ECONOMIC ANALYSIS AND DISTRIBUTIVE JUSTICE

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ABSTRACT

We propose an approach to Paretian jurisprudence which is intermediate in its distributive consequences between the perfectly risk-neutral, consumer surplus-maximizing approach of Richard Posner and the perfectly risk-averse, leximin approach of John Rawls. Instead of consumer surplus, we focus on the marginal costs of increased labor; the dollar-weighted formula of Posner is replaced by an hour-weighted alternative. This alternative replaces the traditional assumption of economic analysis that dollars have equal value for everyone in a society. While drawing on literature from public finance, public choice, and cost-benefit theory, this paper develops an ethical argument based on a labor theory of value and several arguments from simplicity. We also describe a majoritarian or median voter argument; a social contract argument; and an efficiency argument which construes judicial support of a constitutional efficiency measure as a cooperative strategy in a multi-sided political process. We then present brief applications to negligence and liability; to "unconscionable" contracts; and to warranties of habitability. These arguments have possible applications in other cases of normative economic analysis in which the government is unable to reach an ideal income distribution by means of taxes and transfers alone.

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"Economic analysis" approaches problems of jurisprudence by substituting market prices for alternative evaluations of rules and policies. The approach has been both praised and condemned for its descriptive and prescriptive qualities.¹ Because of its descriptive content (prices in the marketplace describe what is, not what should be) economic analysis is claimed to be free of the moralistic distortions which underlie other theoretical approaches. However, the putative descriptive accuracy of an economic analysis doesn't justify its prescriptive use.² For that purpose, prior normative judgments are needed.

1. It may be more accurate to further separate economic analysis into positive (or predictive), normative ("prescriptive") and descriptive approaches. See C.G. Veljanovski, The New Law-and-Economics: A Research Review, in A.L. Ogus and C.G. Veljanovski, eds., Readings in the Economics of Law and Regulation at 12, 13-15 (Clarendon Press, 1984). The sharp line that we have drawn in this essay is between the normative and the descriptive. The "positive" approach is more problematic because, while ostensibly not tied to normative issues, the step from prediction to advocacy (from saying this will happen to arguing that it should happen) is as seductive for economic analysts as it is for anyone else.

2. This point goes back at least to David Hume. Treatise of Human Nature, (1739) (Oxford University Press, 1941).

Thus it must be emphasized that economic analysis is an inherently value-laden activity. In the words of a formative text in welfare economics:

... It may be suggested that welfare economics could be purged [of value terminology] by the strict use of a technical terminology, which, in ordinary speech, had no value implications. The answer is that it could be, but it would no longer be welfare economics. It would then consist of an un-interpreted system of logical deductions, which would not be about anything at all, let alone welfare. I.M.D. Little, A Critique of Welfare Economics at 82 (Clarendon Press, 1950).
Many critics have disputed these normative judgments. They have questioned the value of "wealth maximization," they have objected to a callous disregard for "losers" in the marketplace, and they have argued that an entrenchment of inequality is accepted as a given by many economic analyses. Despite these criticisms, the influence of economic analysis of law is increasing.

Scholars, judges and legislators asked to make judgments about the law are understandably attracted to the appeals of "neutrality" and "efficiency." This attraction can be analyzed from an economic standpoint. When decision-makers are faced with two analytical approaches, one derived partly from a scientific analysis which offers mathematical clarity, the other based entirely on normative judgments and yielding more


5. Id.

ambiguous conclusions, they will tend to prefer the former. A cost-benefit analysis helps to explain the popularity of the economic approach.

The challenge for critics of economic analysis, therefore, is to provide an alternative which is comparably attractive to scholars and decision-makers. In this essay we are seeking a revised framework which offers the conceptual clarity of the traditional economic analysis while addressing the contentious issue of distributive justice.

The framework we develop accepts the general goal of "Pareto efficiency" while providing a different quantitative criterion for efficiency than that used in the traditional

7. While there might be arguments about whether economic analysis and moral theory meet this description, there is at least substantial evidence to support it. On the one hand, economists are not reluctant to admit that they tend to avoid questions about distribution. C.G. Veljanovski, *The New Law-and-Economics* at 23 (cited in note 1). On opposite sides of the spectrum, the attraction to nihilism on the part of both legal formalists and subjectivists does little to suggest ready alternatives. See, M. Tushnet, *Truth, Justice and the American Way: An Interpretation of Public Law Scholarship in the Seventies*, 57 Tex. L. Rev. 1307 (1979).

8. Pareto efficiency, which will be discussed within this paper in more detail, measures results in terms of whether desired net benefits have been optimized. A "Pareto optimum" is reached when it is impossible to make any individual better off without making someone else worse off. The acceptance of Pareto efficiency as a goal is not without its difficulties, as A. Sen pointed out in his article *The Impossibility of a Paretian Liberal*, 78 Journal of Political Economy 152 (1970). For other relatively sympathetic objections, see C.K. Rowley and A.T. Peacock, *Welfare Economics: A Liberal Restatement*, (Martin Robertson, 1975). For a thorough-going repudiation based on the Critical Legal Studies school, see D. Kennedy, *Form and Substance in a Private Law Adjudication*, 89 Harvard Law Review 1685-1778 (1976).

Our view, as developed in Section I is that Pareto efficiency almost never provides a *sufficient* normative condition for deciding issues. At the same time we view Pareto efficiency as a *necessary* (meta-)condition that should be imposed on more specific quantitative criteria of efficiency. Richard Posner accepts the former view and rejects the latter view (see notes 24 and 29).
analysis. It can therefore be discussed in "positive" terms concerned with "whether a certain activity is (or is not) efficient." As an alternative to "wealth maximization", it rests on equivalent claims of neutrality. Therefore our analysis highlights the normative character of any decision to test efficiency in a particular manner.

Our discussion is rooted in the literature of public economics, and in the values of democracy and of equality before the law. A main point of our essay is that traditional economic analysis of law employs a cramped reading of welfare economics. Following its leading exponent, Richard Posner, it has accepted a cost-benefit framework which has been rejected by most recent theoretical work on cost-benefit economics.

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9. The traditional analysis to which we refer focuses on optimizing wealth or, more properly defined, consumer surplus. See infra., note 33. This goal is only approximately Paretian. Our alternative measures efficiency in terms of individual effort or labor. See infra., note 91.


11. See, R.A. Posner, The Problems of Jurisprudence (Harvard University Press, 1990); The Economic Structure of Tort Law (Harvard University Press, 1987); Economic Analysis of Law (Little Brown, 3rd ed., 1986); The Economics of Justice (Harvard University Press, 2nd edition, 1983); Tort Law - Cases and Economic Analysis (Little Brown, 1982); Economics of Corporation Law and Securities Regulation (Little Brown 1980); The Economics of Privacy (University of Chicago, 1980); The Economics of Contract Law (Little Brown, 1979); and The Economic Approach to Law (University of Miami, 1975). In this essay we draw heavily on chapters 3 and 4 of The Economics of Justice, which provides the clearest defense we have seen for the normative foundations of economic analysis.

12. Thus: "Virtually all works on cost-benefit analysis would recommend that the distributional consequences of these prices changes be taken into account in policy evaluation, provided that the distribution of income is deemed relevant for policy." [followed by 5 citations]; D.E. Wildasin, Indirect Distributional Effects in Cost-Benefit Analysis, 98 Economic Journal 801 (1988). Again, an authoritative survey of cost-benefit analysis argues for using explicit efficiency weights different from "a dollar is a dollar", 

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This essay does not propose a complete or comprehensive theory of law. Like Posner, we restrict our attention to questions of judicial decision making, taking any legislation as given. We will not look deeply into the conflicting claims of rule-based, and also states:

It is noteworthy that whilst some non-economists, e.g. Lord Roskill in chairing the inquiry into London’s proposed third airport, refused to accept weighting..., it has come to be accepted by some of those economists who had been its strongest opponents -- see, for example, Harberger (1978) and Nwaneri (1970) and Layard, Squire, and Harberger (1980).


Again, a recent elementary textbook author states:

It would be a rare economist who would argue that distributional considerations should not be taken into account, at least judgmentally, at the decision-making stage.


Mishan's antipathy towards pro-egalitarian efficiency-criteria may be based partly on his explicitly stated belief that real income is unrelated to human happiness; see his comments in A Survey of Welfare Economics in Surveys of Welfare Economics at 1:213 (prepared for the American Economic Association and the Royal Economic Association), as cited in J.J. Spengler, Origins of Economic Thought and Justice, at 143 (Southern Illinois Press, 1980).

13. Indeed, several authors have argued against unitary theories of jurisprudence; for example, R.B. Stewart, Regulation in a Liberal State: The Role of Non-Commodity Values, 92 Yale L.J. 1537 (1983); see also citations therein. Posner has recently accepted the point that efficiency cannot provide a complete account of jurisprudence; The Problems of Jurisprudence at 26 (cited in note 11).

14. Our approach would logically be applicable to cost-benefit analysis as well as other forms of legislative and executive decision making. However, a special case can be made

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deontological approaches ("rights") and goal-based, utilitarian approaches ("efficiency").\textsuperscript{15} We will not challenge Posner's normative belief that judges should decide on ex ante rules which lead to efficient outcomes on average ("rule-utilitarian" jurisprudence) rather than deciding ex post efficient outcomes in individual cases ("goal-utilitarian" jurisprudence). Nor will we explore the relationship between efficiency and other normative principles of jurisprudence such as legislative intent and judicial coherence.\textsuperscript{16}

What we do seek is some practical improvement over existing Paretian and approximately Paretian theories of jurisprudence.\textsuperscript{17} In particular, we will argue that our analysis offers a democratic compromise between the relatively pro-rich and pro-poor positions which have been staked out respectively by Posner\textsuperscript{18} and by John Rawls\textsuperscript{19}; and for applying these ideas to judicial decision making, both because of the central role of coherence in jurisprudence; and also because of the historic task of the judiciary in protecting the rights of minorities against the "tyranny of the majority". See, R.M. Dworkin supra, note 3 at 130; see also note 127, 127.

15. Following Posner, we adopt a rule-utilitarian rather than a goal-utilitarian framework; see note 42. Note 16 remarks on the reciprocal relationship between rights and efficiency.

16. However, we do assert that an elaboration of the framework we propose would be more consistent with generally accepted principles of legislative intent and judicial coherence than the traditional economic analysis. See Sections I, IIIe, and IV infra.

17. In this paper we use "Paretian" in the weak sense of supporting Pareto-efficient policies. In our view, no theorist discussed in this paper is Paretian in the strong sense of supporting only those policies which are Pareto-superior to the status quo. Posner tends to adopt the opposite usage, equating Pareto efficiency with Pareto improvements over the status quo. See also footnote 29. We refer to Posner's theory as "approximately Paretian" for reasons discussed in Part Ib.

18. We do not accept Posner's argument that his position is "neutral" and therefore not relatively pro-rich. See Sections I and III below, and especially notes 48 and 52 (third item). However, Paretian positions much more pro-rich than Posner's are possible, at least in
it offers a reasonable approximation to the political preferences of substantial majorities in most democratic countries. Moreover in some cases our approach may improve the descriptive and explanatory power of economic analysis with regard to existing judicial decisions.

Section I is a critical review of Posner’s foundational theory from the point of view of welfare economics. Our review is not intended to provide definitive statements of the arguments against the traditional theory, but rather to make our position clear in relation to both the traditional theory and its critics. For many critics, the Achilles heel of the traditional criterion for efficiency is the normative assumption that a dollar given to each individual has an equal shadow price (or "social value"). We will point out, however, that

19. J. Rawls, *A Theory of Justice*, (Harvard Belknap, 1971). Rawls’s original statement was technically not Paretoian because he neglected to state the necessary tie-breakers for making interpersonal comparisons among persons who are not the worst off. Moreover, Rawls made restrictive assumptions so that interpersonal comparisons could be conducted in terms of bundles of "primary goods", thus simplifying interpersonal utility comparisons. When we speak of a "Rawlsian theory" in this essay, what we have in mind is a generalized "leximin" Paretoian theory.

We characterize Rawls as relatively rather than absolutely "pro-poor" because more extremely egalitarian efficiency criteria are possible; see note 111.

20. By the phrase "social value" we intend only to convey the idea of a relative value assumed (either implicitly or explicitly) by a planner, a policy maker, a public choice theorist, or a voter. We do not claim that "marginal utility" or "social welfare" can be measured empirically, except conditionally upon strong normative judgments. On the other hand, as we argue below policy makers do and must make such judgments.
Section II provides a specific alternative criterion for efficiency, based on a variant labor theory of value which we trace to Adam Smith. We will refer to this alternative measure as "hour-weighting" because it is based on an assumption that hours of labor may be used as a normative yard-stick of efficiency within a society. We provide some specific arguments for this approach.

This section also relates hour-weighting to the constant risk aversion weighting system used in some recent texts on cost-benefit analysis; we will describe a rigorous philosophical basis for choosing a specific and unique value for the critical risk aversion parameter. The constant risk aversion framework supports a clear comparison of hour-weighting with the alternatives advanced by Posner and Rawls. As explained further in Section II, Posner assumes that individuals within a society are willing to risk everything they have in order to maximize wealth; Rawls assumes that individuals would not accept any risk of reduced wealth for the least advantaged regardless of the benefits to others which may result. The alternative we propose falls between these relatively extreme attitudes toward risk aversion.

21. As explained further within, "dollar weighting" refers to traditional measures of efficiency which share a goal of maximizing "wealth" or "consumer surplus".

22. We adopt the term "Constant Relative Risk Averse" or CRRA. Many other names have been used for these functions in the economics literature. For discussion, see infra., note 97.
Section III provides more general arguments for efficiency-criteria which approximate hour-weighting. We relate approximate hour-weighting efficiency-criteria to fundamental democratic values using public choice models; we argue that hour-weighting would be preferred both over dollar weighting, and also over Rawlsian weighting. We argue that this political preference follows both from a Rawlsian "original position" (or at a "constitutional convention" in the model of James Buchanan\textsuperscript{23}), and also from a median voter framework. Finally, we sketch an efficiency argument which construes judicial support of a constitutional efficiency-criterion as a cooperative strategy in a multi-sided political conflict.

Section IV contrasts our theory with Posner’s and Rawls’ approach to specific issues. This section presents brief and partial applications to negligence and liability; to "unconscionable" contracts; and to warranties of habitability. In each case our theory leads to policies that are intermediate between the other two theories with respect to the distribution of welfare. While we primarily intend our theory to be applied normatively, this section points out some instances where it is more successful in describing existing case law than are its competitors.

The Conclusion reviews some of the policy questions raised by our theory.

I. The Normative Inadequacy of "One Dollar--One Vote"

a. The pointlessness of pure Paretianism

Judge Posner reminds us that Pareto superiority is a toothless guide to government action. A similar remark applies to Pareto optimality, but for opposite reasons.

The principle of Pareto superiority advises policy-makers to seek Pareto improvements over the status quo; but usually none are available to policy-makers. For if on the contrary there did exist an opportunity for changing the status quo in a way that literally made no individual worse off, then those who could be made better off would have an incentive to bring the change about, while no one would have an incentive to oppose it. Consequently the beneficiaries would be likely to implement the change as soon as they learned about it. Therefore whenever the status quo constitutes a complete economic and political equilibrium, then all known opportunities for making strict, actual Pareto improvements have already been exploited.

The principle of Pareto optimality advises policy-makers to seek outcomes which are Pareto optimal (whether or not they are Pareto-improvements over the status-quo); but here the problem is that too many optima are available. There are quite literally an


25. There may however exist "potential" strict Pareto improvements over an equilibrium; but transactions costs or other second best impediments prevent us from actually reaching them. For a thorough critique, see G. Calabresi, *The Pointlessness of Pareto: Carrying Coase Further*, 100 Yale Law Review 1211-1238 (1991).

unlimited number of possible Pareto optima available in any economy. For example, if lump-sum taxes and transfers are possible, then by taking an arbitrary number of dollars from one person and giving it to a second person, policy-makers can transform any Pareto optimum into a different Pareto optimum.

Under no plausible normative account are all of the available Pareto optima equally desirable. For example, if there exists anywhere in the world a single sadistic misanthrope so extreme as to enjoy a positive marginal utility from the death of each human save himself, then the eventual end of the entire human race is one Pareto optimum.27

And even if all Pareto optima were equally desirable, any resource-consuming conflict between judges and other policy-makers over the choice of one versus another Pareto optimum would be inefficient. Therefore, the threshold problem for a Paretian jurisprudence is to narrow the choice of optima. That is, one must first answer the question: exactly which Pareto optimum should judges support?

27. The example is extreme, yet germane in light of the historical experience of the Holocaust. Posner makes a similar point in his discussion of sadistic "utility monsters"; The Economics of Justice at 82-83 (cited in note 11).
b. Quantitative efficiency-criteria

One way to answer this question is to select a quantitative efficiency-criterion\textsuperscript{28}. One normative goal of judges, then, would to choose rules which maximize the given efficiency-criterion.

A particular efficiency-criterion could be either exactly or only approximately Paretian. One criterion in particular that is only approximately Paretian is the Kaldor-Hicks or "potential Pareto improvement" criterion. This criterion justifies any change from the status quo such the winners could potentially compensate the losers for their loss, and still come out ahead. Posner argues that the Kaldor-Hicks criterion is accepted by economists even though it sometimes conflicts with Paretian efficiency.\textsuperscript{29}

\textsuperscript{28} The term "efficiency-criterion" corresponds to Posner's more cumbersome phrases "criteria for economic efficiency" and "criterion for a gain in efficiency"; \textit{The Economics of Justice} at 91 (n 12), 92 respectively (cited in note 11).

Posner doesn't provide a specific definition of the concept. We intend the following definition: an efficiency-criterion is any quantitative, real measure over allocations of an economy (or over a subset of allocations) such that any feasible allocation which maximizes the measure is a Pareto optimum (either approximately or exactly). For related definitions, see note 68.

As Posner argues \textit{Id.}, once an efficiency-criterion has been introduced the language of Pareto superiority does not adequately describe the resulting policy arguments. That is, an efficiency optimum is usually not Pareto superior to all other available outcomes. The same could be said for the language of Pareto optimality: because of second best features in the economy, an efficiency optimum is usually not a Pareto optimum.

\textsuperscript{29} \textit{The Economics of Justice}, at 91-92, cited in note 11. His example proves much less than this, however. He shows that a change from monopoly to perfect competition is a Kaldor-Hicks improvement but not a Pareto improvement (the monopolist is hurt). But nevertheless, perfect competition is Pareto-efficient and monopoly is Pareto-inefficient -- facts which Posner fails to point out. The economist's real case against monopoly depends on this subtler point, one which is hard to demonstrate rigorously using elementary techniques. Therefore Posner has \textit{not} shown that "most economists say Pareto but use Kaldor-Hicks". Instead he has merely pointed out a weakness in the usual undergraduate
In our view, this view is doubly inaccurate. First, few modern welfare theorists still defend the Kaldor-Hicks criterion. \(^{30}\) Second, even its strongest advocates recommend it only as an approximate guide to policy, useful when strictly Pareto-relevant information is unavailable. \(^{31}\) Faced for example with a concrete case in which judges had knowledge that rules justified on a Kaldor-Hicks criterion would make every one worse off than rules justified on some other criterion, then even its advocates would agree to ignore Kaldor-Hicks. In other words, Pareto optimality, while not an adequate welfare criterion in itself, is a widely accepted meta-criterion for welfare criteria in general.

Posner however relies on the Kaldor-Hicks criterion to justify an approximate method of measuring efficiency. His approach uses a partial equilibrium rather than an general equilibrium analysis of costs and benefits. \(^{32}\) Posner describes his normative theory as "wealth maximization", but Posner clearly defines "wealth" as an aggregate of consumer surplus. \(^{33}\) For consistency with the welfare economics and cost-benefit literature, in this pedagogy of economics.

30. E.g., see Drèze and Stern, *supra* at 956-957 (cited in note 12).


32. Posner has claimed that an efficient allocation of rights must maximize "wealth" in a global sense; *Utilitarianism, Economics, and Legal Theory*, 8 Journal of Legal Studies 103-140 (1979). However, D. Keenan pointed out that this is only true for small local changes in the allocation of rights. *Value Maximization and Welfare Theory*, 10 Journal of Legal Studies 409-419 (1981). We do not view Posner's partial equilibrium approach as a major limitation of his efficiency-criterion, since there does exist a general equilibrium analog for consumer's surplus, sometimes called the "money metric"; see note 52.

33. *The Economics of Justice* at 60, 77n (cited in note 11). Posner includes producer surplus as well as consumer surplus in his definition; that is a convenience for analyzing both sides
essay we will use the more specific terms "consumer surplus" or "dollar-weighting" where Posner would use the more general "wealth". The consumer surplus approach is highly controversial; below we review some of the normative issues at stake.

c. Objections to all efficiency-criteria

The most sweeping objection to Posner’s theory observes (in our view, correctly) that consumer surplus (like all other quantitative efficiency-criteria) implies some definite interpersonal welfare comparisons. It is then argued that all such comparisons are ethically inadmissible, and perhaps also empirically impracticable. This objection has been put forth most persuasively by the philosopher Robert Nozick.34

Nozick argues that property rights must be taken seriously, because they are rooted in natural law; and if they are taken seriously, then in most cases there is no room left for judges to formulate rules which optimize any criterion for efficiency. Property rights are

of a single market. Posner’s use of the term "wealth" for this construct is an effective rhetorical device; but the term "wealth" has a different set of meanings for many economists and non-specialists. We follow recent authors who use the briefer "consumer surplus" rather than "consumers' surplus". For criticisms of Posner’s definition of the term "wealth", see D.B. Johnson, Wealth Is Value, 15 J. Legal Stud. 263 (1986).

In discussing normative foundations, Posner abstracted away from technical problems related to aggregation; in this essay we will do the same.

34. R. Nozick, Anarchy, State, and Utopia, (Basic Books, 1974). A significant number of leading economists, some but not all associated with the Austrian school, have also objected to any use of aggregated efficiency-criteria. See, for example, J.M. Buchanan, Cost and Choice: An Inquiry in Economic Theory (University of Chicago Press, 1969); and citations therein. Another leading opponent of efficiency-criteria in general, and consumer surplus in particular, is P.A. Samuelson, Foundations of Economic Analysis, (Antheneum, 1st ed. 1965) at 91, 205-210.
asserted as trumps which determine the outcome of legal analysis. Nozick relies extensively on Pareto efficiency as a normative value; however, he uses efficiency as a pre-existing and partial explanation for property rights, rather than as a conscious or unconscious objective of judicial rule-making.35

There is substantial force in Nozick’s general argument that a pre-existing structure of property rights must be accepted before one can speak of an endowment, carry on a market economy, justify or even analyze any particular Pareto optimum.36 It is noteworthy that Rawls’ egalitarian argument, Nozick’s libertarian argument, and Posner’s pro-status quo argument, can all be equally rooted in axiomatic approaches to the initial endowments of property rights. However, Rawls posits a common and collective ownership for non-human resources; Nozick posits an individual and personal ownership for human resources; while Posner posits the endowment under an unexamined status quo as legitimate.37

35. Posner has noted (without emphasizing) the incompatibility between Nozick’s views and his own. R.A. *The Economics of Justice*, at 70-71,90 (cited in note 11).


37. H. Moulin and J. Roemer find that an intermediate starting point between Nozick’s and Rawls’ would lead to strongly egalitarian endowments; *Public Ownership of the External World and Private Ownership of Self*, 97 Journal of Political Economy 347-367 (1989). Their result is similar to ours in Section II below.
In our view, as in Posner’s, traditional property rights alone are an insufficient basis for public policy making. Because technology and society change over time, the common law must make continual adjustments in property rights and other rules; to make these adjustments, jurists need an independent and consequentialist concept of efficiency. Consequently, we reject Nozick’s extreme transvaluation of property rights. In particular, we believe that many or most people would prefer to share in a higher standard of living, even when that requires some limitations on, or changes in, property rights.38

38. In brief, the technical conditions required by Nozick’s theory seem highly particular and rather implausible. That is, to make a convincing argument, Nozick should show that the mere enforcement of traditional property rights is a sufficient condition for reaching a Pareto optimum. Or less restrictively, he should show it is possible to decentralize a welfare optimum. But any public economics text or advanced microeconomics text or game theory text provides numerous reasons why this is probably not the case. These reasons include problems raised by public goods and externalities, non-convexities and monopolies, the second best and the free rider problem. Some of these problems are reviewed in J. Dréze and N. Stern, The Theory of Cost-Benefit Analysis, at 920-953 (cited in note 12). Problems raised by the cost of information have entered the legal economic analysis literature more recently; for an elementary survey, see E. Mackaay, Economics of Information and Law, (Kluwer - Nijhoff, 1982).

Moreover, in our view Nozick himself introduces a veiled efficiency-criterion ("The Principle of Compensation", supra, at 54-87, cited in note 34), amounting to a restricted version of consumer surplus, when he tries to justify taxation for the purposes of law and order and the common defense. That is, he is unable to avoid the fact that any system of taxation imposes an implicit set of interpersonal welfare comparisons.

For a philosophical argument that procedural justice, as exemplified by property rights, cannot be absolute, but must be reconciled or balanced against distributive justice, see L.C. Becker, Property Rights: Philosophical Foundations, (Routledge & Kegan Paul, 1977). Conversely, for an economic argument that consequentialist goals such as efficiency must be tempered by autonomous rights such as property rights, see A. Sen, On ethics and Economics, Rockwell Lecture Series (Blackwell, 1987).
We also doubt that interpersonal welfare comparisons are empirically impracticable; in particular, Posner’s theory\(^\text{39}\) (and arguably also a Rawlsian theory) does provide an empirically practicable counterexample. We will seek to propose another. Many public finance economists have argued that the making of interpersonal welfare comparisons is an inescapable activity for any government which collects taxes or distributes transfer payments or chooses between investment projects, although these judgments may be merely implicit. Therefore an explicit formal analysis seems desirable.\(^\text{40}\) All such formal attempts are necessarily imperfect and controversial, but not all are impracticable.\(^\text{41}\)

\(^{39}\) A point, however, which is disputed by Posner himself; see *The Economics of Justice*, at 79, 107n (cited in note 11). For our responses, see note 61 below.


\(^{41}\) Buchanan and other "constitutional economists" have put forth a very different objection to efficiency-criteria in general: these measures arguably have no point because self-interested judges, legislators, and bureaucrats cannot be bound to respect them. We will address this issue in Section IIIe below.

Accordingly, we accept Posner’s claim that judges should refine and redesign their rules, from time to time and in the light of emerging knowledge, for the purpose (inter alia) of encouraging efficiency. We also agree that this activity is likely to be incoherent and inconsistent across time and across judges, unless it is guided by an explicit quantitative criterion for efficiency. Our purpose here is to provide an alternative criterion for efficiency which may be used as such a guide.

42. In a general sense, Posner’s claim may be identified as “rule-utilitarian.” Posner does make some specifically rule-utilitarian arguments; The Economics of Justice at 87, 113 (cited in note 11). He also takes great pains to distinguish the consumer surplus approach from utilitarianism; Id at 48-87. His criterion for drawing this distinction is that the consumer surplus approach is limited by pre-existing rights. For a persuasive elaboration of his point see R.O. Zerbe, Comment: Does Benefit Cost Analysis Stand Alone? Rights and Standing, 10 Journal of Policy Analysis and Management 96-105 (1991).

Welfare theorists have tended to define "utilitarianism" to include any normative theory which makes use of information which goes beyond ordinal preferences, so as to choose a metrical representation of preferences which is then used to guide policy choices. Under this definition, Posner’s consumer surplus theory is approximately utilitarian. Posner’s most direct counter argument (at 91) notes that consumer surplus can increase while aggregate utility in some other metric is decreasing. While true, this fails to establish his claim that consumer surplus is itself not an approximate, aggregate utility metric, because differently weighted aggregates of utility may respond in opposite directions to a given income transfer. See also note 59.

43. We do not mean to suggest that Pareto efficiency is the only principle (or the dominant principle) to be addressed by such an assessment. Pareto efficiency might be integrated with a broader conception of justice which is based on a coherent pattern of principles as described by Ronald Dworkin. To be acceptable in this manner, however, the criterion for efficiency would need to be consistent with "a sense of justice and with mutual and equal concern and respect..." R.M. Dworkin, Why Efficiency, in A Matter of Principle at 286 (Harvard University Press, 1985).
**d. Equity-based objections to dollar-weighting**

A narrower set of arguments against Posner’s position attacks consumer surplus in particular rather than quantitative efficiency-criteria in general. Consumer surplus assigns the same shadow price (social value) to a marginal dollar of real income whether the recipient is rich or poor; this assignment arguably contradicts the predominant values of the community.

Most forcefully put, the “dollar is a dollar” assumption is "demonstrably false." Most philosophical individualists, and many methodological individualists as well, will deny that the "community" as such can possess values. But in any case, practical political arrangements do get made, and those arrangements are often expressed in terms of, and even implemented by means of, explicitly articulated public values. Our concern in this essay is one for consistency between publicly expressed values; we are here not fundamentally concerned with who actually holds those values. However, we believe that our arguments throughout can be rooted in methodological individualism.

44. In this paper we will ignore intertemporal questions, including issues related to savings; therefore we use real money income and real consumption interchangeably.

45. Most philosophical individualists, and many methodological individualists as well, will deny that the "community" as such can possess values. But in any case, practical political arrangements do get made, and those arrangements are often expressed in terms of, and even implemented by means of, explicitly articulated public values. Our concern in this essay is one for consistency between publicly expressed values; we are here not fundamentally concerned with who actually holds those values. However, we believe that our arguments throughout can be rooted in methodological individualism.


person as it is to the poor, a theory which builds upon the "equal value" of a dollar will systematically favor the rich over the poor. 48

Most subtly put, dollar-weighting simply mis-measures welfare. Since dollar weighting is based on willingness to pay, it often places a higher welfare value on identical goods when provided to the rich than when provided to the poor. For example, on average the rich are likely to be willing to pay more for a given bundle of medical services than the poor would be willing to pay. But most people are likely to assume that equal medical treatments provided to equally sick people should be assigned an equal welfare value, independently of the personal incomes of the sick. 49 In Section II we will draw on this

48. The consumer surplus criterion is pro-rich in a relative sense, as compared to any redistributive criterion. We argue it is empirically pro-rich in an absolute sense when applied to non-market goods. In particular, in many empirical cases taking one unit of an arbitrary non-market good from a poor person and giving it to a rich person would increase consumer surplus. In other words, maximizing consumer surplus supports a pro-rich redistribution of non-market goods. This conclusion follows directly from a single highly intuitive (and testable) empirical claim: that in most cases marginal willingness-to-pay for non-market goods increases on average with income. Note that the goods at issue include extremely important primary goods such as leisure time, voting rights, good health, personal safety, and local public goods. The distribution of each of these goods is deeply affected by the government’s policy criteria. (See also the third item of note 52; and see Section IIIb.)

In addition, it seems fair to characterize Posner’s arguments as pro-rich in an absolute sense when he states: "I do not think there is broad social duty to support people who cannot or will not support themselves. Some non-productive people might therefore starve in a system based on wealth maximization." A Reply to Some Recent Criticisms of the Efficiency Theory of the Common Law, 9 Hofstra L. Rev. 775 (1981). Posner goes on to argue that maximizing consumer surplus will make a society richer and reduce poverty; but he does not argue that maximization of consumer surplus will lead to less starvation than any other ethical theory of jurisprudence.

fundamental insight by treating human labor or time expended as a primary good which should be assigned an equal welfare value across individuals.

These criticisms may not apply when the use of dollar-weighting is confined to descriptive purposes. In particular, Posner's theory that the common law attempts to maximize consumer surplus may help explain many features of that law. His descriptive theory of the law may be especially successful for explaining those features of the law which are a remnant from our undemocratic and feudal past. His theory may also help explain some persistent undemocratic tendencies which exist in our imperfect present. But when the same analysis is put forth as a practical and normative guide for democratic decision-making, then serious questions about "fairness" and "justice" are appropriate.

e. Efficiency-based objections to dollar-weighting

An independent argument is that when judges use consumer surplus as an efficiency-criterion, the consequences may be paradoxically Pareto-inefficient outcomes. This may happen either because of off-setting political reactions on the part of the

50. For one alleged counterexample, see R.W. Wright, Actual Causation Vs. Probabilistic Linkage: The Bane of Economic Analysis, 14 J. Legal Stud. 435 (1985). Several of Posner's reviewers have noted that numerous normative conclusions drawn by Posner are contrary to the primitive facts of our common law; see for example M.S. McPherson's book review of The Economics of Justice, 2 Law and Philosophy 129 (1983), discussing the appendix of Posner's Utilitarian, Economics, and Legal Theory, 8 J. Legal Stud. 103 (1979). S. Rose-Ackerman provides additional examples and citations; Rethinking the Progressive Agenda at 24-25 (New York: Free Press, 1992). See also note 129 and our own discussion of examples in Section IV below.
legislative or executive branches of government; or because of internal inconsistencies in the consumer surplus criterion itself.

All modern states attempt to clothe themselves in legitimacy by appealing to democratic principles, including the principle of consent by the governed. In some cases, governments may even attempt to practice these democratic principles. If so, then it is hard to see how a "one dollar--one vote" efficiency-criterion embodied in the common law could comfortably co-exist with a "one person--one vote" efficiency-criterion embodied in the statutory laws enacted by representative legislatures. Instead, the struggle or game between governmental agents seeking conflicting optima is likely to lead to a Nash equilibrium which wastes resources.\(^51\)

In addition, we note the literature contains several interrelated arguments that consumer surplus in particular, as well as dollar weighting in general, may lead to inconsistent or incoherent measures of welfare.\(^52\) Since these arguments are more

\(^{51}\) A "Nash equilibrium" is a stable situation in which each agent holds accurate anticipations of the responses of other agents. This argument is developed by D. Burress, *Efficiency-Criterion Conflict between Legislature and Judiciary*, mimeo (University of Kansas Institute for Public Policy and Business Research Working Paper, 1992).

This argument tends to support the principle of judicial restraint with respect to the public choice of an efficiency-criterion. But if democracy is a game with many players, in which the legislators, median voter, rent seekers, minority groups, and perhaps the constitution all have conflicting interests, then a case might be made for judicial activism. We will return to this point in Section IIIe below.

\(^{52}\) First: applications of consumer surplus depend on an unverified assumption that the efficiency values of induced changes in secondary markets cancel out. Or in the words of Posner:

"...the third-party effects are merely ‘pecuniary’ externalities, meaning that they result simply from a change in demand rather than from the consumption of some scarce resource (such as clean air, in the case of pollution, which is a technological
externality), or, stated otherwise, ... they have no net effect on the wealth of society..."
in *The Economics of Justice* at 90 (cited in note 11). But in concrete general equilibrium
models, this assumption is generally false. See, for example, I.M.D. Little, *A Critique of

Second: consumer surplus advocates argue that consumer surplus is an acceptable
approximation to an exact criterion for Pareto efficiency; R. Willig, *Consumer’s Surplus
Without Apology*, 66 American Economic Review 589 (1976). However others have argued
that Willig’s and similar approximations are of rather narrow applicability; G.W.
Press, 1983); C. Blackorby and D. Donaldson, *A Review Article: The Case against the use of
the sum of compensating variations in cost-benefit analysis*, 23 Canadian Journal of Economics 474-
491 (1990).

These first two objections can be overcome by using the "money metric" (otherwise
known as "equivalent income") measure recommended by McKenzie. However, the money
metric is a dollar-weighted measure and in other respects is subject to the same normative
objections as consumer surplus.

Third: very far from being a neutral efficiency-criterion, dollar-weighted measures
could be used in some cases to justify a pro-rich income redistribution; T. Scitovsky, *A Note
minimum, it may ratify the existing income distribution in a circular fashion; R.

Fourth: there are a number of problems raised by the sensitivity of the policy
conclusions to the existing price regime or the chosen reference prices; see, for example,
T. Scitovsky, * supra*; J.S. Chipman and J.C. Moore, *Compensating Variation, Consumer’s
of Public Economics* at 162 (cited in note 28); G.W. McKenzie, * supra* throughout. For a recent
example showing that these problems are very significant in applied public finance, see
R.K. Triest, *The Relationship between the Marginal Cost of Public Funds and Marginal Excess
Burden*, 80 American Economic Review 557-566 (1990). In a specific law and economics
context, S. Margolis pointed out that the consumer surplus measure is ambiguous, because
in a given fixed situation, it has a quantitative value which varies with the assumed prior
allocation of rights; however, Margolis failed to cite the price sensitivity literature. *Two
Posner’s discussion of this problem as purely a wealth (income) effect is technically correct,
but unhelpful, since these effects in general do exist; *The Economics of Justice* at 109 (cited
in note 10).

The hour-weighted efficiency-criterion we propose below escapes all except
possibly the fourth of these criticisms. It escapes the fourth (is reference-price invariant)
under at least the same conditions as do dollar-weighted measures. We do not know
whether (a general equilibrium version of) our theory is reference-price invariant under
of a technical than a of normative nature, we will not address them in detail; however, in
our view they have never been adequately addressed by the proponents of maximizing
consumer surplus.

\textbf{f. General defenses for dollar-weighting}

Posner and others have responded to these normative objections with at least seven
independent (and arguably even inconsistent\textsuperscript{53}) defenses of the "dollar is a dollar"
assumption.

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more general conditions.

Another, less fundamental, objection points out correctly that some goods are
unpriced because they are unavailable in the private market; see, for example, H.
(1982). Income redistribution is a germane example of an unpriced good (private gifts are
not a market solution to redistribution because of the free rider problem; see, for example,
327 (1971)). However, this is a purely methodological problem rather than a conceptual
problem. Indeed, there is a large literature which proposes ways of evaluating unpriced
goods which are roughly consistent with consumer surplus; for citations see any of the
cost-benefit analysis texts cited in note 12.

53. Posner’s affirmative defense of consumer surplus as a normative utility-based
maximand (see note 54) rests uncomfortably with his denial that consumer surplus
represents an aggregation of individual utilities. (See note 52 for a discussion of the
importance of Willig’s theorem to the rehabilitation of consumer surplus in formal cost-
benefit analysis; it is clear from Willig’s note 16 that an individual’s consumer surplus is
intended to be a measure of her indirect utility.) Also, Posner’s claim that economists can’t
identify a "fair" income distribution, and his attacks on interpersonal utility comparisons,
seem hard to reconcile with his advocacy for one particular efficiency-criterion. Finally,
his equation of "justice" with "efficiency" seems hard to reconcile with his (implicit) claim
that the "equitable" or "just" distribution of income is empirically separable from the
question of "efficient" government policies (see Section If7).
1. Consent and utility

First, Posner has mounted an affirmative defense for maximizing consumer surplus. He believes it is an attractive compromise between the values of consent and autonomy, on the one hand, and utility maximization, on the other.\textsuperscript{54} Moreover, it gives what he considers to be due weight to the producers of wealth.\textsuperscript{55}

In particular, Posner provides us with a useful form of argument which justifies efficiency as a goal for human institutions by appealing to the implicit, \textit{ex ante} consent that most individuals would be likely to grant for its use.\textsuperscript{56} But Posner fails to take the necessary next step.

That is, Posner does not show that substantial numbers of citizens would give their political consent for judges to base rules on consumer surplus, in particular, if citizens knew that alternative efficiency-criteria were available.\textsuperscript{57} Posner’s concepts of "autonomy"

\footnotesize

55. \textit{The Economics of Justice} at 83 (cited in note 11).

56. \textit{The Economics of Justice} at 96-99 (cited in note 11).


A very different criticism by Robin West asserts that individuals often consent to transactions because they desire to submit to authority, rather than out of a desire to maximize well-being or autonomy. \textit{Authority, Autonomy, and Choice: The Role of Consent in the Moral and Political Visions of Franz Kafka and Richard Posner}, 99 Harvard Law Review 384 (1985). To the extent that this is true, \textit{all} existing empirical approaches based on Paretian efficiency are called into question (including both Posner’s and our own). In particular, economists could not infer an individual’s welfare rankings from her choices alone; supplementary information on perceptions of authority would be needed. While we accept the \textit{theoretical} force of West’s argument, it will have little \textit{empirical} bite unless and until there comes into existence a concrete research program with a general method for
and "consent" are related to the Pareto-improving trades and contracts reached by sovereign individuals; but he does not show that autonomous agents would want judges to use dollar-weighted efficiency-criteria in particular when construing the contracts they enter into.58

Moreover, far from being a "compromise" between utilitarianism and consent, maximizing consumer surplus is intelligible only to the extent that it (approximately) maximizes some particular weighted aggregate of utility.59 (A similar statement holds for any Paretian or approximately Paretian efficiency-criteria.)

In addition, we are not persuaded that judicial maximization of consumer surplus encourages more creation of wealth (in the sense of ordinary usage) than would maximization of some other efficiency-criterion. In particular, if production of wealth is associated more with the active exertion of individual effort or labor than with the passive inheritance of ownership, then it would seem logical that the efficiency-criterion used by

exploiting non-choice-based information about welfare.

58. Indeed, if the parties to the contract are risk averse, insurance is not a free good, future incomes of the parties are uncertain, and the cost of contract enforcement is independent of the efficiency-criterion employed by judges, then rational parties would prefer that judges use an efficiency-criterion which is income weighted, as an implicit form of income insurance. The contracting parties are presumably free to offset any expected distributional consequences of this decision by means of side payments.

59. Posner argues in The Economics of Justice, at 60-66 and 91 (cited in note 11), that consumer surplus is normatively valid in part because (as several economists he cites have shown) it is not an exact utility aggregate. This argument seems perverse. If consumer surplus is not an (approximate) aggregate of utility, then it is not a coherent criterion for welfare at all.
judges should place relatively more weight on labor effort than on property ownership. Consumer surplus does not accomplish this.

2. Interpersonal neutrality

Posner's second defense argues that no interpersonal welfare comparisons are intended by his theory, since it simply reports the outcomes of the market.\textsuperscript{60} This view is not widely accepted in recent welfare economics literature.\textsuperscript{61} Posner is not merely reporting on market outcomes; rather, he is proposing judicial actions which will influence market outcomes.

3. Simplified analysis

Posner's third defence claims that "a dollar is a dollar" leads to a simplified analysis which can be applied using a minimum of social resources.\textsuperscript{62} This argument seems inconclusive; the additional costs required for performing a non-dollar-weighted efficiency analysis are likely to be very small in comparison to the sums of money involved, for example, in taxes and in transfer programs.\textsuperscript{63}

\textsuperscript{60} The Economics of Justice at 79, 107n (cited in note 11).

61. As Veljanovski notes, "[Economic analysis] assumes that a £1 is a £1 to whomsoever it accrues. But this is as much an interpersonal comparison as one that weighs the gains and losses on the basis of some normative and/or ethical value judgment regarding the relatively 'worthiness' of individuals." C.G. Veljanovski, The New Law and Economics at 21 (cited in note 1). See also note 40.

62. The Economics of Justice, at 79 (cited in note 11).

63. Moreover, one scholar has given examples indicating that the traditional economic analysis, far from being simple, direct, and inexpensive, may be excessively complex, difficult, and even indeterminate. R. Schmalbeck, book review (cited in note 36). Similarly, H. Hovenkamp complains that the principle of wealth maximization is "too spongy,
More fundamentally, many economists believe that problems of the second best preclude using the kind of simplified single-market analysis which this cost-comparison assumes.

Nor is an alternative analysis impractical. Economists increasingly do analyze welfare issues using large general equilibrium models containing price distortions and other second best features. Rather than relying on approximate efficiency criteria such as

because there is no way to determine which values the members of the American society hold and how much they are willing to pay for them”, in so far as legislatures and courts are economic responses to missing markets in certain values. H. Hovenkamp, Distributive Justice at 27 (cited in note 52). And T. Armitage argues that economic analysis can be employed in many different ways with outcomes which depend on underlying values held by the analyst. Economic Efficiency as a Legal Norm, 7 Research in Law and Economics 1-27 (JAI Press: 1985).


65. In addition, the simplified and approximate analysis based on consumer surplus introduces errors which may in practice lead to incoherence and intertemporal inconsistency. The problem arises because the analysis is sensitive to the existing price regime; but prices change over time. See citations in note 52.
consumer surplus, they employ explicit utility functions. Efficiency weights are a simple addition to these models.

In particular, using Meade’s formula, any mathematically tractable Paretian efficiency judgment can be expressed using individual weights. The weights are usually based on each individual’s real income or consumption. Consequently, a wide range of Paretian efficiency judgments, and not merely dollar-weighted judgments, can be expressed in terms which allow a formal cost-benefit analysis. A weighted efficiency-criterion of this type, i.e., one supported by explicit rather than implicit judgments about interpersonal comparisons, has been termed a "grand efficiency measure".

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Some authors may wish to distinguish an efficiency-criterion from a welfare measure. For our purposes here, there is no practical difference. What we intend in either case is merely some method for well-ordering the partial ordering imposed by the Pareto principle, for the purpose of guiding policy recommendations or decisions. We reiterate our belief that any such well-ordering induces an implied set of interpersonal utility comparisons.

Thus a "grand efficiency measure" is similar to a Samuelson-Bergson social welfare function. P.A. Samuelson, *Foundations of Economic Analysis* at 219-228 (cited in note 34).
Therefore, we can restate the threshold problem for any Paretian analysis (whether exact or approximate) as one of reaching philosophical or political agreement on a given set of efficiency weights. That problem applies with equal force to Posner’s dollar-weighting as well as to any other weighting scheme.

4. Equalization in the long run

Posner’s fourth defense argues that questions of income distribution are not of any long-run importance, because natural processes will tend to equalize income distributions over time.69 However, this theory is both controversial and contrary to some empirical evidence.70 This argument is also probably unappealing for a considerable majority of those persons who will, in the long run (as Keynes famously commented), be dead.

5. Economic relativism

The fifth and sixth defenses of "a dollar is a dollar" have to do with the concept of "justice". Posner argues that there are two "senses in which the word justice is used in reference to the legal system."71 He defines "distributive justice" as the "proper" degree of economic inequality, and he states that "economists cannot tell you what that degree is." He then defines a second meaning of "justice" as "simply 'efficiency.'"

69. The Economics of Justice at 110-112 (cited in note 11).


Posner’s fifth argument, in effect, turns the tables on his critics, and asks them to put forth a definite theory of the desired degree of equality. That is a valid demand; and we will undertake this burden below. At the same time, we point out this argument is empty as a defense of "a dollar is a dollar" because it deconstructs a pro-status-quo jurisprudence quite as well as it deconstructs any other theory. In other words, Posner’s dollar-weighted theory in practice lends judicial support to the status-quo distribution of resources\(^7\); but Posner, by his own admission, has no normative basis to justify the existing distribution of resources.

6. Efficiency as justice

Posner’s sixth argument equates justice with efficiency. In our view, this combines a mathematical tautology with a slippery *non-sequitur*. Once a concept and a measurement of justice has been accepted, then it is mathematically true that "efficiency" could also be defined and measured, in such a way that increases in measured efficiency entail increases in measured justice. In that sense, Posner can tautologically equate "efficiency" with "justice" if he chooses to use words in that fashion.

However, in ordinary linguistic usage, one can’t tell whether an agent is acting efficiently until one first knows what his real goals are. Thus "efficiency" in the social sense is logically subordinate to some assumed social goals, whether "justice" or some other. Posner has it backwards, subordinating an end (justice) to a measure of the effectiveness

\(^7\) The pro-status-quo bias implied by maximizing consumers surplus was first demonstrated in a Note by Scitovsky; T. Scitovsky, *A Note on Welfare Propositions* (cited in note 52).
of the means (efficiency). The prior question is justice. Define justice, and an appropriate definition of efficiency will follow.

Moreover, most people hold views of "justice" which are entirely independent from, and sometimes in conflict with, Pareto efficiency. Posner fails to provide persuasive reasons for changing those views.

7. Separability of efficiency and equity

A seventh defense argues that the efficiency goal of government is separable from its equity goal. Knut Wicksell first expressed this idea by drawing a distinction between the "allocative" or efficiency-oriented, and the "distributive" or equity-oriented activities

73. This is parallel to R. Dworkin’s point that wealth is a means, not an end; R.W. Dworkin, Is Wealth A Value? at 195 (cited in note 3). Posner’s rebuttal seems to miss the real point here.R.A. Posner, The Value of Wealth: A Comment on Dworkin and Kronman, 9 J. Legal Stud. 244 (1980).

74. For a careful discussion of the linguistic, philosophical, and economic meanings of the terms justice, efficiency, and equity, see J. Le Grand, Equity and Choice, chapters 2 and 3 (Harper Collins: 1991). In his language, both Posner’s theory and our own are concerned with defining a social optimum, and not specifically with justice, equity or efficiency.

75. Posner himself has not explicitly made this argument. However, his position seems logically incomplete without it or something similar. In particular, he needs some way to establish that the distribution of income is still legitimate, even after it has been changed as a result of judicial actions which maximize "wealth".
of government. Therefore Posner can logically argue for a definition of “efficiency” which is conditional on the given income distribution.

This approach assumes the government both can and will accomplish its desired degree of equity by means of taxation and transfer policies. If so, one need not be concerned about interpersonal welfare comparisons when one is performing legal analysis, because the legislature will set a fair balance using transfer payments. This argument is rooted in the second theorem of welfare economics, which implies that under certain conditions including freedom from market distortions, any desired Pareto optimum can be supported by means of lump sum taxes and transfers within a competitive general equilibrium.

However, this argument has fallen on hard times. Most public finance economists have become convinced that real taxes and transfer payments as well as many other second

76. K. Wicksell, A New Principle of Just Taxation, Finanztheoretische Untersuchungen (Jena, 1896); reprinted in R.T. Musgrave and A.t. Peacock, eds., Classics in the Theory of Public Finance, (St. Martin’s Press, 1967). It is significant, however, that Wicksell himself was a radical egalitarian who predicated his efficiency concept on the pre-existence of a just distribution of income. A more complex separation between allocation, distribution, and stabilization was introduced into American public finance by R. Musgrave in the 1950’s. But J. Buchanan states: "As Musgrave has always acknowledged, then and now, the three-part classification is a conceptual rather than an operational tool for analysis." Richard Musgrave, Public Finance, and Public Choice (Review Article), 61 Public Choice 291 (1989).

77. C. Baker argues that this approach is self-contradictory, because judicial rule-making leads to changes in the income distribution. The Ideology of the Economic Analysis of Law, 3 Philosophy and Public Affairs 5-48 (1975). However, if the legislature could and did independently maintain the given income distribution, then Baker’s objection would fail. Accordingly, Posner’s approach is not self-contradictory, provided that Posner (implicitly) assumes this type of separation between efficiency and equity.
best problems necessarily entail substantial market distortions that invalidate practical applications of the second welfare theorem.\textsuperscript{78} Public goods present another impediment to separating allocation from distribution.\textsuperscript{79} For example, the distribution of wealth may affect the optimal allocation of both public and private police services.\textsuperscript{80} Consequently, even at best, less than the desired amount of equality can be achieved by means of taxes and transfers alone; indirect policies including judicial policies also must play a role in any effort to achieve an optimal level of equality.\textsuperscript{81}

\begin{itemize}
\item \textsuperscript{78} E.g., see the optimal taxation literature following P.A. Diamond and J.A. Mirrlees, 1971, "Optimal Taxation and Public Production I,II", \textit{American Economic Review} 61(1,3), March, June, pp. 8-27, 261-278. A textbook author states:
Economists have all too often assumed away distributional problems in order to analyze more comfortable allocation issues, knowing full well that dichotomizing allocational and distributional policies is not legitimate.
\item \textsuperscript{79} \textit{... [because of public goods it is] clear that such an attempt to divorce allocation from distributional considerations is generally not justified."
\item \textsuperscript{80} See, B. Eaton and W. White, \textit{The Distribution of Wealth and the Efficiency of Institutions}, 29 Economic Inquiry 336-350 (1991); and citations therein.
\item \textsuperscript{81} Of course, one might argue that a separation of distribution from allocation is politically practical even if it is not optimal; but Posner has not made that argument. A cost-benefit theorist who does argue for the separability of equity and efficiency in a second-best world is Y-KNg, though he uses partial equilibirum arguments; see his, \textit{Quasi-Pareto Social Improvements}, 74 American Economic Review 1033 (1984). But even if his arguments are approximately correct, they would equally well support the use of any alternative efficiency criteria.
\end{itemize}
g. A restricted defense for dollar-weighting

At the same time, under restricted circumstances it may still be possible to separate efficiency from distributional questions. Thus if it can be shown that a decision will not have a net final effect on rich or on poor, then there is no unique reason for evaluating its efficiency using an income-based weighting system; dollar-weighting will do quite as well. In a partial equilibrium analysis, if those on each side of a dispute are relatively equal in income; or if, regardless of how benefits are distributed by a judicial decision, the market will adjust so as to offset the decision and reach the same equilibrium point\(^82\); then a income-weighted analysis of costs and benefits will add nothing.

Consequently, a general income-weighted analysis opens the door for specific uses of the dollar-weighted analysis which are free of any pro-rich bias. Thus, by separating those issues which have distributional significance from other issues or disputes, the dollar-weighted analysis can gain credibility.

The relevant question is whether a judicial decision will have a distributional effect. Two criteria should guide analysis of this question:

1) Is the social value of the dollar reasonably equal for those on different sides of a dispute? and if not:

2) Will the market adjust to the changed rule so as to offset its initial distributional impact?

\(^82\) For illustrative examples, see *The Economics of Justice* at 102, 104 (cited in note 11).
If not, then an income-weighted analysis should be performed; otherwise, the dollar-weighted analysis may be equally appropriate.

Analyzing the initial impact of the decision on rich and poor separately should help to focus the inquiry. Thus, it would not be enough to find that dollar-weighted benefits are relatively small and costs are significant; if it can be shown that the benefits are received by a class of persons with very low measured welfare, then those benefits might outweigh substantial costs to the rest of society.

But if it appears, after examining the evidence, that a judicial decision will have a differential impact on rich and poor, then the determination of an efficient and just decision should reflect the differences in the social value of a dollar for those affected. But that requires the selection of a specific efficiency-criterion. Thus we return to our threshold question: exactly which Pareto optimum should judges support, and why? Next, we propose an alternative answer.
II. Arguments for an Exact Hour-Weighting of Costs and Benefits

Both for prescribing policy and for defining justice, we start with the principle that people, not dollars, should have equal worth and equal weight. In this section we show that principle is consistent with a specific criterion for Pareto efficiency. Using such a criterion, legal analysis can combine the analytical clarity of the traditional economic analysis with a normative basis rooted in human equality.

The one respect in which people are most nearly equal is that each has been given primary control over her own time and her own effort. Therefore we assert that individual time and effort (the personal value of labor) is a more democratic starting point than market prices for the judicial analysis of value. In particular, we assert that any two people sacrificing equal amounts of time should warrant equal consideration under the law.

a. "Primary goods" and "willingness to pay" welfare metrics

Our assertion is guided in part by Rawls’ intuition that welfare should be measured in terms of primary goods. To translate Rawls’ claim into utilitarian language, we assert that equal quantities of primary goods should be assigned an equal social value for each person who receives them.

This approach contrasts sharply with the dollar-weighted theory, in which goods have marginal social values determined by the marginal willingness to pay of individuals. The contrast is much more stark in the case of primary goods than in the case of market goods.
Market goods, in particular, generally obey the law of one price; consequently, their valuation in terms of marginal willingness to pay is approximately equal across individuals. But primary goods do not obey the law of one price; their valuation in terms of marginal willingness to pay is conditioned by income and differs drastically across individuals.

We will take leisure time as our main example of a primary good. Under ordinary market conditions, the marginal value of leisure time equals the wage rate. But the wage rate differs drastically across individuals. Consequently, the dollar-weighted theory places different marginal social values on the same primary good (leisure time) when given to persons who differ only in their real income. In particular, an hour of leisure is deemed socially more valuable when awarded to the rich than to the poor. This judgement is contrary to any egalitarian conception of welfare.83

Rawls described a number of different primary goods; our theory however will focus on the free use of one’s own human time for one’s own purposes ("leisure time") as a uniquely important primary good.84 We do not deny the existence of other primary

83. In the context of labor supply studies, economists normally use "leisure time" to denote a residual category that includes most personal time but excludes wage and salary labor and equivalent labor by a business proprietor. We intend a more restrictive notion which also excludes unpaid household labor (based on the belief that household labor is scarcely more free than wage labor). However, the argument in the above paragraph should hold under either interpretation.

84. In his original work, Rawls did not specifically include human time as a primary good. Rather, he included "rights and liberties, opportunities and powers, income and wealth"; i.e. means by which "men can be assured of greater success in carrying out their ... ends, whatever these ends may be". J. Rawls, A Theory of Justice at 92 (cited in note 17). R. A. Musgrave argued that "leisure time" in the economist's sense of the free use of one's
goods, but we abstract away from them; our goal here is not to propose a complete or final ethical theory of efficiency, but merely a practical improvement over the dollar-weighted approach.

We do however point out that human time, in its unfree form as wage labor, is in narrow market terms the pre-eminent economic resource. Labor’s marginal product is the direct source of a large majority by value of the world’s annual market product. Moreover, embodied in the form of capital, labor is an indirect source of much of the rest.

b. Adam Smith’s normative labor theory of value

Thus our approach is related to the labor theory of value, which had a long history in classical and Marxian economics. The labor theory was implanted in that discourse by Adam Smith. Smith actually promulgated two different and analytically distinct labor theories of value. Smith’s first and more familiar theory suggested an empirical explanation for production and for the determination of relative market prices based on the ultimate labor inputs.85 That theory is unrelated to our argument.

85. See the first sentence of the Introduction and Plan of the Work: "The annual labor of every nation is the fund which originally supplies it with the all the necessaries and conveniences of life..." A. Smith, Wealth of Nations, at 1, Edwin Cannan, ed., (University of Chicago Press, 1976).
Smith’s second and less familiar labor theory is a *normative* theory relating *welfare*-value to human time. The second theory has no important empirical implications, plays only a small role in *The Wealth of Nations*, and received limited subsequent attention. However, it is the starting point for our argument.

According to Smith’s second and less familiar theory, instead of "a dollar is a dollar", one should assert that "an hour is an hour":

Equal quantities of labor, at all times and places, may be said to be of equal value to the labourer. In his ordinary state of health, strength, and spirits; in the ordinary degree of his skill and dexterity, he must always lay down the same portion of his ease, his liberty, and his happiness. The price which he pays must always be the same, whatever may be the quantity of goods he receives in return for it. Of these, indeed, it may sometimes purchase a greater and sometimes a smaller quantity; but it is their value which varies, not that of the labor which purchases them. Labour alone, therefore, never varying in its own value, is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared. It is their real price; money is their nominal price only.87

In modern language, this passage proposes a cardinal metric for utility so as to compare standards of living or individual welfare across times, places, and persons. Thus it articulates a rational basis for making interpersonal welfare comparisons. This passage also provides the earliest clear distinction between "real" and "nominal" values (it also

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86. However, the Marxian theory of exploitation depends analytically on *both* labor theories of value: in empirical terms all production is traced back to labor; and in normative terms labor is assigned equal social value across individuals. T. Bottomore, *A Dictionary of Marxist Thought* at 157-158 (Cambridge: Harvard University Press, 1983).

87. A. Smith, *supra*, Book I at 37.
demonstrates the irreducibly normative content of any such distinction). But rather than employing the "dollar is a dollar" or "cost of living" metrics used in modern price indices, Smith proposed an "hours of work" standard.

The choice of any cardinal utility metric is inherently normative (as well as descriptive). In particular, when one attempts to make a quantitative comparison of levels of human happiness or welfare between persons (or even for the same person across different points in space-time) one discovers that relative happiness or well-being is not economically observable, even though indifference surfaces are observable. One solves this problem by means of a normative assumption or theory.

These normative theories ordinarily proceed in two steps. First, one matches up levels of indifference across space-time-person by assuming that the "same" bundle of inputs leads on average to the "same" level of personal welfare, independently of space-time-personal co-ordinates. Second, one chooses an objective, mechanical means for assigning reproducible, empirically-based cardinal values ("welfare") to these ordinal levels of "happiness".

In Posner's consumer surplus theory, it has been shown that one (implicitly and approximately) assigns a dollar value to each indifference surface by measuring the

88. In the case of homogenous preferences. With inhomogeneous preferences, one needs a more general approach for mapping between indifference surfaces.

expenditure function, i.e., the income needed to sustain that level of indifference (given some fixed or status quo reference vector of market prices).  

In Smith’s theory, one places a labor-hour value rather than a dollar value on indifference surfaces. However, by modern standards Smith is somewhat vague on how this may be accomplished.

c. The "Hour is an Hour" criterion for efficiency

One of us has extended the project Smith began, using a combination of empirical and normative assumptions. The key empirical assumption is that the uncompensated price elasticity of labor supply must be zero for all persons with zero non-labor income (i.e. a "fixed labor supply"). This condition is reasonably consistent with U.S. empirical data.

90. J.S. Chipman and J.C. Moore discussed the approximation of consumer surplus to equivalent income; Compensating Variation, Consumer’s Surplus, and Welfare (cited in note 52).


92. At least for prime age males. E.g.: casual empiricism would suggest that a middle class professional works more than 40 hours a week for her $50,000 a year; while a top corporate raider works less than 100 hours for his $50 million. That implies a tiny uncompensated wage elasticity of less than +.003. There is much evidence that employed males in poverty work at least as long hours as the middle class; this implies a slightly negative elasticity. A survey of econometric studies found the wage elasticity is less than .3 for prime age males, and could be 0.; B.P. Bosworth, Tax Incentives and Economic Growth, Washington, DC: Brookings Institute (1984), Ch. 5. See also M.R. Killingsworth, Labor Supply, Cambridge: Cambridge University Press (1983), ch. 3 and 4; and J.J. Heckman, What Has Been Learned about the Labor Supply in the Past Twenty Years?, 83(2) American Economic Review- Papers and Proceedings 116 (1993).

This assumption can also be extended to prime age secondary workers if home production is treated as a form of labor.
It also has a long tradition in economic modelling. In addition, our argument assumes that all persons put forth equal effort while at work.

The key normative condition places an equal marginal social value on human leisure time across all individuals who have zero non-labor income. For purposes of simplicity, the efficiency-criterion is also assumed symmetric or "anonymous" and separable across individuals.

Under these assumptions, it can be demonstrated that efficiency is measured by the aggregated logarithms of individual consumption or real income. Moreover, the same rule can be extended with only a small degree of error to persons who do have non-zero amounts of non-labor income.

93. Economists took the total labor supply as fixed in most contexts from the time of Adam Smith until the invention of labor economics as such in the 1930’s; e.g. L. Robbins, *Note on the Elasticity of Demand for Income in Terms of Effort*, 10 Econometrica 123-129 (1930). Keynesian models and Leontief input-output models usually take the labor supply as fixed. Even among models of the new-classical market-clearing school, in situations where the labor supply response is unimportant to the argument at hand, labor supplies are usually assumed fixed as a benchmark. This choice is of course an expositional convenience, but not merely that: equally simple models could have been constructed using perfectly elastic or unitary elastic labor supplies.

94. At least in principle, the weighting formula could be adjusted to reflect effort as well as sacrifice over a lifetime in order to accommodate those who chose to defer gratification. A hour-weighting of costs and benefits would be based upon a calculation of total effort willingly expended. Furthermore, if it turned out that a poor individual was not willing to work as hard for his income as a rich person, then an additional adjustment in the weighting could be justified. At the same time, if it were shown that a typical poor person were working much harder for his dollars than a typical rich person, then each dollar earned by a poor person should be weighted even more heavily than under the formula we propose. This issue is in part empirical and in part normative; it should be tested and debated as such.

95. D. Burress (cited in note 91).
In other words, the total addition to hour-weighted efficiency (call it \( w \)) which results from giving total real income \( y \) to a person is given by:

\[
(1) \quad w = \log(y).
\]

Looking at small changes leads to a proportional weighting formula:\(^\text{96}\)

\[
(2) \quad dw = \frac{dy}{y}.
\]

In applications, we assume that judges will be rule-utilitarian, i.e. they will seek reasonably simple rules that will tend on average to maximize expected efficiency in the future. To simplify the discussion, we will consider representative individuals, for example persons with income equal to the average income expected in the future among persons affected by a judicial decision. Thus, suppose that a representative plaintiff woman has an annual income of \$10,000 and a representative defendant man has an annual income of \$100,000. If the net costs and benefits for each person resulting from the decision are small, then by formula (2) they should be weighted proportionately to their original incomes. Thus a benefit of \$1 to the poorer woman would be socially equal to a \$10 benefit for the richer man. A change in law would be justified if a net gain in weighted benefits resulted.

But if the resulting changes in real income are not small, then formula (1) should be used, or in other words judges should maximize the expected sum of the logarithms of real personal incomes.

\(^{96}\) A weighting formula essentially similar to equation (2) was proposed on an \textit{ad hoc} basis by C.D. Foster. \textit{Social Welfare Functions in Cost-Benefit Analysis}, in R. Lawrence, ed., \textit{Operational Research in the Social Sciences}, (Tavistock Publications, 1966).
"Efficiency" takes on new meaning when evaluated according to this formula. The traditional measurement of economic analysis, maximization of consumer surplus, is replaced by a more direct measure of the satisfaction of human needs; namely, the minimization of the implied labor effort. Thus, the poorer woman described above would be potentially released from as much effective labor time by her $1 gain as the richer man by his $10 gain. We will use the term efficiency to represent this concept, and we claim that our use of the term is at least as compelling as that found in the traditional dollar-weighted analysis.

After making the adjustment we have described, normative economic analysis can proceed in the usual manner. Thus, any change in the interpretation of law should be analyzed in terms of its expected economic costs and benefits, weighted according to the ultimate distributional effect.

Consequently, the analysis would carry with it all of the complications of direct and indirect effects, as well as short run and long run effects, that complicate any economic analysis. Thus if an income redistribution seemingly justified by its weighted impacts actually acted as a disincentive for those with higher incomes, leading to a decrease in weighted net benefits, then such a policy change would fail to meet this efficiency standard. Furthermore, any change which caused both the poor and the rich to be better off than they are currently would satisfy this test of efficiency, even though such a change might increase social inequality.


**d. Constant Relative Risk Averse efficiency-criteria**

As we have noted, many other weighting formulae are theoretically possible. In particular, under certain assumptions the three efficiency-criteria (dollar-, hour-, and Rawlsian weighting) can be subsumed within a larger class of "Constant Relative Risk Averse" or CRRA efficiency-criteria.\(^\text{97}\) We adopt the term CRRA because it stresses their most essential property when they are viewed as a sum of Von Neumann-Morgenstern utility functions (a property we use in the next section).\(^\text{98}\) CRRA weights are characterized by a single parameter \(\gamma\):

\[
(3) \quad dw = \frac{dy}{y^\gamma}.
\]

---

\(^{97}\) Many other names have been used for these functions in the economics literature. The term "constant relative risk averse" or CRRA was in use in the late 1960’s by R. Merton and others in relation to individual utility; *Optimum Consumption and Portfolio Rules in a Continuous Time Model*, 3 Journal of Economic Theory 373-413 (1971).

This class of weighting functions has been proposed in a number of recent textbooks of cost-benefit analysis, especially in those intended for use in developing countries. They are used but not named in L. Squire and H.G. van der Tak, *Economic Analysis of Projects* at 63-66 (Johns Hopkins Press, 1975). They are sometimes referred to as "isoelastic" or "constant elasticity" functions, for example, in *Cost Benefit Analysis: Issues and Methodologies*, at 34-39 (John Hopkins Press, 1984); and also in D.W. Pearce and C.A. Nash, *The Social Appraisal of Projects: A Text in Cost-Benefit Analysis* at 31-33 (Macmillan, 1981). The resulting efficiency-criterion has sometimes been called a "Generalized Bernoulli-Nash Social Welfare Function"; for example, in R. Boadway and N. Bruce, *Welfare Economics*, (Basil Blackwell, 1984). The latter authors point out this measure can be transformed into a Constant Elasticity of substitution or CES measure by means of a monotone transformation which has no effect on the social indifference surfaces.

\(^{98}\) "Von Neumann-Morgenstern utility functions" are functions of consumption or wealth which compactly express an individual’s preferences with respect to risk-bearing. In particular, the individual’s utility when faced with two or more future wealth outcomes is given by the weighted sum of the Von Neumann-Morgenstern utilities of the different values of wealth. Each weight equals the individual’s best judgment about the probability that the given outcome will occur. John Von Neumann and Oscar Morgenstern, *Theory of Games and Economic Behavior, second edition* 15-30 (John Wiley and sons, 1946).
(4) \( w = \log(y), \quad \gamma = 1; \)
\[
= y^{1/\gamma}/(1-\gamma), \quad \gamma \neq 1.
\]

\( \gamma \) is sometimes referred to as the coefficient of relative risk aversion. The three efficiency criteria under consideration can then be characterized as follows:

\( \gamma = 0 \) : dollar-weighting

\( \gamma = 1 \) : hour-weighting

\( \gamma \to \infty \) : Rawlsian weighting (as a limiting case).

Note, in addition, that any other real value of \( \gamma \) also leads to a well-defined Paretian efficiency-criterion. It is well-known that these criteria are increasingly pro-egalitarian as \( \gamma \) increases.

Some readers may object that the CRRA class is itself too restrictive. However, there are powerful reasons both of convenience and of realism for assuming CRRA criteria. These efficiency criteria are analytically simple. They have been widely studied in welfare economics texts. Moreover, among all relatively simple criteria, only CRRA efficiency criteria have the property that the resulting judicial decisions are invariant under proportional growth in the real income distribution.

Moreover, in many normative models, the efficiency-criterion can be viewed as representing an aggregate of the empirical objective functions of individuals under

99. As pointed out, for example, by R. Boadway and N. Bruce, supra at 142.

conditions of risk. A strong case can be made that CRRA functions empirically represent real human choices under risk better than other functions. CRRA objective functions have been widely studied in empirical economic models of choice under uncertainty and intertemporal optimization. CRRA objective functions are the only ones consistent with the observation that risk-avoiding behavior is approximately proportionate to income. Only CRRA functions can support conventional saving models in which saving is proportional to income, thus explaining the observation that the gross rate of saving is crudely constant in the long run.101

e. Arguments against redistributive efficiency criteria

Some authors have put forth general arguments against criteria that can support redistributions of income. Thus Arnold Harberger, a welfare economist of an older vintage, once made an extended argument against using CRRA and similar weighting schemes in the analysis of taxation and public works.102 Harberger gave a series of hypothetical examples showing that CRRA weights with $\gamma >> 0$ could lead to extremes of income leveling and some cases could even justify simple waste. He concluded that these


102. A. Harberger, *On the Use of Distributional weights in Social Cost-Benefit Analysis*, 86 Journal of Political Economy S87-S120 (1978). None of his examples applied directly to the common law. Harberger addressed rather general weighting schemes that impose large differences on weights between rich and poor; the only specific functional form he mentioned is CRRA (p. S112). He also proposed several less radical methods for injecting distributional concerns into a welfare analysis.
weights are contrary to accepted value judgements. (For some counter-examples, see our Section IV below.) Without responding in detail, we do note that most of Harberger’s examples assumed that large taxes and transfers have insignificant distorting effects on labor and saving. We doubt the realism of that assumption; if we are correct then Pareto efficiency places limits on redistribution. Other of his examples depend on the rhetorical force which comes from equating “efficiency” specifically with the dollar-weighted welfare measure -- a trope which fails to persuade us. His suggestion that weights should be limited by the costs of efficient income transfers by other routes, however, could have substantial merit in some circumstances that we will not explore here. In any case, none of Harberger’s examples were directly concerned with the rationale for judicial decisions.

On the other hand, Posner’s arguments reviewed in Section I are clearly is concerned with judicial decisions. Posner has never argued against redistribution per se; but his body of arguments do consistently imply an antagonism to politically-based redistribution. In response to Posner's and Harberger's implied arguments, we assert that

103. The procedure has no merit in a fully specified model in the spirit of Drèze and Stern (supra, Note 12). Their setup assumes that both the channels of influence available to the planning agency, and also the reaction functions of all other government agencies, have been already been included in the model. Therefore any re-weighting procedure would be both superfluous and erroneous. However, Harberger’s procedure could have substantial merit in some circumstances that we will not explore here.

104. In fact, he praises non-political institutions of wealth-sharing in primitive societies, as a form of insurance; The Economics of Justice at 152-163 (cited in Note 11). He seems to imply that political methods of wealth sharing may be less praise-worthy because they rest on violent coercion and on the possibly inefficient use of labor as “thugs and henchmen”; id. at 163-168.

105. In addition to Section I see Note 127, 127.
our theory cannot be sharply distinguished from the dollar-weighted theory on redistributive grounds. Like Posner, we do not ask judges to redistribute wealth per se; we do ask them to establish rules. Like Posner, we propose that the rules be chosen so as to maximize the expected aggregate of resources available for generating utility. We differ from Posner only with respect to the specific target aggregate (human-time-equivalents as opposed to real consumption). We are aware of no fully specified and general economic models that qualitatively distinguish the redistributive properties of Posner’s proposed criterion from our own. In particular, both theories are redistributive in some possible cases and not redistributive in others.106

For example, under either theory, any confiscatory rules promulgated by judges would be self-defeating for the same reasons that confiscatory taxes and transfers are self-defeating: such rules destroy any incentive to create taxable income or wealth. Moreover, the practical role of judges is the relatively narrow one of setting rules to interpret existing constitutions, laws, rules, and contracts in specific contested cases. These interpretative rules are somewhat tentative, because they can always be overturned by means of new

106. A quite general argument can be constructed as follows: the general equilibrium analog of consumer surplus is equivalent income evaluated at a fixed vector of reference prices. If this is to be a consistent welfare criterion, the reference prices must be held constant over time. But actual market prices shift over time. As a result, it can be shown in models with realistic preferences (e.g. income effects or inhomogeneous preferences) that income redistribution can improve aggregate welfare. For further citations on the related problem of price sensitivity effects, and also on Scitovsky’s example showing that consumer surplus is potentially redistributive, see Note 52. For discussion of a related controversy, see Note 32.
constitutions, legislation, administrative rules, and contracts. The more radical is the judicial redistribution, the greater are the forces for a non-judicial reversal.

In addition, to the extent that information costs and decision costs are substantial, some degree of respect for precedence follows from any Paretian judicial criterion. And this implies that the production of new judicial law will typically concentrate on the filling in of what was previously not defined. New rules of this type do indeed allocate resources, but they do not reallocate resources, in the sense that the allocation in question was previously undefined. In cases where judges clarify previously undefined rules, our proposal is no more and no less redistributive than Posner’s proposal.

f. Arguments from simplicity for an exact hour-weighting

In a subsequent section we will argue that efficiency-criteria based on \( \gamma=1 \) correspond more nearly to common political opinion than those based on \( \gamma=0 \) or \( \infty \). But why not consider other intermediate values of \( \gamma \)? The "stylized political facts" we will discuss below are not sufficiently precise or consistent so as to pick out any one preferred value from a range of values in a neighborhood of \( \gamma=1 \). However, we will focus on the hour-weighting case based on several considerations of simplicity and familiarity.

1. The labor theory of value

Only the hour-weighting case can be derived from the labor theory of value described above.
2. Simplified description

The hour-weighted case is the most easily described of the intermediate cases ($0 < \gamma < \infty$). In light of the hour-weighting formula (1), the gain in welfare resulting from a small increment in real income is proportionate to the ratio of the increment to the income. This simple rule accords well with universality, one of the constraints on principles of justice proposed by Rawls:

"... each can understand these principles and use them in his deliberations. This imposes an upper bound of sorts on how complex they can be..."

In a similar vein, Posner argues that law should be "rational" and "public".

3. Simplified theories of bargaining

The hour-weighting formula is equivalent to the simplest version of the Nash Social Welfare function often used in axiomatic bargaining theories. In other words, hour-weighting describes a natural outcome of a consensual bargaining process.

4. Simplified empirical estimation

The hour-weighted case is the most easily used among risk-averse CRRA weighting schemes. Hour-weighting employs logarithmic objective functions; these are widely used in economic modeling precisely because they often produce analytically simpler results.


109. The Nash Social Welfare Function is a product of cardinal utilities. Assuming that cardinal utilities are represented in the dollar metric (as consumption) and taking logarithms (which doesn’t change the efficiency well-ordering), we have the hour-weighted case. See also M. Kaneko and K. Nakamura, *The Nash Social Welfare Function 47* Econometrica 423-435.
than any other concave objective functions. For example, the logarithmic case can simplify the transition from a person-centered analysis to the family-centered analysis which many analysts prefer.¹¹⁰

5. Conservatism

If ethical or practical arguments lead to a range of admissible efficiency-criteria rather than to one unique criterion, then it would seem desirable to select among them that criterion which most nearly conserves the existing body of academic research and analysis. Thus the hour-weighted case is in a sense the most conservative member among a range of admissible cases supported by empirical arguments. In particular, we will argue below that \( \gamma = 1 \) is an approximate lower bound for observed measurements of risk aversion; therefore the logarithmic case is the closest we can come to the traditionally risk neutral, dollar-weighted measure, consistently with actually observed attitudes toward risk.

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¹¹⁰. For example, suppose that family sizes are exogenous and that judges maximize the sum across families of \( N \log(y/c(N)) \), where \( N \) is the number of family members, \( y \) is the family real income, and \( c(N) \) is the cost of an average standard of living with \( N \) family members. That is, \( c(N) \) corrects for economies of scale and other effects from living together. Unfortunately, \( c(N) \) is extremely difficult to observe. But note that maximizing this is the same as maximizing \( N \log(y/N) \), because the difference is just a constant [namely, \( N \log (N/c(N)) \)]. Moreover, the second maximand is just our original theory, except that family members are now assigned the average family income.
III. Democratic Arguments for an Approximate Hour-Weighting

a. Arguments from compromise

It is surprisingly difficult to make a rigorous argument for any specific normative values when starting only from democratic premises. In practice, a democracy doesn’t exist as a bundle of values. Instead, it exists as a set of procedures for deciding between conflicting values. The majority of a people who practice a successful democracy probably must share some minimal values; these values might include self-restraint, mutual toleration, and a respect for established procedures. Yet these procedural values do not lead to any one substantive efficiency-criterion.

Again, these minimal democratic values are likely to erode if faced with a sufficiently extreme social inequality. Yet that fact alone does not lead to any one particularly favored distribution of income. Each actual democracy is merely an experiment; it can in effect vote itself out of existence by failing to affirm a bundle of values which reproduces its own conditions for existence.

Thus, the labor theory of value proposed in the previous section leads to ethical or political judgements which may be consistent with democratic values, but cannot be rigorously derived from them. In a democracy, the only persuasive kinds of argument available for any particular normative judgement are procedural or majoritarian arguments. In this section we review two majoritarian arguments.

In both arguments we present our position as a democratic compromise between two influential Paretian theories, that of Posner (relatively pro-rich) and Rawls (relatively
pro-poor). \footnote{That is, as in our example below Posner’s theory is relatively preferred by self-interested rich people, and the Rawlsian theory by self-interested poor people. In our view, these two theories represent the extremes among views which are likely to obtain any significant support in a democracy. However, more extreme efficiency theories are certainly available. Thus increasingly anti-egalitarian efficiency-criteria can be obtained by using CRRA functions with increasingly negative values of $\gamma$; these theories are Paretian but tend to support redistribution from the poor to the rich. Also, increasingly pro-egalitarian efficiency-criteria can be obtained by adding to the Rawlsian minimax additional terms which place increasingly negative weights on differences between individuals’ consumptions; policies based on these theories tend to reduce inequality, even to the point of making everyone worse off in absolute terms than they would be under the Rawlsian theory (hence these theories are not Paretian).}

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that to the rich. Any change in policy which satisfied this "difference principle" would also be justified under the hour-weighting formula.

The hour-weighting formula, however, is more flexible than Rawls’ difference principle. As in Posner’s theory, some positive weight is always given to any gains enjoyed by the rich. Therefore hour-weighting would permit some improvements in the welfare of the rich even at the expense of the poor. Thus, a policy change which resulted in a $10 improvement in the welfare of the rich man described above could be justified provided that the resulting decrease in the welfare of the poor woman was less than $1.

On the other hand, Posner’s theory would justify $10.01 given to the rich even at a cost of $10.00 lost by the poor. Thus Posner’s theory is relatively more pro-rich than our own; whereas Rawls’ theory is relatively more pro-poor.

b. A median voter argument

Let us consider what would happen if the choice of an efficiency-criterion for judicial decision making were put to a referendum in an actual democracy. Assume that

113. In cases of persons at an extreme of misery, for example where their life is at an immediate risk from starvation, some people will view this conclusion as excessively pro-rich. For this reason, some welfare theorists have proposed what might be described as "Hyperbolic Absolute Risk Averse" or HARA efficiency-criteria, \( w = (y-s)^{1-\gamma}/(1-\gamma) \), where \( y \) is real income and \( s \) is the average amount of real income needed to obtain a bare subsistence. (The earliest use of term "HARA" is apparently by R.C. Merton, Optimum Consumption and Portfolio Rules in A Continuous Time Model, 3 Journal of Economic Theory 373-413.)

114. Posner accepts the principle that the consent of a majority may be a suitable ethical criterion for choosing an efficiency-criterion; see The Economics of Justice at 101 (cited in note 11).
each voter knows the expected effects on his own welfare of adopting any given efficiency-
criterion, that voters are risk-neutral, and that each votes purely to promote his own material self-interest.\(^{115}\) Then it seems quite plausible that the majority would adopt the moderate system of hour-weighting over either extreme.

Of course, the actual outcome would depend on the specific facts of the situation. Moreover, each voter might have a different preferred value for \(\gamma\) which would depend partly on her own income and partly on the expected distribution of issues to be decided. However, under reasonable conditions the preferences of the median income voter would win out.

A specific model worked out by one of us supports these conclusions.\(^{116}\) In particular: if the value of winning a contested issue cannot exceed the income of an opponent; if the average value of winning an issue generally increases with the opponent’s income; and if the choice is restricted to reasonably simple criteria (CRRA criteria, the key assumption); then there is a median voter equilibrium leading to a value of \(\gamma\) strictly intermediate between the dollar-weighted case and the Rawlsian case. Moreover, in a three-way choice between dollar-weighting, Rawlsian weighting, and hour-weighting, hour-weighting (i.e. the logarithmic case) always dominates.

\(^{115}\) The existence of altruistic concern for the poor, envy of the rich, or risk aversion, would only strengthen the tendency for the majority to prefer hour-weighting over dollar-weighting. At the same time, these factors would tend to reduce, but not (except in extreme cases) reverse, the tendency for the majority to prefer hour-weighting over Rawlsian weighting.

\(^{116}\) D. Burress (cited \textit{supra} in note 100).
To summarize, then, under a realistic range of supporting assumptions, a majority of perfectly rational and selfish voters will prefer hour-weighting over either dollar-weighting or Rawlsian weighting.

c. A theoretical social contract argument

The median voter approach, however, may be unsatisfactory for handling distributional questions. The amount of information assumed known by each voter is rather extreme. Also, the model assumes that voters have no political or ethical preferences apart from selfish materialism; but it is very hard to understand how the institutions of a real democracy could be held together under those conditions.117 Moreover, the median voter would prefer an exactly optimal $\gamma$ rather than the approximately optimal hour-weighted case; but the $\gamma$ most-preferred by the median voter is sensitive to the detailed parameters of the economy, and is likely to change over time, leading to an intertemporally-unstable efficiency-criterion.

Another problem much discussed in the public choice literature is that voting models of self-serving redistribution are typically very unstable, with constantly shifting coalitions that lead to no determinant outcome.118 Thus direct democracy arguably cannot

117. For a review of some empirical problems in the material self-interest model of democracy, see H. Margolis, Selfishness, Altruism & Rationality: A Theory of Public Choice, ch. 2 (University of Chicago Press, 1982).

settle fundamental questions about the income distribution, except when there already exists some degree of ethical or political consensus. The median voter approach is unpersuasive in part because it is unrelated to any firm ethical or political basis for choosing an income distribution.

Several authors who accepted this insight have attempted to derive interpersonal welfare judgments from a social contract argument. More specifically, they relate the desired efficiency-criterion to the individual preferences of persons who attempt to reach agreement while in a state of great uncertainty about their own future prospects (e.g. behind Rawls’ "veil of ignorance").

As it turns out, however, the median voter argument for an hour-weighting can be directly recast as a social contract argument for an hour-weighting. In particular, law givers under a state of great uncertainty about their own personal prospects, but with full knowledge about the distribution of future prospects across all persons, are likely to choose hour-weighting over either dollar-weighting or Rawlsian weighting.119

d. An empirical social contract argument

A similar conclusion can also be reached by an indirect route. Provided that the government could be bound to maximize a specific Paretian efficiency-criterion, and provided also that individuals have rational ethical preferences as well as rational selfish preferences, John Harsanyi has shown that the social contract approach leads to a

119. D. Burress, supra note 100.
surprisingly general conclusion: the chosen efficiency-criterion should equal a weighted sum of the ordinary (selfish) Von-Neumann-Morgenstern utility functions of the individuals.\textsuperscript{120}

The three efficiency-criteria we have been discussing can all be forced into this framework. That is, each CRRA efficiency-criterion can be described, or at least closely approximated, as a sum of equally weighted Von-Neumann-Morgenstern utility functions which could be interpreted as representing the preferences of identical individuals. However, the hour-weighted analysis uses utility functions which resemble actual, empirically estimated VNM utility functions much more closely than is the case either for a dollar-weighting or for a Rawlsian weighting.

In other words, one can criticize the three competing theories by examining the degree of risk aversion reflected in the implied objective functions held by individuals. In this vein, Posner follows Kenneth Arrow in criticizing Rawls’ theory as being perfectly risk averse.\textsuperscript{121} Consequently, Rawlsian theory is contrary to the values of most humans, who

\textsuperscript{120} Moreover, under usual "anonymity" or "symmetry" assumptions the weights are equal across individuals. J.C. Harsanyi, \textit{Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparisons of Utility}, 63 Journal of Political Economy 309 (1955). Unlike other utility functions, Von-Neumann-Morgenstern functions are cardinally measurable (up to an affine transformation) because they describe individual preferences for real income or consumption under observable variations in risk. Harsanyi also assumed that the ethical preferences obey the Pareto principle and have von-Neumann-Morgenstern properties. For an improved axiomatic basis, see T. Coulhon and P. Mongin, \textit{Social Choice Theory in the Case of Von Neumann-Morgenstern Utilities}, 6 Social Choice and Welfare 175-187 (1989).

are willing to run a finite risk of losing part of what they have if the prospective pay-off is sufficiently probable and attractive.

But Posner’s own theory is subject to a similar criticism. The dollar-weighted approach is perfectly risk neutral; this is also contrary to ordinary human values. For example, most persons are unwilling to run a 50-50 risk of losing all and starving to death, if the best pay-off were a mere doubling of income; but risk-neutrality implies that they will.

In contrast, the hour-weighted formula expresses an intermediate degree of risk aversion. It accords well with ordinary attitudes toward risk. And in fact, detailed empirical studies of risk aversion in the context of intertemporal choice are quite often consistent with logarithmic preferences ($\gamma=1$).\textsuperscript{122} The empirical studies are clearly inconsistent with either $\gamma=0$ or $\gamma=\infty$. In that sense, hour-weighting expresses ordinary values about risk aversion more accurately than do its main competitors. To that extent, hour-weighting represents a more realistic social contract.

e. Arguments in the presence of democratic inefficiency

The three alternative criteria for efficiency (dollar-, hour-, and Rawlsian weighting) were presented above as ideal theories. Each assumes that both legislative and judicial decision-makers are disinterested and benevolent parties whose only goal is to accord a

\textsuperscript{122} For a review see O.J. Evans, Tax Policy, The Interest Elasticity of Savings, and Capital Accumulation: Numerical Analysis of Theoretical Models, 73 American Economic Review 398 (1983). The best empirical value for $\gamma$ may be somewhat larger than 1, but it is certainly not much smaller.
fair degree of respect for all citizens and to resolve disputes in a fair and efficient manner. It would be a mistake to argue for adoption of any such formula without recognizing the limitations of this premise.

In particular, it seems unlikely that actual policies affecting taxation and the income distribution which have been adopted by actual legislatures are especially efficient, as measured by any simple weighting formula. Therefore, the social contract approach is in one sense unrealistic: it assumes that legislators or judges or other government agents can be bound to respect one particular efficiency-criterion.

123. Two interesting efforts to uncover the empirical efficiency weights revealed by actual government actions failed to uncover a persuasively coherent result. B.A. Weisbrod, Income Redistribution Effects and Cost-Benefit Analysis (cited in note 68); and W.B. Neenan, Distribution and Efficiency in Benefit-Cost Analysis, IV Canadian Journal of Economics, 217 (1971). On the other hand, H.P. Young recently found that income tax schedules for the US and other countries have often been roughly consistent with a theory of equal sacrifice using CRRA utility functions with $\gamma$ near 1.5 to 1.7. Progressive Taxation and Equal Sacrifice, 80 American Economic Review 253 (1990). (The theory of equal sacrifice differs from our theory, insofar as it is not directly based on Paretian efficiency. However, the two theories could conceivably lead to similar tax schedules under special circumstances, for example if it happened that the excess burdens of taxation increased with income according to a specific relationship with right properties.) Moreover, J.A. Yunker used an 11 sector computational general equilibrium model to argue that the average effective rate of all taxes in the US is broadly consistent with a social welfare optimum, with $\gamma = 0$ or $\gamma = 1$ about equally likely, and with both more likely than the Rawlsian case. Some Empirical Evidence on the Social Welfare Maximization Hypothesis, 44 Public Finance 110-133 (1989). R. Haveman recently argued that much or most of recent economic policy advice has been ignored; he explained this in part by claiming the advice itself is seriously misguided: it assumes incorrectly that previous policy was based on a coherent social welfare objective. Economics and Public Policy: On the Relevance of Conventional Economic Advice (Thompson Lecture, Midwest Economics Association), 29 Quarterly Review of Economics and Business 6 (1989).
Our social contract arguments may be unrealistic in a second sense: empirical evidence that such a contract actually exists may be rather thin.124 We point out, however, that members of a society might have a substantial consensus that both the traditional economic analysis and the existing government policies are excessively pro-rich, without being able to form a consensus around any one particular alternative. Rawlsian theory has been the main well-formulated alternative to a dollar-weighted analysis; but to many people Rawlsian theory seems excessively pro-poor. The general CRRA theory supported in many cost-benefit analysis texts is a rather indefinite theory because no particular value of $\gamma$ has been recommended. Perhaps critics of existing efficiency theories have been prevented from reaching a consensus by the absence of any well-posited, definite, and moderate alternative.

Buchanan and others have developed a more descriptive and empirical approach. Buchanan observes that public agents are themselves self-interested actors. Therefore Buchanan distrusts the policy relevance of all efficiency-criteria equally, on the grounds that no benevolent despots are available to implement them. His approach looks for ways to settle the question of distributive justice by means of constitutional mechanisms such as grants of property rights, while imposing constitutional constraints on the degree of discretionary redistributive action by government agents.125

124. See however note 127, 127 infra.

125. Some economists have objected that this approach suffers from the same defect as the benevolent despot approach: it naively ignores the problem that self-interested agents have in enforcing the constitution. In other words, *quis custodiet ipsos custodes?* See J.D. Davidson, *The Limits of Constitutional Determinism* in R.B. McKenzie, ed., *Constitutional
One might respond to this point on normative grounds; that is, a particular efficiency-criterion such as hour-weighting might be "right",\textsuperscript{126} or might be required by the Constitution,\textsuperscript{127} even if it were not enforceable. A more descriptive response is that government policy is always likely to be incoherent in some degree because it reflects a continuing political struggle between competing views. The proposal of any one particular efficiency-criterion, necessarily supports one particular position in that ongoing struggle.\textsuperscript{128}

As Buchanan points out, a fundamental problem of reality in any "democratic" system is that legal, legislative and regulative outcomes do tend to reflect rent seeking

\textit{Economics, ch. 3 (DC Heath, 1984)}

126. For arguments that individuals have a right against the state to obtain their basic needs, see David Copp, \textit{The Right to an Adequate Standard of Living}, 9 Social and Economic Policy 231-261 (1992).


Posner, however, argues on starkly legal realist grounds that "an effort to redistribute wealth in one form or another from one group to another" is "the most characteristic product of a democratic (perhaps of any) political system"; \textit{The Economics of Justice} at 382-383 (cited in Note 11). He concludes that "rejecting any general constitutional challenge to legislation...as inefficient or inequitable" would be odd and unreasonable; \textit{id.} at 383. His recommendation for judicial passivity in constitutional decisions is almost paradoxically opposite to his support for normative efficiency in common law decisions.

behavior, i.e., outcomes reflect the influence of existing and potential distributions of money and power. If one believes that the rich and the potentially rich, or any other group, have disproportionate influence in the political process, then logically one might recommend a pro-egalitarian efficiency-criterion as an appropriate corrective to the judge who seeks rules of "justice."

Of course, this argument assumes that judges are motivated more by ideas such as "efficiency" than by personal economic pressures. By the nature of their life-time appointments and their institutional roles, judges would seem to be better candidates than either politicians or employees in the executive branch for the role of "benevolent despot". As a recent review argues, "so far as common law tends toward efficiency, it must be driven by the ideas of judges, not by competitive pressure in the market for litigation", because pressures on judges tend to be bureaucratic rather than competitive.

129. "Economists [and others] have increasingly come to recognize that the untrammeled interplay of interest-group politics is unlikely to promote objectives for distributive justice. ... principled adjustments in the post-tax, post-transfer distribution of values is likely to be achieved only if the institutional rules severely restrict the profitability of investment in attempts to subvert the transfer process."

J.M. Buchanan, *Constitutional Economics*, in R.D. Tollison and V.J. Vanberg, *Explorations into Constitutional Economics* at 66 (cited in note 23). And in particular, if it is assumed that the rich are more likely than the poor to be the "repeat players" in judicial disputes, then they may be systematically favored by the judicial system as a whole. See M. Galanter, *Why the 'Haves' Come Out Ahead: Speculations on the Limits of Legal Change*, 9 Law & Soc. Rev. 95 (1974). This may help explain why Posner's consumer surplus theory is a successful description of some features of the common law. The seminal paper on rent seeking in regulation is G.J. Stigler, *The Theory of Economic Regulation*, 2 Bell Journal of Economics and Management Science 3 (1971).

If the judges seek some kind of efficiency optimum as the outcome for the game they referee, then they should not adopt a criterion for efficiency which forces a Nash equilibrium and wastes resources. Instead, they should adopt a criterion for efficiency which supports a cooperative coalition among other players in the game. We have argued that dollar-weighting does the former; we suggest that hour-weighting may accomplish the latter.

We will not propose a formal model of that multi-sided game. However, we point out that the players include the judges; the rent-seekers; the legislators, the President, and other politicians; the regulatory agencies and other bureaucracies; and past and future as well as present-day voters at large, acting partly in their narrow self-interest and also partly according to their ethical beliefs.

It seems likely that, when acting as a class, neither rent-seekers, nor politicians, nor bureaucrats, nor voters acting in purely selfish interests could agree on any particular coherent criterion of efficiency. If so, then by a process of elimination the efficiency-criterion supported by judges should be based on the ethical beliefs of voters; i.e., on a social contract. Hour-weighting is proposed as such a measure.

131. However, Posner claims the contrary, that rent-seeking interest groups will tend to support a dollar-weighted measure; The Economics of Justice at 105 (cited in note 11). For a contrary argument that the legislature can motivate the collective judiciary through the power of the purse, see G.M. Anderson, W.F. Shughart II, and R.D. Tollison, 1989, On the Incentives of Judges to Enforce Legislative Wealth Transfers, 32 J.L. & Econ. 215 (1989).

131. However, Posner claims the contrary, that rent-seeking interest groups will tend to support a dollar-weighted measure; The Economics of Justice at 105 (cited in note 11). He provides no supporting model; modelling of this question is needed.
IV. Applications

In this section we give brief examples comparing some normative implications of the three efficiency approaches for three questions of common law. In each of our cases it will be apparent that factual (i.e. behavioral or statistical) information plays a role that is either comparable to, or greater in importance than, the choice of efficiency weights. However, a change in the definition of efficiency does seem likely to lead in some cases to changes in what policy rules are found to be "efficient".

a. Liability and negligence

There is an extensive literature of economic analysis of liability and negligence under the dollar-weighted norm, showing that in concrete cases the empirical issues can be very complicated. 132 At the most abstract level, the discussion is based on the following normative judgement: judges should create rules of liability and negligence so as to create incentives for ex-ante constrained-best behavior on the part of potential plaintiffs and defendants. In a partial equilibrium analysis, "constrained-best behavior" could be defined as behavior which minimizes the expected total social cost to the two parties, including

transaction costs. In a general equilibrium analysis, "constrained-best behavior" could be defined as behavior which minimizes the expected total social cost to all parties. In either context, "total social cost" may include the costs of damages, the costs of performing mitigation, the costs of learning about the risks and the possible means of mitigation, the costs of undertaking court processes or other negotiations to establish claims for damages, and the costs of uncertainty about outcomes.

At this high level of abstraction, all three theories share the same goal. Where the theories differ is in the detailed definition of social costs. The received theory defines costs in units of dollars of equivalent real income; our theory defines it in units of equivalent labor hours, or in units of changes in logarithms of equivalent real income; Rawlsian theory defines it in units of changes in the circumstances of the worst-off affected person.

Consequently, much of the discussion will be substantially unchanged. Where the incomes of the parties are comparable on average and where the costs at issue are small in comparison to income, the recommended policy will be similar in all three theories. However, in cases where incomes are unequal, our theory will be more favorable to the poorer party than is the received theory; but less favorable than is Rawlsian theory.

To give a greatly simplified example based on Judge Hand’s formula, suppose that there are no transactions costs, no offsetting market effects, no third party effects, individuals are risk neutral, the plaintiff has no means of mitigation available, and neither

133. United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947). For a contemporary illustration in which Judge Posner uses a dollar weighted formula to compare costs of mitigation of a motel owner and a rape victim guest, see Wassell v. Adams, 865 F.2d 849 (7th Cir. 1989).
party is insured. Then, as Judge Hand’s formula implies, the defendant’s incentive to mitigate should correspond to

(5) expected net social cost = PL-B,

where P is the probability of an accident, L is the social cost of damage conditional on an accident, and B is the social cost of mitigation.

In all three theories, efficient incentives can be imposed through rules of negligence using this formula. That is, the defendant should pay if and only if PL-B>0. However, the social values of L and B are differently measured in the three theories. 134

In the dollar-weighted theory:

(6) L = E[D]; and B = M,

where D is the plaintiff’s private (dollar) value of damages conditional on an accident, E is the (ex ante) expectation operator for the defendant, and M is the private (dollar) cost of mitigation (assumed known ex ante by the defendant).

In the hour-weighted theory:

(7) B = \{\log (Y_d)-\log(Y_d-M)\}; and L = E[\log(Y_p+D)-\log(Y_p)],

where Y_d is the income of the defendant and Y_p is the income of the plaintiff. 135

134. In each of the three theories, L is the expected difference in social welfare between situations in which the accident does occur with damage, and does not occur. M is the expected difference in social welfare between situations in which mitigation is performed, and is not performed. However, social welfare is measured differently across theories.

135. Note that damages in excess of income can easily occur when injuries lead to a loss of quality of life. To derive the formula in that case, we must return to the original language of utility and expand the utility function to include an argument for a quality of life. If quality of life is separable from consumption and leisure, then damages can defined in units of consumption goods by the equation:
In the Rawlsian theory:

\[ B = \mathbb{E}\{ \text{MIN}[Y_p, Y_d] - \text{MIN}[Y_p, Y_d-M] \}; \text{ and} \]
\[ L = \mathbb{E}\{ \text{MIN}[Y_p, Y_d] - \text{MIN}[Y_p-D, Y_d] \} \]

where all terms are defined above.\(^{136}\)

It is easy to demonstrate the following facts:

1. In all three theories, the defendant’s standard of care increases on average with the expected private damage \(\mathbb{E}\{D\}\), and increases with the probability of damage \(P\), and decreases on average with the private cost of mitigation \(M\).

2. In both our theory and Rawlsian theory (unlike the traditional theory), the defendant’s standard of care increases on average with the defendant’s income \(Y_d\) and decreases on average with the expected income of the plaintiff, \(E\{Y_p\}\).

3. In Rawlsian theory (unlike ours and the traditional theory), the defendant’s standard of care is completely insensitive to moderate private costs of mitigation whenever defendant’s income is much greater than plaintiff’s expected income; and completely insensitive to

\[
\log(Y_p+D) = \log(Y_p) + V(q) - V(q^*),
\]
where \(V(.)\) is the utility from quality of life; \(q\) is quality of life before the accident; \(q^*\) is quality of life after the accident; and \(D\) is the real dollar payment required to hold the plaintiff harmless. We then define \(L\) as the expected utility loss:

\[ L = \mathbb{E}\{V(q)-V(q^*)\} = \mathbb{E}\{\log(Y_p+D)-\log(Y_p)\}. \]

The result then follows from equation (4).

\(^{136}\) We are using a greatly simplified Rawlsian theory in which consumption goods are the only primary goods and no third parties exist whose level of utility could complicate the picture. Also, the assumed Rawlsian goal is to maximize expected social utility. A possible alternative interpretation of the Rawlsian goal would be to maximize the utility of the worse-off person in any possible state of nature, over all states of nature, independently of probabilities; in that case, formula (4) would not apply.
moderate private damages whenever plaintiff’s expected income is much greater than defendant’s income.

While the second conclusion under our theory will clearly provoke controversy, we note that our theory can explain the empirical tendency of some U.S. juries to find against the party who has "deep pockets." The third conclusion under Rawlsian theory will be unappealing to anyone who believes that a positive marginal gain for the rich should be assigned some positive marginal social value (however small).

b. Warranty of habitability

A number of efforts have been made to develop an economic analysis of the court decisions which imposed a "warranty of habitability" on housing landlords. Analysts have argued that, under long-run perfect competition with full information, the market adjustment to such a decision would lead to total costs which exceed benefits for both rich and poor. This result is likely to hold, even when using the hour-weighted or the Rawlsian measure of social cost. In particular, under constant long-run costs, all of the

137. See James K. Hammitt, Stephen J. Carroll, and Daniel A. Relles, "Tort Standards and Jury Decisions," 14 Journal of Legal Studies 751, 753-756 (1985). Dicta by Judge Posner has speculated that a jury may be motivated by sympathy with the suffering of the plaintiff -- a motivation which is valid in our framework but not in Posner’s. Wassell v. Adams, 865 F.2d 849, at 856 (7th Cir. 1989).


costs of the warranty will be shifted to the tenant. If warranties were not adopted voluntarily, then it could be presumed that the costs to tenants exceed the benefits to tenants; hence imposing warranties makes the tenant worse off.

Other analysts, however, have considered failures of perfect competition that an externally imposed warranty might correct. In particular, the tenant incurs a high transaction cost at the time he changes his residence. If the tenant fails to notice defects in the housing unit at the time he moves in, or if defects develop subsequently, then the landlord has little incentive to make repairs unless the tenant is willing to move; i.e. unless the damage to the tenant exceeds the cost of moving. Moreover, at the time the lease is first signed, the landlord often has superior information about possible defects (an information asymmetry); and she has little incentive to reveal that information to a potential tenant.

The tenant could reasonably make a needed repair himself, however, provided that his expected damages exceeded the out-of-pocket cost of repair. But if moving costs and repair costs each exceed the damage (or if the tenant were unable to borrow funds), then


141. This assumption is especially significant if, as Kennedy argues, landlords are prone to undermaintain or "milk" buildings in declining slum neighborhoods, eventually leaving abandoned buildings to be dealt with at public expense. Kennedy, supra Note 140, at 486.

142. Rabin supports an imposed warranty in this case by arguing that there is an implied agreement in fact. Supra, Note 138 at 580.
no one would make the repairs. And yet, making the repairs might still be efficient: i.e.
damages avoided, plus landlord’s salvage value expected when the tenant moves for other
reasons, might well exceed repair costs.

Of course, this entire issue could in principle be handled more effectively by an
explicit warranty voluntarily included in the lease. But such a provision amounts to an
insurance policy sold by the landlord to the tenant.\textsuperscript{143} Insurance markets are widely subject
to serious market failures, often related to information asymmetry, information costs, and
enforcement costs - all are factors that may be present here.\textsuperscript{144} If the relevant insurance
market does fail to operate, then an imposed warranty of habitability could be welfare-
improving.\textsuperscript{145} An externally imposed warranty may reduce enforcement costs (by
providing public risk-sharing of enforcement costs as well as by providing a new
mechanism of enforcement). Also, an imposed warranty may reduce information and

\textsuperscript{143} The seminal statement relating ordinary markets to implied insurance markets was
by G.A. Akerlof in \textit{The Market for Lemons: Quality Uncertainty and the Market Mechanism}, 84

\textsuperscript{144} Without mentioning the analogy to insurance markets, Rabin argues on these
grounds that "anti-insurance policies" in the form of exculpatory clauses or waivers of
rights should not be upheld. \textit{Supra}, Note 138, at 583-584.

\textsuperscript{145} There exits presumptive evidence that the landlord on average has superior
information, higher income, similar relative risk aversion, and consequently lower absolute
risk aversion, as compared to the tenant. Therefore in our view any general absence of
explicit warranties of habitability in leases in a given housing market would constitute
\textit{prima facie} evidence that the implicit insurance market had failed.

However, one cause of the absence of explicit warranties could conceivably be the
prior existence of judicially imposed warranties. A critical test for this hypothesis would
be to remove the judicial warranties and see whether explicit private warranties then came
into existence.
negotiation costs (the tenant does not need to hire a contract lawyer before he signs a lease).

It remains true that in the long run the market is likely to adjust to imposed warranties so as to shift most of the landlord’s expected costs of repair back to the tenant. But in this case the tenant in effect pays a fair price for an insurance policy that guarantees essential repairs. By hypothesis, the tenant would have been unable to purchase such a policy in the unfettered market. As long as the tenant’s absolute risk aversion exceeds the landlord’s, then this forced sale of insurance is likely to make both parties better off.

There is an additional social cost of imposing this kind of insurance, however. In some cases repairs will be made that are inefficient; namely, in cases where tenant’s damages plus landlord’s expected salvage value are less than the repair cost.

The contribution of either the hour-weighted theory or the Rawlsian theory to this discussion is relatively marginal. Both theories reduce the set of repairs deemed inefficient, and hence both theories expand the range of market failures in which imposed warranties are socially justified.

In particular, there is evidence that renters have lower income on average than housing property owners. Moreover, the warranties of habitability are significant mainly for the lower end of the housing market (landlords in upscale housing are more likely to make the needed repairs). Consequently, in both our theory and in Rawlsian theory any

146. E.g., average household income of renters is approximately one-half the household income of average home owners. James W. Hughes and George Sternlieb, The Dynamics of America’s Housing, 63 (1987).
damages to the tenant must be assigned a higher weight on average than any costs of repair borne by the landlord. Assuming that net benefits to tenants exceed costs incurred through market adjustments, the test for the social efficiency of making a given repair will tilt much more often in favor of making the repair under our theory; and will nearly always favor the repair under the Rawlsian theory.

But note that, at least by some accounts, it is possible that tenants will generally benefit from housing code enforcement or habitability requirements, but that the burden of costs shifted by the marketplace will be heaviest for the very lowest income tenants.147 Posner has speculated that "a covert purpose of housing codes [might] be to increase the supply of middle income housing at the expense of the poor."148 Such speculation leads to the possibility that habitability rules may be unacceptable under either traditional theory or a Rawlsian approach while still being favored under our alternative.

In this analysis in general, however, the concrete implications for the rule of habitability resulting from any choice of efficiency weights are rather slight. At the same time, hour-weighting does capture some of the sense of unfairness that many people feel (and some courts have felt149) when a rich landlord refuses to make a necessary repair for a poor tenant. Dollar-weighting pays no homage to this sentiment. And (in our opinion) Rawlsian weighting pays too much homage: even the most insignificant improvement in

147. See Rabin, supra Note 138, at 560.


the liveability of rental housing could be justified, even when the cost of repair is quite large, provided that the cost is shifted to the landlord.

c. Unconscionable contracts

Rules regarding "unconscionable" contracts have been criticized in a perfectly competitive framework for creating costs (raising the prices of the goods affected) while failing to meet their redistributive objectives.\(^{150}\) Thus, the use of unusually high interest rates could be described as making available an option to the poor through market mechanisms which, if not allowed, would simply make it impossible for the same poverty group to purchase the items in question. This argument does not depend on any particular set of efficiency weights.

At the same time, however, if the high interest rates did not reflect a genuinely competitive market, but rather took advantage of ignorance or local monopoly, then the argument from perfect competition would fail.\(^{151}\) The hidden punitive repossession schemes,\(^{152}\) or the door-to-door seller of worthless books\(^{153}\) illustrate problems with

& Economics 293 (1975)}\]

\[^{151}\text{Thus, if the same poor person could have obtained the same amount of credit at more favorable rates, but failed to do so because unfavorable credit terms were hidden or the merchant falsely alleged that better terms were not available, then limiting that merchant should not genuinely limit options for the poor consumer.}\]

\[^{152}\text{Williams v. Walker-Thomas Furniture Co. 9, 350 F.2d 445 (D.C. Cir. 1965).}\]

\[^{153}\text{Kugler v. Romain, 279 A.2d 640 (N.J., 1971).}\]
unscrupulous merchants who may take advantage of ignorance rather than functioning in a genuinely open market.\textsuperscript{154} While it is true that there are costs associated with controlling such schemes through rules prohibiting unconscionable contracts, and it is certainly true that such a rule will only have limited effectiveness, nevertheless there is reason to believe that the primary beneficiaries of such a rule are likely to be relatively poor.\textsuperscript{155} An analysis of the efficiency of such a rule should compare those benefits to the costs involved, taking into account the efficiency weights assigned to the agents involved.

The outcome will depend on factual information in each case. However, given that some market failure has occurred and given that suppliers’ incomes exceed demanders’ incomes on average, we believe that the presumptive outcomes are as follows:

1. In the traditional dollar-weighted theory, the rule of unconscionability will most often be disallowed, because benefits and costs to the parties are simply a transfer payment at best.

\textsuperscript{154} As noted in Judge Skelly Wright’s opinion in \textit{Williams}: "Unconscionability has generally been recognized to include an absence of meaningful choice on the part of one of the parties together with contract terms which are unreasonably favorable to the other party." 350 F.2d at 449.

\textsuperscript{155} Virtually all reported cases in which courts have found unconscionability involved low-income and poorly educated consumers. The over-priced books in \textit{Kugler v. Romain}, were "directed toward minority group consumers and consumers of limited education and economic means," \textit{supra} Note 153 at 643. In \textit{Vasquez v. Superior Court}, 484 P.2d 964, 968 (1971) the California Supreme Court certified a class action for relief from unconscionable sales practices after finding that: "...many persons who reside in low income neighborhoods experience grievous exploitation by vendors..." In both \textit{Toker v. Westerman}, 274 A.2d 78 (N.J.Dist.Ct., 1970) and \textit{Jones v. Star Credit Corp.}, 298 N.Y.S.2d 264 (Sup.Ct., 1969) the courts specifically noted that the victims of unconscionable sales were welfare recipients.
2. In our hour-weighted theory, the rule of unconscionability will generally be upheld, except when the social costs of intervention are rather high in comparison to the implied transfer payment.

3. In the Rawlsian theory, the rule of unconscionability will always be upheld, even when the social costs of intervention are extremely high; except when a substantial part of those costs are borne by the demander.

   Once again, we suggest that many citizens will find our moderate approach appealing. Judges are not impervious to this appeal: our approach can explain the observation that case law cited above has often failed to follow the traditional economic analysis.\textsuperscript{156}

   In summary, in each of the three issues examined here our theory leads to judgments that are often consistent with dollar-weighted theory and/or the Rawlsian theory. But wherever the theories diverge, our theory leads to judgments that, in our view, are more consistent than its competitors with the ethical judgments likely to be made by many ordinary citizens, jurors, and judges.

\textsuperscript{156} For an exploration of the sympathies of judges which stand behind the doctrine of unconscionability, see Louis W. Wolcher, “The Enchantress” and Karl Polanyi’s Social Theory, 51 Ohio State Law Journal 1243 (1990).
Conclusion

An hour-weighted economic analysis will often preclude the use of dollar-weighted market prices as a guide to decision-making. Consequently, many adherents of traditional dollar-weighting will not accept it. Our purpose in this paper was not finally to settle the question of what efficiency weights to use, but rather to advance an unsettled controversy. By providing a clear-cut alternative, we believe we have shown that prices in the marketplace need not be used for dollar-weighted evaluations of "fairness" or "justice." We have also shown that prices provide neither a simple nor a unique basis for measuring "efficiency."

We have noted that our proposed alternative itself is not unique, and it may not correspond exactly to the ethical arrangements reached by any one actual community. However, the technical feasibility of such a distributional analysis casts substantial doubt on the fairness of any legal analysis which encourages an unnecessary degree of inequality.

Moreover, we believe that there are persuasive reasons for adopting the specific alternative we propose. In particular, we have shown that it has a basis in ethical theory, it passes tests of simplicity, it corresponds in a reasonably realistic fashion to individual attitudes toward risk, it is likely to have a comparative advantage in the democratic marketplace for votes, and it has some degree of descriptive validity.

In contrast, prices in an inegalitarian marketplace for goods merely reflect the existing distribution of resources. If a historical review of the common law does lend a degree of descriptive validity to a dollar-weighted marketplace analysis, that may only
restate the obvious: judges who achieved their status through existing rules tend to preserve them. Hour-weighted economic analysis provides judges with an independent standard by which they can build in an ongoing correction to this bias.

Thus, hour-weighting is proposed as a way of thinking about judicial decision-making in a dynamic society. Unlike theories justified only conditionally on the fairness of an existing income distribution, hour-weighting can be justified at any time in any democratic society. The bias it reflects is towards an equality of concern and respect regardless of existing inequalities.

If we are correct in suggesting that hour-weighting is consistent with democratic principles, and is likely to be compatible with an ideal legislator’s view of fairness, then an additional argument would support its application. The question we raise is whether judicial decisions should mirror the balance of economic power established by the private market, or the balance of equity established by the legislature or the Constitution. The common law did the former; judges acting in the era of statutory law should attempt to do the latter.

A hour-weighting of costs and benefits would also help one to sort out and distinguish between the descriptive, predictive and normative elements of any economic analysis. Separate identification of the measured distributional impacts clarifies the limits of economic analysis when money has unequal social value for those affected. In other words, by using an explicitly weighted measure of value, normative issues would be explicitly raised rather than concealed behind an unstated initial assumption that money has equal social value for each.
Therefore, the hour-weighted economic analysis of law is intended to correct distortions of legal decisions which result from a tendentious assumption that wealth has an equal social shadow price for rich and for poor. It is founded instead on a belief that "justice" has a meaning that is distinct from the market outcome. And it adopts a moderate attitude toward risk sharing and income equalization which contrasts favorably with the relatively extreme but opposing views of Posner and Rawls.