Wicksell and Pareto in Public Choice

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Abstract: No individual in the history of public economics has been subject to more contentious discussion than Knut Wicksell – and perhaps no concept subjected to more diverse interpretation than Wicksell's unanimity rule. The story begins in 1896 with the publication of Wicksell's public finance treatise, *Finanztheoretische Untersuchungen*, and starts to take shape in 1906 with the publication of Pareto's *Manual of Political Economy*. The crux of the matter hinges on the relationship between Wicksell's unanimity rule and Pareto's optimality. This article examines Knut Wicksell's one-sided debate with Vilfredo Pareto on issues in welfare economics and considers the trajectory of their economic ideas that led to an eventual convergence in public choice.

Key Words: Knut Wicksell, Vilfredo Pareto, Efficiency, Unanimity

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No individual in the history of public economics has been subject to more contentious discussion than Knut Wicksell – and perhaps no concept subjected to more diverse interpretation than his unanimity rule. The story begins in 1896 with the publication of Wicksell's public finance treatise, *Finanztheoretische Untersuchungen*,[1] and starts to take shape in 1906 with the publication of Pareto's *Manual of Political Economy*. Contemporaries who had much in common, Wicksell and Pareto were unable to come to a meeting of the minds on a number of fundamental theoretical issues related to welfare economics.[2] What makes the Wicksell-Pareto discussion particularly interesting is the degree to which their 'feud' has continued in modern public economics, represented in the split between the public choice tradition of James Buchanan and Richard Musgrave's triparate approach of allocation, distribution, and stabilization.

The crux of the matter hinges on the relationship between Wicksell's unanimity rule and Pareto's optimality. Buchanan declared equivalence between the two ideas; Musgrave vehemently disagreed. The purported correspondence of has been subject to much debate (Buchanan and Musgrave 1999; Head 1974; Johnson 2005 and 2010; Medema 2005; Musgrave 1959; Silvestre 2003; Syll 1993; Wagner 1988; Uhr 1953 and 1962). Some, like Pieter Hennipman, fail to understand why Wicksell did not "recognize that his doctrine and Pareto's were essentially alike" (1982, 62) though confessing that Wicksell and Pareto "would presumably have been astonished had they foreseen the future linking of their names" (1982, 47). Others, such as Carl Uhr (1962) and John G. Head (1974) see the relationship between Wicksellian unanimity and Pareto efficiency as hinging on the relative importance assigned to the various antecedent assumptions and requirements imposed by each. Head concludes that

Wicksell showed "an intense awareness of the allocative and distributional problems of the Pareto criterion" (1974, 33) though it was the distributional requirement that distinguished between Wicksell and Lindahl's "essentially Paretian theories of the budget" (1974, 14).

This paper revisits Wicksell's one-sided debate with Pareto and considers the trajectory of their ideas that led to an eventual convergence in public choice. The main goals of this paper are to (1) clarify Wicksell's reading of Pareto's welfare economics and frame Wicksell's criticisms within the context of his economic world view and turn-of-the-century economics, (2) identify some of the origins of their miscommunication, and (3) consider how Wicksellian unanimity and Pareto efficiency came to be seen as equivalent in public choice.

Wicksell's Unanimity Rule

The rise of democratic governments on the European continent at the end of the 19th century changed the political debate over taxes and public goods by giving the lower classes a voice in government. With this came progressive national income taxation, estate taxation, and the expanded provision of public goods. These changes had a profound impact on the study of public finance, giving rise to the German *Finanzwissenschaft* and the Italian *Scienza delle Finanze* traditions. While the Germans emphasized statistical analysis and pronouncements such as Wagner's Law, the Italians focused on a developing a theory of the state (Buchanan 1960; Eusepi and Wagner 2013; Medema 2005; Wagner 2014). A third continental tradition can be identified in the Scandinavian literature, starting with Wicksell. A radical and progressive thinker, Wicksell championed the working classes, argued for legalized contraception, expanded access to higher education, confiscation and redistribution of inheritances, extension of the franchise, and reform of the tax system, claiming that "the goal of economic activity must be the greatest possible social prosperity, individually and collectively" (1958a, 63). Wicksell's economic and social philosophy had a profound influence on the next generation of Swedish economists which can still be seen in the policies and institutions of the modern Swedish welfare state (Lindahl 1959; Hennipman 1982; Johnson 2010).

An eclectic economist who worked in diverse fields, Wicksell's most significant contribution to public finance can be found in the second essay of *Finanztheoretische Untersuchungen*, "A New Principle of Just Taxation" (1896 [1967a]). While a strong supporter of universal franchise and parliamentary rule, Wicksell understood that simple majority-rule decision-making may do nothing to guarantee that the taxes paid generated proportionate benefits at the individual level. Further, it was entirely possible under majority rule that newly proposed programs, which may yield significant benefits to a small group of citizens, could fail to secure a majority of votes under many funding schemes.

A unanimity-voting rule would guarantee that all individuals receive benefits commensurate to their tax cost and thus be consistent with "modern tax administration, specifically the parliamentary approval of taxes" (1967a, 72). Implementation required that any new expenditure be paired with a corresponding tax scheme for consideration by parliament. Representatives would then vote on successive expenditure-tax pairs, until one received unanimous consent (Wicksell 1967a, 89 -90).[3] Individuals would have little incentive to misrepresent their preferences since by doing so, they would risk that the good or service may not be provided at all. A variation of the tax-expenditure pairings could be used to evaluate and modify existing government expenditures. The system could work for nearly all governmental expenditures, excepting certain special cases such as previously incurred national debts (Wicksell 1967a: 93 - 95). Despite the stringency of a unanimity requirement, Wicksell felt it would result in an increase in social welfare, since it would bring many activities under the umbrella of the state (e.g., telegraph, rail service), expanding availability to the poorer classes of society (Wicksell 1967a, 73).

While Wicksell never published another major work in public finance, he in no way abandoned the idea of the unanimity rule, returning to it periodically over the next quarter century. Unfailingly, Wicksell was unhappy with the reception it received (see for example, Wicksell 1999, 174). Addressing the common complaint that the unanimity rule was impractical, as minority groups would always see incentives to exact more favorable tax treatment, Wicksell argued that if individuals felt themselves fairly treated in the tax-expenditure process, they would have no incentive to veto pairings that yielded them positive net benefits (in Jonung 1988, 509). In 1923, in the Swedish journal *Ekonomisk Tidskrift*, Wicksell sought to correct his colleague David Davidson's misunderstanding about the 'voluntariness' of tax payments under his unanimity scheme. Wicksell clarified that he viewed only the ratifying of tax-expenditure pairs as voluntary. Once tax-distributions have been accepted, the payments themselves should be compulsorily (Wicksell 1997d, 242; see also Wicksell 1997c, 218). "Incidentally, formally speaking, according to the constitution this process is already founded on voluntarism or self-taxation; what I have demanded is that it should be so in reality too, so that the rights of minorities are also protected" (Wicksell 1997d, 242). Wicksell complained that Davidson (among others) failed to grasp the essence of his proposal: "In my earlier writings I have attempted to show that there are no theoretical limits to the extent that this must be possible [application of the unanimity rule], as long as the issues of taxes and appropriations are treated as a connected whole…I do not see why it should not be possible in practice" (1997d, 242).

Wicksell on Pareto Optimality

One of the most appealing features of the unanimity criterion was that it did not require inter-personal utility comparisons, since “the advantage [is] that one does not at all have to compare the subjective valuations of *different* persons, but only those of one and the same person” (Wicksell 1967a, 164). For “no one can complain if he secures a benefit which he himself considers to be (greater or at least) as great as the price he has to pay” (Wicksell 1967a, 79). It was therefore up to each individual to weigh the “expected utility against the necessary sacrifice,” and while perhaps difficult, this was certainly more feasible than weighing the utility of different persons, which would be “exceedingly difficult, strictly spoken, impossible” (Wicksell 1967a, 89). From a practical standpoint, while it may be difficult for an individual to make decisions, “this much is certain: If the individual is unable to form an even approximately definite judgment on this point, it is *a fortiori* impossible for anyone, even if he is a statesman of genius, to weigh the whole community’s utility and sacrifice against each other” (Wicksell 1967a, 79).

Pareto was struggling with many of the same ideas as Wicksell in the 1890’s, including how to develop an ethically neutral criterion for economic evaluation. Seeking to move away from utilitarian approaches of aggregated individual utilities and discussions of ‘right’ and ‘justice,’ which he found unscientific, Pareto (1971) argued that the only norm for evaluation was the individual. The utility or satisfaction of heterogeneous individuals could not be summed into a social utility function without the interjection of some sort of external ethical criterion. Pareto suggested that an outcome could be defined as optimal if it were impossible to make one person better off without harming another, or where the gains from voluntary exchange were exhausted. Leveraging this idea, Pareto demonstrated mathematically that under certain conditions, the competitive market outcome generated a welfare maximum. Pareto believed his finding to be a justification for free market policies. The origin, motivations, and underlying philosophy of Pareto's welfare criterion are too nuanced and complicated to be treated fairly here. Readers are referred to Backhaus (1978), Blaug (1992b), and Tarascio (1968); on Pareto's public finance, see Hennipman (1982 and 1995).

Wicksell found Pareto's argument unconvincing and continued to struggle with the idea of measuring social welfare. In one conceptualization, Wicksell postulated that social welfare could be measured as a utilitarian sum, where redistribution would be necessary to reach a true social optimum. In this case, "the greatest possible sum of happiness," and not the "greatest possible happiness for the greatest possible number of individuals" (1997a, 10) would be the standard for policy making. None of this implied that that maximizing individual utilities would necessarily maximize social utility, as Wicksell pointed out in his review of Walras' *Études d'Économie Politque Appliquée* (Wicksell 1999).

In "Defense of Marginal Utility" (1997a [1900]) Wicksell argued that where individuals had interpersonally identical utility functions (the same ability to enjoy life and consumption, which he felt would especially be evident within social or income groups) and had a declining marginal utility of income – where "a penny or two more per day in the hands of the workers is of greater advantage than a penny or two in those of the propertied classes" (1967b, 79) – social welfare functions could, in fact, be used as representative of individual utility functions. Wicksell was not blind to the difficulties of such comparisons, but was willing to consider the options (Wicksell 1997a, 5).[4] In a private letter, Wicksell explained his welfare criterion as operating on a group level, with individuals represented and evaluated within their social group, of secondary consideration: "each social group…indeed each member of the community, if possible, should be able to feel that his annual tribute is not money wasted but is something which will bring real additional benefit" (Wicksell in Gardlund 1996, 157). Wicksell felt that Pareto's position was unrealistic and overly limiting.

> Pareto maintains that the utilities of different persons are '*heterogeneous quantities'* which cannot possibly be compared with one another…But is this correct? Are we human beings so made that we are unable to form some adequate picture of the joys and cares of our fellows, or to compare in any way the intensities of their feelings with our own? If not, what material basis can there really be for the idea of *justice*, whether in government or in social distribution? (Wicksell 1958c, 169; italics in original)

In contrast, Wicksell was optimistic that improved mathematical tools and clearer definitions might allow economists to create better measures of utility (Wicksell 1958c, 161 – 162). Advances in psychology and in other social sciences would be able to shed additional light on measurement and comparability issues (Wicksell 1997a, 5), for "some day the physiologists will succeed in isolating and evaluating the various human needs…and thereby lay a really rational foundation for the theory of consumption" (Wicksell 1967b, 33). Thus, despite criticisms by Gustav Cassel and Pareto, who claimed that such evaluation was impossible without a clearly identifiable unit of measurement for utility, Wicksell argued that at least at the individual level, subjective utility measurement was possible (Wicksell 1997a, 4). Rather, it was Pareto's approach that made "no attempt…to master the difficulties, to solve and overcome the problem of conflict between individualism and socialism, by an extended analysis and synthesis of fundamental economic concepts" (Wicksell 1958a, 64; see also the discussion in Syll 1993, 183).

Wicksell on the First Welfare Theorem

Both Léon Walras and Pareto claimed that under certain conditions, free competition generated a social optimum – what is now known as the First Welfare Theorem.

> Pareto takes as established – and considers that he himself has proved it strictly mathematically – that free competition implies the greatest possible total of satisfaction or ophélimité conformable with the actual distribution of property, not only to the society as a whole, but to each class of it, and even to each member of each class. (Wicksell 1958b, 152)

However, where Pareto saw the exhaustion of gains from trade as guaranteeing an individual and social optimum, Wicksell was less sure. At best, Wicksell felt that all that had been proved was, taking the distribution of income and prices as given, that free competition would guarantee an individual maximum. This outcome could not be shown to be a social optimum. Instead, Wicksell argued that freely reached agreements could improve upon competitive outcomes and that "state intervention would be fully justified in some cases" (1958a, 35).

> I consider, however, that we must reject the claim which has repeatedly been made by Pareto himself and his Italian admirers, that he has accomplished no less than a revolution in our science. One might rather say with regard to such claims, that most of the truths stated by this gifted scientist are not new, or are at most in a new form, while what is really new is, unfortunately, to a great extent, not true (Wicksell 1958c, 175).

In the end, Wicksell was not convinced that Pareto had actually made much of a contribution to economic theory.

Wicksell's objections to the First Welfare Theorem were rooted in several different issues: the stringency of the assumptions or requirements, the practicality of the claim, and the separation of distributional considerations from the analysis (Wicksell 1958b, 143). In reality, most markets were not examples of free or perfect competition, with collusion, monopolization, and price-fixing in evidence (Wicksell 2007, 129). "The exchange value of and total incomes from produced commodities (but not total utility) would be maximized under free competition" (Wicksell in Silvestre 2003, 531), and therefore, the state could always improve overall social welfare by manipulating total utility, for example, by taxing increasing cost and subsidizing decreasing cost industries.[5] Therefore "it is not possible to maintain that the combined gain of all subjects involved is in the economic sense greatest when under free competition" (Wicksell 1958b, 143; see also Wicksell 2007, 75). Left unregulated and unattended,

> Unlimited competition could, to take a quite trivial but rather telling illustration, be likened to a so-called 'free-for-all' supper, where everyone without regard to his fellows, runs amok amongst the food and tries to get as much as possible for himself. The result, nevertheless, is often that a large amount of food ends up on the tablecloth or the floor, and no one is really satisfied. (Wicksell 1958a, 35)

Thus, where we see the split between Wicksell and Pareto is not over the general characteristics or the advantages of free competition, but over the relative importance to be assigned to the case of free competition, or what Wicksell referred to as "Pareto's erroneous conception of the economic significance of free competition" (1958c, 152). Pareto's definition of optimality thus becomes a tautology,[6] and the equilibrium prices of free competition do not rule out another system of prices that could generate even more valuable transactions.[7]

In contrast to Wicksell's view of competitive chaos, Pareto and the harmony economists represented the optimality of the competitive equilibrium as a natural outcome of the market prices, much at odds with a view of a society shaped by disparities in wealth, power, and access to government. Wicksell found the group unscientific, and complained that they "endeavored to extend the doctrine so that it might become a defense of the existing distribution of wealth" (Wicksell 1967b, 34).[8] The competitive equilibrium was a very limited view of the social-economic system, for really “price formation under free competition far from exhausts the domain of economics, and as soon as one progresses from purely individualistic to altruistic or social points of view” the nature of the problem changes (Wicksell 2007, 6). In this latter case, policies could be designed by governments to favor the poor that, while contrary to free competition, could in fact generate higher levels of overall social welfare.

Competitive equilibrium outcomes also depend on initial starting points and different outcomes could be reached, starting from different initial allocations or endowments (Wicksell 2007, 82). This raises the possibility of better social optimums to be gained by manipulation of prices, a point that Alfred Marshall also made.[9] “Exchange between a rich man and a poor man may lead to a much greater total utility for both together – and therefore for society as a whole – if it is effected at a suitable price fixed by society, than if everything is left to the haphazard working of free competition” (Wicksell 1967b, 77). While generally a believer in the advantages of free trade, Wicksell was cautious of ascribing too much to market outcomes because they depended on the distribution of wealth and power in society. Rather, “free competition only has the quality of bringing about the greatest possible total satisfaction in a special case – e.g. when all traders are in precisely the same economic position” (Wicksell 2007, 10).[10] Combined with assumptions regarding declining marginal utility of income, Wicksell argued that the social leveling of opportunity and wealth would yield greater overall utility for society than free competition (Wicksell 1967b, 76 – 79). Wicksell explained his position in *Alliances between Workers and Employers* (1902)

> As a matter of fact, all arguments in favor of free competition rest on one tacit assumption, which, however, corresponds but little to reality, namely that from the beginning all men are equal. If that were so, everyone would be equipped with the same

> working power, the same education, and, above all, the same economic assets…but if all conditions are basically unequal, if some people have good hands from the beginning and other hold only low cards, free competition does nothing to stop the former from winning every trick while the latter pay the table (translated in Gardlund 1996, 208 – 209).

Similar views can be found throughout Wicksell's work, including in *Lectures on Political Economy* (1967b) where Wicksell argued that public enterprise could better achieve distribution of society's resources than private monopoly in many cases.[11]

Allocation Versus Distribution in Economics

Wicksell's discussion of the First Welfare Theorem was not substantially different than Marshall's in terms of the technical complaints (Blaug 1992a). What set Wicksell apart from other economists of his time was his insistence on including distributional problems in the economics sphere. Wicksell sought to bring the scientific approach to bear on distributional questions in a very overt way. In contrast, Pareto wanted to abstract from distributional questions because he felt they fell outside the scope of positive economic analysis, requiring the imposition of value judgments. Certainly, it seems to be that Wicksell was unable to move past the fact that Pareto's definition of an optimum effectively precluded distributional changes, and only by raising the total income of society could specific groups gain. Wicksell complained "This does not mean to say that the result of free competition might not be a huge profit for a few, thought their attainment of a maximum *d'ophélimité* could not possibly, for the society as a whole, counter-balance the impoverishment or rater lasting pauperism of the greater part of the population" (Wicksell 1958c, 168).[12]

Unlike Pareto, Wicksell was not adverse to activist policy-making, where gains to some may come at the detriment of others. For the idea that “a diminution of the inequality of incomes can only occur if the total of incomes increases faster than the population” (1958b, 157) was a process much too slow for Wicksell, and was one that may do nothing to rectify existing disparities in the distribution of wealth. “If I am not greatly mistaken, the whole proposition rests on a *self-delusion*” (Wicksell 1958b, 157). Rather, it was an effort to “conceal or pervert the truth, that is to say, in this case to represent the position as if [the working] classes had already received all they could reasonably wish or expect, or to rely upon unfounded, optimistic beliefs that economic developments in themselves tend to the greatest possible satisfaction of all” (Wicksell 1967a, 4).

From a public policy perspective, Wicksell argued that the important question was “how far the taxing authority should go in meeting the demands not only of political but of social justice. This is the question of the extent to which one should follow the explicit purpose of modifying the existing income distribution which is taken as given in the context of political justice” (Wicksell, 1967a, 73). Operation of the unanimity rule required that inequities of distribution of income (and wealth, power, and access to government) be rectified prior to the imposition of the unanimity rule. Wicksell recognized that guaranteeing individuals justice was not an easy process, but

> It is clear that justice in taxation tacitly presupposes justice in the existing distribution of property and income. This holds of any approach to the question. It would otherwise be impossible to speak either of equality between Value and Countervalue or of equality of sacrifice (Wicksell 1967a, 108).[13]

That meant that “As soon as we begin seriously to regard economic phenomena *as a whole* and to seek for the conditions of the welfare of the whole, consideration for the interests of the proletariat must emerge” (1967b: 4). Wicksell therefore recommended regulations and protective tariffs, depending on the social and economic conditions of those concerned. In addition to such strategically-targeted government interventions in the economy, Wicksell supported a number of specific social policy reforms designed to secure a more even distribution of opportunity and income, including free access to education, social security, and a national health insurance program (Wicksell 1905, see translation in Uhr 1951, 835; Wicksell 1967a, 98; Lindahl 1958, 36).

A Failure to Communicate

There is no mystery as to why Wicksell failed to “recognize that his doctrine and Pareto’s were essentially alike” (Hennipman 1982, 62). They were not speaking the same language – either literally or figuratively. While both were interested in problems of utility measurement, they approached economics from vastly different perspectives, as Wicksell’s criticisms of Pareto make clear. The task of communication was complicated by terminology that was not consistent and concepts that were not clearly defined.[14] Contemporary readings of past works are filtered through the lens of modern economics and thus what may seem obvious to us was by no means likely to be to Wicksell or Pareto. Additionally, their respective (challenging) personalities also likely contributed to an impasse in communication (Hennipman 1982). That Wicksell was unable to engage Pareto in a discussion of welfare issues, despite numerous attempts, led him to petulantly conclude “it appears that these reviews have not come to the notice of Pareto, or he would surely have paid attention in his new publication to at least a few of the many comments I made" (Wicksell 1958c, 159).[15]

Wicksell's contributions to economic theory and monetary economics were widely recognized during his lifetime. His work in public finance, however, failed to find contemporary support or understanding. Wicksell's unanimity rule was characterized as impractical and harebrained by many of his Swedish colleagues (Davidson in Hennipman 1982: 215; Ohlin 1926). While both F.Y. Edgeworth (1899) and Carl Plehn (1897, 156) lauded Wicksell's treatment of tax incidence in the first essay of *Finanztheoretische Untersuchungen* (Wicksell 1997b), Plehn dismissed Wicksell's second essay entirely, since "practically all this means is that no taxes are just unless the public expenditures are for purposes which really benefit the taxpayers." Notable British public economist C.F. Bastable (1896, 594) criticized Wicksell's defense of the benefit approach on the grounds that it "runs against the modern tendency to generalize the Budget…[and was] quite unsuited to the modern unitary state." Further, the requirement of a super-majority would implicitly weaken the power of government, making legislative financing decisions nearly impossible (Bastable 1896, 594). Wicksell's unanimity essentially disappeared from the literature until Erik Lindahl's reconsideration (1919). Even then, it took nearly twenty more years before the unanimity rule received serious consideration in the English-language literature.

Frederick C. Benham perhaps uniquely appreciated Wicksell's view on the importance of governing rules, declaring that Wicksell's application of marginal utility analysis and the benefit principle applied to taxation "would strengthen the main body of economic science" which generally excluded an analysis of the state (1934, 450). Additionally, the unanimity rule benefitted from being ethically neutral and conforming with democratic principles. Though, in the end, Benham discounted Wicksell's solution as impractical and "indeterminate" since everything must be done simultaneously. Unanimity would fail if "some persons declare themselves unwilling to contribute anything towards collective services" (Benham 1934, 453). Benham (1934) also provided a nuanced discussion of the Italian approach to the theory of the fiscal state, but without mention of Pareto. Maria Lusia Boggeri and J.W. Sundelson (1938, 266) outline Italian contributions to public finance, though barely mentioning Pareto and dismissing Wicksell and Lindhal as "writing in German though they were not Germans, [and who] viewed public finance as a science to which marginal economics could be applied."

Lionel Robbins did much for Wicksell's reputation as a theorist by publishing his *Lectures on Political Economy* in English (1935 [1967b]). German émigré Musgrave capitalized on this interest with a detailed critique of Lindahl's voluntary exchange theory, which included the first significant critical discussion of Wicksell's unanimity rule in English (1939). In Musgrave's view, Wicksell's theory included the essentials of a "competitively determined revenue-expenditure process" with taxes representing voluntary purchase payments for individual shares of a public good (Musgrave 1939, 218). Like Wicksell's contemporaries, Musgrave (1939, 220) concluded that the unanimity rule was ultimately "unrealistic" and "of little practical significance." Though discussing the similarities between Wicksell's approach and those of Emil Sax and Antonio de Viti de Marco, Musgrave (1939) did not mention Pareto.

Following Musgrave's detailed consideration, Wicksell began to appear more frequently in the English-language literature, though no one linked Wicksell with Pareto. In his textbook, *Financing Government*, Harold Groves surveys the continental public finance tradition, dispatching Wicksell's and Lindahl's efforts as "abstract marginal studies in taxation equity" (1939, 754). Henry Simons also demonstrated familiarity with Wicksell's contributions to public finance (letter to R. Musgrave, August 18, 1943 in the Henry C. Simons Papers, Series II, Box 4, Folder 56). Overall, however, Wicksell's treatment of tax incidence continued to receive much more consideration than his unanimity rule.

It was not just Wicksell's unanimity rule, but also Pareto's efficiency for which there seemed little use in public finance prior to the 1950s. Pareto goes unmentioned in Pigou's (1928) classic textbook as well as in leading American texts by Harley Lutz (1936) and Groves (1939). Simons had no use for Pareto, nor did E.R.A. Seligman. It wasn't until the work in welfare economics in the 1930s and 1940s that economists even began to develop an appreciation for Pareto's contributions (Blaug 2007; Hands 2013). Samuelson (1947) sided with Wicksell over Pareto on the optimality of competitive general equilibrium (1947, 204n, 205n and 212),[16] complaining that "Pareto's exposition is not easy to follow" due to his abstruse mathematics and the "sketchy" nature of his argument (Samuelson 1947, 212 – 213). While Samuelson was likely familiar with the concept of the unanimity rule from Musgrave (1939), he had not read *Finanztheoretische Untersuchungen* at this point nor did he link unanimity with Pareto efficiency.[17]

Convergence in Public Choice

Ultimately, Buchanan (1951) was the first to claim that Wicksell's requirement of explicit unanimous agreement imposed by constitutional rules would generate a result equivalent to modern notions of Pareto efficiency in an article contributing to the 'marginal cost controversy.' The controversy originated in the theory literature of the 1940s, and included contributions from Ronald Coase, Harold Hotelling, Frank Knight, Pigou, and Allyn Young. The central question was whether decreasing-cost industries ought to price at marginal cost and have fixed costs subsidized by the government (for summaries, see Frischmann and Hogendorn 2015; Ruggles 1949 – 1950). Buchanan states his purpose

> is to point out that Wicksell, as early as 1896, presented an extremely clear and concise statement of the marginal cost pricing rule for decreasing cost public enterprises…In effect, this note should indicate that Wicksell's discussion anticipated the current 'controversy'; and in addition, that his specific proposal satisfies the welfare criteria of Pareto and the 'new' economics of welfare. (1951, 173)

Buchanan found it "surprising that the name of Knut Wicksell does not occupy a more prominent position" in the marginal cost literature, but attributed the "failure of Wicksell's contribution to gain widespread recognition" to the fact that there was no English translation (Buchanan 1951, 173). After summarizing Wicksell's scheme, Buchanan concluded that Wicksell's "special theory of taxation in accordance with the principle of unanimity can be interpreted in terms of the Paretian conditions for optimum welfare. Obviously, no one is worse off if some allocation of the required tax can be found which is acceptable to everyone" (1951, 177). Buchanan (1952, 601n8) reiterates this point in his response to Carl Uhr's (1951) centennial remembrance of Wicksell.

A Google Scholar search yielded 24 citations for Buchanan (1951); nearly all are recent histories of Wicksell. Only three contemporary citations are found, all in the welfare economics and marginal cost literature. None mention Buchanan's claim of equivalence.[18] No contemporary citations are made to Buchanan (1952), excepting Uhr (1953) in his "Further Comment." Uhr argues that Buchanan is mistaken to compare unanimity to Pareto efficiency because of the extensive distributional preconditions required by Wicksell. Uhr (1953) subsequently disappears from the literature as well. A JSTOR search returns 36 articles in which both Wicksell and

Pareto are mentioned in decade following Buchanan's claim. Only three specifically address both Wicksellian unanimity and Pareto efficiency and none consider whether the concepts were equivalent (Samuelson 1954, 1955, and 1958).[19] Rather, Samuelson's references are meant to establish a historical lineage for a mathematical treatment of the problem of public goods.

Citation practices suggest that the equivalence between Wicksell's unanimity and Pareto efficiency was not necessarily obvious – or at least obviously useful – to the profession. Indeed, Buchanan does not belabor the point throughout the 1950s. Rather, it was not until Buchanan and colleagues such as Gordon Tullock and Geoffrey Brennan began to clearly articulate their Public Choice research program in the early 1960s that Wicksell comes to the forefront and that Pareto and Wicksell become irrevocably linked in the literature.

Buchanan explains that though in the private market, unanimity is implicit and is not imposed (but rather is a characteristic of free trade), explicit unanimity in the collective decision-making process regarding public goods can achieve the same efficiency (Buchanan 1968, 83). Ultimately, "the Wicksellian contribution serves much the same function here as the economist's assumption of perfect competition" (Buchanan 1968, 97). If individuals enter into collective processes voluntarily, then the logical criterion by which to judge the outcome is unanimous agreement.[20] That principle of agreement forms the basis for Buchanan's argument
that the Wicksellian unanimity rule is equivalent to Pareto efficiency: if, given the initial position, no agreement can be reached as to a change, then any move from the initial position causes a decrease in utility for at least one person—i.e., the initial position must be Pareto efficient (Buchanan 1967, 285). Distributional considerations are irrelevant to the mechanism and the outcome, though different starting points would undoubtedly yield different end points. The appeal of Wicksell to Buchanan has been well explored, as has the motivation for Buchanan

to name Wicksell a forefather of Public Choice (Buchanan 1991; Buchanan and Musgrave 1999; Johnson 2005 and 2006; Medema 2005).

Conclusions

It has been nearly 120 years since the publication of Wicksell's *Finanztheoretische Untersuchungen* (1896) and 110 years since the publication of Pareto's *Manual of Political Economy*. Seen as irreconcilable by Wicksell, unanimity and Pareto efficiency both languished in the English-language public finance literature until the Second World War profoundly disrupted the public economics theory and practice. Following the war, public economics transformed itself from a descriptive discipline focused on ethical concerns and tax incidence to the highly mathematical and efficiency-policy focused subfield interested in expenditures and government choice. This new approach embraced both Wicksell and Pareto in sometimes similar and sometimes different ways.

It is fundamentally irresolvable to determine what Wicksell 'really' meant or how Wicksell would have viewed his linking with Pareto. More interesting is to examine the dissemination and transmission of Wicksell's ideas in modern public economics, as well as the use of the ideas by those who followed. It is remarkable that seemingly mutually exclusive ideas in one context can be combined as equivalent in another. This paper is thus a case study in the evolution and survival of economic ideas. Filtration systems operate within the discipline through which certain ideas, concepts, models, theories and paradigms are retained and others excluded. In Public Choice, unanimity and Pareto efficiency became inextricably linked through the work of Buchanan. Why unanimity was initially so roundly rejected but later taken up and found convincing is an interesting sub-story in the development of public economics and demonstrates that the survival of ideas is a function of many factors, not least how a theory comports with our own views and ideas.

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End Notes

[1] *Finanztheoretische Untersuchungen nebst Darstellung und Kritik des Steuerwesens Schwedens* was made up of three essays. The first dealt with tax incidence and was submitted as part of Wicksell’s doctoral dissertation. The third was an extensive historical study of the Swedish tax system. The second essay, a New Principle of Just Taxation, is the one that garners the most attention and is where Wicksell proposes his unanimity rule. Only the first and second essays have been translated into English.

[2] Born three years apart, both were late-comers to economics, having first begun their careers studying mathematics. Both had difficulty securing academic positions in economics, lived an unconventionally married life, and had a passionate interest in politics. Pareto earned a degree in engineering in 1870 from the Polytechnic Institute of Turin. He subsequently worked for a

railway company and a steel company for many years. Wicksell began his university career in 1869 and studied mathematics and physics for several years before switching to economics. Wicksell largely supported himself through public lecturing and pamphlet and editorial writing. He continued to augment his income this way after earning his doctorate in economics in 1896, for it was not until 1899, after also earning a law degree, that Wicksell found a position as a professor of economics (Gardlund 2006). Not politically dissimilar from Pareto, Wicksell's deeply held beliefs and penchant for radicalism got him into trouble on numerous occasions, including a short stint in prison for blasphemy. It is well documented that Wicksell's political activism held up his chances of securing a professorship in economics for a number of years (Gardlund 1996). Pareto had taken a strong position against the Italian government, viewing it as a sham democracy that protected the interests of the nobility and wealthy through regulation and protectionism. Pareto backed the liberal movements, arguing that a restoration of democracy, free trade, and competition would promote the social welfare. Viewed as a trouble maker, Pareto's lectures were often shut down by the government and his applications for teaching positions were blocked. Pareto finally secured a university chair in economics at Lausanne in 1893 thanks to the intervention of Maffeo Pantaleoni and Léon Walras (Blaug 1992b). Pareto continued to write a monthly column for *Giornale degli economisti* for many years after his hiring. He retired in 1907 and worked primarily on sociological problems until his death in 1923. Wicksell retired in 1916, but continued to be active in the Swedish economic community, regularly attending Economics Club meetings and advising the Swedish government on tax reform until his death in 1926.

[3] "It will always be theoretically possible, and approximately so in practice, to find a distribution of costs such that all parties regard the expenditure as beneficial and may therefore approve it unanimously" (Wicksell 1967a, 89 -90).

[4] "Of course, it is a rather different matter when dealing with different people, or with the same person in different circumstances. A *direct* comparison between the intensity of the emotions felt by different individuals is of course out of the question, but this by no means prevents a comparison being possible – not as might be supposed by means of money, but rather via induction and analogy. When dealing with people of the same age, the same sex, possessing the same degree of education, etc., once can reasonable assume that their elementary needs…are virtually the same; in if in addition they have equal wealth, then the extent to which they can and will satisfy these needs is surely probably identical" (Wicksell 1997a, 5).

[5] Wicksell claims that he demonstrated these limitations in both *Value, Capital and Rent* and *Finanztheoretische Untersuchungen* (Wicskell 1958b, 144). As Mark Blaug noted "This was [Marshall's] major criticism of what he called 'the doctrine of maximum satisfactions,' or in our language, the first welfare theorem of economics. He and Wicksell were in fact the only nineteenth-century marginalists to reject the doctrine" (2007, 194).

[6] "That which Pareto gives as a description of the maximum d'ophélimité actually constitutes a definition of free competition. When it is possible, by extended trade or by increasing production, to bring about an increase of the utility of each partaking subject, or of only some of them without loss to others, it is inconceivable that such changes would *not* be introduced if the economy were free" (Wicksell 1958c, 168).

[7] "Each of the exchanging persons (and consequently all of them together) obtains the greatest possible gain of utility which can be attained by him (or them) *at the price fixed on the market* it

can, however, *not* be asserted that the gain of utility attained by all the exchanging persons together is necessarily *smaller* than in the case of entirely free competition" (Wicksell 2007, 20).

[8] However, Pareto was "not as biased as some of the *harmony economists* in their easy optimism that the prevailing distribution of wealth is manifestly an infallibly holy outcome of free competition. But as soon as this distribution is accepted as fact, Pareto says that free competition must provide everyone with the greatest satisfaction" (Wicksell 1958b, 144).

[9] "Because Marshall, Edgeworth, Walras, Wicksell, Böhm-Bawerk, and the others thought that men were much alike and subject to interpersonally summable diminishing marginal utility, they all tended to regard existing capitalistic society as too unequal in its income distribution. They felt that only after there takes place a redistribution of the initial wealth could one regard the dollars voted in the market place as being of ethically equal weight; only then would the invisible hand of perfectly competitive markets lead to the social optimum… Recall Wicksell's well-founded objection to the view that competitive equilibrium must represent the optimum. What about the admitted case in which competitive supply and demand curves intersect more than once? Obviously, both cannot be *the* optimum; Wicksell thought that this should alert us to the possibility or virtually certain fact that neither represents an optimum" (Samuelson 1956: 12 and 19).

[10] "The doctrine of free trade in general, presupposes that each member of society is provided with the various resources of production (land, capital, etc.) exactly in proportion to his or her own needs, in other words, it presupposes an even distribution of the national wealth…given the actual distribution of wealth, processes that under other conditions would lead to a general gain for the national economy not infrequently turn out to be to the sole advantage of certain classes,

while for the mass of the people they entail not just no advantage, but even a disadvantage" (Wicksell 1997, 104).

[11] Wicksell's personal "notes also show signs of a critical attitude towards the laissez-faire doctrine…After reading Cairnes' *Political Essays* (1873), he condemns the idea that social institutions spontaneously arrange themselves to the general good as a 'pretentious sophism lacking any scientific base'" (Gardlund 1996, 105).

[12] Similarly, Wicksell argued that even if free competition maximized production, distribution "may be so warped and unjust that even fewer products, more justly distributed, would provide a greater material happiness. As a matter of fact, al arguments in favor of free competition rest on one tacit assumption which, however corresponds but little to reality, namely that all men are created equal" (Wicksell 1905, 6; translated in Syll 1993, 179).

[13] Wicksell rearticulated the requirement nearly twenty years later, claiming "the very concept of taxation *presupposes* that all incomes are equally justified" (1997e, 243). Lindahl paraphrased Wicksell view: "I agreed that justice in taxation is inextricably linked with justice in distribution of property, since it would obviously be nonsense to speak of 'a just portion of an unjust whole'" (Lindahl in Silvestre 2003, 531). Lindhal's own work was much influenced by the prerequisite established by Wicksell (Lindahl 1919, Silvestre 2003).

[14] "I believe this science [economics] would gain a great advantage by developing a terminology of its own…but in this transition period many persons judge of works which are written according to the new methods as if they have been written according to the principles which have prevailed in the past" (Pareto 1897, 492).

[15] Wicksell is known to have sent a copy of *Value, Capital and Rent* to Walras who sent a letter in response mentioning Pareto (Gardlund 1996, 154). Gardlund (1996, 331) also mentions

Wicksell's correspondence with Pareto, though he classifies it as concerned with practical affairs rather than the exchange of ideas. Wicksell published a number of reviews of Pareto's work, including two on *Cours d'Économie Politique* (1897, 1899) in a German journal as well as a review of *Manuel d'Économie Politique* (1913), also in German.

[16] "While Wicksell and Marshall held that competition would optimal if the distribution of income were appropriate, it was left to Pareto to take the stronger position that competition produces a *maximum d'utilité collective* regardless of the distribution of income , and indeed even if the utilities of different individuals were not considered to be comparable" (Samuelson 1947, 212). Search performed on December 15, 2015.

[17] Maxime Desmarais-Tremblay (2015) documents that at the time of writing his series of public goods papers, Samuelson had not read Wicksell, but was familiar with Wicksell's argument through his friendship with Musgrave.

[18] The search was conducted on December 15, 2015. The three papers defined as contemporary are those published before 1965.

[19] While rough approximations of topics, I categorize 12 articles as history/survey, 11 as utility theory and welfare economics, four as mathematics in economics, five as money and macroeconomics, and one on monopoly.

[20] "Although he presented the whole construction under the rubric of 'justice,' Wicksell's emphasis, as I interpret it, was on the epistemological properties of agreement" (Buchanan 1991, 114). In fact, Buchanan goes so far as to argue "Wicksell's objective was to construct a criterion for efficiency in fiscal decisions, by which he meant the satisfaction of the demands of individuals as consumers of collectively financed goods and services, analogously to the

satisfaction of consumer demands in the competitive market for private goods and services" (Buchanan 1991, 113).