense of providing an interpretation which has a good fit with legal practice, it does not fit cases in which two parties must agree on how to coordinate their separate activities when they cannot deal with third parties. These cases are unlike competitive markets because each of the parties to the dispute cannot con-

227. B & A can evenly divide the surplus income between the activities; it can divide the surplus on the basis of their relative shares of the combined values of land and cement plant, or it can divide the surplus by any other arbitrary criterion. It could also use the surplus to diversify if the rate of return is higher in other industries.

228. "[T]he distinguishing mark of the firm is the supersession of the price mechanism." Coase, *The Nature of The Firm*, ECONOMICA 386, 389 (1937). Within a firm, market transactions are eliminated and a heirarchical structure and internal control processes are substituted in their place. O. WILLIAMSON, *supra* note 190, chs. 2-4.

trol the other's opportunistic behavior by threatening to transact with third persons should they fail to reach an agreement. If one party attempts to take undue advantage of the other in such cases, the only recourse is for the latter party to threaten the use of the coercive power of a court to dictate a settlement. This procedure is similar to a bilateral monopoly stalemate that parties settle by binding arbitration.

2. *Bilateral Monopoly Better Fits* Boomer *Than Does the Coase Theorem*

In his well known article, *The Problem of Social Cost*,[229] Coase suggested, but never explicitly stated, what has become known as the Coase Theorem.[230] Coase left the job of stating exactly what the theorem says to others.[231] This Article briefly explains Coase's article, and then discusses the construction of Coase's remarks by others. The bilateral monopoly interpretation will then be shown as superior to the Coase Theorem interpretation of cases in which two parties must agree on how to coordinate their separate activities in a situation when it is not possible to deal with third parties.

In one sense, the Coase Theorem can be seen as an attempt to rescue Adam Smith's invisible hand theorem[232] from the charge that the visible hand of governmental intervention is required in order to solve problems like the one presented in *Boomer*, where mutually interfering activities generated by individual self-interested behavior reduce social welfare. When Coase wrote his article, government intervention in the form of taxes and subsidies represented the prescription for dealing with problems like pollution. No one challenged this procedure.[233]

Coase attacked these prescriptions on two grounds. First, whether termed mutually interfering activities, externalities,[234] or social costs, Coase maintained that such phenomena should not be viewed in a uni-directional man-

229. Coase, *The Problem of Social Cost*, 3 J. LAW & ECON. 1 (1960).

230. "I am told that he stated the theorem explicitly in a seminar at the University of Chicago." Cooter, *supra* note 35, at 14 n.10.

231. Coase's failure to state the theorem in his article resulted in a great deal of confusion that surrounds the Coase Theorem. Robert Cooter systematically describes several alternative formulations in THE COASE THEOREM, in THE NEW PALGRAVE (1985).

232. This theorem states that if every individual acts so as to maximize her self interest, social welfare, however defined, will be maximized as well. A. SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 423 (1937).

233. Baumol, *supra* note 36, at 307-09.

234. An externality occurs when an activity undertaken by party A imposes a cost or confers a benefit on party B for which party A is not charged or compensated by (or through) the price system. D. DEWEY, MICROECONOMICS: THE ANALYSIS OF PRICES AND MARKETS 221 (1975). If a steel factory, A, pollutes air and streams with the incidental by-products of steel production, smoke and slag, many B's suffer damage because of the reduction in air and water quality. It is often not feasible to compensate these individuals because of: 1) the transaction costs involved in dealing with large groups of persons, most of whom suffer small individual damage; 2) the problem of proving causation, for instance, which factory caused damage to which individuals; and 3) the problem of determining the extent to which individuals have suffered damage. Because the cost of damage is not considered in the market for steel, the damage is said to be external to that market or represent an externality. However, pollution may affect other markets. Air pollution causes increased purchases of air purifiers, house paints, and window cleaners. Water pollution increases the cost of producing pure water. W.

ner or one way causation.[235] Every social cost is inherently reciprocal in nature.[236] Although the social cost of pollution would disappear if the cement company in *Boomer* closed, the social cost of dirt, smoke, and vibration emanating from the cement plant would also disappear if neighboring landowners moved away. "This position, though at first glance very odd (the murder victim too is then always an accessory to the crime), grows more persuasive as one considers it further."[237] For example, if an individual builds a house in a business district where steel-producing factories are located, the government should neither tax nor assess damages against the factories for smoke damage to the home and its occupants, but should require the homeowner to locate elsewhere.[238] The doctrine of "coming to a nuisance" in the law of torts recognizes the reciprocal nature of mutually interfering activities and refuses relief in these situations.[239] Coase's first point that it is often impossible to say that either party is the cause of mutually interfering activities due to the reciprocal nature of social costs, has made a lasting contribution to law and economics; it provides the theoretical foundation for the economic analysis of alternative legal rules and institutional structures. Coase's point is also entirely consistent with the bilateral monopoly interpretation.

Second, Coase analyzed several cases and constructed several examples to conclude, although never explicitly, that: (1) if the law clearly specified property rights one way or the other, and (2) if transaction costs,[240] defined as the costs of making contracts between those who have the rights specified in their favor and those who don't, are zero, then no matter whom the law favors, the bargaining between the parties will result in the efficient coordination of their activities.[241] Self-interested bargaining allegedly will coordinate cement production and land owning efficiently. This results because both parties may possibly gain from such coordination which produces a joint-income surplus.[242] One succinct formulation of the theorem is as fol-

---

BAUMOL & A. BLINDER, *supra* note 30, at 634-38. E. MANSFIELD, *supra* note 3, at 482-87; H. VARIAN, *supra* note 31, at ch. 31.

235. The externality approach to social costs emphasizes one-way causation.

236. Coase, *supra* note 229, at 2.

237. Baumol, *supra* note 36, at 308.

238. *Id.* at 317-18. Cooter, *supra* note 35, at 12-13.

239. W. KEETON, PROSSER AND KEETON ON THE LAW OF TORTS § 88B, at 634-35 (5th ed. 1984).

240. The transaction costs of bargaining refer to the cost of communicating among the parties (including the value of time used up in sending messages), making side payments (the cost of the transaction, not the value of what is exchanged), and the cost of excluding people from sharing in the benefits exchanged by the parties [free riders]. In the case of contingent commodities [those involving risk and uncertainty such as insurance], the cost of obtaining information on the actions of the players is also treated as a transaction cost, so the inefficiencies from moral hazard and adverse selection are swept under the blanket of transaction costs.

Cooter, *supra* note 35, at 16.

241. *See infra* note 243.

242. In order for transaction costs to be low enough for bargaining to be possible, the number of parties involved must be small. This is an important caveat. The Coase Theorem is not applicable to those situations involving large numbers of parties. E. MANSFIELD, *supra*

lows: "If transaction costs are zero the structure of the law does not matter because efficiency will result in any case."[243]

Bilateral monopoly provides an interpretation that better fits the facts and conclusions of law in cases like *Boomer* than does the Coase Theorem for three reasons. First, in order for the Coase Theorem's simplistic property right approach to result in efficient solutions in cases like *Boomer*, the theorem must implicitly assume that the opportunistic behavior of the party who has the monopoly power inherent in the property rights is either: (1) controlled by the myriad alternatives of some mythical market, which clearly does not exist, since the parties must deal with each other and no others; (2) that a single firm coordinates and manages the mutually interfering activities, in which case there would be no dispute and no case for the court to decide; or (3) that the party with the monopoly power inherent in the property right would not act opportunistically but would bargain cooperatively. With respect to the last alternative, Cooter demonstrated that even if transaction costs are zero, the Coase Theorem is false because it cannot be deduced from the usual economic assumption of individual self-interested behavior.[244] The Coase Theorem requires the assumption of cooperative behavior.[245] This assumption is contrary to economic theory's general assumption of self-interested behavior, as well as the particular assumption that a monopolist will exploit its monopoly power to the fullest extent so as to maximize profit. The deus ex machina involved in the Coase Theorem's implicit requirement of either nonexistent markets, coordinated management, or counter-assumed cooperation suggests that it should be called the Dr. Pangloss Theorem.

---

note 3, at 509. Large number externalities, social costs, are the most socially troubling type and cause such problems as acid rain and smog. In *Boomer*, the Court was troubled by the possibility that its decision in the case would have wide ranging ramifications on parties not before it. 257 N.E.2d at 871.

243. Cooter, *supra* note 35, at 16, *citing* Polinsky, *Economic Analysis as a Potentially Defective Product: A Buyer's Guide to Posner's Economic Analysis of Law*, 87 HARV. L. REV. 1655, 1665 (1974).

244. Cooter demonstrated that the Case Theorem requires cooperative behavior, which is contingent on agreement by the parties to a rule for the distribution of surplus income that results from such cooperation. If such agreements always occurred as the Coase Theorem suggests, litigation would never occur because the parties would always settle their differences. Cooter, *supra* note 35, at 17.

To emphasize the extremely optimistic and Panglossian assumption concerning cooperative behavior necessary if the Coase Theorem is true, Cooter constructed the polar opposite and equally false theorem (his conclusion), the Hobbes Theorem, which represents extreme pessimism concerning the cooperative potential of individuals: "Private bargaining to redistribute external costs will not achieve efficiency unless there is an institutional mechanism to dictate the terms of the contract." *Id.* at 18. The Hobbes Theorem assumes that people will exercise their worst threats against each other and identifies the impediment to agreement with the absence of a third party who has the power to coerce the parties to compromise because it can threaten to dictate the distribution of the stakes authoritatively.

245. "The Coase Theorem represents extreme optimism about private cooperation. . . ." Cooter, *supra* note 35, at 19. "The error in the bargaining version of the Coase Theorem is to suppose that the obstacle to cooperation is the cost of communicating, rather than the strategic nature of the situation. Bargainers remain uncertain about what their opponents will do, not because it costs too much to broadcast one's intentions, but because strategy requires that true intentions be disguised." *Id.* at 23.

Second, given that mutually interfering activities are reciprocal in nature, Baumol demonstrated that both parties must be given proper incentives to act efficiently.[246] A property rule which favors one party will not generally result in efficient coordination of two activities because the favored party will not have sufficient incentives to take into account the detrimental effect of its activity on the other party.[247] Thus, Baumol showed that the Coase Theorem's extreme view, that courts are free to alter distributive consequences of economic activity without impairing efficiency, is generally incorrect.[248]

Third, the court's decision in *Boomer* supports the conclusion of the bilateral-monopoly interpretation. The *Boomer* court expressly refused to adopt the Coasian property-right solution for reasons suggested by the bilateral-monopoly interpretation.[249] In order to achieve efficient and distributionally fair results in cases in which parties must coordinate their separate activities without dealing with third parties, courts are often required to resort to liability rules or damage remedies and to other forms of equitable relief, rather than merely to declare declarations of property rights.

IV. GOVERNMENT ACTION TO ACHIEVE MAXIMUM SOCIAL WEALTH

Two basic principles control government action of a primarily economic character. First, both courts and legislatures should attempt to achieve the same goal, that of maximizing social wealth. This principle is contrary to the generally accepted view expressed by Posner, who argues that courts and legislatures have totally different functions and goals with respect to economic policy.[250] In Posner's view, courts through common law adjudication are exclusively concerned with efficiency,[251] while legislatures are concerned with distributional equity[252] and interest groups politics.[253]

Section Two, however, showed that distributional equity and efficiency are the two ingredients of social wealth. Maximization of social wealth requires that these two ingredients be optimally mixed. Section Three domonstrated that when courts adjudicate hard common law cases, their decisions have implications for both distributional equity and efficiency, not just efficiency alone. Clearly, therefore, when courts adjudicate hard common law cases they should not merely be concerned with efficiency alone, but should be engaged in social wealth maximization as defined in Section Two. Courts should attempt to use their limited freedom to alter distributional conse-

246. Baumol, *supra* note 36, at 308-09, 311-12.

247. *Id.*

248. "The closer the world approaches the Coasian world of zero transaction costs, the closer law comes to playing a purely distributive function." (footnote omitted) Rose-Ackerman, *Law and Economics: Paradigm, Politics, or Philosophy*, in LAW AND ECONOMICS 235 (N. Mercuro, ed. 1989).

249. *See* text accompanying note 203.

250. R. POSNER, *supra* note 4, at 505-06.

251. *Id.*

252. *Id.* at ch. 16.

253. *Id.* at 496-99. "Although the correlation is far from perfect, judge-made rules tend to be efficiency-promoting while those made by legislatures tend to be efficiency-reducing." *Id.* at 495.

quences, in order to achieve their conception of a society which maximizes social wealth.

Because Congress drafted the federal antitrust statutes[254] with constitution-like generality, Congress has in effect granted courts common law power to police and restructure monopolized markets in order to ensure the markets are reasonably competitive.[255] The court's exercise of antitrust power has significant implications for both efficiency and distributional equity. Because a monopolist can take great advantage of buyers' lack of alternative sellers, a large scope for opportunistic behavior exists in monopolized markets. Monopoly markets are both inefficient and distributionally unfair. By creating an artificial scarcity of the monopolized product, monopolists cause an inefficient allocation of resources. The market produces too little of the monopolized product and too much of other products.

Political conservatives often argue not only that efficiency considerations alone are sufficient to justify antitrust policy, but that efficiency is the only justification for antitrust policy.[256] This assertion is not only unsupported by statutory history and intention,[257] it has questionable theoretical support. *The General Theory of the Second Best*[258] states that if a number of monopolized or imperfectly competitive markets exist in an economy, and the antitrust authorities are in a position to break up some but not all of the monopolies, one cannot be sure that efficiency will be increased.[259] Moreover, empirical studies on the efficiency impact of monopolies on the American economy estimate only a small resultant impact, consisting of one or two percent of the national income.[260] An equally important rationale for antitrust policy is its use as remedy for the distributional inequity resulting from monopolized markets. Without such a policy, buyers would pay more than they should as a consequence of the monopolist's ability to raise the product's price and thereby unfairly transfer income from buyers to the monopolist.[261] Empirical studies estimate that the wealth transfers due to monopoly tend to be very large.[262]

Courts have used this antitrust power to restructure markets in order to dissolve monopolies into a number of competitive firms.[263] Courts have also

254. 15 U.S.C.A. §§ 1-7, 12-27.

255. A. Neale & D. Goyder, THE ANTITRUST LAWS OF THE UNITED STATES OF AMERICA 440, 442 n.1 (3d ed. 1980).

256. R. BORK, THE ANTITRUST PARADOX 81-89 (1978).

257. Hovenkamp, *Distributive Justice and the Antitrust Laws*, 51 GEORGE WASH. L. REV. 1, 16-20 (1982); D. DEWEY, MONOPOLY IN ECONOMICS AND LAW. 139-44 (1959).

258. Lipsey & Lancaster, *The General Theory of Second Best*, 24 REV. ECON. STUD. 11 (1956-57).

259. E. MANSFIELD, *supra* note 3, at 493-94.

260. W. SHEPHERD, THE ECONOMICS OF INDUSTRIAL ORGANIZATION 130-32 (3d ed. 1990); K. CLARKSON & R. MILLER, INDUSTRIAL ORGANIZATION: THEORY, EVIDENCE, AND PUBLIC POLICY 124-27 (1982).

261. *See supra* notes 184-206 and accompanying text.

262. D. Greer, BUSINESS, GOVERNMENT AND SOCIETY 171 (2d ed. 1987).

263. *See* Standard Oil Co. v. United States, 221 U.S. 1 (1911) and P. AREEDA & L. KAPLOW, ANTITRUST ANALYSIS: PROBLEMS, CASES AND TEXT (4th ed. 1988).

enjoined opportunistic or anticompetitive behavior of monopolists.[264] Dewey pursuasively argues that courts have used their power to restructure monopolized markets sparingly because innocent shareholders and workers will experience the severe redistributive impact of such restructuring.[265] In other words, social-wealth maximization in monopoly cases often forces the courts to make difficult judgments as to the efficiency and distributional consequences of their decisions.

The second principle of government action to achieve social wealth holds that neither courts nor legislatures should interfere in competitive markets if markets are in fact competitive and not afflicted by market failures or chronic instability.[266] As discussed earlier,[267] government intervention in competitive markets for the purpose of altering their distributional consequences is self-defeating because it impairs the raison d'etre for markets, their efficiency. Such intervention to achieve distributive goals is functionally equivalent to opportunistic behavior. For example, legislation that benefits "rent-seeking" special interests, such as price supports for farmers, import quotas for clothing manufacturers, military bases for local interests, etc., reduces efficiency and is inconsistent with social wealth maximization.[268]

This second principle does not mean that courts and legislatures should in all cases refrain from interfering in matters of contract. Courts or legislatures often justify government intervention if any of the major assumptions underlying the competitive model are not met. For example, intervention is justified if one party to a contract has significant bargaining or monopoly power, or if significant informational asymmetries exist. *Henningsen v. Bloomfield Motors, Inc.*[269] involved the sale of an automobile in which the contract effectively disclaimed all warranties.[270] The Supreme Court of New

---

264. *See* United States v. United Shoe Mach. Corp., 110 F. Supp. 295 (D. Mass. 1953), *aff'd per curiam*, 347 U.S. 521 (1954).

265. [T]hey [courts] are not convinced that the exercise of monopoly power which has been acquired by means neither actionable nor indictable per se violates the law to an extent justifying its elimination without a sympathetic attention to the position of workers and stockholders whose interests may be adversely affected by trust busting. This view does not regard vested interests in monopoly as bona fide property rights merely by virtue of their established character, but it does assume, however inarticulately, that possible public gains must be weighed against possible private losses and that the more problematical the public benefit, the greater the weight of private claims.

D. DEWEY, *supra* note 257, at 247-48.

266. There should also be no market failures or market instabilities. H. VARIAN, *supra* note 31, at chs. 31-32. E. MANSFIELD, *supra* note 3, at ch. 16. For an argument in favor of government rent stabilization due to the instability in the housing market, see Cirace, *Housing Market Instability and Rent Stabilization*, 54 BROOKLYN L. REV. 1275 (1989).

267. *See supra* note 192 and accompanying text.

268. *See* E. Phelps, POLITICAL ECONOMY: AN INTRODUCTORY TEXT 187-88 (1985); Cirace, *An Economic Analysis of the "State-Municipal Action" Antitrust Cases*, 61 TEXAS L. REV. 481 (1982); Tullock, *The Welfare Cost of Tarrifs, Monopolies, and Theft*, V. W. Econ. J. 224 (No. 3, June, 1967).

269. 32 N.J. 358, 161 A.2d 69 (1960).

270. In fact, the manufacturer only agreed to replace defective parts which in the manufacturer's opinions are defective and which defect is discovered within 90 days of delivery or

Jersey held that the disclaimer was contrary to public policy and was therefore void.[271] Moreover, the court stated, "it is our opinion that an implied warranty of merchantability, chargeable to either an automobile manufacturer or a dealer, extends to the purchaser of the car, members of his family, and to other persons occupying or using it with his consent."[272] In support of its decision, the court noted both the information asymmetry between the buyer and seller[273] and the lack of a competitive market in the automobile industry at the time of the automobile sale.[274] In the 1950s, the American automobile industry market structure was not competitive but rather a "tight oligopoly."[275]

The United States Congress has also passed laws affecting contracts. For example, the Magnuson-Moss Warranty Act[276] limits the seller's power to disclaim or modify implied warranties arising under the Uniform Commercial Code.[277] Informational asymmetries, competitive imperfections,[278] and the duty of Congress to provide an institutional framework which makes competitive markets possible, justify this Act.

Finally, consider the savings and loan scandal, which resulted from the deregulation of the industry, as an example of a failure by Congress to fulfill its responsibility to provide an institutional framework for efficient, competitive markets. Government abandoned control over the type of investment that depositor's funds could finance, while at the same time retaining its role as insurer against losses to depositors.[279] Thus, the government allowed savings and loan managers to invest in unsound investments and engage in opportunistic behavior without fear of market discipline.[280] The savings and loan scandal implicates both distribution, costing tax payers billions of dollars,[281] and efficiency, destabilizing of real estate and mortgages markets.[282] With respect to the savings and loan industry, the federal government

---

4,000 miles of use, whichever event occurs first, on condition that the buyer return the parts with transportation charges prepaid! 161 A.2d at 73-74, 78-79.

271. *Id.* at 95.

272. *Id.* at 100.

273. "The limitations of privity in contracts for the sale of goods developed their place in the law when marketing conditions were simple, when maker and buyer frequently met face to face on an equal bargaining plane and when many of the products were relatively uncomplicated and conducive to inspection by a buyer competent to evaluate their quality." 161 A.2d at 80.

274. "The form warranty is not only standard with Chrysler but . . . it is the uniform warranty of the Automobile Manufacturers Association. . . . [T]he "Big Three" (General Motors, Ford, and Chrysler) represented 93.5% of the passenger-car production for 1958 and the independents 6.5%." 161 A.2d. at 87.

275. A "tight oligopoly" is defined as a market in which "[t]he leading four firms, combined, have 60-100 percent of the market; collusion among them to fix prices is relatively easy." W. SHEPHERD, THE ECONOMICS OF INDUSTRIAL ORGANIZATION 14 (3d ed. 1990).

276. 15 U.S.C. §§ 2301-2312 (1975).

277. *Id.*

278. Goldberg, *Institutional Change and the Quasi-Invisible Hand*, 17 J. LAW & ECON. 461, 464 (1974).

279. 12 U.S.C.A. §§ 1724, 1728 (1986), *repealed by* Pub. L. No. 101-73, Title IV, § 407, Aug. 9 1989, 103 Stat. 363.

280. *See* N.Y. Times, Feb. 16, 1990, at D7, col. 5.

281. *Id.* Jan. 25, 1990, at D1, col. 3.

282. *Id.* Jan. 22, 1990, at D7, col. 4.

clearly failed to fulfill its responsibility to provide an institutional framework composed of efficient and competitive markets.

V. CONCLUSION

This Article has attempted to effect a synthesis of law and economics acceptable to both lawyers and economists. Lawyers and economists possess conflicting values and employ different methodologies. The value conflict between lawyers and economists concerns the proper criterion to evaluate governmental action of a predominantly economic character. Once it is demonstrated that total social wealth is a function of both distributional equity and efficiency, construction of a wealth maximization criterion that is efficient and has a strong claim to distributional equity resolves this value conflict. In addition to resolving the value conflict between lawyers and economists, both courts and legislatures can employ this criterion, thus making it unnecessary to construct different theories for each branch of government.

To form the hard case paradigm, a synthesis of the different law and economics methodologies combines hard common law cases, which are difficult because questions of distributional equity and efficiency are interrelated and difficult to disentangle, with the economic paradigm or model of bilateral monopoly, which best explains such cases. Bilateral monopoly provides an interpretation that fits hard common law cases better than does the Coase Theorem interpretation. A true synthesis of law and economics, as opposed to an economic analysis of law, must include a method for analyzing distributional consequences as well as efficiency consequences of court and legislative decisions.