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Antitrust's Normative Economic Theory Needs a Reboot[†]

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ABSTRACT

Antitrust has adopted a normative economic theory based on maximizing economic surplus. The theory originates with Marshall but was introduced into antitrust as the Consumer Welfare Standard by Judge Robert Bork, and survives today in virtually every industrial organization textbook. This persistence is unwarranted. Welfare economists abandoned it several decades ago because the theory is inconsistent, and we review those inconsistencies. Moreover, welfare economists and moral philosophers have shown that the theory is biased in favor of wealthy individuals and corporations—the very powers the antitrust law is supposed to regulate. Finally, behavioral economists and psychologists have shown that the model of human behavior behind the economic surplus theory is simplistic and often in conflict with actual human behavior. We argue that antitrust should be brought into alignment with modern welfare economics. We also discuss how the New Brandeis Movement's proposal to replace the consumer welfare standard with the protecting competition standard could be developed to accomplish this goal.

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I. INTRODUCTION

Economists play a major role in antitrust litigation. In the typical Sherman Act Section 2 monopolization case, the plaintiff and the defendant will each hire economics professors, usually faculty specializing in the field of Industrial Organization, to provide expert testimony on the major proof points that are central to their cases: (1) Does the defendant have market power? (2) Did the defendant engage in exclusionary or predatory conduct that harmed competition? (3) Are there redeeming procompetitive or efficiency justifications for the

defendant's conduct? And, in private litigation, (4) what are the damages? Economists play a similar central role in price fixing cases under Section 1 of the Sherman Act and in merger cases under Section 7 of the Clayton Act. Thus, economists are essential in most antitrust litigation today. Outside of litigation, economists also frequently make contributions to the major antitrust law journals and are influential in debates about antitrust goals and policy.

In performing these functions, economists rely on both positive and normative economic theory. The normative theory forms the basis of economic thinking about how policies can be justified and the criteria for recommending a policy change. The study of normative theories in economics is called "welfare economics." When economists refer to the "welfare effects" of policy, they necessarily are referencing welfare economic theories. In economics, "welfare" refers to human well-being, either at the individual or social level; the latter is also called "social welfare." In economics, policy positions can only be justified if they increase social welfare.

Industrial organization is the field of economics that addresses the positive economic issues in antitrust. Questions such as how we should measure monopoly power, or what types of conduct exclude rivals, are positive economic issues. But positive economic models implicitly incorporate normative theory. For example, a large literature in antitrust economics addresses whether and when vertical mergers, or price discrimination, or tying, or other strategies, expand or reduce output. But why focus only on output? Why not ask under what conditions a vertical merger reduces income inequality? Thus, normative theory identifies the goal—whether it be maximized output or reduced income inequality—and the model to determine the impact of corporate conduct on the goal comes from positive theory.

Industrial organization has adopted a specific normative theory called the surplus approach.[1] Federal Trade Commission Chair Lina Khan has challenged industrial organization economists to reevaluate their normative theory. She wrote, "Post Chicago's choice to accept Chicago's normative paradigm stands in contrast with the New Brandeis intervention, which rejects the idea that antitrust law should be centered on promoting consumer welfare."[2] What Chair Khan means here is that, although several industrial organization economists (in the so-called Post-Chicago School of economics) have challenged the positive economic theories of Judge Bork,

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[1] Jean Tirole, THE THEORY OF INDUSTRIAL ORGANIZATION (2nd ed. 1989) 12 ("consumer surplus is a good approximation of welfare"); Paul Belleflamme & Martin Peitz, INDUSTRIAL ORGANIZATION: MARKETS AND STRATEGIES (2nd Ed. 2015) 24 ("Throughout this book we assume that changes in consumer welfare can be measured by the consumer surplus"); W. Kip Viscusi, John Vernon & Joseph Harrington, ECONOMICS OF REGULATION AND ANTITRUST (3rd Ed. 2001) 76 (welfare requires "choosing policies that yield the highest total economic surplus"); Don Waldman & Elizabeth Jensen, INDUSTRIAL ORGANIZATION: THEORY AND PRACTICE (4th ed 2014) 70 ("economists often evaluate the welfare effects of changes in market structure or of government policies by looking at changes in consumer and producer surplus."); Roger Blair & David Kaserman, ANTITRUST ECONOMICS (2nd Ed. 2009) 23 ("Social welfare associated with the market…is the sum of producer and consumer surplus."); Lynne Pepall, Daniel Richards & George Norman, INDUSTRIAL ORGANIZATION: CONTEMPORARY THEORY AND PRACTICE (2nd Ed. 2002) 22 ("[W]e need some measure of how well-off consumers and firms are in any market outcome. For this purpose, we use the concepts of consumer surplus and producer surplus."); Giles Burgess, THE ECONOMICS OF REGULATION AND ANTITRUST (1995) 21 ("The efficiency of the competitive equilibrium is revealed in the fact that the total surplus, the net gains for consumers and producers, is greater than for any possible alternative.").

[2] Lina Khan, *The End of Antitrust History Revisited*, 133 HARV. L. REV. 1655, 1671 (2020).

Richard Posner, and other Chicago School law and economics scholars, they have not challenged the underlying normative theory, the Consumer Welfare Standard ("CWS").

Advances in welfare economics since the 1940's have been ignored by antitrust and industrial organization economists. Modern welfare economics widely rejects the surplus approach. For example, Economics Nobel laureate Angus Deaton says, "there is no valid theoretical or practical reason for ever integrating under a Marshallian demand curve," meaning, there is no reason to calculate consumer surplus.[3]

Accordingly, we accept Chair Khan's invitation, working from the basis of modern welfare economics. In Section II, we summarize the surplus approach, its origins and evolution. The surplus theory of welfare is the basis for the Consumer Welfare Standard in antitrust jurisprudence, a standard introduced by Judge Bork in his book *The Antitrust Paradox* in 1976. The CWS only recognizes part of the total economic surplus, however.[4] Post-Chicago Economists improve the situation by suggesting that total economic surplus should replace the CWS, while progressive economists, such as those in the Neo Brandeis Movement, have attacked the CWS for its pro-business ramifications, but even they retain elements of the surplus approach.

Although the surplus approach remains the dominant antitrust standard around the world, even Alfred Marshall, who introduced the surplus approach in 1890, recognized that it had several shortcomings. One shortcoming is that it endorses policies which hurt some people. As Section II.C describes, this caused a retreat from the surplus approach in the early twentieth century, to the ideas of Vilfredo Pareto, followed by a return to a modified version of the surplus approach a few decades later based on work by Nicholas Kaldor and John Hicks.

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[3] As quoted in Marco Becht, *The Theory and Estimation of Individual and Social Welfare Measures*, 9 J. OF ECON. SURVEYS 53–87, 77 (1995).

For welfare economics textbooks warning that consumer surplus is, at a minimum, inexact, see E.J. Mishan, INTRODUCTION TO NORMATIVE ECONOMICS (1981) Sec. 23.7, 23.8, and pages 183–5; Per-Olov Johansson, AN INTRODUCTION TO MODERN WELFARE ECONOMICS (1991) 49; Yew-Kwang Ng, WELFARE ECONOMICS: INTRODUCTION AND DEVELOPMENT OF BASIC CONCEPTS (1983) 89, 92; Robin W. Boadway & Neil Bruce, WELFARE ECONOMICS (1984) §6.1 and 211–212. See also *infra* Section III.C.

[4] Mishan, *supra* note 3, 305 ("Nor did those who proposed or advocated tests of hypothetical compensation suggest that, by themselves, such tests were to be decisive in any ranking of alternative positions. All proponents recognized that the distributional changes involved […] might be socially significant and that any recommendation had to take account of them."), 372–3 ("Finally, it must be confessed that the ranking of alternative or successive economic situations by reference, in large part at least, to criteria based on potential Pareto comparability has never escaped the strictures of a number of economists. […] More important, however, expediency rather than principle has prevailed. Economists recognize that if they reject criteria of potential Pareto improvements in favour of a criterion of actual Pareto improvements, they would have to mute their voice considerably. All their expertise would avail them little whenever it was a matter of ranking real world situations."). Mishan adds that economists are "pushing on regardless, elaborating the superstructure despite the manifest shakiness of the foundations."

Troublesome inconsistencies in this modified surplus approach emerged as early as Scitovsky's work in 1941.[5] In Section III, we analyze those inconsistencies and a host of similar problems that have been uncovered since. [6]

Section IV critiques the original and modified surplus approaches because their policy recommendations sometimes make no sense, and on ethical grounds (because their policy recommendations are biased in favor of high-income individuals and corporations). The topics of Sections III and IV are so destructive to the surplus and modified surplus approaches that Mishan claimed no one ever thought those approaches should be considered decisive, and, later when admitting that there are economists who do treat them as decisive, Mishan writes that doing so is "expediency rather than principle."[7]

Section V shows that the connection between consumer choice, which underlies the surplus approaches, on the one hand, and consumer welfare, on the other hand, relies on unreliable assumptions about human nature. Although in most of this paper our arguments are firmly rooted in economics, our arguments in Section V are interdisciplinary, combining behavioral economics with findings from psychology, other social sciences, and biology.

In Section VI, we take up the issue of whether the New Brandeis School offers an acceptable alternative normative approach for antitrust policy. Concluding that the answer is not an unqualified yes, we suggest modifications to get closer to that goal. In doing so, Section VI stays within the tradition of modern welfare economics, which follows either the Bergson-Samuelson Social Welfare Function approach[8] or the Capabilities Approach, attributable to Amartya Sen.[9] This has resulted in welfare economists developing a "dashboard" of important factors that influence national well-being, some of which directly or indirectly reflect the traditional Congressional values revealed in the legislative intent when the antitrust statutes were promulgated. These were the very values that were replaced by the CWS, based on the outdated normative theory that we criticize in this paper.

While the concern of this paper is flaws in the normative basis of antitrust, there are other causes for concern in antitrust economics, including the standard assumption that firms are (or should be) solely motivated by profit, and the "representative agent" assumptions that often underlie antitrust econometric estimation. Those concerns are beyond the scope of this paper, but we and others have dealt with them elsewhere.[10]

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[5] Tibor de Scitovszky [more widely known as Tibor Scitovsky], *A Note on Welfare Propositions in Economics*, 9 REV. ECON. STUD. 77 (1941). The New Welfare Economics was then attacked by Paul A. Samuelson, FOUNDATIONS OF ECONOMIC ANALYSIS 208–9, 219 (1947).

[6] See supra note 4.

[7] See supra note 4.

[8] *Supra* note 5. at 219. Welfare economics textbooks analyzing Social Welfare Functions, as discussed in Section VI.A, include Mishan, *supra* note 3 Ch. 17; Johannson, *supra* note 3 Section 3.2; Ng, *supra* note 3, 39; and Boadway & Bruce, *supra* note , Ch. 9 Sec. 6.

[9] See Ingrid Robeyns & Morten Fibieger Byskov, *The Capability Approach*, in STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Summer 2023 edition), Edward N. Zalta & Uri Nodelman (eds.), https://plato.stanford.edu/archives/sum2023/entries/capability-approach.

[10] Gabriel A. Lozada, *A Critique of Antitrust Econometrics: Aggregation, the Representative Consumer, and the Broader Concerns of the New Brandeis School*, 67 ANTITRUST BULL. 69 (2022). See also the more recent working

II. How Industrial Organization's Normative Theory Operates in Antitrust

A. Consumer Surplus for an Individual

A central concept in the CWS/Antitrust normative theory is "consumer surplus." It was introduced in 1890 by one of the most influential economists of all time, Alfred Marshall. Marshall defined consumer surplus as the difference between the consumer's demand and the market price:

> The excess of price which he (a consumer) would be willing to pay rather than go without the thing, over that which he actually does pay, is the economic measure of this surplus satisfaction. It may be called consumer's surplus.[11]

Marshall thought of consumer surplus as a measure of the "value" of a commodity, and that it was connected to the satisfaction, welfare or utility that the consumer received from the commodity. Marshall believed that the social welfare of a nation is enhanced when this measure of commodity value is maximized, all else held equal. Eighty-eight years later, Judge Bork would rechristen Marshall's consumer's surplus as "consumer welfare," and claim that increasing consumer's surplus should be the sole goal of antitrust jurisprudence.[12] Industrial Organization economists stubbornly adhere to Marshall's normative approach, despite its repudiation by welfare economists.

Some have argued that Bork pivoted from consumer welfare/surplus to total welfare/surplus. We assume for a moment consumer welfare as the target, and later expand to incorporate total welfare. The flaws in total surplus commence in the notion of consumer welfare.

To provide foundational structure for our subsequent criticisms, we first sketch the justification for consumer surplus as a measure of economic value. Figure 1 depicts one individual's demand curve for a commodity. We wish to determine the value of 25 units of this commodity. Suppose first that the consumer, possessing none of this commodity at the onset, is given a chance to purchase 5 units. According to point B, the price on the demand curve corresponding to $Q = 5$ is \$45/unit. This means that the consumer would be willing (and able) to pay 45×5 in total for those units. Assume the consumer pays this amount and is then given the opportunity to buy an additional 5 units. According to point C, the price on the demand curve corresponding to $Q = 10$ is \$40/unit, so the consumer would be willing and able to pay $40 * (10 - 5)$ in total for those units. Once this is paid, suppose the consumer is given a chance to buy yet an additional 5 units. According to point D, the price on the demand curve corresponding to $Q = 15$ is \$35/unit, so the consumer would be willing to pay $35 * (15 - 10)$ in total for those units. In a similar manner, Figure 1's shaded rectangle whose upper right-hand corner is at point E shows the consumer's willingness and ability to increase his or her holdings of the same commodity from 15 to 20 units, and Figure 1's shaded rectangle whose upper right-hand corner is at point F shows the consumers' willingness and ability to increase

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paper: Gabriel A. Lozada, *The Perils of Antitrust Econometrics: Unrealistic Engel Curves, Inadequate Data, and Aggregation Bias*, Institute for New Economic Thinking Working Paper 203 (2023). For another critique of representative agent modeling see Alan P. Kirman, *Whom or What Does the Representative Individual Represent?*, 6 J. Econ. Perspectives 117 (1992).

[11] Alfred Marshall, Principles of Economics 124 (8th ed. 1920).

[12] Robert Bork, The Antitrust Paradox: A Policy at War with Itself 15 (1978).

his or her holdings from 20 to 25. The consumer's willingness and ability to pay will be, in total, the sum of the shaded areas in Figure 1. If the distance from A to F had been divided into more intermediate steps, the consumer's willingness and ability to pay would converge to the area under the line AF. The total consumer's "value" of 25 units is this area. Since point F is at (25, 25), the size of this area is exactly that of the rectangle below and to the left of F, which has size $25 \times 25 = 625$, plus the area of the triangle above and to the left of F, which has size $\left(\frac{1}{2}\right) \times 25 \times (50 - 25) = 312.5$, for a total of 937.5, which is close to the shaded area of Figure 1 (875), which is a discrete approximation to the exact total. This is why it seems correct to identify consumer surplus as what the consumer would be willing and able to pay for 25 units of this good.

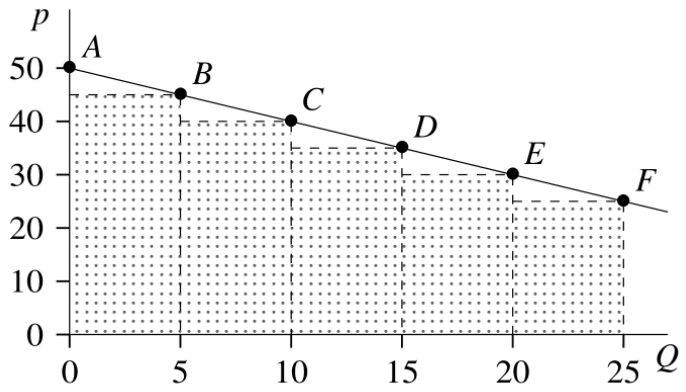

Figure 1. The line A-B-C-D-E-F is the (Marshallian) demand curve. The shaded area is approximately the value of 25 units, measured by the willingness and ability to pay in order to acquire it, according to Marshallian consumer surplus. The size of the shaded area is 875.

It is important to show for purposes of consistency that this is also equal to what the consumer would be willing to accept in compensatory payment if the consumer had to give up the 25 units, rather than acquire them (because willingness to accept is as valid a measurement of economic value as is willingness to pay, and if these two valid measures were not equal, there would be no unique measure of value). For this, refer to Figure 2. Suppose first that this consumer, already possessing 25 units, has 5 units taken away. According to point E, the marginal per-unit value at $Q = 20$ is \$30/unit, so the consumer would be willing to accept (approximately) $30 \times (25 - 20)$ in total for those units. Having been reduced to only owning 20 units of the good, suppose the consumer has an additional 5 units taken away. According to point D, the marginal value at $Q = 15$ is \$35/unit, so the consumer would be willing to accept (approximately) $35 * (20 - 15)$ in total for those units. In a similar manner, the consumer's willingness to accept compensation for losing 5 more units is determined by point C, losing yet 5 more is determined by point B, and losing the final 5 units is determined by point A. The consumer's willingness to accept compensation for losing all 25 units would be, in total, the sum of the shaded areas in Figure 2, which is 975. If the distance from A to F had been divided into more intermediate steps, the consumer's willingness to accept would converge to the area under the line AF, 937.5. This is the same consumer's value as in Figure 1, which seems to confirm that Figure 2's "willingness to accept" compensation for losing 25 units is the same as Figure 1's "willingness (and ability) to pay" for gaining 25 units.

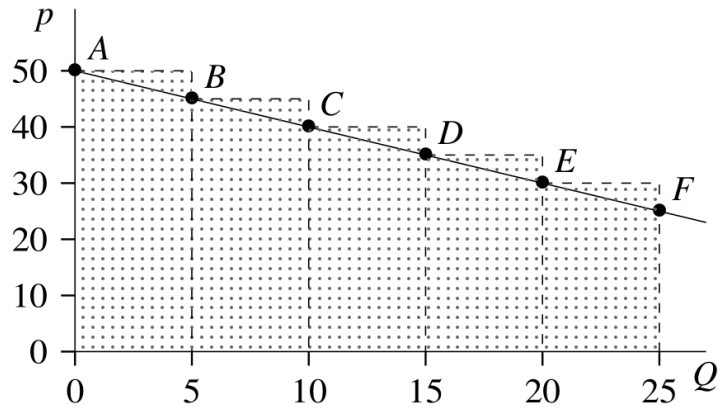

Figure 2. The line A-B-C-D-E-F is the (Marshallian) demand curve from Figure 1. The shaded area is approximately the value of 25 units, measured by the willingness to accept compensation for giving it up, according to Marshallian consumer surplus. The size of the shaded area is 975.

In the limit, as the number of intermediate steps goes to infinity, the consumer surplus is an unambiguous measure of value, 937.5 in our example, and it is equal both to "willingness to accept" and to "willingness and ability to pay."

Consumer surplus is the consumer's total value for the 25 units minus the consumer's outlay for those units. If there is only one market price for the good and that price is 25, then consumer surplus would be the consumer's value minus the rectangle whose height is 25 and whose width is 25 (so whose area is 625). Therefore, consumer surplus would be the triangle A-F-$(0,25)$. (If the demand curve is not a straight line, consumer surplus is not a triangle, but rather is a triangle-like shape with one leg curved rather than straight.). Total consumer surplus is therefore 937.5 (the consumer's willingness to pay and, equally, the consumer's willingness to accept) less 625, which is 312.5.

B. From Individual to Market Economic Surplus

Focusing on a sole consumer is one thing, but antitrust analysis occurs in markets. So, rather than focusing on the surplus utility experienced by a single consumer, one must consider surpluses in a market, a setting in which there are usually many buyers and many sellers. Figure 3 is a simple model of market supply and demand. The market demand curve AF is the sum of the individual demand curves, and HF is the sum of the firms' marginal cost curves, and is the market supply curve if the firms are price-takers (assuming marginal cost is above the bottom of average variable cost, a complication we set aside). Point I represents the market-clearing price, and G the corresponding quantity.

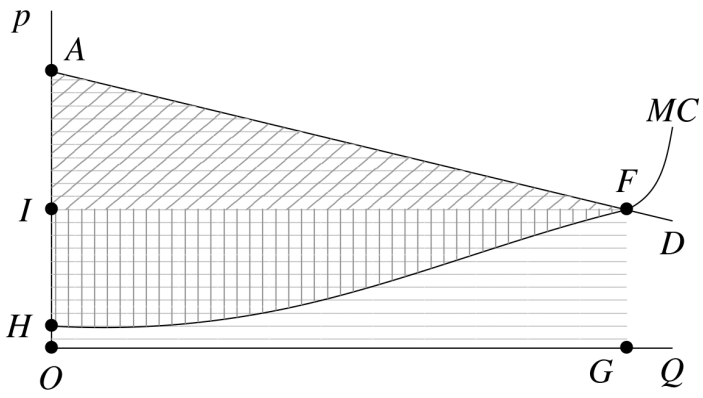

Figure 3. The vertical axis is price and marginal cost MC; the horizontal axis is output Q. Demand is D; consumer value is AFGO; consumer surplus is AFI because consumers' expenditures, which equal firms' total revenue; is IFGO; variable cost is HFGO; and profit (plus fixed cost) is IFH. Total social surplus, which is the sum of consumer surplus and profit, is, assuming zero fixed costs, AFH.

We know from Section II.A that the total amount of money consumers are willing and able to pay, or willing to accept, is the consumer surplus, that is, the area under their individual demand curves. Since the market demand curve is just the sum of all the individual demand curves, in Figure 3, the amount of money all consumers in total are willing and able to pay, or willing to accept—the total consumer surplus—is the area under the market demand curve: it would be $AFGO$ if consumers desired to purchase G units. What the consumers actually have to pay for G units, assuming the market is perfectly competitive, is $IDGO$. This is the sacrifice that the consumer must make to obtain g units. The difference between these, AFI, is the consumer surplus for the entire market.

However, consumer surplus is only part of total social surplus. Producers' short run surplus is IFH. This is defined as the difference between their variable costs and what they receive in the market. Producers would be willing to supply G units for a payment covering their variable costs, which is the area under the marginal cost curve, $FGOH$. In a competitive market they receive payment of $IFGO$, a rectangle with height equal to the competitive price and a width equal to the competitive quantity sold. The excess of payments received over variable cost is the producer surplus, IFH. This is equal to profit minus fixed costs; and it is equal to profit in the long run, when fixed costs are zero.

In input markets, there is also a surplus which is analogous to consumer surplus. It is the excess of the input price actually received by the input supplier, over the minimum payment that would be required to induce the supplier to supply the observed quantity of the input. This surplus is called "economic rent." Figure 4 is the graph of an input market, with "Input D" representing the demand curve for the input and "Input S" representing the input supply curve, the area of economic rent would be BEJ. However, for no good reason, economic rent is very often omitted from the calculation of social surplus.

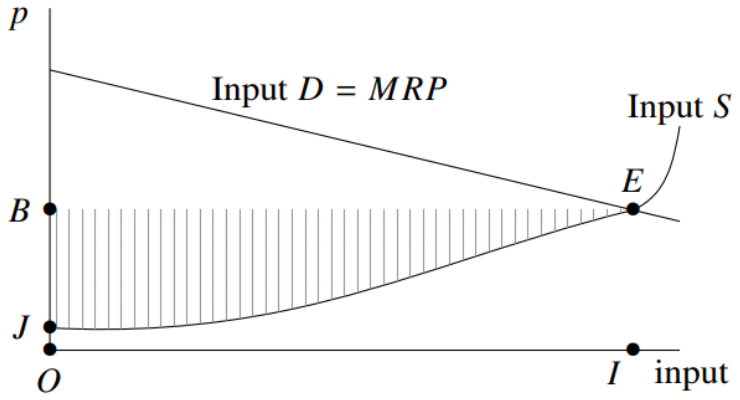

Figure 4. The vertical axis is price and the horizontal axis is the amount of one input. The input demand curve is D, representing the input's marginal revenue product. The input supply curve is S. Economic rent is BEJ, the excess of total input supplier's receipts, BEIO, over the minimum needed to induce the supplier to supply the input, JEIO. The unshaded area above BE and below the input demand curve is part of firm profit.

The labor market is also an input market. In the labor market, the economic rent received by workers is called labor rent. It is the difference between the wage and the supply curve of labor (which represents the minimum payments required to induce the workers to work for the firm).

In symbols, if the economy consists of persons 1, 2, …, then the total consumer surplus is $CS = CS_1 + CS_2 + \cdots$; if the economy consists of firms A, B, …, then the total producer surplus is $PS = PS_A + PS_B + \cdots$; if the economy consists of input suppliers a, b, …, then the total economic rent is $ER = ER_a + ER_b + \cdots$; and the (total) social surplus would be $CS + PS + ER$. In this expanded view of the economy, as including firms and input suppliers, Marshall equates the social welfare of a nation with its total social surplus.

Unfortunately, through the influence of industrial organization and law and economics proponents like Robert Bork, antitrust goals became limited to economic surplus. The narrowest surplus concept is the sum of all consumers' surpluses, CS. A broader goal, and the one advocated by Bork, is to maximize the sum of all consumers' and all producers' surpluses, $CS + PS$.[13] The most inclusive goal would be to maximize total surplus, which is the sum of

[13] The inclusion of *all* producer surpluses in the antitrust goal is controversial. For example, Shapiro writes, "we learned long ago that proper antitrust enforcement is about protecting consumers, and protecting the competitive process, not about protecting competitors." Carl Shapiro, *Antitrust in a Time of Populism*, 61 INT. J. IND. ORG. 714, 742 (2018). See also Potter Stewart's dissenting opinion, *Utah Pie Co. v. Continental Baking*, 386 U.S. 685, 705 (1967) ("That the Court has fallen into the error of reading the Robinson-Patman Act as protecting competitors, instead of competition, can be seen….").

The contrary position is that "competitors" are no less worthy of having their social surplus counted than are consumers, workers, or any other group of people. This reflects the elementary "monotonicity" and "symmetry" properties of social welfare functions. "Two basic requirements of a social welfare ordering $\succcurlyeq$, beside the property of completeness and transitivity already mentioned, are *monotonicity* and *symmetry*. The social welfare ordering $\succcurlyeq$ is monotonic in utility u_i if an increase in agent i's utility, ceteris paribus, increases social welfare. [...] The social welfare ordering $\succcurlyeq$ is symmetric if it does not pay attention to the identity of the agents, only to their utility level. If the utility profile u obtains from v simply by permuting the index of the agents in arbitrary fashion […], the social welfare ordering views these two profiles as equivalent. […] Symmetry is equal treatment of equals, namely the basic fairness axiom discussed in section 1.1: agents can only be discriminated on the basis of their utilities,

consumers' and producers' surpluses and economic rents, $CS + PS + ER$. This more complete approach incorporates, for example, the impact of monopsony on labor markets.[14]

C. Justifying Surplus Maximization: the Pareto & Potential Pareto Criteria

Although a goal of maximizing social surplus appears to be objective and untethered to any particular ethical viewpoint, it actually reflects an ethical viewpoint called Utilitarianism.[15] To understand Utilitarian ethics, consider two consumers. Surplus maximization, that is, Utilitarian ethics, asserts that a situation with "$CS_1 = 5$ and $CS_2 = 5$" is inferior to a situation with "$CS_1 = 11$ and $CS_2 = 0$," because the former has total $CS = 10$ and the latter has total $CS = 11$. In other words, since Utilitarians only care about the sum of (in this example) consumer surplus, they do not incorporate distribution.[16] Many non-Utilitarians do care about distribution, however, and believe that a situation with "$CS_1 = 5$ and $CS_2 = 5$" is superior to a situation with "$CS_1 = 11$ and $CS_2 = 0$,"

Vilfredo Pareto, writing in 1905, rejected Utilitarianism and surplus maximization as an ethical social goal because he did not believe hurting Person 2 in that way could be ethically justified. Pareto advocated replacing surplus maximization with a goal now called "Pareto Efficiency" or "Pareto Optimality." A "Pareto improvement" is a change that benefits at least one individual while none are harmed. "Pareto Efficiency" is defined as a situation where no further Pareto improvements are possible. This approach did not require the adding up of surpluses, and it

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not of any other exogenous factors." Hervé Moulin, FAIR DIVISION AND COLLECTIVE WELFARE, 2003, Cambridge MA: MIT Press, 66. "Monotonicity" is sometimes called "the Paretian property" or the "strictly Paretian property" (we are referring to the latter: if $u_i' \geq u_i$ for all i and $u_i' > u_i$ for at least one i then [social welfare function] $W(u') > W(u)$). Andreu Mas-Colell, Michael D. Whinston, & Jerry R. Green, MICROECONOMIC THEORY (1995) 825. "Symmetry" is sometimes called "anonymity." GEOFFREY A. JEHLE & PHILIP J. RENY, ADVANCED MICROECONOMIC THEORY 282 (3rd ed. 2011).

[14] Some observers advocate for maximizing the output of the final good. If there is only one final good, this goal is ill-advised because it is equivalent to maximizing consumer surplus while ignoring producer surplus and economic rents. If there is more than one final good in the economy, there is an additional problem: the goal, "output," as a single number, becomes impossible to even define. "Output" properly becomes a vector (of dimension greater than one), and it is not mathematically possible to maximize a vector. Attempting to fix this by multiplying the output vector by the price vector, resulting in a scalar, brings the demand curve back into the analysis, in a way that is inferior to the surplus approach because the latter takes the entire demand curve into account, not merely the part of the demand curve near the equilibrium point such as F. Output maximization thus is an inappropriate goal for society.

The fallacy that output is easy to define in a multiple-commodity world also underlies the fallacy that economic efficiency pertains to the "size" of the economic "pie," while distribution pertains to the way the pie is cut. In a multiple-commodity world, the "size of the pie" is invariably calculated by multiplying the output vector by the price vector; but the price vector is determined by distribution, since richer people's tastes are more strongly represented in the marketplace than poorer people's tastes. Therefore, there is actually no separation of the pie's size from the way it is cut: changing the way it is cut will, by changing prices, change the pie's "size."

[15] Stephen Nathanson, *Act and Rule Utilitarianism,* INTERNET ENCYCLOPEDIA OF PHILOSOPHY: A PEER-REVIEWED ACADEMIC RESOURCE, available at https://iep.utm.edu/util-a-r/ ("The well-being of the group is simply the sum total of the interests of the all of its members."). In this source, see also the "Wrong Answers" objections to Act Utilitarianism and the "Wrong Answers and Crude Concepts" objections to Rule Utilitarianism.

[16] Some versions of utilitarianism maximize the average utility. But even these theories allow for some people to sacrifice utility in favor of others. See Daniel Hausman, Michael McPherson and Debra Satz, ECONOMIC ANALYSIS, MORAL PHILOSOPHY, AND PUBLIC POLICY (3rd Ed 2017) at 110–112.

condemns a move from "$CS_1 = 5$ and $CS_2 = 5$" to "$CS_1 = 11$ and $CS_2 = 0$." The economics profession embraced the Pareto criterion, and it is what mainstream economic textbooks mean by "efficiency" today.[17]

However, Pareto's criterion is of little policy use. Few policies benefit some but do not harm anyone. Certainly, in antitrust litigation, enforcement of the Sherman Act results in harm to the defendant, the alleged monopolist. Moreover, the Pareto criterion is highly conservative. Even a slight harm to a monopolist that, for example, benefits workers or consumers or which preserves democracy or benefits future innovation cannot be justified by the Pareto principle.

A few decades after abandoning Utilitarianism and surplus maximization, economists became concerned that they would have little to say about policy since the Pareto criterion requires policies to have unanimous consent. Nicholas Kaldor and John Hicks came up with a new justification for Utilitarianism and surplus maximization. This new justification, called the Potential Pareto criterion, blurred the distinction between surplus maximization and the (actual) Pareto criterion. Potential Pareto endorses a move from "$CS_1 = 5$ and $CS_2 = 5$" to "$CS_1 = 11$ and $CS_2 = 0$" *not merely* because the former has a lower CS than the latter. It *also* endorses that move because the government could, if it wanted to, supplement that move by a second move which took, say, 5.4 units of CS from Person 1 and giving those 5.4 units to Person 2. If the government were to do this, Person 1 would end up with $CS_1 = 11 - 5.4 = 5.6$ and Person 2 would end up with $CS_2 = 0 + 5.4 = 5.4$, which would make both persons better off than they were in their original $\{5,5\}$ situation. In other words, if the government were to make both the first and the second move, an actual Pareto improvement would result. This is why the first move is called a "Potential" Pareto improvement. It could, potentially, be supplemented with a second move that together would be a Pareto improvement. The second move is seen as optional or political; that is, as being about distribution as opposed to the first move being about (tautologically-defined) "efficiency." Accordingly, the Potential Pareto criterion endorses the first move regardless of whether the second move is undertaken or not.

The Potential Pareto criterion is the modern economist's justification for surplus maximization. Thus, the normative theory behind industrial organization and antitrust's CWS has two components: the theory of economic surplus and the potential Pareto criterion.

D. How the Economic Surplus Model is Used to Evaluate Monopoly

The surplus model together with the Potential Pareto criterion can be used to identify the harm that results from monopoly. In Chapter 5 of *The Antitrust Paradox*, Judge Bork introduced the standard industrial organization graph of the effect of monopoly compared to perfect competition. Figure 5 is a simplified version, highlighting the social cost of monopoly.

[17] For further explanation, and citations of textbooks, see Mark Glick, Gabriel A. Lozada, Pavitra Govindan, & Darren Bush, *The Horizontal Merger Efficiency Fallacy,* 96 TEMP. L. REV. 571, 591–2.

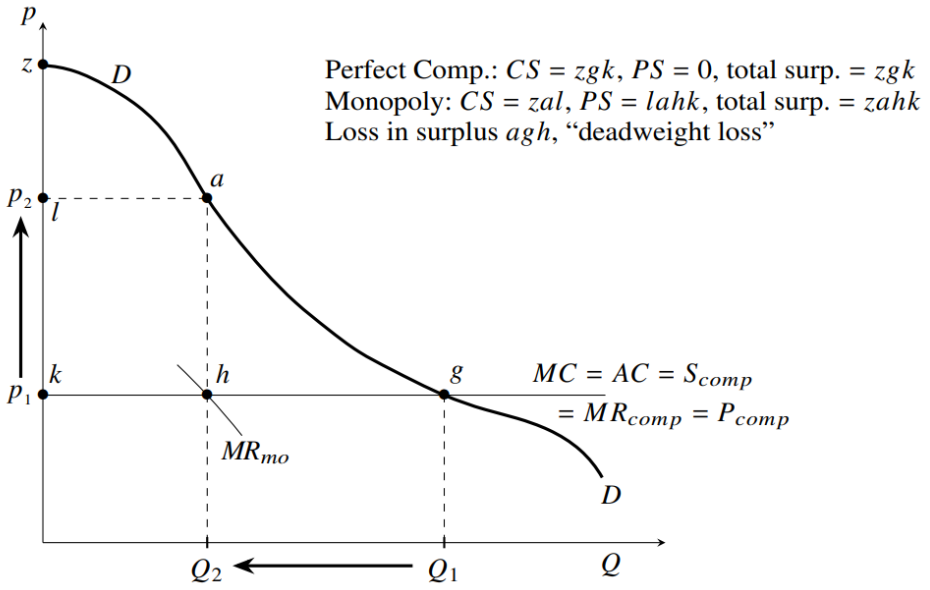

Figure 5. The change in consumer surplus resulting from a merger to monopoly. The demand curve is D. The horizontal line is marginal cost, average cost, supply for a competitive industry, marginal revenue for a competitive industry, and the competitive price. The monopolist's marginal revenue is MR_{mo}. The competitive equilibrium is at g. The merger causes marginal revenue to become downward sloping. The monopoly maximizes profit at h, resulting in a decrease in quantity from Q_1 to Q_2 and an increase in price from p_1 to p_2. Profit (producer surplus PS) increases from zero to $lahk$ and consumer surplus CS shrinks from zgk to zal. Total social surplus decreases from zgk to $zahk$, which is a fall of agh, which is the deadweight loss to monopoly.

When a market is monopolized, consumer plus producer surplus is reduced. The difference between the new and old consumer plus producer surplus is called the "deadweight loss." In the graph, the deadweight loss is the loss of consumer surplus, $lagk$. The loss of consumer surplus occurs because the monopolist's profit-maximizing level of output is less than the competitive industry's equilibrium level of output. While changes in this market cause changes in other markets, it is traditional to restrict attention to a single market. Because of the presence of the deadweight loss agh, economists holding to the surplus theory and Potential Pareto criterion say that merger to monopoly is bad.

Judge Bork adopted this theory of why monopoly power was socially injurious and cast aside earlier concerns about excessive corporate power. It was viewed as a triumph of economic science; but was it? We explore that question in the next section.

III. Normative Economic Theory Based on Surplus is Inconsistent

A. Comparing Perfect Competition to Monopoly Sheds no Light on Oligopoly

One problem with illustrating the harm resulting from monopoly by comparing the economic surplus under perfect competition with the economic surplus from pure monopoly, is that antitrust cases are almost never about perfect competition or literal monopoly. Perfect competition means firms are unable to affect the price of their output, which happens when a market has very many, very tiny firms—a market structure of little relevance in modern economies and of no importance in antitrust cases. At the other end of the spectrum, a literal

monopoly means one seller, which also has little relevance except in regulation cases. Modern antitrust cases are predominantly about comparing oligopolies with more, or with fewer, firms. Thus, the lessons from Figure 5 do not translate into this situation.

Economic theory does not support the proposition that the economic surplus generated by an oligopoly with fewer firms is less than that generated by an oligopoly with additional firms. To the contrary, the Theory of the Second Best[18] shows that reducing but not completely eliminating monopoly may make things worse. There is absolutely no theorem in economics that states that an oligopoly with more firms (or "more rivalry" or "more competition") is in general better than an oligopoly with fewer firms (or "less rivalry" or "less competition").[19] Indeed, economists studying one-shot Cournot oligopolies find that there are cases in which more firms generate less social surplus than fewer firms, and in which there are oligopolies which generate less social surplus than a monopoly would.[20] Economists studying oligopolies modeled as repeated games (rather than one-shot games) can often say remarkably little about what happens, because there are multiple equilibria. Fudenberg and Tirole write:[21]

> The "folk theorems" for repeated games assert that if the players are sufficiently patient then any feasible, individually rational payoffs can be enforced by an equilibrium. Thus, in the limit of extreme patience, repeated play allows virtually any payoff to be an equilibrium outcome.

Therefore, the theory of economic surplus offers a weak foundation for understanding how greater rivalry is socially beneficial.

B. The Order-of-Analysis Paradox

Another traditional concern raised by welfare economists about consumer surplus is that the order of the summation changes the total consumer surplus if the prices of two or more commodities change.[22] In other words, one gets a different number for the change in consumer

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[18] R. G. Lipsey & Kelvin Lancaster, *The General Theory of the Second Best*, 24 REV. ECON. STUD. 11 (1956).

[19] As Markovits puts it, "the fact that 'perfect competition among sellers and buyers' are Pareto-optimal conditions does not imply that policies that increase competition will tend to increase allocative efficiency on that account in a still-Pareto-imperfect world." Richard S. Markovits, *Second-Best Theory and Law & Economics: An Introduction*, 73 CHI.-KENT L. REV. 3, 4 (1998).

[20] One-shot games are less realistic than repeated games because oligopolistic firms typically take potential future responses by their rivals to the firm's current actions into account. For one-shot games, there are oligopolistic models in which having more firms will generate more surplus than having fewer firms, but in very simple settings (identical firms, linear costs, linear demand). In more complicated settings, Corchón writes, "We find that there are markets with a large number of [Cournot oligopolistic] firms where [the Percentage of Welfare Loss compared with the social optimum] PWL is close to one [i.e., quite bad] whereas [the Hirschman-Herfindahl concentration index] *H* is close to zero [i.e., indicating very low concentration]. This shows that *H* is not a reliable measure of WL…. [M]onopoly, the target of attacks of our profession from Adam Smith on, is not necessarily the worst outcome in terms of WL." Luis C. Corchón, *Welfare Losses under Cournot Competition,* International Journal of Industrial Organization (2008) 1120, 1121. In one model Corchón studies, as *H* goes up, the percent of surplus loss goes *down*. Id. at 1126, iv").

[21] Drew Fudenberg & Jean Tirole, Game Theory 150 (1991).

[22] See for example Per-Olov Johansson, An Introduction to Modern Welfare Economics §4.2 (1991); Robin W. Boadway & Neil Bruce, Welfare Economics *43* (1984); Yew-Kwang Ng, Welfare Economics: Introduction and Development of Basic Concepts §4.4 (1983).

surplus depending on the order in which one analyzes the price changes. One might say that the analysis is not commutative because the order of operation changes the total. Ekelund and Hébert write:[23]

> Foster and Neuburger (1974) caution that considerable care must be exercised to ensure the additivity of Marshall's measure once the analysis extends beyond the single-good partial-equilibrium case. It has been shown that in the case of simultaneous, multiple price changes, the Marshallian surplus is no longer uniquely defined, and that alternative evaluations of a given welfare change depend on the assumed order of price adjustments between the terminal situations being compared. This path-dependence problem was first recognized by Hotelling (1938) and subsequently considered by Mohring (1971), Harberger (1971), Silberberg (1972), Glaister (1974), and Turvey (1974) and in synthetic fashion by Bums (1977). It has come to be a major obstacle to the further development of the consumer surplus concept.

To illustrate this problem, consider the situation of a single consumer experiencing a simultaneous fall in the price of beef from \$10 to \$8 and a rise in the price of pork from \$7 to \$12. Suppose that for this consumer, beef and pork are substitutes, so the fall in the price of beef lowers this consumer's demand for pork, and the rise in the price of pork increases this consumer's demand for beef. Then the following numbers are possible:

	Change in this consumer's consumer surplus for beef as its price falls from \$10 to \$8
at pork's original price of \$7	$+\$100$
at pork's final price of \$12	$+\$120$

	Change in this consumer's consumer surplus for pork as its price rises from \$7 to \$12
at beef's original price of \$10	$-\$200$
at beef's final price of \$8	$-\$90$

If one analyzes beef first, then the fall in its price, with pork at pork's original price, causes consumer surplus to change by $+\$100$. Moving to analyzing pork, the rise in pork's price, with beef now at its final price, causes consumer surplus to change by $-\$90$. Hence the total change in consumer surplus is $+\$10$: the price changes have caused overall consumer surplus to rise, indicating a net increase in welfare for this consumer.

However, if one analyzes pork first, then the rise in its price, with beef at beef's original price, causes consumer surplus to change by $-\$200$. Moving to analyzing beef, the fall in beef's

[23] Robert B. Ekelund, Jr., & Robert F. Hébert, *Consumer Surplus: The First Hundred Years,* 17 HIST. POL. EC. 491, 446 (1985).

price, with pork now at its final price, causes consumer surplus to change by $+\$120$. Hence the total change in consumer surplus is $-\$80$: the price changes have caused overall consumer surplus to fall, indicating a net decrease in welfare for this consumer. This contradicts the conclusion arrived at analyzing beef first, and means that consumer surplus cannot determine whether a consumer's welfare goes up or down in response to these price changes.

Johansson writes of this problem:[24]

> This is generally known as the *path-dependency problem* in the literature. The implication of this deficiency is clear. It simply does not make sense to use areas to the left of ordinary demand curves [i.e., consumer surplus] to evaluate multiple price changes. In particular, if some prices increase while others fall, the money measure [i.e., consumer surplus] may tell us that the consumer has gained from the change in prices, while the consumer himself thinks that the change reduces his welfare. […]
>
> …[I]f several prices are changed, we cannot use areas to the left of demand curves to evaluate the welfare gain/loss. The only exceptions occur if (we somehow happen to know that) the consumer's preferences are such that they can be represented either by a homothetic or a quasi-linear utility function. In the former case a 10 per cent increase in income will cause demand for each and every commodity to increase by 10 per cent. In the latter case demand for all but one commodity remains constant when income is changed. Needless to say, many economists question whether consumer's [*sic*] behave in either of these ways.

We now turn to several even more troublesome problems with consumer surplus as an analytical tool for evaluating social welfare.

C. Consumer Surplus Numerically Mis-Measures Welfare

The arguments in Section II.A purported to show that consumer surplus was a measure of an individual's willingness and ability to pay to obtain a good, or willingness to accept compensation for giving up a good. In this section we show that those arguments are flawed (except in the unlikely case when the income effect of a price change is exactly zero).

Recall what we claimed above concerning Figure 1:

> Having paid this [amount to acquire the very first 5 units of the good), suppose the consumers are given a chance to buy an additional 5 units. According to point C, the market-clearing price at $Q = 10$ is \$40/unit, so the consumers would be willing to pay $40 * (10 - 5)$ in total for those units.

This narrative is flawed, however, because once the deal to purchase the first 5 units of the good at a price of 45 has been consummated, the consumer's income falls: The consumer must make this payment to the seller, and this reduction in income *causes the consumer's demand curve to shift* due to the well-known "income effect." If the good is a "normal" good (purchases of it rise when income rises), then the payment for 5 units at price of \$45/unit causes

[24] Per-Olov Johansson, An Introduction to Modern Welfare Economics 44, 47 (1991).

the demand curve to shift down; and if the good is an "inferior" good (purchases of it fall when income rises), then the payment for 5 units at price of \$45/unit causes the demand curve to shift up.[25]

The correct analysis is shown in Figure 8. Having made the payment to acquire the first 5 units, the demand curve falls, and so the payment to acquire the second 5 units will correspond to a rectangle whose upper-right corner is lower than at point C. Suppose the new demand curve (not illustrated) goes through point C', corresponding to a price of \$30/unit rather than point C's \$40/unit. Then, having made the payment to acquire the second 5 units, the demand curve falls yet again; suppose it now passes through point D'. Then the payment to acquire the third 5 units will correspond to a rectangle whose price is point D''s \$20/unit rather than point D's \$35/unit. In a similar way, the consumers' payment to go from 15 to 20 units could be the rectangle in Figure 8 whose upper left-hand corner is at point E', and the consumers' payment to go from 20 to 25 units could be the rectangle in Figure 8 whose upper left-hand corner is at point F'. Figure 1's consumer surplus is thus an overestimate of the consumer's willingness and ability to pay for 25 units of this commodity. (If this good were "inferior" instead of "normal," then the demand curves would shift up rather than down, and consumer surplus would be an underestimate of the actual WATP.)

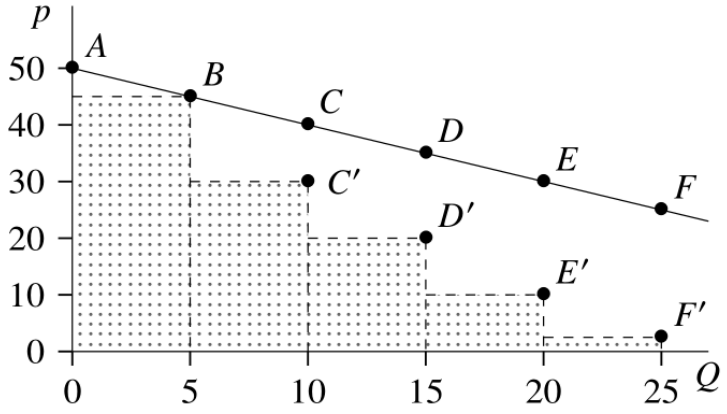

Figure 6. The line A-B-C-D-E-F is the (Marshallian) demand curve from Figure 1. The shaded area is approximately the value of 25 units, measured by the actual willingness and ability to pay in order to acquire it. The size of the shaded area is 537.5.

For the same reasons, Figure 2's "willingness to accept" analysis is also wrong. Starting at 25, suppose one measured how much the consumers were willing to accept in return for losing the good. To move the consumers to 20 units of the good, compensation would be required at the level represented by a rectangle with a height of point E and a width between 20 and 25. To move the consumer from 20 units of the good down to 15 units, if the demand curve did not shift, compensation would have to be paid at a level represented by a rectangle with a height of point D and a width between 15 and 20. But the deal struck to buy back $25 - 20$ units at E's price of \$30/unit caused the consumer's income to rise, meaning the demand curve will shift up if the good is normal and down if the good is inferior. Assuming a normal good, extending this

[25] The situation would be different if the good were an indivisible one, such as automobiles—one cannot buy one-quarter of an automobile—where each consumer probably only buys one unit. In contrast, in our situation, the consumer may buy various levels of output.

analysis down to a quantity of zero would give compensatory payments as shown by the shaded area of Figure 7. The conclusion is that Figure 1's consumer surplus, the area under AF, is an *underestimate* of the consumer's actual WTA for 25 units. (If this good were "inferior" instead of "normal," then the demand curves would shift down rather than up, and consumer surplus would be an overestimate of the actual WTA.) The critical point, however, is that regardless of the nature of the good, the surplus model fails to provide an accurate measure of the consumer's welfare.

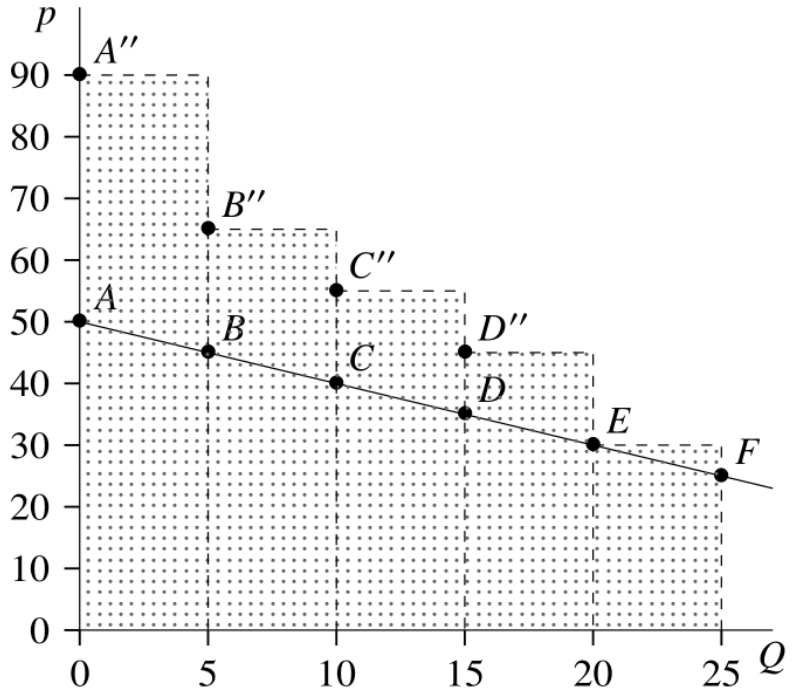

Figure 7. The line A-B-C-D-E-F is the (Marshallian) demand curve from Figure 1. The shaded area is approximately the value of 25 units, measured by the actual willingness to accept compensation for giving it up. The size of the shaded area is 1450.

Economics students must wait for Ph.D.-level microeconomics textbooks before they discover that there are two actual "values" of 25 units, one the area under the "Hicksian demand curve" through the point A and the other the area under the "Hicksian demand curve" through the point F. Neither of these "Hicksian demand curves" is the same as the more familiar Marshallian demand curve depicted in Figure 1, which generates consumer surplus. We will learn later in the next section that one of the Hicksian demand curves generates a measure of value known as "Compensating Variation" and the other generates a different measure of value known as "Equivalent Variation." One of these is equal to the willingness and ability to pay for a commodity; the other is the willingness to accept compensation for giving up a commodity (but which corresponds to which depends on the setting and is not important at this stage). These concepts, and not consumer surplus, are the *actual* neoclassical measures of value of 25 units. But having *two different* measures for *one* thing, the value of 25 units, can cause severe problems in making public policy. For an analogy, imagine what problems architects would have if every building component had two equally valid but different lengths, widths, heights, and weights. In Sections III.F and III.G we explain that the presence of two different measures of value is one of the central problems that led welfare economists to reject consumer surplus

or willingness and ability to pay or willingness to accept as a valid basis for a normative economic theory.

There are two defenses to this line of argument offered by the supporters of surplus maximization, neither of which we find persuasive. The first is to *assume* that income does not affect any consumer's purchases of the good in question. This is debunked in Section III.E.1. The second defense is to argue that income only trivially affects any consumer's purchases of any good, so it can be ignored. This is debunked in Section III.E.2.

D. Compensating and Equivalent Variation

After realizing the phenomenon discussed in Section III.C, economists began working with two measures of value, one corresponding to Figure 6's willingness and ability to pay and the other corresponding to Figure 7's willingness to accept. These are also called "compensating variation" ("CV"), and "equivalent variation" ("EV") (though which is which depends on whether the policy is a gain or a loss).[26] To replace the old goal of maximizing consumer surplus, which is $CS = CS_1 + CS_2 + \cdots$, economists under what is called the New Welfare Economics instead pursue maximization of compensating variation, which is $CV = CV_1 + CV_2 + \cdots$ and maximization of equivalent variation, which is $EV = EV_1 + EV_2 + \cdots$. Since the goal clearly remains maximization of a sum, the ethical foundation of the New Welfare Economics remains Utilitarian, and its criterion for the social good is the Potential Pareto criterion defined in Section II.C.

Defining CV and EV $requires\ precision$. Compensating variation measures the value of the policy by asking citizens, if the policy *is* adopted, how much are they willing and able to pay (if the policy benefits them) or willing to accept (if the policy hurts them) in return for the policy's adoption. The Potential Pareto test says to adopt the policy if the winners' WATP is larger than the losers' WTA, because in this case the winners could compensate the losers for the policy's adoption, making the hypothetical "adoption plus compensation" an actual Pareto improvement. This is called the Kaldor Test.

In contrast, equivalent variation measures the value of the policy by asking citizens, if the policy was *not* adopted, how much are they willing and able to pay (if the policy hurts them) or willing to accept (if the policy helps them) in return for the policy's non-adoption. The Potential Pareto test says to adopt the policy if the would-be losers' WATP is smaller than the would-be winners' WTA, because in this case the would-be losers could not compensate the would-be winners for the policy's non-adoption; in other words, "non-adoption plus compensation," leading to an actual Pareto improvement, is not feasible. This is called the Hicks Test.

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[26] When considering the welfare effect of price changes, CV and EV are by no means the only correct measures of welfare change, as explained by Boadway & Bruce, *supra* note 3, 199–200, 206, 211–212 ("There are several ways of getting from [the original] point 1 to [the new] point 2 by combinations of price and income changes, and each of them gives a different measure of welfare change. [….] An arbitrary method of selecting a path to measure the distance between indifference levels must be chosen. Two methods are conventionally used in applied welfare economics [….] They are the […] CV and the […] EV [….] They differ only in the set of reference prices they use—the initial or the final ones. In principle, any set of reference prices could be used to construct a welfare index. […] [T]he 'true measures' [of welfare change] are usually taken to be CV or EV although, as we have seen, measures using reference prices other than the initial or final prices are just as good as EV and CV in principle").

The upshot is that there is not one Potential Pareto criterion, there are two—the Kaldor test and the Hicks test. They are more likely to conflict the more different they are. If CV and EV are close, then conflicts may be few. The next section discusses the frequent (albeit in our view mistaken) claim that CV and EV are not very different.

E. Are CV and EV Always Close?

1. Quasilinear Utility

There is a utility function that will force CV and EV and CS to be equal. It is the "quasilinear" utility function. If consumers' utility function is quasilinear in a commodity, for example salt,[27] then income does not affect demand and consumers with identical preferences would consume identical amounts of the good (salt) even if the consumers' incomes varied drastically. There may be some commodities for which consumption rarely depends upon income. But that is not true for most goods; if it were, a rich person and a poor person who had the same tastes would buy the same *amount* (not just proportion) of most goods. For example, if on an income of $100 a week, you bought one pizza a week, then on an income of $100,000 a week you would also buy one pizza a week.[28] Economists will often begin an analysis by assuming quasi-linear utility. But when they do, they are assuming that as income increases the same goods are always purchased (with the exception of one good which absorbs all the increase in income), an obviously false assumption.[29]

A weaker assumption that preferences are homothetic will not achieve this result. If preferences were "homothetic," a rich and a poor person with the same tastes would buy the same *proportion* of most goods (though not the same amount). Homotheticity is a much more plausible assumption than quasilinearity. Yet Paul Samuelson, perhaps the most important economist of the twentieth century, called homotheticity "Santa Claus economics" (meaning a "mathematical model with extremely strong and empirically unrealistic assumptions").[30] One can only imagine his reaction to a theory requiring quasilinear utility functions to avoid serious inconsistencies.

Quasilinear utility is so contradictory to the real world that introductory economics textbooks, wisely, do not even discuss it. Nonetheless, its assumption underlies much of surplus theory.

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[27] Marshall uses salt as an example of a good whose demand is insensitive to price, which is a roughly similar idea. Alfred Marshall, *supra* note 11 at III.iv.3, p. 105, ff.

[28] W. M. Gorman, *Community Preference Fields*, 21 ECONOMETRICA 63 (1953).

[29] There is another problem with quasilinear utility functions. They have the form $m + \phi(x)$ where m is the composite "numeraire" good and x is the good under study. This means that it is impossible for *all* goods' consumption to be insensitive to income: there has to be at least one good whose consumption varies strongly with income.

[30] D. Wade Hands, *The Individual and the Market: Paul Samuelson on (Homothetic) Santa Claus Economics,* EURO. J. HIST. ECON. THOUGHT 425 (2014).

2. Robert Willig's Argument

The problems associated with having two measures of value were pointed out by Scitovsky, Samuelson, and Gorman[31] and are laid out in Sections III.F–III.I of this paper. In response, Robert Willig defended consumer surplus in his 1976 paper "Consumer Surplus Without Apology."[32] The article was hailed as clearing the way for antitrust to make use of the consumer welfare standard. Willig claimed to show that, in practice, EV and CV are close to each other. Textbooks show that consumer surplus CS lies between EV and CV, so if Willig were correct that EV and CV are close to each other in practice, then the binary nature of value would be of no practical importance in antitrust, and CS could reliably be used in place of EV or CV in applied work. However, a close reading of Willig's paper reveals that it *did not* actually show that EV and CV will always be close to each other, despite the popular stylized summary of his work.

In an earlier paper, Glick, Lozada, and Bush ("GLB")[33] demonstrated that Willig's claims are not supported by his analysis:

> Willig's paper presents some non-approximate results, which are rather complicated, and some approximate results, which are simpler. Among the simple results, and based on a constant income elasticity η , are the following, with m denoting initial income (and also assuming that $(1-\eta)\ (\Delta CS)/m$ is small): $\mathrm{CV} \approx \Delta\mathrm{CS} + \eta \cdot (\Delta\mathrm{CS})^2/(2\mathrm{m})$ and $\mathrm{EV} \approx \Delta\mathrm{CS} - \eta \cdot (\Delta\mathrm{CS})^2/(2\mathrm{m})$.[34] The intuition most readers have obtained from Willig's paper is that CV and EV are "close to" ΔCS. From Willig's formulas we have $(CV - \Delta CS)/\Delta CS \approx (\eta/2)(\Delta CS/m)$ and $(EV - \Delta CS)/\Delta CS \approx -(\eta/2)(\Delta CS/m)$, so such intuition relies on $(\eta/2)(\Delta CS/m)$ being "small." But it may not actually *be* small: in Willig's own Table 1, $\eta/2$ can be as large as 5 and $\Delta CS/m$ can be as large as $0.25 = 1/4$, meaning that $(\eta/2)(\Delta CS/m)$ can be as large as $5/4 = 1.25 = 125\%$, which is in no sense "small."
>
> Using the somewhat smaller parameter values of $\eta/2 = 2.5$ and $\Delta CS/m$=0.15, the second-to-last row and third-to-last column of Willig's Table 1 gives *non-approximated* values to three decimal places of $(CV - \Delta CS)/\Delta CS = 71.6\%$ and $(EV - \Delta CS)/\Delta CS = -26.1\%$, which are not "small" either. Furthermore, the non-approximated gap between CV and EV with these parameter values is $(CV - EV)/\Delta CS = 71.6\% - (-26.1\%) = 97.7\%$, a large number by any objective assessment…. In other words, Willig's paper actually does not support the idea that CV and EV are always "close" to ΔCS, nor close to each other: they may or may not be, depending on the situation.

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[31] Scitovsky, *supra* note 5; Paul Samuelson, *Evaluation of Real Income*, 2 OXFORD ECON. PAPERS 1 (1950); W. M. Gorman, *The Intransitivity of Certain Criteria Used in Welfare Economics*," 7 OXFORD ECON. PAPERS 25 (1955).

[32] Robert D. Willig, *Consumer's Surplus Without Apology*, 66 THE AM. ECON. REV. 589–597 (1976).

[33] Mark Glick, Gabriel A. Lozada, & Darren Bush, *Why Economists Should Support Populist Antitrust Goals,* 2023 UTAH LAW REVIEW 769, 804.

[34] Willig, *supra* note 32, at 593.

These examples show that Willig demonstrates that the differences between EV and CV can be material and large, so consumer welfare proponents cannot simply ignore them as one would need to for surplus theory to be reliable. Moreover, differences between EV and CV can give rise to policy inconsistencies, as we now show.

F. Inconsistency Between the Kaldor Test and the Hicks Test

The first inconsistency problem is that the results of the Kaldor test can conflict with the results of the Hicks test. For example, suppose the CV-value of a policy to its losers is negative $20 (WTA compensation for the policy +$20), the EV-value of that policy to its losers being negative $10 (WATP to veto the policy +$10), and the benefit of the policy to its proponents $14 (for example, the profit generated by a polluting factory). The Kaldor (CV) test has the policy's cost as $20 and its benefits as $14, so the winners could not compensate the losers and the policy should not be adopted. The Hicks (EV) test has the policy's cost as $10 and its benefits as $14, so if the policy were not adopted, the grateful policy-losers could only give the policy-winners up to $10, not fully compensating them for the policy's non-adoption: so the policy should be adopted.

G. Policy Reversals

The second inconsistency is that a welfare-enhancing policy focused solely on either CV or EV would be found to be welfare enhancing if repealed. Suppose in the elementary example of Section III.F, society followed EV and ignored CV, it would adopt the policy. Suppose it did so. In this new position, should the policy be reversed? Since this society has made a habit of ignoring CV, suppose it continues to do so. The EV of the policy reversal is the WTA of the policy's losers (their willingness to accept if the policy is not reversed), which is $20. This is higher than the policy's benefit of $14. So the policy should be reversed. This renders the EV criterion unreliable. It is analogous to claiming that the grass is always greener on the other side of the fence.

Consider the other possibility: in the elementary example of Section III.F, now suppose society followed CV and ignored EV, so it did not adopt the policy. But if society happened to find itself with the policy adopted, would it reverse the policy, to be consistent with its original bad opinion of the policy? Since this society has made a habit of ignoring EV, suppose it continues to do so. The CV of the policy reversal is the WATP of the policy's losers (their willingness to pay not to have the policy), which is $10. This is lower than the policy's benefit of $14. So the policy should not be reversed. This renders the CV criterion unreliable. It is analogous to claiming that the grass is always greener on this side of the fence, whichever side of the fence one is on.[35]

H. The Boadway Paradox: Is the Potential Compensation Feasible?

A third inconsistency pointed out by welfare economists is the Boadway Paradox, which shows that for some "potential Pareto" improvements, achieving an *actual* Pareto improvement is impossible. This challenges the justification of using potentially Pareto improving as a

[35] The possibility of policy reversals was first pointed out by Tibor Scitovsky, *supra* note 5.

normative criterion. To demonstrate the Boadway Paradox[36] we use Figure 8, which is adapted from Feldman and Serrano.[37] The figure is an Edgeworth Box, which will be familiar to economists. The width of the Box represents the amount of Good 1 in the two-person economy, and the height of the Box represents the amount of Good 2 in the economy. Person 1's origin is the lower left-hand corner of the Box and Person 2's origin is the upper right-hand corner of the Box. The curves in the Box represent indifference curves (equal-utility contours), convex for Person 1, and concave for Person 2 because of Person 2's unusual graph origin. The straight lines are budget constraints, the slopes of which represent the ratio of the prices of the goods.

Suppose the initial position is x. Since x is a Pareto Efficient point, there is no way to Pareto-improve upon x. Every test for a potential Pareto Improvement over x logically ought to fail. But the Kaldor Test does not fail in the example below; this is the Boadway Paradox. The reason the Kaldor Test gives the wrong answer is that, in its reliance on "potential" compensation, it does not filter out cases where compensation would not be feasible.

Suppose an economy has 156 apples ("Good 1") and 100 bananas ("Good 2"), and there is trade but no production (a "pure exchange economy"). Suppose the original position ("x") has Person 1 having 36 apples and 26 bananas, depicted as (36,26) with the first number representing apples and the second number representing bananas, and Person 2 having 120 apples and 74 bananas, depicted as (120,74). A policy is proposed which takes 64 apples and 60 bananas from Person 2, whom we will call "the policy loser," and gives them to Person 1, "the policy winner." This is a move from x to y in Figure 8. We will use the table below for the rest of the analysis.

[36] R. Boadway, *The Welfare Foundations of Cost-Benefit Analysis*, 84 ECON. J. 926 (1974).

[37] Allan M. Feldman & Roberto Serrano, WELFARE ECONOMICS AND SOCIAL CHOICE THEORY 208–210) (2nd Ed. 2006).

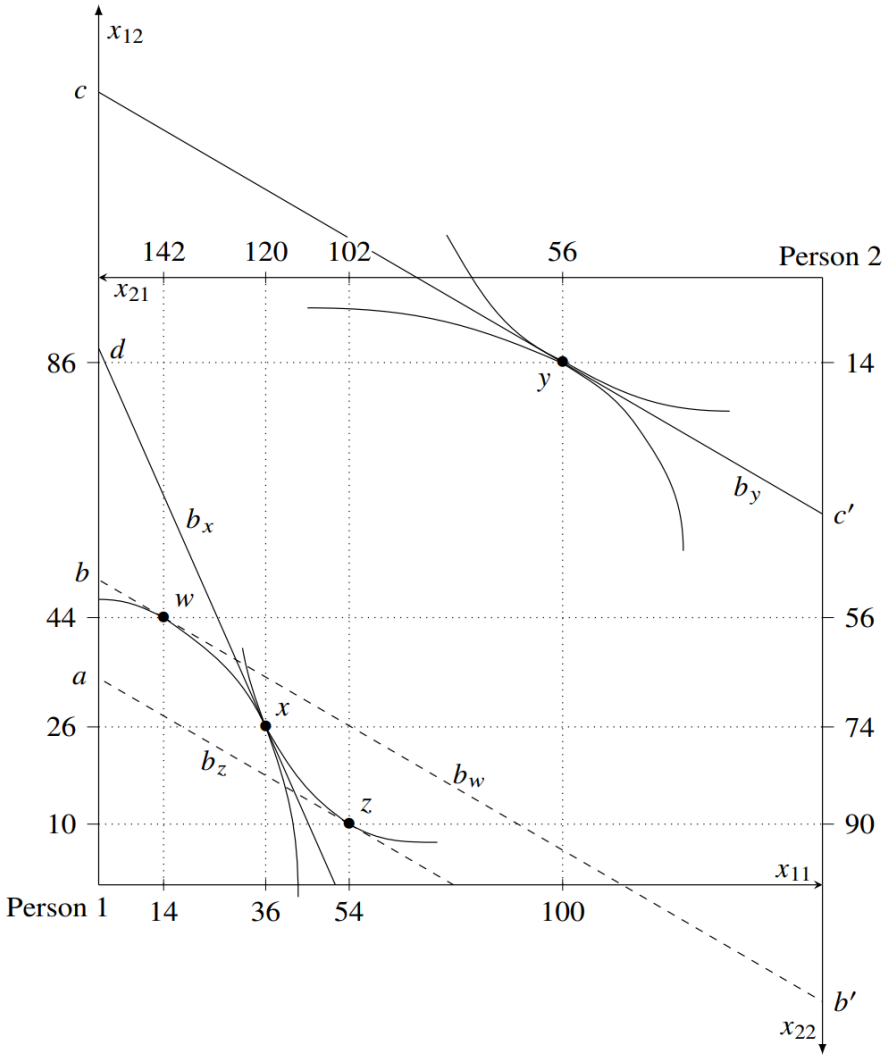

Figure 8. The Boadway Paradox. Source: adapted from Feldman and Serrano Fig. 9.6. There are 156 units of Good 1 (apples) in this economy, graphed horizontally, and 100 units of Good 2 (bananas) in this economy, graphed vertically, and x_{ij} is the consumption by Person i of Good j. Person 1's axes are at the bottom and left of the box, while Person 2's axes are at the top and right of the box.

	Policy Winner	Policy Loser
1. Original, Pareto Optimal, "x"	(36, 26)	(120, 74)
2. New, "y", also Pareto Optimal	(100, 86)	(56, 14)
3. As good as Original	(54, 10) = "z"	(142, 56) = "w"
4. New to "As good as Original"	(-46, -76)	(+86, +42)
5. At \$0.445/apple and \$1/banana, move revenue	+\$96.48	-\$80.29

Row 1 shows the original position, which we assume to be Pareto Optimal as shown by the tangency between the indifference curves of the two persons at x in Figure 8, and Row 2 shows the position "y" after the adoption of the policy, which is also Pareto Optimal. From measuring the slope of b_y we find that it is consistent with prices at the "new" position of approximately \$0.445 per apple and \$1 per banana. Imaginary budget lines b_w and b_z, drawn assuming the new prices, show that at these new prices, allocations "z" for Person 1, the policy winner, and "w" for Person 2, the policy loser, both shown on Row 3, would provide as much utility to each person as their Row 1 allocation does. This means that moving from the new position to the Row 3 (As good as Original) position represents the policy winner's WATP for the policy and the policy loser's WTA for the policy. Moving from the new position to the Row 3 (As good as Original) position entails the changes in the numbers of apples and bananas given in Row 4. At the new prices for apples and bananas, the Row 4 changes caused by moving from the new position to the Row 3 position result in the revenue changes given in Row 5.

Row 5 means the policy winner could be forced to give anything between \$80.29 and \$96.48 to the policy loser, fully compensating the policy loser, and the policy winner would still have money left over. Hence the policy passes the Kaldor test (the compensating variation test).

But that compensation would not actually be feasible. If the policy were adopted and \$80.29 compensation were paid by the winner to the loser, and an additional $96.48 - 80.29 = 16.19$ temporarily withheld from the winner, then at the new prices, the persons would end up at their Row 3 positions (z and w), and the policy winner would have an extra \$16.19 more to spend. But the Row 3 positions have 54 apples going to the policy winner and 142 apples going to the policy loser, which is a total of 196 apples, while there are only 156 apples in this economy. The compensation is not feasible. Moreover, with the \$16.19 left over, the policy winner is likely to demand even more apples than his Row 3 amount, making compensation even less feasible.

This demonstrates that the Potential Pareto logic is flawed: its requirement is that if compensation is paid, everyone is made better off, but it is not limited to situations where

making the compensation payments is feasible. If the new relative prices are different from the old relative prices, the payments may not be possible.[38]

If, as we have assumed, the original position is Pareto Optimal, then there is no other allocation that makes both people better off. Yet, we have seen that there are policies moving away from the original position that pass the Kaldor test. Such results render the Kaldor test unreliable.[39]

I. The Paradox of the Non-Neutral Numeraire

A fourth inconsistency is that the numeraire affects the values and outcome. A numeraire is merely the good used as the base value to express the values of other goods. The choice of a numeraire is arbitrary and should not affect any important values. But in the Kaldor and Hicks tests, the choice makes a difference. This is a serious inconsistency.

An early hint that there could be a numeraire problem appears is in Mishan's text.[40] Mishan supposes a consumer whose income is $100, and calculates CV for two policies: the first halves all prices but keeps income the same; and the second doubles income but keeps all prices the same. These policies are equivalent, but the first one has a CV of $50 and the second one has a CV of $100. If these policies both had a cost lying between $50 and $100, say $70, then society's value of the first policy would be $50 - 70 = -20$ and society's value of the second policy would be $100 - 70 = +30$, meaning the first policy should be rejected and the second policy should be accepted. This cannot be right, because, again, the policies are equivalent in their effect on the consumer, and are assumed to have the same cost as well. The CV's differ because money in the second option is worth less in terms of goods than money in the first option. (There is no similar problem for EV.)

A more formal investigation was made by Brekke.[41] To illustrate his point, assume there are two consumers, both of whom receive utility from apples a and bananas b. Person 1's utility function is $U_1 = 4a_1 + b_1$ and Person 2's utility function is $U_2 = a_2 + 4b_2$. In the initial position, $(a_1, b_1) = (1000,1000)$, so $U_1 = 5000$, and $(a_2, b_2) = (1000,1000)$, so $U_2 = 5000$. The new policy would move Person 1 to $(a_1', b_1') = (999,1001)$, making $U_1' = 4997 < U_1$, and move Person 2 to $(a_2', b_2') = (999,1001)$, making $U_2' = 5003 > U_2$.

If the numeraire is apples, the compensating variation for Person 1 is their willingness to accept apples to compensate for their loss of utility, starting from their new position. This is $U_1(999 + WTA, 1001) = 4 * (999 + WTA) + 1001 = 5000$, so $WTA = 0.75 = -CV_1$. The compensating variation for Person 2 is their willingness and ability to pay apples in gratitude

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[38] The importance of the new prices being different from the old prices is clear from Figure 8.

[39] See also Charles Blackorby & David Donaldson, *The Case against the Use of the Sum of Compensating Variations in Cost-Benefit Analysis*, 23 CANADIAN J. OF ECONOMICS 471 (1990).

[40] Mishan, *supra* note 3, 173. See also Boadway & Bruce, *supra* note 3, 201–202 ("the fact that [a new set of] prices in situation 2 are used in calculating CV causes some ambiguities in its use. […] For example […] states 2 and 3 are on the same indifference curve yet CV associated with the move from 1 to 3 […] will generally differ from [CV associated with the move from 1 to 2]."

[41] Kjell Arne Brekke, *The Numéraire Matters in Cost-Benefit Analysis*, 64 J. PUBLIC ECON. 117 (1997). Brekke studied the case of a public good (environmental quality) while we will only consider private goods. David Ellerman has made a closely related point; for example, see David Ellerman, PUTTING JURISPRUDENCE BACK INTO ECONOMICS: WHAT IS REALLY WRONG WITH TODAY'S NEOCLASSICAL THEORY Ch. 7 (2021).

for increasing their utility, starting from their new position. This is $U_2(999 - WATP, 1001) = 999 - WATP + 4 * 1001 = 5000$, so $WATP = 3 = +CV_2$. The overall change in CV is $3 - 0.75 = 2.25 > 0$, so the policy passes the Kaldor test.

Now, suppose that the numeraire is bananas, and repeat the exercise. The compensating variation for Person 1 is their willingness to accept bananas to compensate for their loss of utility, starting from their new position. This is $U_1(999{,}1001 + WTA) = 4 * 999 + 1001 + WTA = 5000$, so $WTA = 3 = -CV_1$. The compensating variation for Person 2 is their willingness and ability to pay bananas in gratitude for increasing their utility, starting from their new position. This is $U_2(999{,}1001 - WATP) = 999 + 4 * (1001 - WATP) = 5000$, so $WATP = 0.75 = +CV_2$. The overall change in CV is $-3 + 0.75 = -2.25 < 0$, so the policy fails the Kaldor test.

The choice of numeraire is arbitrary and is not supposed to affect anything important in a problem. But this example shows that whether the plan passes or fails the Kaldor test depends on the choice of the numeraire. This is a serious inconsistency. In our example, it arises when measuring CV in terms of a commodity, either apples or bananas, rather than in terms of money, but Brekke uses money, treating money as entering the utility function directly, just like a commodity.

To understand what is behind the problem, we will use cardinal utility, although the explanation could be rewritten to use only ordinal utility. The policy causes Person 1 to have a utility loss of 3 units and Person 2 to have a utility gain of 3 units. Undoing those changes, which is what CV does, requires +0.75 apples for Person 1 and –3 apples for Person 2, because Person 1 has a much higher marginal utility for apples (i.e., 4) than Person 2 does (i.e., 1). However, undoing those changes requires +3 bananas for Person 1 and –0.75 bananas for Person 2, because Person 1 has a much lower marginal utility for bananas (i.e., 1) than Person 2 does (i.e., 4). The general principle, in ordinal utility terms, is that as long as the two agents have very different marginal rates of substitution for the two goods, the sum of the CV's using one good as the numeraire will be quite different from the sum of the CV's using the other good as the numeraire, and this difference can be so great that the two sums even differ in sign. This is a major problem.

In sum, we have pointed out three serious inconsistencies in the normative theory that underlies the current model in antitrust and industrial organization. These problems have been discussed at length by the welfare economists, yet, paradoxically, the original Marshallian approach remains unchallenged in these disciplines. Moreover, as we will see in the next two sections, the problems with the surplus approach go well beyond its foundational normative theory.

IV. The Serious Moral Problems with Consumer Surplus and the Potential Pareto Criterion

The Potential Pareto criterion is the fundamental ethical justification for surplus maximization, as we saw in Section II.C, and for CV or EV maximization, as we saw in Section III.D. This Section finds the Potential Pareto criterion deficient on philosophical grounds as well.

A. The Moral Basis of the Potential Pareto Criterion is Not Defensible

Under the Potential Pareto criterion, a policy generating more total CS or CV or EV is deemed good because once adopted, the winners could compensate the losers and still benefit by keeping a larger CS/CV/EV than they started with. As with the stricter Pareto Criterion, the moral basis of this approach is unanimous consent. Since there are no losers, everyone gets an equal veto power. Unfortunately, the compensation is only potential, and this leads to serious ethical problems. Stripped to its essence, Kaldor and Hicks's Potential Pareto criterion endorses "Policy A" because "Policy A plus Policy B" ("Policy B" is the redistribution) is a Pareto Improvement. It endorses Policy A because something that will not happen, namely "Policy A plus Policy B," is good. As philosopher Jules Coleman points out,[42] there is no reason to think that people would consent to a policy that harms them "in virtue of its potential to be something other than it is." Of course, when compensation is not required, the original justification breaks down. Theft can be fully justified under this approach. Suppose that my car dealer giving me a car (Policy A), in return for me giving him $40,000 (Policy B), makes both me and the car dealer better off. Then according to the Potential Pareto criterion, Policy A alone—in ordinary language, my stealing the car from the car dealer—is a good policy. Ellerman quotes Friedman's textbook admitting exactly this: "It would still be an improvement, and by the same amount, if [the person] stole the apple."[43]

Economists defend their adoption of this approach by appealing to a lack of competency by economists in issues related to compensation. They assert that it is acceptable to simply advocate a policy that increases total CS/CV/EV, while the desirability of making compensation to satisfy the criterion of unanimous consent can be left to the judgment of others. (In Kaldor's words, compensation is "a political question on which the economist, *qua* economist, could hardly pronounce an opinion."[44]) Thus, if eliminating trade barriers enable rich consumers to buy cheaper goods, and also cause millions of working-class people to lose their jobs and their communities to sink into depression, if the rich consumers could in principle fully compensate the laid-off workers, then the government should sign free trade agreements even if the laid-off workers will not be compensated, because the Potential Pareto principle says to do so. To defend such a position, the Potential Pareto advocates would presumably use the following explanation, which we will call "the Standard Defense of Potential Pareto":

> "If Policy A plus Policy B is a Pareto Improvement, and Policy B has no efficiency component and is thus strictly distributional, then Policy A must contain all of the 'efficiency' part of the joint policy. Since economists should not make value judgments, economists cannot give a recommendation about Policy B, but economists should recommend Policy A."

Critically, however, the word "efficiency" in the above quotation is undefined. It cannot be "Pareto Efficiency" because Policy A is not a Pareto Improvement (if it were, there would be

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[42] Jules L. Coleman, *Efficiency, Utility, and Wealth Maximization*, 8 HOFSTRA L. REV. 509–551, n. 12 (1980).

[43] David Ellerman, *supra* note 41 at 135, quoting David D. Friedman, LAW'S ORDER: WHAT ECONOMICS HAS TO DO WITH LAW AND WHY IT MATTERS (2000) 20.

[44] Nicholas Kaldor, Welfare Propositions of Economics and Interpersonal Comparisons of Utility, 49 ECON. J. 549, 550 (1939).

no need to talk about Potential Pareto Efficiency). It cannot be "Potential Pareto Efficiency" because that would render the defense circular. The term value judgment also begs the question. Distribution is labelled a value judgment, but so is whether to adopt Policy A, applying the potential Pareto standard. Value judgments are simply unavoidable in constructing a normative economic theory.

A further problem with this is its claim that Policy B, since it is a transfer of money, is "purely distributional" and "does not affect efficiency" because money does not appear in the utility function and Policy B is a lump sum redistribution of purchasing power. However, consider again the sale of a car. Policy A is "the car dealer giving me a car." Policy B is "I give the car dealer $40,000." Policy A plus Policy B is a Pareto Improvement by assumption; it is an improvement in efficiency. Policy A alone is theft; it is not a Pareto Improvement. When one adds Policy B to Policy A, one turns the policy from one that is not Pareto Improving to one that is. The claim that Policy B "does not affect efficiency" is simply not true.[45]

Industrial Organization economists take the position that distribution can be ignored. To them, Potential Pareto is the only thing Industrial Organization economists need to know about welfare economics. Nobel laureate Jean Tirole, in his widely used graduate industrial organization textbook, admits that "extending the single-consumer case to multiple consumers creates new difficulties […,] the issue [being] that aggregate equivalent variation is not, in general, insensitive to redistributions of income between consumers. Only under strong assumptions can one ignore the distribution of income."[46] Yet two sentences later, he writes that he will ignore the distribution of income: "In this book, I will treat income distribution as irrelevant."[47]

This position is not defensible. Stephen Martin, a prominent industrial organization economist, contends that an economist should analyze all the costs and benefits involved in a policy choice:

> If an economist is not professionally qualified to pronounce upon the welfare consequences of a project that impacts the distribution of income, then an economist is not professionally qualified to say that the costs and benefits of the project might usefully be added without regard to the individuals to whom they accrue.[48]

Welfare economists uniformly reject the position that distribution effects can be ignored. Eminent economic theorists Chipman and Moore excoriated Potential Pareto's advocacy of policy A only on the grounds of the merit of a completely different policy (policy A plus policy B) because this "is to wash one's hands of the responsibility for one's own actions."[49]

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[45] This is related to the difficulty of separating efficiency from distribution, as discussed in *supra* note 14.

[46] Jean Tirole, The Theory of Industrial Organization 31 (1989).

[47] For defense, he cites the redistributing central authority that we refute in the Appendix (Section VIII), and the Compensation Principle that we refute in the earlier subsections of Section IV.

[48] Stephen Martin, The Kaldor–Hicks Potential Compensation Principle and the Constant Marginal Utility of Income, REVIEW OF INDUSTRIAL ORGANIZATION 493, 497–8 (2019).

[49] John S. Chipman & James C. Moore, *The New Welfare Economics 1939–1974*, 19 INT'L ECON. REV. 547, 580 (1978). As pointed out by Glick, Lozada, Govindan, & Bush, *supra* note 17 at 571, note 45, "Chipman was a Fellow of the Econometric Society, of the American Academy of Arts and Sciences, and of the Guggenheim

In the next subsection we will show that the Potential Pareto criterion is biased in favor of those with high income and unfair to the poor. It is particularly perverse to advocate an approach that is unfair to the poor, but then simply hope that the government will step in and tax the rich and redistribute tax dollars to the poor in compensation. Not only do we see few historical examples of such compensation, by increasing the corporate power of the wealthy, this approach makes it even less likely that such compensation would ever occur.

B. Potential Pareto is Unfair to the Poor

One of the most fundamental tenets of almost every moral philosophy is the principle of equal respect for all humans. As Ronald Dworkin, James Griffin, Will Kymlicka, and Amartya Sen have all argued, "some form of equality lies at the heart of morality."[50] Peter Singer argues that impartiality, which he defines as equal consideration of all individuals' interests, has a strong biological origin in our evolutionary history in small egalitarian groups.[51] Will Kymlicka states that "the deepest principle, as we have seen, is an egalitarian one."[52] He argues that much of the debate among moral philosophers concerns how best to treat people equally. Sen, in his capabilities approach, argues that what should be equalized is real opportunities.[53] Ronald Dworkin argues that what should be equalized is access to resources.[54] Libertarians argue that only rights, such as property rights, should be equal.[55] Utilitarians, who consider utility to be cardinally measurable and interpersonally comparable, believe society should maximize the sum of utilities, $U = U_1 + U_2 + U_3 + \cdots$, which is symmetric (that is, unweighted) but is not egalitarian because it shows no preference between "$U_1 = 5$ and $U_2 = 5$" and "$U_1 = 10$ and $U_2 = 0$." However, if, as historically many Utilitarians believed, each U_i is a concave function of a person's income I_i (exhibiting "diminishing marginal utility"), then for a given total income, the solution to maximizing U is to give everyone equal income, and hence equal

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Foundation, a Distinguished Fellow of the American Economic Association, and an elected member of the National Academy of Science. See John S. Chipman: Timeline of Selected Honors and Tributes, Univ. of Minn., https://sites.google.com/umn.edu/chipmantimeline (last visited Jan. 7, 2024)."

Ellerman, *supra* note 41 at 134–139, has a different critique of the Standard Defense of Potential Pareto. In his model, money enters into the utility function. Then, if one takes money as the numeraire, Policy Y must not change any economic aggregate because Policy Y is a transfer of the numeraire, whose aggregate is constant because it is the numeraire. So Policy X, the transfer of a good, must be the source of increased "efficiency," like the Standard Defense says. Ellerman's point is that if one instead takes the transferred commodity as the numeraire, then Policy X must not change any economic aggregate because Policy X is a transfer of the numeraire, whose aggregate is constant because it is the numeraire. So Policy Y, the transfer of money, must be the source of increased "efficiency," which is the opposite of what the Standard Defense says. This is problematic because choice of a numeraire is supposed to be neutral. Ellerman's critique is sufficient to refute the Standard Defense when money is in the utility function. It is related to the numeraire problem treated in Section III.I.

[50] Daniel Hausman, Michael McPherson, and Debra Satz, Economic Analysis, Moral Philosophy, and Public Policy 196 (3rd Ed. 2017).

[51] Peter Singer, The Expanding Circle, Ethics, Evolution and Moral Progress (1981).

[52] Will Kymlicka, Contemporary Political Philosophy An Introduction (2nd ed. 2002) at 38.

[53] Amartya Sen, "Capabilities and Well-being," in Martha Nussbaum and Amartya Sen, The Quality Of Life, (1993); G.A. Cohen, On The Currency Of Egalitarian Justice (2011).

[54] Ronald Dworkin, Sovereign Virtue: The Theory and Practice of Equality (2000).

[55] Robert Nozick, Anarchy, State, and Utopia (1974).

utility, which is egalitarian. Marshall endorsed the diminishing marginal utility hypothesis, writing, "a pound's worth of satisfaction to an ordinary poor man is a much greater thing than a pound's worth of satisfaction to an ordinary rich man.…"[56] Therefore, many Utilitarian philosophers have contended that utility should be equalized.[57]

Under any circumstance, however, we make an important moral judgement when we sum individual consumer surplus to obtain the market consumer surplus that we use in antitrust analysis. Maximizing total consumer surplus $CS = CS_1 + CS_2 + \cdots$ appears to be fair to all individuals because they are treated in a symmetric way. However, symmetry is not, by itself, egalitarian; it shows no preference between "$CS_1 = 5$ and $CS_2 = 5$" and "$CS_1 = 10$ and $CS_2 = 0$," and it prefers "$CS_1 = 11$ and $CS_2 = 0$" to "$CS_1 = 5$ and $CS_2 = 5$." Moreover, the higher one's income, the larger will be that person's demand, and hence higher CS (for normal goods, all else equal). This means that policies that seek a greater total market CS will inherently favor the rich over the poor—which is of special importance for antitrust because antitrust policy is supposed to be aimed at regulating the power of large corporations, the richest entities in our economy.

An example from Richard Posner illustrates the problem. Suppose the problem facing society is to whom to assign a "quantity of pituitary extract": either "a poor family whose child will be a dwarf unless he gets the extract," or to "a wealthy dilettante who wants to use the extract to grow a giant gerbil."[58] The poor family's willingness and ability to pay for the extract is small (because their ability to pay is small), meaning that if they are represented by CS_1, that value will not increase much if the extract is given to them. On the other hand, the wealthy dilettante's willingness and ability to pay for the extract is large, meaning that if they are represented by CS_2, that value will increase a great deal if the extract is given to them. Using as society's goal to maximize the sum $CS = CS_1 + CS_2$, this sum will increase more if the extract is given to the dilettante than if it is given to the poor family. *Ergo*, according to the surplus maximization criterion, the extract should be given to the dilettante. Since CV and EV are approximately as dependent on income as CS is, the same conclusion would hold for the criterion of maximizing total CV or EV.

The first point to make about this conclusion is that it is not objective nor scientific, it reflects a particular ethical point of view. Peter Hammond, a prominent welfare economist, explains[59]:

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[56] Alfred Marshall, *supra* note 4 at 130.

[57] James Griffin, Well-Being: Its Meaning, Measurement, and Moral Importance (1986).

[58] Richard A. Posner, *Wealth Maximization Revisited*, 2 NOTRE DAME J.L. ETHICS & PUB. POL'Y 85–105, 96 (1985).

[59] Peter Hammond, *13. Welfare Economics*, in ISSUES IN CONTEMPORARY MICROECONOMICS AND WELFARE (George R. Feiwel ed, 1985), 408. See also Marc Fleurbaey and Peter J. Hammond, *Interpersonally Comparable Utility,* in Salvador Barberà, Peter J. Hammond, and Christian Seidl, eds, *Handbook of Utility Theory, Volume 2 Extensions* 15 (Kluwer Academic 2010), who write:

> At this stage, many economists of the so-called "Chicago school", following Harberger (1971) in particular, succumb to the temptation of just adding different individuals' monetary measures. "A dollar is a dollar", they might say, regardless of how deserving is the recipient. Implicitly, they attach equal value to the extra dollar a rich man will spend on a slightly better bottle of wine and to the dollar a poor woman needs to spend on life-saving medicine for her child. Of course, any such judgement is a value judgement, even an interpersonal comparison, which lacks scientific foundation. […] Thus, the "surplus economists" who just add monetary measures, often of consumer

> The compensation test compares different individuals' monetary gains and losses by treating all incremental dollars equally, in effect. Yet it hardly requires a very strong sense of moral compassion to regard the dollar a destitute mother needs for medicine to save her dying child as definitely more valuable than the extra dollar an opulent man wants to spend on a better-quality cigar. Even if this is disputed, however, there is no denying that such comparisons are actually very specific interpersonal comparisons of utility, with utility effectively measured in monetary units, and all individuals' incremental dollars being regarded as equally valuable, no matter what the distribution of income may be. Such interpersonal comparisons, of course, are fundamentally ethical value judgements, and treating all incremental dollars equally in this way is no less 'unscientific' than are any other interpersonal comparisons of utility.

The second point about using the sum of the CV's (or CS's or EV's) as one's criterion is that "there is near unanimity about the undesirability of such [anti-egalitarian] ethics," as welfare economists Blackorby and Donaldson put it:[60,61]

> The ethical judgments implied by the compensating-variation test [which is Potential Pareto applied to the sum of the CV's] are not defensible. It treats increases in income as equally socially valuable no matter who receives them. Social judgments—revealed by government policy—and the overwhelming majority of individual judgments are not consistent with this indifference toward inequality.

> surplus rather than individual welfare, make their own value judgements and their own interpersonal comparisons. Moreover, their comparisons not only lack scientific content, but most people—especially non-economists—also find them totally unacceptable from an ethical point of view. Surely it is better to avoid interpersonal comparisons altogether rather than make them in such a biased way.

[60] Blackorby & Donaldson, *supra* note 39 at 492, 493. Even Richard Posner, who supported giving the extract to the dilettante, did so not solely because that maximized the sum of CS, but also because of other extraneous, speculative arguments which we refute in Mark Glick, Gabriel A. Lozada, & Darren Bush, *Law and Economics Fallacies: What Modern Economics Really Says About the Definition of Efficiency and the Measurement of Welfare*, 24 Houston Business & Tax Law J. 1, 71–73.

[61] Blackorby & Donaldson, *supra* note 39 at 472. In an earlier, technical paper, Blackorby and Donaldson point out that quasiconcavity of the social welfare function "ensures that social judgments provide goods for everyone rather than giving them exclusively to the few," then conclude, "Unless the analyst is prepared to assume that preferences are such that all income consumption curves are linear over the entire consumption set of each agent, the social ordering over allocations cannot be guaranteed to be quasiconcave when money metric representations of preferences are used in social welfare analysis. Furthermore, these regions of nonconvexity depend upon the reference price vector chosen. Hence, small changes in the reference price vector may yield large changes in optimal solutions. Since reference price vectors are typically picked by the analyst in an ethically arbitrary and mechanical way, ethically acceptable social judgements are not guaranteed. Further, since many plausible preference orderings yield nonconcave money metrics for all reference prices, we must conclude that social welfare analysis based on money metrics is flawed, despite the fact that money metrics provide exact indices of individual households' well-being." Charles Blackorby & David Donaldson, *Money metric utility: A harmless normalization?*, 46 J. OF ECON. THEORY 120, 121, 128–9.

There are three defenses against this—none of which, one should note, actually contest the claim that maximizing surplus, CV, and EV are biased against the poor.[62] The first defense is that the bias against the poor does not matter if there is an omniscient, omnipotent, omni-benevolent agency of government that uses lump-sum taxes to fix every biased outcome that surplus maximization creates. That argument, which underlies the treatment of surplus in Ph.D.-level textbooks (see our Appendix, Section VIII), is true but irrelevant to actual human societies. The second defense is to say that the bias does not matter because there *could be* an omniscient, omnipotent, omni-benevolent agency of government that uses lump-sum taxes to fix every biased outcome that surplus maximization creates. We refuted that Potential Pareto line of reasoning in Section IV.A. The third defense is that there *could be* an omniscient, omnipotent, omni-benevolent agency of government that uses lump-sum taxes to fix every biased outcome that surplus maximization creates, but the fact that there *is* no such agency reveals that society does not mind using a technique which is biased against the poor. That is wrong because, as we show in Section V.A, humans in general do care about inequality.

The first defense that the Potential Pareto criterion is biased against the poor vitiates a commonly-made defense of the Potential Pareto criterion. This defense is that Potential Pareto's hurting some people might not be fatal if the people it disadvantages are random. If that were the case, then sometimes one group would be at a disadvantage, and sometimes another; in the end, the disadvantages might be equally shared. This defense of the Potential Pareto Criterion, while similar to sentiments expressed by Marshall, is better expressed by Hicks (emphasis ours):[63]

> If the economic activities of a community were organised on the principle of making no alterations in the organisation of production which were not improvements in this [Potential Pareto] sense, and making all alterations which were improvements that it could possibly find, then, although we could not say that all the inhabitants of that community would be necessarily better off than they would have been if the community had been organised on some different principle, nevertheless *there would be a strong probability that almost all of them would be better off after the lapse of a sufficient length of time*.

Wonnell refers to this argument as "Package Paretianism"[64] and a more accurate name would be "Package Potential Paretianism". The name comes from the idea that people will support

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[62] The distinction between CV and EV does raise one consideration absent from the unitary CS framework: while Willingness and Ability to Pay is constrained by income, Willingness to Accept is not. Nevertheless, a poor person is quite likely to have a lower WTA for his home being polluted than a billionaire does: the poor person would value the compensation more highly than the rich person. Despite this, WTA is probably somewhat less prejudicial to the poor. Interestingly, some authors state that only WATP, not WTA, should be used in cost-benefit analysis. They would ensure that the decision-maker chooses from WATP or WTA the option that will disadvantage the poor the most. One author who holds this opinion is William N. Trumbull, *Who has Standing in Cost-Benefit Analysis?*, 9 J. OF POLICY ANALYSIS AND MANAGEMENT (1990) 201, 216 ("Only willingness-to-pay measures of value have meaning").

[63] J.R. Hicks, *The Rehabilitation of Consumers' Surplus*, 8 REV. ECON. STUD. 108, 111 (1941). Hicks points out that Marshall thought something similar; Hicks quotes Marshall as writing, "'by far the greater part of the events with which economics deals, affect in about equal proportions all the different classes of society' (p. 131)," and Hicks adds, "a statement obviously open to dispute" (op. cit. 110).

[64] Christopher T. Wonnell, *Efficiency and Conservatism*, 80 NEB. L. REV. 643, 660 (2001).

systematic application of the Potential Pareto criterion because, while they will "win" in some decisions and "lose" in others, on average—that is, seen as a "package" of many decisions—they will, overall, win.

The flaw in this argument is that, as we have just seen, the people whom the Potential Pareto criterion disadvantages are not random—they are mostly poor people. Each application of the Potential Pareto criterion disadvantages poor people even more. Over time, poor people become successively worse off and rich people become successively better off. As Baker noted, applying Potential Pareto to court cases means that "A person favored in a previous case is progressively more likely to be favored in the next case...."[65] This matches the well-known trend of income inequality in the US. As GLB write:[66]

> In 2008, Daniel Hausman and Michael McPherson cite[d] Baker's paper: "Because preferences in cost-benefit analysis are weighted with dollars, and the poor have fewer of these, their preferences count for less (Baker 1975)."[67] In 2012, Hackinen confirmed, in a dynamic mathematical model, Baker's assertion that on average, the poor become progressively worse off with repeated applications of a surplus criterion.[68] Liscow in 2018 defines "neutral," "rich-biased," and "poor-biased" policies, then shows that "efficiency analysis places a heavy thumb on the scales in favor of rich-biased policies."[69]

In sum, the normative approach that underlies the consumer welfare standard is morally indefensible. The ethical point of view which Potential Pareto takes is largely responsible for the judgment of Chipman and Moore that "the New Welfare Economics must be considered a failure,"[70] and other eminent economists share their opinion. Drèze and Stern write:

> According to the fourth approach, we should ignore distribution either because it is not an appropriate concern for government or because distributional matters should be dealt with using other policy tools than public projects. These views are translated in practice into simply adding net money benefits, or willingness-to-pay, across households. [… This] is, we hope, seen as clearly unattractive and irresponsible—at a minimum one would want to see governments accepting some obligation to the weak or disabled.[71]

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[65] C. Edwin Baker, *The Ideology of the Economic Analysis of Law*, 5 PHILOSOPHY & PUBLIC AFFAIRS 3, 9 (1975).

[66] Glick, Lozada, & Bush, *supra* note 33 at 786.

[67] Daniel M. Hausman & Michael S. McPherson, *The Philosophical Foundations of Mainstream Normative Economics*, *in* THE PHILOSOPHY OF ECONOMICS: AN ANTHOLOGY 226–250, 247 (Daniel M. Hausman ed., 2007).

[68] Brad Hackinen, *Does Repeated Application of the Kaldor-Hicks Criterion Generate Pareto Improvements?* Undergraduate Honours Thesis, Department of Economics, University of Victoria, downloaded from https://www.uvic.ca/socialsciences/economics/assets/docs/honours/Hackinen.pdf (2012).

[69] Zachary Liscow, *Is Efficiency Biased?* 85 U. CHICAGO L. REV. 1649 (2018), 1672.

[70] John S. Chipman & James C. Moore, *supra* note 49.

[71] Jean Drèze & Nicholas Stern, *The Theory of Cost-Benefit Analysis,* 2 HANDBOOK OF PUBLIC ECONOMICS 909, 958 (Alan J. Auerbach & Martin Feldstein, eds., 1987).

In fact, after he won the Nobel Prize, even Hicks himself came to doubt not only the usefulness of the Potential Pareto Hicks test, but even the attractiveness of Pareto Optimality itself. He wrote:

> …[I]t is by no means directly apparent that 'potential welfare' is anything in which we have any reason to be interested. Further, can even those changes which we have designated (A) changes [that is, Pareto improvements] necessarily deserve a congratulatory title? The (A) test, it was often pointed out, would be satisfied when the bloated plutocraft [*sic*] had an extra course upon his table, provided he did not acquire it at the expense of anyone else. Why should we be required to give our blessing to his acquisition, as we must appear to do if we are to reckon it as an increase in 'welfare'?[72]

V. THE BEHAVIORAL CRITIQUE OF THE OLD AND THE NEW WELFARE ECONOMICS

When we introduced the concept of consumer surplus, we explained that the measure of "willingness to pay" and "willingness to accept" is the basis of value. If we want to use willingness to pay and willingness to accept and consumer surplus to be the basis of a theory of welfare or well-being, then we need to assume that the consumer's choices are "rational," that they are informed and not based on mistaken information, and that the consumer's preferences can be represented by a utility function. The word "rational" is used here not in its ordinary meaning of "lacking cognitive errors," but specifically in a technical sense, meaning that the consumer's preferences are complete and transitive.[73] The word "utility" means well-being,[74] and in order for a utility function to exist, the consumer's preferences also have to satisfy a technical condition known as "continuity." In addition, neoclassical economists usually (though not always) work with models in which consumers are assumed to be self-interested,

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[72] John R. Hicks, *The Scope and Status of Welfare Economics*, 27 OXFORD ECONOMIC PAPERS 307, 310, (1975).

[73] Neoclassical positive consumer theory is based on the *choices* that people make (but not on the reasons people make those choices). If given a choice between A and B, a consumer chooses A, the consumer is said to "prefer" A to B. Thus, in neoclassical consumer theory, "preferences" are just a shorthand for the choices people make. Nothing more is implied. If A is "one unit of a bad thing" and B is "two units of a bad thing," the economist will say that the consumer "prefers" A to B; so, a "preference for A" does not mean the consumer likes A in general, only that the consumer will choose A over B if forced to make that choice. If a consumer who "prefers" A to B and who also "prefers" B to C always "prefers" A to C, the consumer's preferences are said to be "transitive." If, regardless of what A and B are, a consumer presented with a choice between them will always be able to make that choice—that is, will always choose A, or choose B, or be definitely indifferent between A and B—then the consumer's preferences are said to be "complete." If a consumer prefers A to B_1, prefers A to B_2, prefers A to B_3, …, for an infinite number of B_i's, and suppose the B_i's converge to B. If in all such situations the consumer prefers A to B, the consumer's preferences are said to be "continuous." If a consumer's preferences are transitive, complete, and continuous, it is a theorem that there exists a function, call it "utility," with the following property: the utility of A is higher than the utility of B if and only if the consumer prefers A to B, that is, if and only if the consumer, when presented with a choice of A and B, will pick A. Mas-Colell, Whinston, & Green, *supra* note 13 at Proposition 3.C.1.

[74] Well-being is a very general concept that includes everything that impacts an individual's life either positively or negatively. Louis Kaplow and Steven Shavell, FAIRNESS VERSUS WELFARE, Harvard (2002) at 18. Thomas Scanlon describes well-being as "what makes someone's life go better." Thomas Scanlon, WHAT WE OWE TO EACH OTHER, Belknap (2000) at 109. For a comprehensive discussion see Will Kymlicka, CONTEMPORARY POLITICAL PHILOSOPHY: AN INTRODUCTION CH. 2 (2002).

that is, their choices are not influenced by the well-being or possessions of other people.[75] Behavioral economists and psychologists have challenged each of these assumptions.

A. Failure of the Self-Interest Assumption

The simplest type of preferences to analyze are self-interested preferences, so economists often assume that preferences are self-interested. However, this is belied by our everyday experience. We observe that people vote when voting takes time and energy and the probability of it influencing the result is near zero. People return lost wallets even if they know there is no reward. People regularly donate blood, give to charity, tip when out of town, and sometimes take extraordinary risks to help strangers.[76] Recently, behavioral economists, biologists, and psychologists have confirmed through experiments the ubiquity of human activities that are aimed at advancing the interests of others even when there is a personal cost.

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[75] A different problem with evaluating policy according to utility, concerned with how to make decisions for groups of people rather than concerned only with the choices of individuals, arises when considering altruism or jealousy (envy). Mathematically, it is completely unproblematic to represent Person 1's utility u_1 as a function of his consumption of apples, a_1, and Person 2's consumption of apples, a_2. This function, $u_1(a_1, a_2)$, simply represents the choices Person 1 would make when presented with options such as "5 apples for me and 1 apple for Person 2" and "4 apples for me and 2 apples for Person 2." Suppose Person 1 prefers the second to the first (reflecting some altruism), so that $u_1(5,1) < u_1(4,2)$. Suppose Person 2 is only self-interested, so Person 2's preferences can be represented simply by $u_2(a_2)$ (Person 2 only makes choices based on the number of apples for Person 2). A Utilitarian would measure social welfare as $u_1(5,1) + u_2(1)$ in the first situation and as $u_1(4,2) + u_2(2)$ in the second situation; but this may be inappropriate, or may involve double-counting, because it registers both u_1 and u_2 as being higher in the second situation, even though in this situation Person 1 has given up one apple. Some observers would argue that a social welfare function should reflect the fact that Person 1 has lost something by giving up one of his apples. He has not lost utility, as defined to reflect his choices, but he has lost one apple, which means he has fewer commodities than he had before. His loss of commodities is not captured in choice-based "utility" (because his loss in utility caused by the loss of commodities is more than offset by his gain in utility caused by Person 2's increased number of apples). Some observers will consider this a shortcoming that choice-based "utility" has when constructing a Utilitarian social welfare function, because choice-based utility leads to social welfare being highest when altruistic people get very few commodities (making them happy because other people are receiving those commodities), and when jealous people get very many commodities (making them happy because other people are not receiving those commodities). Section V.A presents evidence from other social sciences suggesting that most people consider favoring such uncooperative behavior and disfavoring such cooperative behavior to be a shortcoming. Matthew Weinzierl, *A Welfarist Role for Nonwelfarist Rules: An example with envy*, National Bureau of Economic Research Working Paper 23587, July 2017, presents direct survey evidence of the former. Exactly the same shortcoming exists when constructing a non-Utilitarian social welfare function as long as it is "welfarist," that is, as long as its social welfare W takes the form $W(u_1(a_1, a_2), u_2(a_2))$ where W is increasing in u_1 and u_2. There is no need to worry about this if preferences were always self-interested, but Section V.A argues that is not the case. Therefore, self-interested preferences join defects in decision making and misinformation as reasons for rejecting utility as the sole basis for policy evaluation. A similar problem with evaluating social welfare according to utility arises with "utility monsters" (originally due to Nozick): if $u_1(5) = 20$ and $u_2(5) = 1$ then Person 2 gets much less (cardinal) utility from five apples than Person 1 does. Section V.A shows there is a common human preference for egalitarianism; but combining evaluating social welfare according to utility with egalitarianism leads social welfare to rise when Person 2, the "utility monster," is given many more apples than Person 1. That is not the sort of egalitarianism shown in Section V.A, revealing that the sort of egalitarianism shown in Section V.A is an egalitarianism over commodities, not an egalitarianism over utility.

[76] Moreover, in a world of incomplete contracts, cooperative and moral behavior is necessary for markets to operate efficiently. Kenneth Arrow, *Gifts and Exchange*, 1 PHIL & PUBLIC AFFAIRS 343 (1972); Paul Zak and Stephen Knack, *Trust and Growth*, 111 ECON. J. 295 (2001) (showing trust increases investment and growth).

We refer to preferences for these activities as other-related preferences. Experiments have found that, even when substantial amounts of money are at stake and players are fully informed, they are often fair-minded, generous, and retaliatory toward those that violate these values. For example, in one-shot prisoner dilemma games, players regularly cooperate; in dictator games, players are generous; in ultimatum games, players act according to fairness principles; and in public goods games, players express altruism and reciprocity.[77] Commenting on the totality of the experimental literature, Ernst Fehr and Urs Fischbacher wrote:

> First, during the last decade experimental economists have gathered overwhelming evidence that systematically refutes the self-interest hypothesis…. Second, there is also strong evidence indicating that the deviations from self-interest have a fundamental impact on core issues in economics.[78]

This evidence shows that the common assumption that human action can be assumed to be always self-interested is flawed. Biologists have concluded that our evolutionary history has left humans with a desire and ability to cooperate (albeit not always, and often only within their own group or tribe). For biologists, humans are often cooperative and only their genes are selfish.[79] Evolutionary theory has demonstrated that evolutionary fitness and selfish genes can be squared with other-regarding preferences.[80] For example, Williams' theory of inclusive fitness shows that if behavior that harms an individual benefits a close relative, it can be beneficial to a selfish gene.[81] Axelrod explains cooperation from reciprocal altruism.[82] Gintis has advanced an evolutionary model of strong reciprocity, defined as a predisposition to cooperate with others and punish violators of norms of cooperation even when costs are not likely recovered at a later date.[83] Because the social structure of human life is important to evolutionary success, and because humankind obtained the ability to internalize norms through child rearing, there is a coevolution involving genes and cultural norms.[84] Generally, we do not

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[77] This literature is reviewed by Samuel Bowles, The Moral Economy: Why Incentives are no Substitute for Good Citizens (2016).

[78] Earnst Fehr and Urs Fischbacher, *Why Social Preferences Matter: The Impact of Non-Selfish Motives on Competition, Cooperation and Incentives*, 112 ECON. J. C1 (2002). Bowles and Gintis summarize the results of the literature on eight types of experimental games, including the prisoner's dilemma, the dictator game, the ultimatum game, and various public goods games. *See* Chapter 3 of SAMUEL BOWLES & HERBERT GINTIS, A COOPERATIVE SPECIES: HUMAN RECIPROCITY AND ITS EVOLUTION (2013).

[79] Richard Dawkins, THE SELFISH GENE ix (1976) ("We are survival machines—robot vehicles blindly programmed to preserve the selfish molecules known as genes.").

[80] Matt Ridley, The Origins Of Virtue: Human Instincts And The Evolution Of Cooperation, (1996).

[81] W.D. Hamilton, *The Genetical Evolution of Social Behavior*," 7 J. OF THEORETICAL BIOLOGY 1 (1964).

[82] Robert Axelrod, THE EVOLUTION OF COOPERATION (1984); R. L. Trivers, *The Evolution of Reciprocal Altruism*, 46 Q. REV. OF BIOLOGY 35 (1971).

[83] Herbert Gintis, Individuality and Entanglement The Moral and Material Bases of Social Life, Ch. 10 (2017); Robert Frank describes how altruism could have arisen from group selection processes. Robert Frank, Passions Within Reason The Strategic Role of The Emotions 37-38 (1988).

[84] Samuel Bowles & Herbert Gintis, *supra* note 78 at 15 ("Cultural transmission, also called social learning as opposed to individual learning, takes the form of vertical (parents to children), horizontal (peer to peer), and

raise our children to be selfish or narcissistic. This process clearly endowed humans with preferences that go beyond narrow self-interest (although to what extent will vary; narrow self-interested behavior is certainly sometimes observed in human populations).

The findings of experimental economists are consonant with what we are learning about human societies during evolution during the Pleistocene age.[85] The availability of large game, the discovery of fire and cooking, and sharing child rearing created a high return for complex cooperation in hunting and subsequent meat sharing, and created sanctions for deviation from cooperative norms. Frank theorizes that human emotions evolved to aid in cooperation.[86] The discovery of lethal weapons undermined the ability of the strongest group members to dominate or exploit others in the group, and created egalitarian societies in which leadership relied on consent. This likely led to the genetic predispositions for fairness, and may explain the innate moral attractiveness of equal treatment and autonomy.[87]

Other-regarding preferences can also be negative. Humans can harbor racial or ethnic bias, can be revengeful, and can at times be sadistic, preferences possibly the result of evolutionary conflicts with outsider groups. Modern welfare economists consider negative other-regarding preferences as a serious problem.[88] If society's goal were to maximize the welfare gained by satisfying all subjective preferences, then the preferences of the racists and the sadists potentially could have considerable influence. For example, John Harsanyi, a Nobel Prize winning welfare economist, believes that "we must exclude all clearly antisocial preferences, such as sadism, envy, resentment, and malice."[89] But once we move away from crediting all actual preferences, the process becomes complicated because we need a theory to guide what preferences are excluded.[90]

Our point here is that the research by biologists, psychologists, and behavioral economists shows that an assumption of universal narrow self-interest is not sustainable. This poses a problem for a theory of welfare based on the Potential Pareto condition, which is indifferent to distribution in a formal sense, and, as shown in Section IV.B, is actually anti-egalitarian in practice.

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oblique (non-parental elder to younger) transfer of information"); Marc Hauser, MORAL MINDS: HOW NATURE DESIGNED OUR UNIVERSAL SENSE OF RIGHT AND WRONG 97-98 (2006).

[85] The Pleistocene age stretched from approximately 1.6 million years ago to about 10,000 years ago.

[86] Robert Frank, *supra* note 83 at 37–38.

[87] Daniel Hausman, Michael McPherson and Debra Satz, ECONOMIC ANALYSIS, MORAL PHILOSOPHY, AND PUBLIC POLICY, Cambridge (2017) at 196 ("To many—as Ronald Dworkin, James Griffin, Will Kymlicka, and Amartya Sen have all argued—some form of equality lies at the heart of morality.").

[88] Matthew Adler & Eric Posner, New Foundations of Cost-Benefit Analysis 33-34 (2006).

[89] John Harsanyi, *Morality and the Theory of Rational Behavior*, UTILITARIANISM AND BEYOND 56 (Amartya Sen & Bernard Williams, eds, Cambridge 1977). Harsanyi had personal experience with antisocial preferences: he was of Jewish origin, and in Budapest in November 1944 he escaped during transport of his forced labor unit to an Austrian concentration camp where most of his comrades perished. John Harsanyi on https://www.nobelprize.org/prizes/economic-sciences/1994/harsanyi/biographical/.

[90] RONALD DWORKIN, TAKING RIGHTS SERIOUSLY, Harvard (1977), Chapter 12 argues that it is impossible to avoid counting other-regarding preferences. But the crediting of negative other-regarding preferences poses a challenge to democracy. A majority with negative other-regarding preferences can subordinate a minority. Dworkin makes the interesting proposal that the foundation of legitimate inherent rights involves the protection of liberties that are threatened by large external preferences in a community.

B. Failure of the Rationality Assumption: Endogenous Preferences

Economists consider market choices as their most primitive data. People have preferences which determine their choices, and welfare is increased when preferences are satisfied. However, preferences are partially determined by the economic system; they are learned through social processes, they are not given by nature. Genes and norms likely constitute the primary long-run preference learning process. These norms are created by institutions such as education, the media, religion, and other organized social practices. These institutions are not neutral but are subject to influence by dominant groups and classes.[91] If we accept that preferences are influenced by the social system in which people live, determining policies that advance human well-being becomes a more complicated endeavor.

As Tyler Cowen has pointed out, such "endogenous preferences create problems for welfare economics when preferences (or meta preferences) are determined by the policies chosen or evaluated."[92] This is because endogenous preferences exhibit path-dependence and in general violate transitivity, so such preferences cannot be represented by a utility function. As an example of such preferences, consider that in 1521, when English King Henry VIII was awarded the title "Defender of the Faith" by Pope Leo X, most English people preferred being Roman Catholics to being Protestants; but after Henry broke with the Pope in 1530, many English people eventually chose to become Protestant. The 1530 policy change was unpopular when enacted, but became popular later—endogenously, because had it not been enacted, the general preference for Catholicism would presumably have remained. This makes it extremely hard to answer the question of whether the 1530 policy change increased or decreased social welfare (basing social welfare only on concordance of the state religion with most people's choice of religious affiliation): adopting the policy change made it popular, but not adopting it would make it remain unpopular. Since endogenous preferences cannot be represented with a utility function, it is impossible to represent social preferences by aggregating the (non-existent) individual utility functions, or measures of value deriving from them, such as consumer surplus.

C. Failure of the Rationality Assumption: Mistakes Concerning One's Own Preferences

When a preference is revealed by a choice, it is merely a prediction that that was the best choice under the circumstances, and that prediction may not have been an accurate assessment. For example, people buy goods and services, revealing their willingness to pay for them, prior to consuming them and discovering whether their prediction of the welfare increase due to the goods and services was accurate. People are notoriously bad at predicting the degree of

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[91] Herbert Gintis, *A Radical Analysis of Welfare Economics and Individual Development*, 86 Q. J. OF ECON. 572, 579 (1972); MICHAEL ALBERT AND ROBIN HAHNEL, QUIET REVOLUTION IN WELFARE ECONOMICS, (1990); John Gowdy, *The Revolution in Welfare Economics and Its Implications for Environmental Valuation and Policy*, 80 LAND ECONOMICS 239, 251–253 (2004).

[92] Tyler Cowen, *The Scope and Limits of Preference Sovereignty*, 9 ECON & PHIL. 253, 254 (1993). The classical economists believed that preferences were endogenously learned. For example, Adam Smith defined necessities of life as including "not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without." ADAM SMITH, THE WEALTH OF NATIONS (1776), Book V Part II Article IV, at 821.

adaptation to post-choice situations.[93] One may look back after the choice and find upon reflection that utility was overestimated or underestimated. This is a violation of the assumption that preferences are transitive, because not all of the choices made at an earlier time would be repeated if the same possibilities presented themselves at a later time. For example, people's predictions of the satisfaction from a windfall in income do not take account of the immense ability humans have to adapt to higher income levels. Studies have found that recent lottery winners are no happier than those in a control group, for instance.[94] Bruno Frey, summarizing the experimental literature on forecasting utility ("utility" in the nontechnical sense to mean satisfaction or happiness), concludes that:

> Individuals are not good at foreseeing how much utility they will derive from their future consumption. Research on affective forecasting shows, for instance, that people underestimate their ability to cope with negative effects. Usually, therefore, people have biased expectations about the intensity and duration of emotions. People fail to foresee that they will adapt more in the future than they predict at present.[95]

Daniel Kahneman and Carol Varey argue that "rational decisions about delayed outcomes require accurate predictions of future tastes," predictions that humans make poorly.[96] (Note that Kahneman and Varey are using the word "rational" in a nontechnical sense, to mean "good"; economists use it to describe preferences that are complete and transitive.) People often rely on past experience to make these predictions, but past experience is dominated by "memorable moments": that is, past experience is unduly weighted by intense peak experiences rather than the experience as a whole.[97]

In markets for status goods, predictions of utility changes can be inaccurate, and will be inaccurate if the actions of other people are incorrectly foreseen or not considered. Robin Wright explains that humans evolved to care about status and relative social position.[98] When many individuals simultaneously seek higher status, the efforts of one undermines the others.

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[93] Daniel Kahnemann & Jackie Snell, *Predicting a Changing Taste: Do People Know What they will Like?*, 5 J. BEHAV. DECISION MAKING 187 (1992).

[94] Daniel Kahneman & Carol Varey, *Notes on the Psychology of Utility*, INTERPERSONAL COMPARISONS OF WELL-BEING 131 (Jon Elster and John Roemer, ed. 1991).

[95] Bruno Frey & Alois Stutzer, Happiness & Economics, 130 n. 62 (2002).

[96] *Supra* note 94 at 130; Daniel Kahneman, *New Challenges to the Rationality Assumption*, 150 J. INST. & THEORETICAL ECON 18 (1994).

[97] Bruno Frey & Alois Stutzer, HAPPINESS & ECONOMICS (2002) at 131–132. The disconnect between the expectation of satisfaction and actual utility may in part contribute to the demand for "bad output" such as tobacco, gambling, firearms, and environmentally sensitive products. Daniel Crane, *Harmful Output in the Antitrust Domain: Lessons from the Tobacco Industry*, 39 GEORGIA L. REV. 321 (2005).

[98] Robert Wright, *The Moral Animal: Why We Are the Way We Are*, ABACUS (1994) at 245 ("Once this status ladder exists, and the higher rungs bring reproductive payoffs, genes that help a chimp climb it at acceptable cost will spread. The genes may work by instilling drives that, in humans, get labeled ambition or competitiveness…."); Daniel Kahneman & Carol Varey, supra note 94 at 142 (1991) ("sociological studies of soldiers' morale in World War II identified relative deprivation as a more important factor than objective circumstances").

Thus, if everyone seeks a larger house than their peers and everyone moves to a larger home, relative positions may not change.[99] Robert Frank puts the problem this way:

> Despite their higher incomes, then, the rich now appear to be worse off on balance. Their higher spending on cars and houses has simply raised the bar that defines adequate in those categories, while the corresponding decline in the quality of public goods has had a significant negative impact.[100]

Behavioral economists and psychologists have also identified numerous heuristics, biases, and failures of judgment that influence decisions. These include loss aversion, framing effects, and status quo bias.[101] While there is a debate about whether these behaviors are truly irrational, there is no disagreement that they complicate the description of human behavior.[102] Very few economists would model the utility of apples "a" to Person 1 as $u_1(a, I)$ where "I" is the information, or framing, that the apples are selling for more, or less, than their usual price; yet experimentally it is observed that such information does affect consumer choice. Erroneously thinking of choices as only depending on a would run afoul of nontransitivities: a consumer might choose "5 apples and 0 bananas" over "0 apples and 4 bananas" if apples were selling for less than their usual price, but make the opposite choice if apples were selling for more than their usual price. Such behavior is intransitive unless the information is explicitly included as a separate factor in modeling the consumer's choices.

D. Failure of the Assumption of Informed Choice

Another necessary assumption for equating choice with improved well-being is that decision-makers have accurate information on which to base their choices. The information does not have to be complete, but if the information is incomplete, the decisionmaker must know all the possible outcomes and the actual probability of each one. If individuals hold beliefs based on inaccurate information, their decisions will not necessarily accord with their well-being.[103]

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[99] Robert Frank, *How the Middle Class is Injured by Gains at the Top*, in JAMES LARDNER AND DAVID SMITH, INEQUALITY MATTERS: THE GROWING ECONOMIC DIVIDE IN AMERICA AND ITS POISONOUS CONSEQUENCES, Demos (2005) at 138 ("Suppose you had to choose between two worlds: World A, where you earn $110,000 a year and everyone else earns $200,000, and world B, where you earn $100,000 and everyone else earns $85,000. Most neoclassical economists would have an easy time deciding. Neoclassical economics, long the dominant wing of the profession, tends to equate personal well-being with absolute income, or purchasing power…. And yet, when the choice is put to American survey respondents, many seem torn, and most actually end up opting for World B").

[100] ROBERT FRANK, SUCCESS AND LUCK: GOOD FORTUNE AND THE MYTH OF MERITOCRACY, Princeton (2016) at 120. Frank argues that an across-the-board consumption tax would lower everyone's consumption and therefore have little impact on well-being. See also, Maurice Stucke & Ariel Ezrachi, COMPETITION OVERDOSE: HOW FREE MARKET MYTHOLOGY TRANSFORMED US FROM CITIZEN KINGS TO MARKET SERVANTS, (2020); Keith Payne, THE BROKEN LADDER HOW INEQUALITY AFFECTS THE WAY WE THINK, LIVE AND DIE (2017).

[101] See Daniel Kahneman, Thinking Fast And Slow Ch. 25-36 (2011).

[102] Gintis argues that if preferences are state-, time-, and social-frame-dependent, and individuals have full information, these biases do not violate transitivity, completeness and Bayesian updating. Herbert Gintis, *supra* note 83 at Chapter 5. See also, ROGER MCCAIN, WELFARE ECONOMICS: AN INTERPRETIVE HISTORY, 212-218, (2020)(reviewing the literature on this topic).

[103] Daniel Hausman, Michael McPherson, and Debra Satz, *supra* note 87 at 130 ("The second objection arises from the fact that people are ignorant of many things. Consequentially, people may prefer something that is bad for them because they mistakenly believe it is beneficial. It is not true that x is better for A than y if and only if A

Economists are well aware that people can make mistakes because of misleading or biased information.[104] Advertising can both increase information and can bias preferences in a way that reduces welfare.[105] Elizabeth Anderson argues that more information is a woefully inadequate remedy when choice is driven by "appetites and whims," "actions prompted by habits," and "blind emotions." No amount of information can ensure that such motivations result in greater well-being, according to Anderson.[106] Fiona Scott Morton notes that the relationship between consumers' choices and welfare are broken with respect to "addictive products."[107] It is clear that greater consumption of cigarettes due to lower cigarette prices will not likely result in greater human well-being. This point is made by Barak Orbach, who distinguishes between surplus and welfare.[108]

While terse and admittedly inadequate, this review of the enormous research being undertaken in the other social sciences and biology is sufficient for our purposes here: It raises serious questions about the adequacy of a normative theory—like surplus theory—based solely on a concept of "willingness to pay," "willingness to accept," and indifference to distribution.

VI. MODERN WELFARE ECONOMICS AND ITS RELEVANCE FOR ANTITRUST POLICY

The accumulation of problems that plague the normative theory based on economic surplus detailed above caused welfare economics to move on to more salient approaches. A four-hundred-page text published in 1991 that summarizes the state of welfare economics mentions Kaldor-Hicks on a single page (and only to recount criticisms of the approach).[109] In their 2013 book on welfare economics, Fleurbaey and Blanchet devote no analysis to the surplus theory.[110] So, is there an analytically robust alternative?

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prefers x to y. Indeed, many people live in circumstances in which their governments, their poverty, or their lack of education makes it almost impossible for them to make informed choices.").

[104] MATTHEW ADLER & ERIC POSNER, NEW FOUNDATIONS OF COST-BENEFIT ANALYSIS 38 (2006)("One general approach to idealization, popular among many philosophers of welfare and some welfare economists, too, is to invoke fully informed preferences."); John Harsanyi, *Morality and the Theory of Rational Behavior*, UTILITARIANISM AND BEYOND 55 (Amartya Sen & Bernard Williams, eds, 1977)(preferences can be "based on erroneous factual beliefs").

[105] G. Peter Penz, CONSUMER SOVEREIGNTY AND HUMAN INTERESTS 96-97 (1986)("However, if the more serious claims of the critics of advertising are correct, we have not only brand-choice patterning, but also the patterning of forms of consumption, for example, in favor of cosmetics and against books, and perhaps even life-style patterning that affects the choices concerning the trade-offs among consumption, leisure, work satisfaction and social relations. If advertising has an impact on such choices in favor of certain consumer goods and generates a bias against other kinds of wants, it patterns, for better or for worse, preferences at a more basic level…the impact may be so profound that it becomes very difficult to extract an image of interests from them that is not shaped by advertising.").

[106] Elizabeth Anderson, Value in Ethics and Economics, 131-132 (1993).

[107] Niels J. Rosenquist, Fiona M. Scott Morton, & Samuel Weinstein, *Addictive Technology and Its Implications for Antitrust Enforcement,* 100 N.C. L. REV. 431 (2022).

[108] Barak Orbach, *The Antitrust Consumer Welfare Paradox*, 7 J. COMP. L. ECON. 133 (2010).

[109] Peter J Hammond, *Interpersonal Comparisons of Utility: Why and How They are and should be Made*, in INTERPERSONAL COMPARISONS OF WELL-BEING (JON ELSTER & JOHN ROEMER, EDS. 1991).

[110] Marc Fleurbaey & Didier Blanchet, Beyond GDP: Measuring Welfare and Assessing Sustainability (2013).

A. The Social Welfare Function Approach and the Capabilities Approach

Welfare economists today take one of two approaches. The first (and oldest) assesses welfare using a Bergson-Samuelson social welfare function ("SWF").[111] Such a social welfare function ranks policies according to their ability to increase human welfare. The social welfare function approach requires identifying the individuals with standing; positing a utility function for each individual, that is, positing a method to convert the set of measures of things affecting an individual's well-being into a single number measuring the individual's well-being; and a method for aggregating the individual utility numbers into an aggregate number for society.[112] As shown in the Appendix (Section VIII), social welfare functions are a component of the very strong assumptions that modern graduate-level economics textbooks use to explain when consumer surplus is a legitimate measure of value.

The second approach used by modern welfare economists is the Capabilities Approach of Amartya Sen. This approach also requires identifying the individuals with standing, and it also requires a set of measures of things affecting an individual's well-being, but it does not require an individual utility function, nor an aggregation scheme. It is an example of multi-criteria decision-making, as Sen explains:[113]

> The concentration on distinct capabilities entails, by its very nature, [a] pluralist approach. Indeed, it points to the necessity of seeing development as a combination of distinct processes, rather than as the expansion of some apparently homogeneous magnitude such as real income or utility. The things that people value doing or being can be quite diverse, and the valuable capabilities vary from such elementary freedoms as being free from hunger and undernourishment to such complex abilities as achieving self-respect and social participation.

Concerning the first step of both the SWF and Capability approaches, the question is whether all individuals affected by the policy count, or only a subset. As an example, the consumer welfare standard posits that only the welfare of consumers matters, even though there is no principled reason for this limitation. Most welfare economists require taking into account the welfare of all individuals affected by a policy change (with the likely omission of persons holding negative other-regarding preferences such as sadism).[114]

Concerning the set of measures of things affecting an individual's well-being, for the last fifty years, scholars have been developing the subjective well-being approach, in which massive comprehensive surveys are conducted asking subjects some variation of the question, "overall,

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[111] Abram Bergson, *A Reformulation of Certain Aspects of Welfare Economics*, 52 Q. J. ECON. 310 (1938); PAUL SAMUELSON, FOUNDATIONS OF ECONOMIC ANALYSIS 219–29 (1947).

[112] Mathew Adler, Measuring Social Welfare: An Introduction, (2019).

[113] Amartya Sen, *Development as Capability Expansion,* in READINGS IN HUMAN DEVELOPMENT: CONCEPTS, MEASURES, AND POLICIES FOR A DEVELOPMENT PARADIGM (Sakiko Fukuda-Parr & A.K. Shiva Kumar, eds., 2003).

[114] See *supra* note 13.

how satisfied are you with your life nowadays?"[115] Individuals answer the question on a scale from 0 to 10. Bruno Frey reports that subjective happiness studies have been performed in eighty countries, comprising over 80% of the world's population, at various times.[116] The results of these numerous surveys have been verified by high correlations of the answers over time. Scholars have used a variety of other comparisons to verify survey answers, including comparing survey responses with objective measures of brain activity using fMRI studies, reports by third parties familiar with the survey subjects, the predictive power of subject's answers, and other factors.[117] Scholars then use objective and subjective data as well as social science research to determine the factors that explain well-being.[118]

B. The Determinants of Well-Being

An enormous amount of research has focused on the determinants of well-being. Large-scale analyses by international organizations, including the EU, the United Nations, the World Bank, the OECD, and many governments have assembled similar sets of indicators that materially affect well-being either positively or negatively.[119] For example, the EUROSTAT expert group converged on nine critical well-being factors:[120] (1) material living conditions (income), (2) productive activity (unemployment and quality of work), (3) health, (4) education, (5) leisure and social interactions, (6) economic security and personal safety (poverty and crime), (7) governance and basic rights (democracy and good government), (8) natural and living environment (pollution), and (9) overall life experience. Economics Nobel laureates Stiglitz and Sen, working with Fitoussi, formulated similar factors, as did the World Happiness Report.[121] Psychologists similarly report results consistent with the economic studies.[122]

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[115] There are several versions of this question. For example, the Cantril ladder questions asks, "please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?" John Helliwell, Richard Layard, Jeffrey Sachs, Jan-Emmanuel De Neve, Lara Aknin, and Shun Wang, WORLD HAPPINESS REPORT (2023).

[116] Bruno Frey, HAPPINESS: A REVOLUTION IN ECONOMICS 20 (2010).

[117] Id.

[118] Des Gasper, Subjective and Objective Well-Being in Relation to Economic Inputs: Puzzles and Responses (2005); Filomena Maggino, Methodologies to Integrate Subjective and Objective Information to Build Well-Being Indicators (2009).

[119] Eurostat, Final Report Of The Expert Group on Quality Of Life Indicators (2017); United Nations, World Happiness Report (2023); World Bank, The Changing Wealth of Nations: Measuring Sustainable Development in the New Millenium (2011); OECD, Guidelines on Measuring Subjective Well-Being (2013).

[120] These factors are multidimensional. We added in parentheses illustrative examples.

[121] Stiglitz, Sen, and Fitoussi list eight factors: material living standards, health, education, personal activities including work, political voice and governance, social connections and relationships, the environment, and insecurity. The UN World Happiness Report lists physical and mental health; human relationships; income and employment; character virtues, including pro-sociality and trust; social support; personal freedom; lack of corruption; and effective government.

[122] Michael Argle, *Causes and Correlates of Happiness*, in WELL-BEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY (Daniel Kahneman, Ed Diener & Norbert Schwarz Eds. 1999).

In modern welfare economists Fleurbaey and Blanchard's book *Beyond GDP: Measuring Welfare and Assessing Sustainability,* a list of the components of welfare like this, is called a welfare "dashboard."[123] In modern welfare economics, there is broad agreement that many of the components of these dashboards are important for welfare, and it is clear that a narrow understanding of welfare, as represented by the CWS, or the total surplus approach, or the sum of equivalent variation or compensating variation of marketed goods, is inconsistent with this broad agreement.

The dashboard hence replaces surplus, or CV or EV, as the starting point. However, one needs an ending point as well, a way to trade off dashboard components, a modern replacement for the flawed Potential Pareto criterion. That is an unsolved problem (although Fleurbaey and Blanchard's book surveys suggested solutions, pointing out the advantages and disadvantages of each). Since that problem is unsolved, the dashboard approach clarifies the set of values that are important to welfare, but it does not supply a unique optimal aggregation method to consolidate the dashboard elements into one measure of value.

This modern welfare approach can serve as a valuable tool for reforming antitrust's flawed normative theory, however. Prior to the rise of the consumer welfare standard, traditional antitrust goals derived from Congressional intent as expressed when Congress passed the antitrust statutes drove antitrust analysis.[124] These consisted of preserving political democracy through dispersion of the economic and political power of big business,[125] protecting small business,[126] limiting income inequality,[127] and protecting workers.[128] These goals are among the characteristics whose importance to social welfare have been confirmed by the modern welfare economists and other social scientists. Therefore, these goals could constitute elements of the welfare dashboard. Then, using the social science research, antitrust policy makers may be able to ascertain the relative importance of each Congressional goal, and certainly could study what policies affect each goal and how.

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[123] Marc Fleurbaey & Didier Blanchard, *supra* note 110.

[124] Two of us review the legislative history of the antitrust statutes in Mark Glick and Darren Bush, *Breaking Up Consumer Welfare's Antitrust Policy Monopoly*, 61 SUFFOLK U. L. REV. 201, 207-213 (2023).

[125] Zephyr Teachout: *The Long Future of the Neo-Brandeisian Movement, in Three Parts*, NETWORK L. REV., July 24, 2024 (The neo-Brandeisians want to "ensure that economic power is distributed broadly rather than concentrated in the hands of a few."); Zephyr Teachout & Lina Khan, *Market Structure and Political Law: A Taxonomy of Power*, 9 DUKE J. OF CONST. L. & PUB. POL'Y 37, 40 (2014) ("A political economy dominated by large companies, along with economies of scale in the purchase of political power is a problem for representative democracy.").

[126] Sandeep Vaheesan, *The Evolving Populisms of Antitrust*, 93 NEB. L. REV. 370, 374-376 (2014).

[127] Lina Khan & Sandeep Vaheesan, *Market Power and Inequality: The Antitrust Counterrevolution and its Discontents*, 11 HARV. L & POL'Y REV. 235 (2017); Sandeep Vaheesan, *The Evolving Populisms of Antitrust*, 93 NEB. L. REV. 370, 403-406 (2014).

[128] AMY KLOBUCHAR, ANTITRUST: TAKING ON MONOPOLY POWER FROM THE GILDED AGE TO THE DIGITAL AGE 59 (2021) (describing the early labor movement as one of the motivations for passage of the Sherman Act); Eric Posner, How Antitrust Failed Workers (2021).

For one example using a Congressional antitrust goal, living in a democratic country has been shown to have a positive impact on well-being.[129] Objective data from the World Bank, the Economist Intelligence Unit, and the Varieties of Democracy project, which rate countries on democracy and voice, can be used to study this relationship. Bruno Frey summarized the results from several welfare studies of the impact of democracy on welfare:

> Overall, these results suggest that individuals living in countries with more extensive democratic institutions feel happier with their lives according to their own evaluation than individuals in more authoritarian countries. These results are not prompted by directly asking whether individuals would be happier living in a democracy. Rather, the subjective, self-reported evaluation of well-being has been gathered, independent of the objective political conditions. Moreover, many other influences on happiness are controlled for, and a certain amount of trust can therefore be placed in the results.[130]

The relationship between democracy and welfare is confirmed by other economic research. For example, Daron Acemoglu and James Robinson conclude that inclusive economic and political institutions are the key common element in successful economies and are essential to prosperity and development.[131] Similarly, income inequality lowers well-being.[132] Again, epidemiological evidence supports this conclusion, as income inequality correlates with greater drug use, violence, mental illness, and other problems.[133]

Extensive research by welfare economists shows that small business—promotion of which is another Congressional antitrust goal—affects welfare positively. Self-employed persons are more satisfied with their lives than are employees of big business. This relationship has been

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[129] David Dorn, Justina Fischer, Gehhard Kirchgassner, and Alfonso Sousa-Poza, *Is it Culture or Democracy? The Impact of Democracy and Culture on Happiness,* 82 SOC. INDIC. RES. 505, 512 (2007) ("a significant positive relationship between democracy and happiness [exists] even when controlling for income and culture measured by language and religion"). Also see Frey, *supra* note 116 at 64 ("Overall, these results suggest that individuals living in countries with more extensive democratic institutions feel happier with their lives according to their own evaluation than individuals in more authoritarian countries").

[130] Bruno Frey, *supra* note 116 at 20.

[131] Daron Acemoglu & James Robinson, Why Nations Fail: The Origins Of Power, Prosperity and Poverty (2012).

[132] Shigehiro Oishi, Selin Kesebir, & Ed Diener, *Income Inequality and Happiness*," 22 PSCH. SCI. 1095 (2011) (showing that U.S. happiness levels are negatively related to inequality).

[133] RICHARD WILKINSON AND KATE PICKETT, THE SPIRIT LEVEL: WHY GREATER EQUALITY MAKES SOCIETIES STRONGER, (2010) (showing income inequality undermines community and creates status anxiety, mental illness, greater drug use, more violence, and lower life expectancy).

found for Germany,[134] Switzerland,[135] the U.K.,[136] and the United States.[137] Eric Posner cites to further evidence of the well-being impact of small businesses.[138]

There are also other society-wide benefits from small businesses. Small business leads the way in certain types of innovation.[139] Small businesses anchor local communities by creating a local tax base and local employment, and they participate in local culture and politics.[140]

Finally, welfare studies spanning multiple geographies and time periods have found that loss of one's job is one of the most significant factors in reducing welfare:

> Unemployment has a severe effect on the subjective well-being of people. This has been shown over and over again. An obvious reason for this drop in well-being is of course the loss of income. But that is not the major explanation…. The psychic costs of unemployment are much bigger than the loss of income. But worse than that: unemployment has lasting, scarring effects. That is, the long term unemployed remain unhappy even if they find a job gain. They feel and stay unhappy.[141]

Thus, there is ample evidence that the traditional antitrust goals of preserving political democracy, protection of small business and labor, and reducing income inequality, ought to take the lead in terms of antitrust law. For one, Congress has made those goals clear in the legislative history of the antitrust laws. Second, modern welfare economics has proved their importance empirically. In contrast, the Consumer Welfare theory is untethered from sound economics and from Congressional intent.

Tim Wu has written about the struggle between proponents of "antitrust with multiple objectives—as described by Learned Hand" and proponents of a "single-pointed goal" such as consumer welfare.[142] As detailed above, there is social science research backing up the multiple Congressional goals that we have suggested could form a workable dashboard for setting antitrust policy. In contrast, as also detailed above, economics research into the CWS shows it to be a flawed single-pointed goal. A successful modern welfare economics approach

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[134] Matthias Benz & Bruno Frey, Being Independent is a Great Thing: Subjective Evaluations of Self-Employment and Hierarchy, 75 ECONOMICA 362 (2008).

[135] Id.

[136] Peter Warr, Self-Employment, Personal Values, and Varieties of Happiness-Unhappiness, 23 J. OCCUP. HEALTH PSYCHOL. 388 (2017).

[137] Greg Hundley, Why and When are the Self-Employed More Satisfied with Their Work? 40 IND. RELAT. 293 (2001).

[138] Eric Posner, Market Power, Not Consumer Welfare: A Return to the Foundations of Merger Law, 86 ANTITRUST L. J. 205, 233-235 (2024).

[139] Sam Hogg, Why Small Companies Have the Innovation Advantage, ENTREPRENEUR, Nov. 15, 2022.

[140] Stacy Mitchell, Big Box Swindle: The True Cost of Mega-Retailers and the Fight for America's Independent Business (2007).

[141] Peter Van der Meer, Happiness, Unemployment and Self-Esteem (2016)

[142] Tim Wu, *After Consumer Welfare, Now What? The "Protection of Competition" Standard in Practice*, available at http://www.competitionpolicyinternational.com (April 2018) III.A.

requires that one start with a correct dashboard, then try to make progress to a synthesis of those goals.

C. The "Protection of Competition" Standard

The modern welfare economics approach points the way forward for antitrust. The New Brandeis scholars have made some significant, albeit in our view still insufficient, advances towards this position. The New Brandeis alternative to the Consumer Welfare Standard is what Tim Wu refers to as the "protection of competition" test. According to Wu, this means that antitrust should not focus on outcomes such as output and price, but instead focus on the competitive process itself.[143] Wu analogizes the competition standard to the referee at a boxing match:

> …[A]ntitrust complaints usually involve one party (the aggressor) seeking to inflict some economic damage to another party, or set of parties. That, of course, can be a legitimate part of market competition, much as inflicting blows is part of boxing. Yet it nonetheless remains the enforcers' task to distinguish between strategies and attacks that represent the competitive process (actual blows), as opposed to its subversion (low blows).[144]

In a 2022 speech, Jonathan Kanter, Assistant Attorney General in charge of Antitrust, offered a similar analysis. He recognized that there are several purposes of the antitrust laws including preserving democracy, protecting small business, and protecting labor from excessive corporate power.[145] He asserted that all of these goals can be advanced by simply protecting "competition and the competitive process."[146]

One problem with these formulations is that there is no single definition of "competition" in economics that can be held up as a template with which to evaluate corporate behavior. Much economic theory concerns "perfect competition." As discussed in Section III.A, perfect competition is defined as a situation where all economic agents are price takers, meaning that they are unable to affect any of the relevant prices. Perfect competition is most plausible if an industry consists of a very large number of very small firms. Assuming perfect competition and the other Arrow-Debreu conditions (no externalities, no barriers to entry, and full and complete information),[147] the first fundamental theorem of welfare economics states that a competitive equilibrium is Pareto optimal, meaning no one can be made better off without making someone else worse off. Obviously, these assumptions are not present in real markets. Therefore, perfect competition cannot serve as a guide to evaluating markets and conduct. In addition, the theory of the second best (as demonstrated in Section III.A) shows that, in an

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[143] Id.

[144] Id. at 11.

[145] Assistant Attorney General Jonathan Kanter Delivers Remarks at New York City Bar Association's Milton Handler Lecture, May 18, 2022 ("Competitively healthy markets offer more economic opportunity and less risk of corporate power dominating our democratic and social wellbeing.")

[146] Id. ("Focusing on competition and the competitive process protects all the benefits of competition.")

[147] Mark Glick, Gabriel A. Lozada, Pavitra Govindan, Darren Bush, *The Horizontal Merger Efficiency Fallacy*, 96 TEMP. L. REV. 571, 598 (2024).

economy which is not perfectly competitive, moving in the direction of perfect competition could be welfare reducing.[148]

There are also other models of types of competition: "Cournot competition," "Bertrand competition," and "Stackelberg competition," for example. But their equilibria are not necessarily Pareto optimal, and in the realistic context of repeated games, they often have multiple equilibria (see Section III.A's discussion of the Folk Theorem).

The upshot is that there is no clear definition of "competition" from economics to hold up as a guide, let alone as a goal. Since "the competitive process" has no clear definition, there is no rule book as in boxing.

Advocates of the protection of competition standard typically revert to the commonsense definition of competition as rivalry. Rivalry involves the number of rivals in a market and the intensity of their interaction. However, as Section III.A pointed out, there is no economic theorem that, in the equilibrium of a repeated game, an oligopoly with more firms generates more surplus than an oligopoly with fewer firms. It is almost certainly the case that Congress believed that oligopolies with more firms were socially better than oligopolies with fewer firms, but even a Congress of today, let alone one of 1890, would find it impossible to support that contention by appealing solely to the economic theory of surplus.

Jonathan Kanter is one of the scholars in whose hands the protection of competition standard reverts to the definition of competition as rivalry. He writes:

> What do I mean by the competitive process? The competitive process is how rivalry plays out in the market among multiple competitors. It is charging lower prices so customers buy your goods instead of a rival's or paying higher salaries so you attract talent away from a competitor. It is treating employees with respect because you know they can and will leave if you do not. The heart of the competitive process is the guarantee that everyone participating in the open market—consumers, farmers, workers, or anyone else—has the free opportunity to select among alternative offers. That freedom to choose drives competition between firms trying to ensure their offer is the one that's chosen.[149]

Besides the problem of more rivalry not necessarily being good according to economic theory, a second problem with a standard of rivalry is that corporate strategy universally impacts rivals. The purpose of the antitrust standard is to provide goals for antitrust that can be used to differentiate between conduct that is socially beneficial from conduct that is not. In an Arrow-Debreu world, perfect competition is socially beneficial only because it is Pareto Optimal. Pareto Optimality is the goal, and perfect competition is the means to that goal. In our own non-Arrow-Debreu world, however, rivalry, or "competition" defined in some other way, would only be socially beneficial if it were the means to a goal—but what goal? We need to identify the goal, the end, in order to differentiate whether certain activities and corporate

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[148] *Supra* note 19.

[149] Assistant Attorney General Jonathan Kanter Delivers Remarks at New York City Bar Association's Milton Handler Lecture, May 18, 2022, available at https://www.justice.gov/opa/speech/assistant-attorney-general-jonathan-kanter-antitrust-division-delivers-remarks-new-york.

strategies advance or detract from that goal.[150] Only then can we make reasoned judgments about whether they are socially beneficial. John Newman described this problem:

> Even if Congress intended some ill-defined conception of 'competition' to serve as the overarching goal of the antitrust laws, the decision rules for promoting that goal may—and, it seems, must—nonetheless comprise something other than competition itself. Some standard is needed in order to distinguish between reasonable and unreasonable restraints. The undefined competitive process approach fails to do so.[151]

A standard is distinguishable from a rule. According to Ehrlich and Posner, "a standard indicates the kinds of circumstances that are relevant to a decision on legality and is thus open-ended. That is, it is not a list of all the circumstances that might be relevant but is rather the criterion by which particular circumstances presented in a case are judged to be relevant or not."[152] In contrast, a rule "withdraws from the decision maker's consideration one of more of the circumstances that would be relevant to [the] decision according to the standard."[153] For example, the consumer welfare standard dictates that conduct that decreases output and raises price is socially undesirable. In contrast, a rule such as tying two products together is *per se* illegal if (1) there is a conditional sale of two products, (2) there is market power in the tying product market, and (3) a substantial amount of commerce is affected in the tied market. In antitrust, rules cannot replace the standard because some cases involve conduct for which no rules exist, and because the rules themselves cannot be analyzed without the standard. Therefore, we must alter the standard—not jettison all standards—by being clear what goals are important. The consumer welfare standard limited these goals to effects on economic surplus. But because of this limitation, important traditional goals, where antitrust can materially advance social welfare, are being ignored.

D. Mergers

To illustrate these issues, consider first the application of the "protection of competition" standard to merger analysis, defining "competition" to mean "rivalry." The original Merger Guidelines issued by the Department of Justice in 1968 reflected a protection of competition standard: mergers that result in concentrated markets above a certain threshold should be blocked. But under the influence of the Chicago School, the Merger Guidelines were revised into an analysis of efficiencies. The 1984 Merger Guidelines express this assumption as follows: "The primary benefit of mergers to the economy is their efficiency-enhancing potential."[154] Efficiencies in merger analysis typically mean cost savings. But in economics,

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[150] Or "goals" (plural), in the case of multiple-criteria decision-making, as would be appropriate to operationalize Amartya Sen's "Capability Approach." See Ingrid Robeyns & Morten Fibieger Byskov, *The Capability Approach*, Stanford Encyclopedia of Philosophy (Summer 2023 edition), Edward N. Zalta & Uri Nodelman (eds.), https://plato.stanford.edu/archives/sum2023/entries/capability-approach.

[151] John Newman, *Procompetitive Justifications in Antitrust Law*, 94 INDIANA L. J. 501, 533 (2019).

[152] Isaac Ehrlich and Richard Posner, *An Economic Analysis of Legal Rulemaking*, 3 J. OF LEG. STUDIES 257, 258 (1974).

[153] Id.

[154] The 1984 Merger Guidelines Section 3.5.

efficiencies mean activities that increase welfare. One must accept the consumer welfare standard to make cost savings and welfare coextensive.[155] This is because, under an economic surplus standard, higher costs will impact producer and consumer surplus. Under a more general welfare standard, however, cost savings might not be desirable. For example, cost savings due to layoffs likely would reduce welfare. Thus, an efficiency defense in a merger inquiry requires the acceptance of the consumer welfare standard.[156]

The rivalry/competition standard could be implemented by retaining the structural presumption based on concentration but eliminating the efficiency defense. But what about the other Congressional values? One could conceive of a variable structural presumption, where the concentration thresholds are scaled up or down depending on concerns that the proposed merger could impact other Congressional values. For example, a corporation's size is not a factor in the Merger Guidelines, but it is an important factor in the ability of a company to distort political democracy. As Lande and Vaheesan show, mergers could continue under the present guidelines until only ten firms remained in the United States, centralizing enormous political power.[157] Different markets may also have different implications for mergers on Congressional goals. For example, media markets may impact democracy, and acquisitions of local banks could have a detrimental impact on small local businesses.

The current concentration thresholds are rather arbitrary in the first place. Therefore, modest tightening of these thresholds for mergers that potentially could harm other traditional goals of antitrust would be a good way to replace the consumer welfare standard in merger analysis. Tightening the thresholds plus eliminating the efficiency defense should achieve most if not all of the Congressional goals. A simple way to "tighten the thresholds" would be to adopt Kwoka's position that "modern merger control can significantly improve enforcement by reviving the use of the structural presumption."[158] This would be in line with Vaheesan's suggestion that 1960s merger policy, in combination with strengthened controls on conglomerate mergers, was "good for society."[159] As this paper has shown, the attacks on the 1960s merger policy, launched in the 1970s, were based on economic arguments that were naïve, and those attacks incorrectly besmirched a policy that achieved Congressional goals much more than the policies that replaced it.

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[155] This is explained in Mark Glick, Robert Lande, and Darren Bush, *The Efficiency Rebuttal in the New Merger Guidelines: Bad Law and Bad Economics*, 38 ANTITRUST 20 (2024). See also Eric Posner, *Market Power, Not Consumer Welfare: A Return to the Foundations of Merger Law*, 86 ANTITRUST L. J 205, 224 (2024).

[156] Id.

[157] Robert Lande & Sandeep Vaheesan, *Preventing the Curse of Bigness Through Conglomerate Merger Legislation*, 52 ARIZ. ST. L. J. 75, 76 (2020).

[158] John Kwoka, *Competitive Edge: Structural presumption in U.S. merger control policy would strengthen modern antitrust enforcement.* Washington Center for Equitable Growth website (Dec. 19, 2018), https://equitablegrowth.org/competitive-edge-structural-presumption-in-u-s-merger-control-policy-would-strengthen-modern-antitrust-enforcement/.

[159] Sandeep Vaheesan, *Two-and-a-Half Cheers for 1960s Merger Policy* (Dec. 12, 2019), HLS Antitrust Association, available at https://orgs.law.harvard.edu/antitrust/2019/12/12/two-and-a-half-cheers-for-1960s-merger-policy/

E. Single-firm Monopolization Cases

The antitrust laws do not punish monopoly power unless it is achieved by conduct that undermines competition. In a merger case, the act of acquiring a competitor constitutes the conduct that is being challenged. In a single-firm monopolization case under the Sherman Act, a successful prosecution requires not only the existence of market power, but also proof of anticompetitive conduct. Monopoly power can be proven using traditional structural metrics such as market share and barriers to entry, as in merger cases. However, in merger cases, there is no analog to the anticompetitive conduct requirement. Anticompetitive conduct can be divided into two categories, pricing conduct and exclusionary conduct. We focus below on exclusionary conduct cases.

The anticompetitive conduct requirement pointedly illustrates why "protection of competition" cannot operate as an antitrust standard for monopolization cases. Tim Wu states, "The basic question is whether the complained-of conduct is competition on the merits, or, rather, an effort to disable or subvert the competitive process?"[160] How do we know the difference? According to Wu we ask, among other things, "what is the complained-of conduct? It is competition on the merits (i.e., a better or cheaper product) or a potentially illegitimate method (e.g., sabotage, exclusionary deals, tying predation, manipulation of a standards process, and so on). It is here that any procompetitive justification for the conduct is considered."[161] Implicit in Wu's discussion, however, is existence of a standard that can distinguish "competition on the merits" from "exclusionary conduct." This is because all competitive conduct damages rivals to some extent. Is there such a standard?

When a firm with market power innovates to create a better product and thereby takes sales from its competitors, it potentially excludes rivals, but most observers believe creating a better product is "competition on the merits." We suppose this is because it increases some measure of welfare, although what measure is left unexamined, as if judging a product to be "better" is sufficient to decide that its introduction is good.

Defining "exclusionary conduct" is similarly difficult. One definition would be "an agreement, practice, or strategy by which the monopolist impairs the rival's ability to compete on future sales, or sales that the monopolist has not captured directly." For example, tying impairs the ability of a rival to compete for sales in the tied market in the future, and could impair the rival's ability to compete for any customer by raising their costs, or denying them the money needed to innovate, or denying them the learning-by-doing experience. However, introducing an innovative, better product will also impair the rival's ability to compete on future sales, so this definition does not actually distinguish between "competition on the merits" and "exclusionary conduct."

A much-cited test for exclusionary conduct is offered by Herbert Hovenkamp:

> We define monopolistic conduct as acts that: (1) are reasonably capable of creating, enlarging or prolonging monopoly power by impairing the opportunities of rivals; and (2) that either (2a) do not benefit consumers at all,

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[160] Tim Wu, *After Consumer Welfare, Now What? The "Protection of Competition" Standard in Practice.* https://www.competitionpolicyinternational.com/wp-content/uploads/2018/04/CPI-Wu.pdf (April 2018) at 11.

[161] Id.

or (2b) are unnecessary for the particular consumer benefits claimed for them,
or (2c) produce harms disproportionate to any resulting benefits.[162]

Under prong (1), the plaintiff must show that the conduct will increase or prolong the market power of the defendant by increasing the defendant's market share, raising barriers to entry, or through other mechanisms. Then under prong (2a) we ask does the conduct harm consumers or benefit consumers. But this does not conclude the (2a) analysis because the conduct could also have a socially beneficial (so-called "procompetitive") impact. Here, the courts typically mean, that the conduct could solve a market failure problem and thereby increase consumer welfare. For example, exclusionary conduct could eliminate free riders that prevent the monopolist from offering services or new products that consumers value (thus increasing consumer surplus), or it might be necessary to prevent the dilution of incentives to innovate, or prevent consumers from receiving accurate information.[163] Finally, in step (2b) we ask whether the claimed procompetitive benefit could be achieved with a less restrictive alternative. Did the firms have a choice to take another route to achieve the procompetitive aim that did not involve the harm to rivals, or less harm to rivals than the actual choice? If not, step (2c) asks whether the socially beneficial ("procompetitive") justification is significant enough to offset the competitive harm (reduction in consumer surplus) from the exclusion of the rivals. Traditionally, conduct that has been considered to meet this definition of "exclusionary conduct" has included tying, an agreement with customers for exclusivity, sham patents that exclude rivals, business torts that impact rivals, predatory pricing, and bundled prices strategies that hobble competitors.

It is possible to retain this definition of exclusionary conduct while bringing into it the modern welfare economics dashboard components. Under (2a) currently, the consumer welfare standard is used: to harm consumers, the conduct must reduce consumer surplus. There are various tests proposed to identify when conduct may have this impact. Mark Popofsky reviews these various tests, but he concludes that all of them seek to maximize "consumer welfare, a principle courts implement by selecting the legal test that best serves the interests of consumers under the circumstances."[164] But (2a) analysis can also be broadened to include other antitrust policy concerns, so that it also asks whether the conduct will likely impair democracy, harm small business, or harm labor or other firm stakeholders. By bringing in the Congressional goals, traditional analysis can transition towards a "dashboard" approach that includes criteria shown by social science research to affect welfare.

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[162] Herbert Hovenkamp, *The Antitrust Standard for Unlawful Exclusionary Conduct* (2008), available at https://scholarship.law.upenn.edu/faculty_scholarship/1777; Einer Elhauge, *Defining Better Monopolization Standards*," Harvard Law School Discussion Paper 434, August 2003; Douglas Melamed, *Exclusive Dealing Agreements and Other Exclusionary Conduct – Are There Unifying Principles?* 73 ANTITRUST L. J. 375 (2006); Mark Popofsky, *Defining Exclusionary Conduct: Section 2, The Rule of Reason, and the Unifying Principle Underlying Antitrust Rules*, 73 ANTITRUST L. J. 435 (2006); Steven Salop, *Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-Sacrifice Standard*, 73 ANTITRUST L. J. 311 (2006); Douglas Bernheim and Randal Heeb, *A Framework for the Economic Analysis of Exclusionary Conduct*, in 2 THE OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS (2014).

[163] John Newman, *Procompetitive Justifications in Antitrust Law*, 94 INDIANA L. J. 501, 522 (2019).

[164] Mark Popofsky, *Defining Exclusionary Conduct: Section 2, The Rule of Reason, and the Unifying Principle Underlying Antitrust Rules*, 73 ANTITRUST L. J. 435, 454 (2006).

Clearly, implementing a standard that incorporates other important goals will likely involve more judicial resources. But the alternative is to simply accept false negative outcomes with no regard to the negative impact on these values. From welfare economics we know that the losses to social welfare are likely large. Moreover, once the adjustment is made, courts and economists will turn their attention to developing rules in particular cases, and develop presumptions and precedents that will help limit the costs of an otherwise open-ended inquiry.

VII. CONCLUSION

The attraction of the consumer welfare standard was the idea that it offered a simple and objective way to measure economic value or the wealth of a nation: consumer surplus. What we have seen in this paper is that neither consumer surplus, nor any related, more modern ideas actually do straightforwardly measure value or wealth. Summarizing the activity of an economy—its production of basic necessities, of luxury goods, of pollution, of degrading jobs and of rewarding careers—into one or into a few numbers is inherently a subjective exercise, and unavoidably involves making ethical judgments (perhaps unwittingly). In antitrust, Congress has given us what Fleurbeay and Blanchard (and other modern welfare economists) would call the welfare "dashboard;" that is, the components of welfare: protection of democracy and protection (probably partial) of small business, labor, consumers, and farmers. With mergers, taking these components of welfare into account leads to a rather simple suggestion: tighten merger thresholds. However, with firms that have become large due to internal growth, Congress has not given us an easy way to aggregate the dashboard elements, and more work will have to be done to plot a clear way forward.

VIII. APPENDIX: CONSUMER SURPLUS AS PRESENTED IN PH.D. MICROECONOMIC THEORY

Having introduced social welfare functions, we can discuss the treatment of consumer surplus in modern graduate-level microeconomics. In such presentations, surplus maximization is present, but only as an approach that is equivalent to the social welfare function approach under highly restrictive conditions, outside of which it is not useful. To give an example of how these microeconomics texts handle the two fundamental flaws of consumer surplus, the actual binary nature of neoclassical value and consequent inconsistencies that we covered in Sections III.F–III.I, and its ethical failings that we covered in Section IV, we will follow the discussion in Section 10.E of MCWG.

To handle the Section III-type inconsistencies, MCWG follow the path already criticized in Section III.E.1 by assuming a "quasilinear specification of individual utility functions."[165] As explained in III.E.1, quasilinear utility means assuming that consumers do not change their consumption of the good in question as their income changes. In other words, their income does not affect their consumption, except for the one "numeraire" good, into which they pour all of any extra income they receive. Simple introspection shows that actual human beings do not behave in this way, and empirical studies of household consumption unsurprisingly confirm that humans do not behave this way, except perhaps for some trivial commodities such as salt.

[165] Mas-Colell, Whinston, & Green, *supra* note 13 at 328.

To handle Section IV-type ethical problems, MCWG write:[166]

> In the discussion that follows, we assume that the welfare judgments of society are embodied in a social welfare function $W(u_1, \ldots, u_I)$ assigning a social welfare value to every utility vector $(u_1, \ldots, u_I)$ (see Chapters 4, 16, and 22 for more on this concept). In addition, we suppose that (as in the theory of the normative representative consumer discussed in Section 4.D) there is some central authority who redistributes wealth by means of transfers of the numeraire commodity in order to maximize social welfare.

The first assumption here points to a serious gap in the justification of surplus maximization in Section II.C and in legal scholarship, which do not at all acknowledge that surplus maximization is only desirable if there is a "society" making "welfare judgments," let alone discuss the nature of those judgments. The second assumption is unrealistic because no such all-powerful, all-knowing, benevolent central authority exists in any country that we know of. Together, these two assumptions essentially imply that surplus maximization is unjustified for any existing human society.

After dispensing with Section III-type inconsistencies by assuming that consumers behave quite unrealistically, and after dispensing with Section IV-type ethical problems by assuming that human societies behave completely unrealistically, MCWG are then able to mathematically prove that "changes in social welfare can be measured by changes in the Marshallian aggregate surplus … for any social welfare function that society may have."[167] Thus, surplus maximization is unproblematic if one assumes away its problems.

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[166] Id.

[167] Id.

References

Acemoglu, Daron, and James Robinson. Why Nations Fail: The Origins of Power, Prosperity, and Poverty. New York: Crown, 2012.

Adler, Matthew D. *Measuring Social Welfare: An introduction*. New York: Oxford University Press, 2019. https://doi.org/10.1093/oso/9780190643027.001.0001

Adler, Matthew D., and Eric A. Posner. New Foundations of Cost-Benefit Analysis. Harvard University Press, 2006. https://doi.org/10.2307/j.ctv1nzfgqt

Argle, Michael. "Causes and Correlates of Happiness." In *Well-Being: The Foundations of Hedonic Psychology*, edited by Daniel Kahneman, Ed Diener, and Norbert Schwarz. 1999.

Albert, Michael, and Robin Hahnel. *Quiet revolution in welfare economics*. Princeton, NJ: Princeton University Press, 1990.

Anderson, Elizabeth. *Value in Ethics and Economics*. Harvard University Press, 1993.

Arrow, Kenneth. "Gifts and Exchange." *Philosophy & Public Affairs* 1 (1972): 343-362.

Axelrod, Robert M. *Evolution of Cooperation*, 1984.

Baker, C. Edwin. "The Ideology of the Economic Analysis of Law." *Philosophy & Public Affairs* 5 (1975): 3-48. https://www.jstor.org/stable/2265019

Baker, Jonathan B. *The Antitrust Paradigm: Restoring a Competitive Economy*. Harvard University Press, 2019. https://doi.org/10.4159/9780674238947

Barbera, Salvador, Peter Hammond, and Christian Seidl. *Handbook of Utility Theory: Volume 2 Extensions*. Springer, 2010. https://doi.org/10.1007/978-1-4020-7964-1

Becht, Marco. "The Theory and Estimation of Individual and Social Welfare Measures." *Journal of Economic Surveys* 9 (1995): 53–87. https://doi.org/10.1111/j.1467-6419.1995.tb00110.x

Belleflamme, Paul, and Martin Peitz. *Industrial Organization: Markets and Strategies*. Cambridge University Press, 2015. https://doi.org/10.1017/CBO9781107707139

Benz, Matthias, and Bruno S. Frey. "Being Independent Is a Great Thing: Subjective Evaluations of Self-Employment and Hierarchy." *Economica* 75, no. 298 (April 4, 2008): 362–83. https://doi.org/10.1111/j.1468-0335.2007.00594.x

Bergson, Abram. "A Reformulation of Certain Aspects of Welfare Economics." *The Quarterly Journal of Economics* 52, no. 2 (February 1, 1938): 310. https://doi.org/10.2307/1881737

Bernheim, Douglas, and Randal Heeb. "A Framework for the Economic Analysis of ExclusionaryConduct." In *The Oxford Handbook of International Antitrust Economics, Volume 2. Oxford University Press eBooks, 2014.* *https://doi.org/10.1093/oxfordhb/9780199388592.001.0001*

Blackorby, Charles, and David Donaldson. "Money Metric Utility: A Harmless Normalization?" *Journal of Economic Theory* 46 (1988): 120-129. https://doi.org/10.1016/0022-0531(88)90152-4

Blackorby, Charles, and David Donaldson. "A Review Article: The Case against the Use of the Sum of Compensating Variations in Cost-Benefit Analysis." *The Canadian Journal of Economics / Revue Canadienne d'Economique* 23, no. 3 (1990): 471–94. https://doi.org/10.2307/135643

Blair, Roger D., and David L. Kaserman. *Antitrust Economics*, 2009.

Boadway, Robin W. "The Welfare Foundations of Cost-Benefit Analysis." *The Economic Journal* 84 (1974): 926-939. https://doi.org/10.2307/2230759

Boadway, Robin W., and Neil Bruce. *Welfare economics*. Oxford u.a: Blackwell, 1984.

Bork, Robert. *The Antitrust Paradox*. New York: Basic Books, 1978.

Bowles, Sam. *The Moral Economy: Why Good Incentives Are No Substitute for Good Citizens.* New Haven: Yale University Press, 2016.

Bowles, Samuel, and Herbert Gintis. *A Cooperative Species: Human Reciprocity and Its Evolution*. Princeton University Press, 2013.

Brekke, Kjell Arne. "The Numéraire Matters in Cost-Benefit Analysis." *Journal of Public Economics* 64 (1997): 117-123. https://doi.org/10.1016/S0047-2727(96)01610-6

Burgess, Giles H. *The Economics of Regulation and Antitrust*. Addison Wesley Longman, 1995.

Chipman, John S., and James C. Moore. "The New Welfare Economics 1939-1974." *International Economic Review* 19, no. 3 (1978): 547–84. https://doi.org/10.2307/2526326

Chipman, John S. "Timeline of Selected Honors and Tributes." Univ. of Minn. https://sites.google.com/umn.edu/chipmantimeline (last visited Jan. 7, 2024).

Coleman, Jules L. "Efficiency, Utility, and Wealth Maximization." *Hofstra Law Review* 8 (1980): 509–551.

Corchón, Luis C. "Welfare Losses under Cournot Competition." *International Journal of Industrial Organization* (2008): 1120-1131. https://doi.org/10.1016/j.ijindorg.2007.10.003

Cowen, Tyler. "The Scope and Limits of Preference Sovereignty." *Economics and Philosophy* 9 (1993): 253–269. https://doi.org/10.1017/S0266267100001553

Crane, Daniel. "Harmful Output in the Antitrust Domain: Lessons from the Tobacco Industry." *Georgia Law Review* 39 (2005): 321-410. https://ssrn.com/abstract=711882

Dawkins, Richard. *The Selfish Gene.* 1976.

De Scitovszky, T. "A Note on Welfare Propositions in Economics." *The Review of Economic Studies* 9, no. 1 (November 1, 1941): 77–88. https://doi.org/10.2307/2967640

Dorn, David & Fischer, Justina & Kirchgässner, Gebhard & Sousa-Poza, Alfonso. (2007). Is It Culture or Democracy? The Impact of Democracy and Culture on Happiness. Social Indicators Research. 82. 505-526. https://doi.org/10.1007/s11205-006-9048-4

Drèze, Jean, and Nicholas Stern. "The Theory of Cost-Benefit Analysis." In *Handbook of Public Economics,* vol. 2, edited by Alan J. Auerbach and Martin Feldstein, North Holland Press, 1987. https://doi.org/10.1016/S1573-4420(87)80009-5

Dworkin, Ronald. *Taking Rights Seriously,* Harvard University Press, 1977.

Dworkin, Ronald. *Sovereign Virtue: The Theory and Practice of Equality*. Harvard University Press, 2000. https://doi.org/10.2307/j.ctv1c3pd0r

Ehrlich, Isaac, and Richard A. Posner. "An Economic Analysis of Legal Rulemaking." *The Journal of Legal Studies* 3, no. 1 (1974): 257–86. http://www.jstor.org/stable/724127 https://doi.org/10.1086/467515

Ekelund, Robert B., and Robert F. Hébert. "Consumer Surplus: The First Hundred Years." *History of Political Economy* 17, no. 3 (September 1, 1985): 419–54. https://doi.org/10.1215/00182702-17-3-419

Elhauge, Einer. "Defining Better Monopolization Standards." *Harvard Law School Discussion Paper* 434, August 2003. https://ssrn.com/abstract=437863

Ellerman, David. *Putting Jurisprudence Back Into Economics: What is Really Wrong With Today's Neoclassical Theory*. Springer, 2021 https://doi.org/10.1007/978-3-030-76096-0

Eurostat. *Final Report of the Expert Group on Quality of Life Indicators.* 2017.

Fehr, Ernst, and Urs Fischbacher. "Why Social Preferences Matter: The Impact of Non-Selfish Motives on Competition, Cooperation and Incentives." *Economic Journal* 112 (2002): C1-33. https://doi.org/10.1111/1468-0297.00027

Feldman, Allan M., and Roberto Serrano. *Welfare Economics and Social Choice Theory*. Springer Science & Business Media, 2nd Ed. 2006. https://doi.org/10.1007/0-387-29368-X

Fleurbaey, Marc, and Didier Blanchet. *Beyond GDP: Measuring Welfare and Assessing Sustainability.* 2013. https://doi.org/10.1093/acprof:oso/9780199767199.001.0001

Fleurbaey, Marc, and Peter J. Hammond. "Interpersonally Comparable Utility." In Salvador Barberà, Peter J. Hammond, and Christian Seidl, eds. *Handbook of Utility Theory, Volume 2 Extensions,* 15. Kluwer Academic, 2010. https://doi.org/10.1007/978-1-4020-7964-1_8

Frank, Robert. *Passions Within Reason: The Strategic Role of the Emotions.* 1988.

Frey, Bruno S. Happiness: A revolution in economics (munich lectures in economics). MIT Press, 2010.

Frey, Bruno S., and Alois Stutzer. *Happiness and Economics: How the Economy and Institutions Affect Human Well-Being*. Princeton University Press, 2002. https://doi.org/10.1515/9781400829262

Friedman, David D. *Law's Order: What Economics Has to Do with Law and Why It Matters.* 2000. https://doi.org/10.1515/9781400823475

Frank, Robert. *Success and Luck: Good Fortune and the Myth of Meritocracy.* Princeton, 2016. https://doi.org/10.1515/9781400880270

Frank, Robert. "How the Middle Class is Injured by Gains at the Top." In *Inequality Matters: The Growing Economic Divide in America and Its Poisonous Consequences,* edited by James Lardner and David Smith, 138. Demos, 2005.

Frey, Bruno, and Alois Stutzer. *Happiness and Economics.* 2002. https://doi.org/10.1515/9781400829262

Fudenberg, Drew, and Jean Tirole. *Game Theory*. 1991.

Gasper, Des. "Subjective and Objective Well-Being in Relation to Economic Inputs: Puzzles and Responses." *Review of Social Economy* 63, no. 2 (2005): 177–206. http://www.jstor.org/stable/29770304 https://doi.org/10.1080/00346760500130309

Gintis, Herbert. *Individuality and Entanglement: The Moral and Material Bases of Social Life*. Princeton University Press, 2017. https://doi.org/10.2307/j.ctvc779cx

Gintis, Herbert. "A Radical Analysis of Welfare Economics and Individual Development." *The Quarterly Journal of Economics* 86, no. 4 (1972): 572–99. https://doi.org/10.2307/1882043

Glick, Mark, Robert Lande, and Darren Bush. "The Efficiency Rebuttal in the New Merger Guidelines: Bad Law and Bad Economics." *Antitrust* 38 (2024): 20-26.

Glick, Mark, Robert Lande, and Darren Bush. "The Law & Economics Fallacies: What Modern Economics Really Says About the Definition of Efficiency and the Measurement of Welfare, *Houston Business and Tax Law Journal* 24 (2024): 1-116. https://doi.org/10.2139/ssrn.4923471

Glick, Mark, Gabriel A. Lozada, Pavitra Govindan, and Darren Bush. "The Horizontal Merger Efficiency Fallacy." *Temple Law Review* 96 (2024): 573-620. https://doi.org/10.36687/inetwp212

Glick, Mark, Gabriel A. Lozada, and Darren Bush. "Why Economists Should Support Populist Antitrust Goals." *Utah Law Review* (2023): 769-812. https://doi.org/10.2139/ssrn.4277175

Glick, Mark, and Darren Bush. "Breaking Up Consumer Welfare's Antitrust Policy Monopoly." *Suffolk University Law Review* 61 (2023): 201-274. https://doi.org/10.2139/ssrn.4344245

Gowdy, John M. "The Revolution in Welfare Economics and Its Implications for Environmental Valuation and Policy." *Land Economics* 80, no. 2 (2004): 239–57. https://doi.org/10.2307/3654741

Gorman, W. M. "Community Preference Fields." *Econometrica* 21, no. 1 (1953): 63–80. https://doi.org/10.2307/1906943

Gorman, W. M. "The Intransitivity of Certain Criteria Used in Welfare Economics." *Oxford Economic Papers* 7, no. 1 (1955): 25–35. http://www.jstor.org/stable/2662000 https://doi.org/10.1093/oxfordjournals.oep.a042338

Griffin, James. *Well-being: its meaning, measurement, and moral importance*. Oxford [Oxfordshire]: Clarendon Press (1986).

Hackinen, Brad. *Does Repeated Application of the Kaldor-Hicks Criterion Generate Pareto Improvements?* Undergraduate Honours Thesis, Department of Economics, University of Victoria, 2012. https://www.uvic.ca/socialsciences/economics/assets/docs/honours/Hackinen.pdf

Hamilton, W.D. "The Genetical Evolution of Social Behavior." *Journal of Theoretical Biology* 7 (1964): 1-52. https://doi.org/10.1016/0022-5193(64)90039-6

Hammond, Peter. "Welfare Economics." In *Issues in Contemporary Microeconomics and Welfare,* edited by George R. Feiwel, SUNY Press: 1985. https://doi.org/10.1007/978-1-349-06876-0_13

Hammond, Peter J. "Interpersonal Comparisons of Utility: Why and How They Are and Should Be Made." In Jon Elster & John E. Roemer (eds.), Interpersonal Comparisons of Well-Being. New York: Cambridge University Press (1991): pp. 200--254. https://doi.org/10.1017/CBO9781139172387.008

Hands, D.W. "The Individual and the Market: Paul Samuelson on (Homothetic) Santa Claus Economics." *European Journal of the History of Economic Thought* 23, no. 3 (July 29, 2014): 425–52. https://doi.org/10.1080/09672567.2014.916731

Harsanyi, John. "Morality and the Theory of Rational Behavior." In *Utilitarianism and Beyond,* edited by Amartya Sen and Bernard Williams, Cambridge, 1977.

Hausman, Daniel, Michael McPherson, and Debra Satz. *Economic Analysis, Moral Philosophy, and Public Policy.* Cambridge, 2017. https://doi.org/10.1017/9781316663011

Hausman, Daniel M., Michael S. McPherson, and Daniel M. Hausman. "The Philosophical Foundations of Mainstream Normative Economics." Chapter. In *The Philosophy of Economics: An Anthology*, 226–50. Cambridge: Cambridge University Press, 2007. https://doi.org/10.1017/CBO9780511819025.017

Helliwell, J. F., Layard, R., Sachs, J. D., Aknin, L. B., De Neve, J.-E., & Wang, S. (Eds.). (2023). World Happiness Report 2023 (11th ed.). Sustainable Development Solutions Network.

Hicks, John R. "The Scope and Status of Welfare Economics." *Oxford Economic Papers* 27 (1975): 307-326. https://doi.org/10.1093/oxfordjournals.oep.a041321

Hicks, J. R. "The Rehabilitation of Consumers' Surplus." *Review of Economic Studies* 8 (1941): 108-116. https://doi.org/10.2307/2967467

Hogg, Sam. "Why Small Companies Have the Innovation Advantage." *Entrepreneur*, November 15, 2022. Available at https://entm.ag/100n4CP.

Hovenkamp, Herbert. "The Antitrust Standard for Unlawful Exclusionary Conduct." 2008. Available at https://scholarship.law.upenn.edu/faculty_scholarship/1777. https://doi.org/10.2139/ssrn.1140346

Hundley, Greg. "Why And When Are the Self-Employed More Satisfied With Their Work?" *Industrial Relations a Journal of Economy and Society* 40, no. 2 (April 1, 2001): 293–316. https://doi.org/10.1111/0019-8676.00209.

Jehle, Geoffrey A., and Philip J. Reny. *Advanced Microeconomic Theory*. 3rd ed. 2011

Johansson, Per-Olov. *Introduction to modern welfare economics*. Cambridge, GBR: Cambridge University Press, 1991. https://doi.org/10.1017/CBO9780511582417

Kahneman, Daniel. "New Challenges to the Rationality Assumption." *Journal of Institutional and Theoretical Economics (JITE) / Zeitschrift Für Die Gesamte Staatswissenschaft* 150, no. 1 (1994): 18–36. http://www.jstor.org/stable/40753012.

Kahneman, Daniel. *Thinking, Fast and Slow*. Macmillan, 2011.

Kahneman, Daniel, and Carol Varey. "Notes on the Psychology of Utility." Chapter. In *Interpersonal Comparisons of Well-Being*, edited by Jon Elster and John E. Roemer, 127–63. Studies in Rationality and Social Change. Cambridge: Cambridge University Press, 1991. https://doi.org/10.1017/CBO9781139172387.006

Kahneman, Daniel and Jackie Snell. "Predicting a changing taste: Do people know what they will like?" *Journal of Behavioral Decision Making* 5 (1992): 187-200. https://doi.org/10.1002/bdm.3960050304

Kaldor, Nicholas. "Welfare Propositions of Economics and Interpersonal Comparisons of Utility." *The Economic Journal* 49, no. 195 (1939): 549–52. https://doi.org/10.2307/2224835

Kanter, Jonathan. *Assistant Attorney General Jonathan Kanter Delivers Remarks at New York City Bar Association's Milton Handler Lecture,* May 18, 2022.

Kaplow, Louis, and Steven Shavell. *FAIRNESS VERSUS WELFARE*. Harvard University Press, 2002. https://doi.org/10.4159/9780674039315

Khan, Lina. "The End of Antitrust History Revisited." *Harvard Law Review* 133 (2020): 1655–1671.

Khan, Lina, and Sandeep Vaheesan. "Market Power and Inequality: The Antitrust Counterrevolution and Its Discontents." *Harvard Law & Policy Review* 11 (2017): 235-294 https://ssrn.com/abstract=2769132

Kirman, Alan P. "Whom or What Does the Representative Individual Represent?" *The Journal of Economic Perspectives* 6, no. 2 (1992): 117–36. http://www.jstor.org/stable/2138411. https://doi.org/10.1257/jep.6.2.117

Klobuchar, Amy. *Antitrust: Taking on Monopoly Power from the Gilded Age to the Digital Age*. Knopf, 2021.

Kwoka, John. "Competitive Edge: Structural Presumption in U.S. Merger Control Policy Would Strengthen Modern Antitrust Enforcement." Washington Center for Equitable Growth website, December 19, 2018. Available at https://equitablegrowth.org/competitive-edge-structural-presumption-in-u-s-merger-control-policy-would-strengthen-modern-antitrust-enforcement/.

Kymlicka, Will. *Contemporary Political Philosophy: An Introduction*. Oxford : Oxford University Press, 2nd Ed. 2002. https://doi.org/10.1093/hepl/9780198782742.003.0001

Lande, Robert, and Sandeep Vaheesan. "Preventing the Curse of Bigness Through Conglomerate Merger Legislation." *Arizona State Law Journal* 52 (2020): 75-121. https://doi.org/10.2139/ssrn.3463878

Liscow, Zachary. "Is Efficiency Biased?" *University of Chicago Law Review* 85 (2018): 1649-1718. https://doi.org/10.2139/ssrn.3018796

Lipsey, R. G., and Kelvin Lancaster. "The General Theory of the Second Best." *Review of Economic Studies* 24 (1956): 11-32 https://doi.org/10.2307/2296233

Lozada, Gabriel A. "A Critique of Antitrust Econometrics: Aggregation, the Representative Consumer, and the Broader Concerns of the New Brandeis School." *The Antitrust Bulletin* 67, no. 1 (January 26, 2022): 69–99. https://doi.org/10.1177/0003603x211067829

Lozada, Gabriel A., "The Perils of Antitrust Econometrics: Unrealistic Engel Curves, Inadequate Data, and Aggregation Bias" (March 29, 2023). Institute for New Economic Thinking Working Paper Series No. 203, https://doi.org/10.36687/inetwp203

Maggino, Filomena. “Methodologies to Integrate Subjective and Objective Information to Build Well-Being Indicators.” 2009.

Markovits, Richard S. “Second-Best Theory and Law & Economics: An Introduction.” *Chicago-Kent Law Review* 73 (1998): 3-10. https://scholarship.kentlaw.iit.edu/cklawreview/vol73/iss1/2

Marshall, Alfred *Principles of Economics*. 8th ed. 1920.

Martin, Stephen. “The Kaldor–Hicks Potential Compensation Principle and the Constant Marginal Utility of Income.” *Review of Industrial Organization* 55, no. 3 (July 15, 2019): 493–513. https://doi.org/10.1007/s11151-019-09716-3

Mas-Colell, Andreu, Michael D. Whinston, and Jerry R. Green. *Microeconomic Theory*. 1995.

McCain, Roger. *Welfare Economics: An Interpretive History.* 2020. https://doi.org/10.4324/9781315543116

Melamed, Douglas. “Exclusive Dealing Agreements and Other Exclusionary Conduct—Are There Unifying Principles?” *Antitrust Law Journal* 73 (2006): 375-412.

Mitchell, Stacy. *Big-Box Swindle: The True Cost of Mega-Retailers and the Fight for America’s Independent Businesses*. Beacon Press, 2007.

Mishan, E. J. *Introduction to Normative Economics*. New York: Routledge, 1981.

Moulin, Herve. *Fair Division and Collective Welfare*. MIT Press, 2003. https://doi.org/10.7551/mitpress/2954.001.0001

Nathanson, Stephen. “Act and Rule Utilitarianism.” *Internet Encyclopedia of Philosophy: A Peer-Reviewed Academic Resource.* Available at https://iep.utm.edu/util-a-r/.

Newman, John. “Procompetitive Justifications in Antitrust Law.” *Indiana Law Journal* 94 (2019): 501-544. https://dx.doi.org/10.2139/ssrn.3017846

Nozick, Robert. *Anarchy, State, and Utopia.* 1974.

Ng, Yew-Kwang. *Welfare Economics: Introduction and Development of Basic Concepts*. London : Macmillan, 1979. https://doi.org/10.1007/978-1-349-16223-9

OECD. *Guidelines on Measuring Subjective Well-Being.* 2013.

Oishi, Shigehiro, Selin Kesebir, and Ed Diener. “Income Inequality and Happiness.” *Psychological Science* 22, no. 9 (2011): 1095–1100. http://www.jstor.org/stable/41319994. https://doi.org/10.1177/0956797611417262

Orbach, B. Y. “The Antitrust Consumer Welfare Paradox.” *Journal of Competition Law & Economics* 7, no. 1 (December 1, 2010): 133–64. https://doi.org/10.1093/joclec/nhq019

Payne, Keith. *The Broken Ladder: How Inequality Affects the Way We Think, Live, and Die*. Penguin, 2017.

Penz, G. Peter. *Consumer Sovereignty and Human Interests*. Cambridge University Press, 1986. https://doi.org/10.1017/CBO9780511895944

Pepall, Lynne, Daniel Jay Richards, and George Norman. *Industrial Organization: Contemporary Theory and Practice*. South Western Educational Publishing, 2nd. Ed. 2002.

Popofsky, Mark S. “Defining Exclusionary Conduct: Section 2, The Rule Of Reason, And The Unifying Principle Underlying Antitrust Rules.” *Antitrust Law Journal* 73, no. 2 (2006): 435–82. http://www.jstor.org/stable/40843683

Posner, Eric. “Market Power, Not Consumer Welfare: A Return to the Foundations of Merger Law.” *Antitrust Law Journal* 86 (2024): 205-250.

Posner, Eric A. *How Antitrust Failed Workers*. Oxford University Press, 2021. https://doi.org/10.1093/oso/9780197507629.001.0001

Posner, Richard A. *Antitrust Law: An Economic Perspective*. 2nd ed. University of Chicago Press, 2001.

Posner, Richard A. “Wealth Maximization Revisited.” *Notre Dame Journal of Law, Ethics & Public Policy* 2 (1985): 85–105.

Ridley, Matt. *The Origins of Virtue: Human Instincts and the Evolution of Cooperation*. Viking Adult, 1996.

Robeyns, Ingrid and Morten Fibieger Byskov. “The Capability Approach.” In *Stanford Encyclopedia of Philosophy*, Summer 2023 Edition, edited by Edward N. Zalta and Uri Nodelman. Stanford University. https://plato.stanford.edu.

Rosenquist, Niels J., Fiona M. Scott Morton, and Samuel Weinstein. “Addictive Technology and Its Implications for Antitrust Enforcement.” *North Carolina Law Review* 100 (2022): 431-485. https://doi.org/10.2139/ssrn.3787822

Salop, Steven C. “Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-Sacrifice Standard.” *Antitrust Law Journal* 73, no. 2 (2006): 311–374. https://ssrn.com/abstract=871509

Samuelson, Paul. “Evaluation of Real Income.” *Oxford Economic Papers* 2 (1950): 1-29. https://doi.org/10.1093/oxfordjournals.oep.a041383

Samuelson, Paul A. *Foundations of Economic Analysis*. 1947.

Sen, Amartya. “Development as Capability Expansion.” In *Readings in Human Development: Concepts, Measures, and Policies for a Development Paradigm*, edited by Sakiko Fukuda-Parr and A.K. Shiva Kumar, 2003.

Sen, Amartya. “Capabilities and Well-being.” In Martha Nussbaum and Amartya Sen, eds. *The Quality of Life,* 1993.

Shapiro, Carl. “Antitrust in a Time of Populism.” *International Journal of Industrial Organization* 6 (2018): 714–742. https://doi.org/10.1016/j.ijindorg.2018.01.001

Singer, Peter. *The Expanding Circle: Ethics, Evolution, and Moral Progress*. Princeton University Press, 1981. http://www.jstor.org/stable/j.ctt7sg4n

Stucke, Maurice E., and Ariel Ezrachi. *Competition Overdose: How Free Market Mythology Transformed Us from Citizen Kings to Market Servants*. Harper Business, 2020.

Teachout, Zephyr. “The Long Future of the Neo-Brandeisian Movement, in Three Parts.” *Network Law Review*, July 24, 2024.

Teachout, Zephyr, and Lina Khan. "Market Structure and Political Law: A Taxonomy of Power." *Duke Journal of Constitutional Law & Public Policy* 9 (2014): 37-74. https://doi.org/10.2139/ssrn.2490525

Tirole, Jean. *The Theory of Industrial Organization*. 2nd ed. 1989.

Trivers, Robert L. "The Evolution of Reciprocal Altruism." The Quarterly Review of Biology 46, no. 1 (March 1, 1971): 35–57. https://doi.org/10.1086/406755

Trumbull, *William N*. (*1990*), "*Who Has Standing in Cost-Benefit Analysis*?" *Journal* of *Policy Analysis and Management 9*(2) (Spring), pp. *201*-218. https://doi.org/10.2307/3325412

United Nations. *World Happiness Report.* 2023.

U.S. Department of Justice, Merger Guidelines (1984), available at https://www.justice.gov/archives/atr/1984-merger-guidelines.

Utah Pie Co. v. Continental Baking, 386 U.S. 685 (1967).

Van der Meer, Peter H. & Wielers, Rudi, 2016. "Happiness, unemployment and self-esteem," Research Report 16016-HRM&OB, University of Groningen, Research Institute SOM (Systems, Organisations and Management).

Vaheesan, Sandeep. "Two-and-a-Half Cheers for 1960s Merger Policy." HLS Antitrust Association, December 12, 2019. Available at https://orgs.law.harvard.edu/antitrust/2019/12/12/two-and-a-half-cheers-for-1960s-merger-policy/.

Vaheesan, Sandeep. "The Evolving Populisms of Antitrust." *Nebraska Law Review* 93 (2014): 370-428. https://doi.org/10.2139/ssrn.2222368

Viscusi, W. Kip, John Vernon, and Joseph Harrington. *Economics of Regulation and Antitrust*. 3rd ed. 2001.

Waldman, Don and Elizabeth Jensen. *Industrial Organization: Theory and Practice*. Prentice Hall. 4th Ed. 2014.

Warr, Peter. "Self-employment, Personal Values, and Varieties of Happiness–unhappiness." *Journal of Occupational Health Psychology* 23, no. 3 (July 27, 2017): 388–401. https://doi.org/10.1037/ocp0000095

Weinzierl, Matthew. "A Welfarist Role for Nonwelfarist Rules: An Example with Envy." *National Bureau of Economic Research Working Paper* 23587, July 2017. https://doi.org/10.3386/w23587

Wilkinson, Richard, and Kate Pickett. *The Spirit Level: Why Greater Equality Makes Societies Stronger*. Bloomsbury Publishing USA, 2010.

Willig, Robert D. "Consumer's Surplus Without Apology." *The American Economic Review* 66, no. 4 (1976): 589–97. http://www.jstor.org/stable/1806699.

World Bank. *The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium.* 2011.

Wonnell, Christopher T. "Efficiency and Conservatism." *Nebraska Law Review* 80 (2001): 643-714. https://doi.org/10.2139/ssrn.285816

Wright, Robert. *The Moral Animal: Why We Are the Way We Are.* Abacus, 1994.

Tim Wu, "*After Consumer Welfare, Now What? The 'Protection of Competition' Standard in Practice*," Competition Policy International, 2018; Columbia Public Law Research Paper No. 14-608 (2018). Available at: https://scholarship.law.columbia.edu/faculty_scholarship/2291 https://ssrn.com/abstract=3249173

Zak, Paul J., and Stephen Knack. "Trust and Growth." *The Economic Journal* 111, no. 470 (2001): 295–321. http://www.jstor.org/stable/2667866