Erasmus Journal for Philosophy and Economics,
Volume 15, Issue 1,
Summer 2022, pp. 56–82.
https://doi.org/10.23941/ejpe.v15i1.658

"The Hardest of All the Problems": Hochman, Rodgers, and Buchanan on Pareto Optimal Redistribution

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Abstract: This paper provides a history of the development of Harold Hochman and James Rodgers' (1969) theory of Pareto optimal redistribution, which modeled income transfers as a public good. Pareto optimal redistribution provided an economic efficiency case for redistribution policy. After reviewing the emergence of Pareto optimal redistribution at the University of Virginia and its elaboration at the Urban Institute in the early 1970s, the paper describes James M. Buchanan's efforts to grapple with his colleague's ideas in the context of public choice theory. Initially, Buchanan provided an even more expansive argument for redistribution than Hochman and Rodgers (1969). By the mid-1970s, though, Buchanan largely rejected his earlier approach to redistribution and theorized new criteria for redistribution that were narrower in scope.

Keywords: James M. Buchanan, Harold Hochman, James Rodgers, Pareto optimal redistribution, demogrant

JEL Classification: B21, B31, D63, D64

I. INTRODUCTION

Public choice theorists generally, and James M. Buchanan in particular, set a high bar for state action. Pareto optimality and unanimity are Buchanan's ideals, tempered in practice by constitutional accommodations for the costs of decision making. These Paretian and Wicksellian hurdles are difficult enough to surmount for normal policy questions, but they become especially tricky in the case of income redistribution and inequality. Even a novice benevolent planner armed with uniform, twice differentiable utility functions could spin a tale justifying social welfare-improving redistribution policy, but how can a pure transfer possibly be a Pareto

AUTHOR'S NOTE: This paper benefited significantly from comments from Måns Abrahamson, Andrew Farrant, Otto Lehto, and two anonymous reviewers. I am especially grateful to James Rodgers and Richard Wagner for their willingness to be interviewed for this research.

improvement? As Buchanan and Tullock ([1962] 1999, 195) put it, "Pareto criteria can be drawn in for ordinary collective action, but they are useless here". Conversing with Richard Musgrave decades later, Buchanan conceded that distributional questions were "the hardest of all the problems" facing public choice theorists (Buchanan and Musgrave 1999, 85).

This paper describes how a theory of Pareto optimal redistribution emerged out of the research agendas of the University of Virginia (UVA) Economics Department in the 1960s and continued to grow at the newly founded Urban Institute in the 1970s. The paper then describes how Pareto optimal redistribution was elaborated on and challenged by James M. Buchanan. Pareto optimal redistribution theory was developed in 1967 by Harold Hochman, a public finance professor at UVA and his student James Rodgers. The core of the theory is straightforward enough: redistribution can meet Paretian standards if utility functions are interdependent, and redistribution is a type of public good. The idea of redistribution as a public good had been stated at least as far back as Milton Friedman (1962, 191) in *Capitalism and Freedom* when he wrote that "I am distressed by the sight of poverty; I am benefited by its alleviation; but I am benefited equally whether I or someone else pays for its alleviation".[1] Hochman and Rodgers did not mention Friedman's insight in their paper, but their formal model of redistribution as a preference and a public good followed the same logic. They published their work in the *American Economic Review* in 1969 in a paper that inspired robust debate in the early 1970s. Hochman continued to develop the theory and apply it to practical policy questions with his public finance team at the Urban Institute in the early 1970s.

After describing the emergence of Pareto optimal redistribution, this paper reviews Buchanan's grappling with the theory that his student (Rodgers) and colleague (Hochman) developed. Buchanan's (1974a) initial public choice theoretic extensions of Pareto optimal redistribution justified more expansive income redistribution than even Hochman and Rodgers anticipated. However, by the mid-1970s Buchanan's work on the economics of anarchy led him down another analytical path that allowed for a much narrower scope for redistribution that privileged minimizing distributional conflict and rent-seeking. This paper describes the contributions of UVA economics and public choice theory to the history of

[1] Drakopoulos (2012, 2016) reviews an even deeper history of interdependent preferences in economics, although the public goods aspect of redistribution highlighted by Friedman (1962) is what is essential to the Hochman and Rodgers (1969) theory.

theoretical criteria for redistribution policy and shows that the appropriate applications of theoretical standards to redistribution can be more complex and contestable than they first appear.

II. Harold Hochman, James Rodgers, and the Development of Pareto Optimal Redistribution

Harold ('Hal') Hochman was hired by the UVA Economics Department in 1965 after completing his PhD at Yale. By all accounts the students and faculty at UVA thought incredibly well of him (Pressman and Rodgers 2001). Buchanan (2006, 37) described how Hochman's arrival "added to the excitement of the Thomas Jefferson Center". Richard Wagner, a student of both Hochman and Buchanan at UVA, fondly recalls Hochman as providing the most "detailed and helpful" comments of any member of his dissertation committee.[2] Hochman was tapped to teach macroeconomics and public finance at UVA. The latter assignment in particular was an emphatic vote of confidence from a faculty that already boasted considerable expertise in the field.

Hochman and Rodgers began collaborating on their Pareto optimal redistribution paper when Rodgers was a student in Hochman's spring 1967 public finance course. Their paper developed out of a classroom discussion on the weaknesses of Richard Musgrave's (1959) text, *Theory of Public Finance*. Although the public choice tradition is often portrayed as counterposed to Musgravian public finance, Hochman saw great value in Musgrave's text and used it in his class. He was frustrated, though, with Musgrave's failure to provide the same economic efficiency justifications for the redistributive function of the state (the 'distribution branch') that he did for the allocative and stabilization branches. Musgrave's allocative branch was concerned with the provision and allocation of goods, frequently focused on public goods but also the efficient allocation of private goods in the case of externalities. The stabilization branch focused on macroeconomic stability. Both the allocation and stabilization branches had clear efficiency criteria associated with them. The distributive branch, in contrast, required a "political process of decision making" (Musgrave 1959, 19) because market-based efficiency standards were unavailable. Musgrave (1959, 89) characterized the allocation branch as "more amenable to economic analysis" than the distribution branch, and "therefore it is proper for the economist to concentrate on this aspect"

[2] Richard Wagner, interview, December 1, 2021.

rather than redistribution. Hochman posed the problem as a challenge to his students: How could redistribution be justified on an efficiency basis? Rodgers agreed to work on the problem with Hochman, a collaboration that would generate their paper on Pareto optimal redistribution that was published in the *American Economic Review* in 1969.

The UVA Economics Department actively encouraged "research apprenticeships" like the one that generated the Hochman and Rodgers paper (Levy and Peart 2020, 60). Joint projects with professors frequently became a UVA student's first peer reviewed publication and were a cornerstone of what Steven Medema (2011) calls the 'creative community' of public choice scholars. [3] In fact, James Rodgers had multiple collaborations to choose from in the spring of 1967. While he was working with Hochman, Rodgers was also taking a class on cost and choice with Buchanan and had an appointment with him to discuss the possibility of co-authoring a paper.[4] Finding Buchanan "too intimidating", Rodgers skipped the appointment and the two never wrote together. Rodgers found Hochman more personally compatible, "very approachable, and easy to work with", and they launched into their joint work revising Musgrave's approach to redistribution.[5]

Hochman and Rodgers (1969, 556) characterized their analysis as reconciling redistribution with "consumer sovereignty and an individualistic interpretation of the fiscal and political processes". If individual utilities were interdependent, then efficiency would require transfers determined jointly by 'transfer elasticities', and by the initial distribution of income. The transfer elasticity was defined as the donor's demand for an increase in the recipient's income with respect to the differences in their incomes. Donors in the model cared about the absolute gap between their own income and the income of other persons, *not* the level of other persons' incomes or utilities. In that sense, donors can be thought of as directly demanding reductions in inequality rather than having altruistic preferences that only indirectly relate to equity.[6] The donor's budget constraint for transfers had a slope of negative one and spanned half the gap between the donor and the recipient's original income levels. The reason for

[3] See Levy and Peart (2020, 60) for details on a proposal for "research apprenticeships" at the Thomas Jefferson Center to the Ford Foundation in 1960.
[4] The class was built around material and texts that Buchanan would ultimately organize into the book *Cost and Choice* (Buchanan, 1969).
[5] James Rodgers, interview, June 25, 2021.
[6] For a detailed review of the related question of altruistic preferences, see Fontaine (2007, 2012).

spanning only half was that after half of the gap in income is redistributed, the donor and the recipient experience full equality, such that there would be no more possibility for difference-reducing transfers. Anti-social interdependent preferences, where individuals prefer to widen income gaps out of envy or malice could also be included in this framework, although Hochman and Rodgers (1969) ignore this case and later writers such as Harsanyi (1977) explicitly exclude it. Crucially, since donors value reductions in the gap between individual incomes and not their own donation *per se*, redistributive transfers are a public good. The benefit of another person's donation to the poor is non-rivalrous for individuals who value reductions in income gaps, because all such individuals can experience the reduction in inequality at the same time. It is also non-excludable because once an income gap is reduced, the donor cannot keep other persons from enjoying the reduced inequality. Redistribution is therefore a public good for individuals who value equality of incomes.

After laying out the basic theory, Hochman and Rodgers demonstrated that the optimal form of income transfers depended on the magnitude of the transfer elasticity. An elasticity of zero made fixed sum transfers from each donor to each recipient optimal, while an elasticity of one made proportional transfers optimal. They compared modeled transfers under both of those extreme elasticity values to actual data on fiscal residuals to understand if the United States conformed to their model and if so, what it might imply about empirical transfer elasticities. Estimates of the distributional incidence of federal, state, and local taxes were relatively common in the empirical public finance literature by the late 1960s, but distributional studies of public expenditures and therefore total fiscal residuals were not. Irwin Gillespie (1965), a Musgrave student, provided Hochman and Rodgers with the expenditure estimates they needed.[7] They compared Gillespie's empirical data to two modeled fiscal residuals representing the extreme assumptions of their model: one case where the transfer elasticity was equal to zero, and another case where the transfer elasticity was equal to one (figure 1).

The first discrepancy between empirical fiscal residuals and modeled fiscal residuals that Hochman and Rodgers (1969) highlighted was that actual net transfers were disproportionately concentrated on income brackets that were lower income but not the poorest families. They

[7] Gillespie's dissertation under Musgrave, "The Effect of Public Expenditures on the Distribution of Income: An Empirical Investigation", was finished in 1963. Hochman and Rodgers relied on a 1965 summary of the dissertation published in Musgrave's edited volume, *Essays in Fiscal Federalism* (see Gillespie 1965).

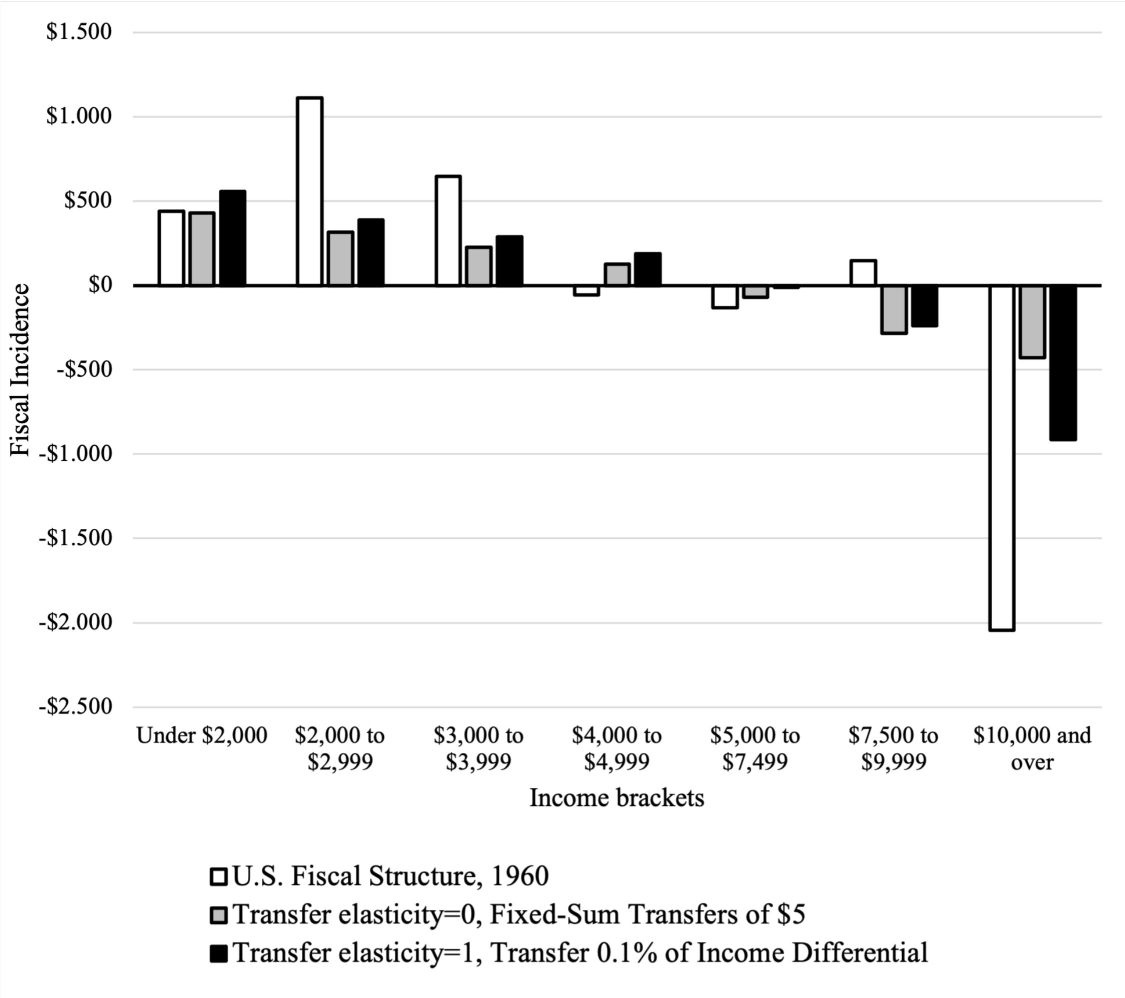

Figure 1: Comparison of Gillespie's (1965) fiscal residuals with Hochman and Rodgers' (1969) modeled fiscal residuals.

Notes: Fiscal incidence from Hochman and Rodgers (1969, 55; Table 7). Original income bracket labels from Gillespie (1965, 162; Table 11).

hypothesized that this may be due to differences in the political salience of rural compared to urban poverty, the lack of political power among the very poor, or even that it was just a statistical artifact. Stigler (1970), Tullock (1971), and Buchanan (1974a) subsequently showed great interest in the phenomenon of redistribution that benefited the near-poor but not the poorest Americans, which Stigler dubbed 'Director's Law' after Aaron Director. However, none of them cite Hochman and Rodgers's (1969) or Gillespie's (1965) earlier analyses of the empirical regularity.

From James Rodgers' perspective, a critical factor in the success of the paper was that Gary Becker championed it as a referee, not because Becker was deeply invested in the public finance questions motivating their research, but because of his own recent interest in interdependent utility functions.[8] Becker was working on two papers involving interdependent preferences at the time, one of which ("A Theory of Social Interactions") was published in 1974 in the *Journal of Political Economy*. Becker's papers were more broadly concerned with economists' neglect of interdependent preferences than with the specific application to redistribution, but he appreciated the gap that Hochman and Rodgers were filling in their own public finance literature (Medema, 2015; Fontaine, 2007).

Hochman and Rodgers (1969) attracted three comments in the December 1970 issue of the *American Economic Review*. The first comment from Paul Meyer and J.J. Shipley (1970) criticized the model's restrictive assumptions. A second, by Robert Goldfarb (1970), offered a specification of the utility function in the *n*-person version of the model that guaranteed Pareto optimal redistribution could not be accomplished by charity alone, but could be achieved through taxation. Meyer and Shipley (1970) were attempting to point out the theory's vulnerabilities, while Goldfarb (1970) attempted to strengthen the theory by making government indispensable to redistribution. In their reply, Hochman and Rodgers (1970) found both comments to be either incorrect or relatively inconsequential for their core argument. The third commenter in the December 1970 issue was Richard Musgrave, whose public finance text provided the initial inspiration for Hochman and Rodgers. Musgrave's comment was less technical than the other two, but ultimately more important for framing the discussion of Pareto optimal redistribution over the next decade.

Musgrave (1970) focused his comment on how Pareto optimal redistribution fit into his own typology of public finance, famously divided between the allocative, stabilization, and distributional branches. He pointed out that Hochman and Rodgers' theory of redistribution itself depended on an initial distribution of income, and in that sense pertained to a 'secondary redistribution' that depended on a prior 'primary redistribution'. Musgrave (1970) associated this primary redistribution with rules about inheritance, factors' earning capacity, and market structure: the stuff of his allocative branch. He further pointed out that primary and secondary redistribution were intertwined, interacting with each other and difficult to untangle. Moreover, both were determined by the distribution of power and voting rights. Musgrave's generally positive and elaborative comment on the Pareto optimal redistribution paper is notable because the initial purpose of the paper was to address a gap in

[8] James Rodgers, interview, June 25, 2021.

Musgrave's public finance. Rather than resisting Hochman and Rodgers's criticism of the gap, Musgrave found their exercise valuable. It was also an important comment because Musgrave anticipated Buchanan's elaboration on Pareto optimal redistribution, which explored the constitutional grounding for redistribution.

Hochman and Rodgers received criticism on the seminar circuit as well as in the journals. Rodgers recalls that when they presented the paper at Stanford, Michael Boskin dismissed the analysis as "empirically a tiny piece of the whole puzzle".[9] This was a criticism they heard repeatedly, despite the fact that Hochman and Rodgers did not argue Pareto efficiency was a justification for *all* redistributive policy. Although their paper was developed and published at a time when policymakers increasingly turned to economic efficiency standards and away from egalitarian ideals (Berman 2022), Hochman and Rodgers were primarily interested in the theoretical project of making Musgrave's public finance more internally consistent rather than in promoting Pareto efficiency as an encompassing requirement for policy. If some redistribution was justifiable by Paretian standards then all the better, but they did not insist that the welfare state could only be judged on those grounds.[10] This was a point that many contemporary critics failed to understand. For example, in his reply to Hochman and Rodgers (1969), Mishan (1972, 971) observed that "apparently economists have never been quite happy simply to propose transfers of income to the poor as a commendable aim of policy", and instead prefer it if "the policy of equalizing transfer payments could be made to flow from some essential part of economics". But Mishan's critique misses the point. Clearly voters consider redistribution to be a commendable aim of policy and this is why redistributive policy is passed. Hochman and Rodgers wanted to analyze those voter preferences with the tools of economics rather than provide permission for those preferences or even worse, to dictate those preferences.

Hochman maintained his interest in Pareto optimal redistribution when he moved from UVA to the Urban Institute in 1970, where he led the Institute's new public finance program. The Urban Institute was founded in Washington D.C. in 1968 and was intended to function like

[9] James Rodgers, interview, June 25, 2021.

[10] As an anonymous reviewer points out, this orientation is consistent with the view that Buchanan advocated (and often adhered to) that economists should provide citizens with an understanding of opportunities for mutually beneficial exchange rather than insisting on a course of policy. See Boettke and Candela (2018) for a recent elaboration of this characterization of Buchanan's position.

the RAND Corporation, but for urban policy research instead of military research. Following the RAND model, the Urban Institute was largely dependent on federal research contracts, but its researchers did their work independent of the federal agencies that funded them (Finney 1968). The lion's share of the research focused on evaluations of federal policies and programs. But just as economists at RAND pushed economic theory forward even as they worked on practical problems for the military,[11] Hochman made theoretical contributions to the economics of redistribution alongside his colleagues who were working on program evaluations. Hochman supported the new public finance program at the Urban Institute with funding from the National Science Foundation (NSF) and the Ford Foundation.

Research on the distribution of income was "one of the Institute's largest and most important programs" (Urban Institute 1972, 541) in its early years and was divided into three interrelated efforts. The first two efforts were computer simulation models: a static model for evaluating the impact of income maintenance programs and a dynamic model that incorporated a broader set of policy feedback loops affecting income distribution.[12] The third research effort focused on "criteria for distributional policy" (Urban Institute 1972, 545) and was headed by Hochman. Criteria for distributional policy did not exclusively refer to Paretian standards, but it was this third effort that advanced the research on Pareto optimal redistribution. Although it was primarily theoretical, Hochman's work was of considerable interest to the Urban Institute microsimulation teams. Harold W. Guthrie, the project lead for the income maintenance microsimulation project in the early 1970s, described Pareto optimal redistribution as a "promising attempt" at providing a badly needed theoretical criterion to guide federal redistribution policy (Guthrie, 1972, 418).

Many of the Urban Institute researchers working on criteria for redistribution were not primarily concerned with reconciling Musgrave's fiscal branches or resolving Paretian paradoxes. Their work was practical, using the framework of interdependent utility functions to understand how transfer programs ought to be structured. George Peterson (1973), a member of Hochman's public finance team, considered alternative

[11] See Weintraub (2017) for a detailed review of recent scholarship on the development of game theory and theories of rational choice at RAND and elsewhere, and their relationship to the Cold War.

[12] The modern versions of the Urban Institute's static and dynamic models for studying income distribution are TRIM3 and DYNASIM, respectively. For more details on the history of microsimulation at the Urban Institute, see Urban Institute (n.d.).

interdependent utility function specifications where donors cared about transfer recipients’ incomes and their leisure. In that case, the rate of substitution between labor and leisure was an important parameter for designing redistribution policy and balancing cash transfers with wage subsidies. Mitchell Polinsky, a student and coauthor of Musgrave’s at Harvard, became interested in Pareto optimal redistribution when he worked at the Urban Institute as a research assistant before starting graduate school. Polinsky published several papers expanding on the theory that grew out of his work as a research assistant (Polinsky 1971, 1972).

Urban Institute funding to work on Pareto optimal redistribution was also distributed to researchers at other universities, including John F. Johnston’s (1975) work at the University of Delaware and of course James Rodgers, by then a professor at the University of Pennsylvania. In one of his papers, Rodgers (1973) used Pareto optimal redistribution theory to contribute to the growing literature on the design of transfers, arguing that the relative preferability of cash or in-kind transfers depended on whether voters’ redistributive preferences were defined over transfer recipients’ welfare, income, or consumption. Within only a few years, Pareto optimal redistribution was featured in dissertations on welfare and redistribution (see, for example, Barmack 1975).

Most of Hochman’s funding while at the Urban Institute came from NSF, which was interested in basic research, including in the social sciences. More significant funding for the Urban Institute as a whole came from the Department of Health, Education, and Welfare, the Department of Labor, and the recently created Department of Housing and Urban Development. It was not easy for Hochman to interest those departments in theoretical economics, which had less obvious immediate relevance to program evaluation. Hochman ultimately struggled to support both his Pareto optimal redistribution work and the broader Urban Institute public finance team with regular infusions of contract and grant funding, and the team disbanded in 1973.[13]

Hochman and Rodgers’s work influenced other economists outside the circle of researchers supported by Urban Institute funds. Due to their UVA connections, Hochman and Rodgers also published on redistribution with Gordon Tullock, who liked their Pareto optimal redistribution paper and enjoyed talking with both Hochman and Rodgers about the

[13] Richard Wagner, interview, December 2, 2020.

economics of redistribution, a long-standing area of interest of his.[14] During this period, NSF also provided grant funding to Kenneth Boulding to study the economics of charity, interdependent preferences, and redistribution (Fontaine 2007), and Hochman and Rodgers even published an Urban Institute working paper on Pareto optimal redistribution in one of Boulding's volumes (Hochman and Rodgers 1973). Kapteyn and Van Herwaarden (1980) noted that despite the interest in Pareto optimal redistribution, no one had attempted to empirically measure interdependent preferences and demand for redistribution. Citing Hochman and Rodgers (1969) as inspiration, Kapteyn and Van Herwaarden pioneered new approaches to this empirical problem.

Although Hochman and Rodgers' perspective on redistribution generated considerable excitement, they were hardly the only economists analyzing the problem in the 1960s and 1970s, and arguably not even the most prominent. In the first third of the twentieth century, economists' analysis of redistribution was primarily organized around the insight that diminishing marginal utility implied progressive taxation because an extra dollar had greater value to a person with lower income than a person with higher income. This style of argument, associated closely with Edgeworth, fell out of fashion in the 1930s and 1940s particularly following Robbins' (1932) broadside against the utilitarian foundations of welfare economics.[15]

Sandmo (2015, 51) describes a "comeback" for utilitarian approaches to redistribution in the postwar period in the work of Vickrey (1945) and Harsanyi (1955), who independently anticipated Rawls's veil of ignorance. Vickery (1945, 329) described the optimal distribution of income in terms of an individual's choice "were he asked which of various variants of the economy he would like to become a member of, assuming that once he selects a given economy with a given distribution of income he has an equal chance of landing in the shoes of each member of it".

Another strand of analysis developed at the same time as the work of Hochman and Rodgers was James Mirrlees' work on optimal tax theory. Optimal tax theory recognized that non-distortionary lump sum taxation was politically infeasible in most cases and asked what non-linear income

[14] James Rodgers, interview, June 25, 2021. Although not considered in detail here, Tullock continued to be interested in the economics of charity and redistribution and published extensively on the subject, even more broadly than the Pareto optimal redistribution model. See especially Tullock (1981, 1997).

[15] As Backhouse (2009) points out, Robbins is more accurately read as criticizing the stronger arguments of Hobson and Hawtrey than as a criticism of Pigou.

tax schedule would be optimal in a world where lump sum taxes are not an option. Analysis of the income tax as a redistributive policy lever brought trade-offs between equity and productive efficiency to the foreground and, to Mirrlees' own surprise, implied low or even zero top marginal tax rates (Mirrlees 1971).

In contrast with all of these literatures, Hochman and Rodgers (1969) can be read as providing the basis for a realistic public choice model of redistribution. Vickery (1945), Harsanyi (1955), and Rawls (1971) provide some intuition for how citizens *might* choose a redistributive policy grounded in principles of justice or a social optimum, but their respective versions of the veil of ignorance introduce a wide gulf between the world of the model and real political systems. Mirrlees (1971) starts from more realistic assumptions, such as the restriction on lump sum taxes, but his is a social planner's optimum rather than one that would reasonably emerge in a democratic society. Each literature has its insights and strengths, but it is clear how Hochman and Rodgers (1969) alternative perspective would have emerged from the milieu of the University of Virginia and also why Buchanan would want to build on it.

Broader ideological parallels between Hochman and Rodgers (1969) and Rawls also merit further comment. Pareto optimal redistribution theory emerged at the same ideological inflection point separating welfare state liberalism from neoliberalism as Rawls' (1971) *A Theory of Justice*. Hochman and Rodgers therefore could be read (as Rawls is often read) as a justification for welfare state liberalism dressed up in the garb of social contract theory. Pareto optimal redistribution has the same aura of being a "last gasp of a dying welfarist ideology", to quote Katrina Forrester (2019, xi) on Rawls. But just as Forrester (2019, xi) rejects this interpretation of Rawls in favor of the alternative view that Rawls was sorting out a mid-century "liberalism [which] was full of contradictions", Hochman and Rodgers were also more driven to resolve the contradictions of the postwar liberal public finance tradition of Musgrave than in defending the welfare state directly. James M. Buchanan, meanwhile, was interested in and worried about the rise of the modern welfare state in addition to his contributions to theory. Buchanan is not usually identified as an important contributor to the literature on Pareto optimal redistribution, but he did consider the ideas of his former colleague and student carefully in the early 1970s. Buchanan's reaction to their work served as a backdrop to his approach to redistribution through the rest of his career.

III. JAMES M. BUCHANAN AND PARETO OPTIMAL REDISTRIBUTION

Early in his career, Buchanan shared the orthodox view that transfers could not generally be justified or analyzed using Paretian standards. With his coauthor Gordon Tullock, Buchanan dipped his toes in the waters of redistribution, democratic choice, and Paretian standards in chapter 13 of the *Calculus of Consent* (a chapter that Buchanan drafted). The chapter assumed that pure transfers at the post-constitutional stage could not be Pareto improvements and argued in contrast that redistribution naturally followed from non-unanimity rules because a majority coalition would have an incentive to vote for transfers financed by the balance of the electorate. The *Calculus of Consent* notes that redistribution as insurance against the risk of future hardship might be agreeable at the constitutional stage of decision making, behind a veil of ignorance (Buchanan and Tullock [1962] 1999, 197). However, they argued that any post-constitutional redistribution (that is, redistribution after setting the rules governing policymaking) under democracy would tend to exceed these narrower insurance justifications (195).

After its publication, the Hochman and Rodgers (1969) paper was recognized by the community of public choice scholars as a work in their tradition. Mark Pauly (1970), for example, included it in his bibliography of recent public choice economics. Buchanan was familiar with Hochman and Rodgers' work on Pareto optimal redistribution before it was published, since the acknowledgements in the paper indicate he provided comments on drafts.[16] But Buchanan's first public comment on the work came in March 1972, at a conference on redistribution and public choice organized by Hochman and the Urban Institute (published as Buchanan 1974b).[17] Buchanan's paper for the conference analyzed the level of government in a federal system that should undertake redistribution policy. He argued that Tiebout pressures (competitive pressures exerted on local government due to citizens 'voting with their feet') dramatically narrowed the redistributive scope of local government action but also ensured that local redistribution would be relatively efficient. National redistribution policy was less efficient and provided more scope for transfers because

[16] James Rodgers has no recollection of Buchanan providing comments, so these likely came through Hochman rather than Rodgers (James Rodgers, interview, June 25, 2021).

[17] James Rodgers also presented a paper at the Urban Institute conference and argued that a self-interest model did not adequately explain observed redistribution; some utility interdependence was required (Rodgers, 1974). As Richard Wagner's (1976, 110) review of the conference volume playfully noted, this was a conclusion that "any self-interest model of intellectual choice would predict Rodgers to reach".

net taxpayers would have fewer viable opportunities to discipline the national government by voting with their feet.

Halfway through his analysis of federalism and redistribution at the Urban Institute, Buchanan raised the theory of Pareto optimal redistribution as one possible justification for redistribution at all levels of government. He argued that if national redistribution policy, with its tendency to inefficiency, could be grounded in interdependent utility functions that ensured Pareto optimality, then perhaps apparently inefficient national redistribution could be Pareto efficient. Buchanan harbored doubts about that possibility and threw himself at the mercy of the empirics. "If a case for federal-government or national-government activity is to be based on the grounds of strict utility interdependence", Buchanan wrote, "evidence should be available to indicate that the sociocultural environment is such that the effective limits are, indeed, those determined by national boundaries" (Buchanan 1974b, 35). In other words, Buchanan raised no objections to the analytics of Pareto optimal redistribution, but he did demand evidence that individuals' utility functions really extended to the welfare of individuals across the country, as opposed to locally.

A conference on public choice and redistribution at the Urban Institute, which had emerged as a hub for Pareto optimal redistribution research, would have been an appropriate opportunity for Buchanan to wrestle with the theory, but unfortunately his thoughts were not fully formed and articulated until later in 1972. In October, Buchanan developed his thoughts on Hochman and Rodgers's work in much greater detail in a paper for a UVA conference in honor of Milton Friedman titled "The Political Economy of the Franchise in the Welfare State" (1974a). Buchanan's interest in voting rules and public choice pulled him in a different direction in his evaluation of Pareto optimal redistribution. He began his talk by working out the marginal conditions for determining an optimal level of redistribution when utility functions were interdependent. This was a step that was not taken in the Hochman and Rodgers (1969) paper, although it was a natural extension of their work. Since the utility benefits of redistribution to a net transfer recipient are enjoyed by all net taxpayers, Buchanan (1974a) treated redistribution as a pure public good and derived the standard Samuelsonian condition for efficient government provision. The utility of one of n individual i's was defined as a function of the income of individual i and individual j,

$$U^i = U^i(Y^i, Y^j) \tag{1}$$

The n i's were understood to be net donors to j, the net transfer recipient. The Samuelsonian condition for the public transfer good was therefore,

$$\sum_{i=1}^{n} \frac{u^{i}_{Yj}}{u^{i}_{Yi}} = 1 \tag{2}$$

Where u^{i}_{Yj} was the marginal utility of the n identical individual i's, with respect to the income of a single individual j. Since j's income enters the utility of all i's, transfers to j behave like a public good so the sum of the marginal utilities from the transfer equal the marginal cost of the transfer. Buchanan (1974a) pointed out that the problem with marginal condition (2) was that it excluded net transfer recipients from the political calculus. The marginal benefit of a transferred dollar to a transfer recipient was 1, so trivially

$$\frac{u^{j}_{Yj}}{u^{j}_{Yj}} = 1 \tag{3}$$

If these transfer recipients were included in the marginal condition for efficient provision of redistribution, the new Samuelsonian condition became,

$$\sum_{i,j=1}^{n+1} \frac{u^{i,j}_{Yj}}{u^{i}_{Yi}} = 1 \tag{4}$$

Buchanan (1974a) notes marginal condition (4) is not satisfied at the same level of redistribution as marginal condition (2). When transfer recipients are included, any redistribution exceeding the level defined by (2) will be a Pareto improvement and will not be rejected by transfer recipients. Because of the inconsistent Samuelsonian conditions, trying to pin down the efficient level of redistribution with interdependent utility functions proved a frustration. "This apparent paradox arises from the particular nature of pure income transfers", Buchanan concludes, "and this nonuniqueness in outcomes makes the application of the standard tools difficult" (Buchanan 1974a, 55). The only sensible resolution for

Buchanan was to deny the franchise (that is, the right to vote) to net transfer recipients, at least on this particular policy question.[18]

Although work on Pareto optimal redistribution at the Urban Institute in the early 1970s did not focus on the constitutional and voting rules developed in his analysis of Hochman and Rodgers (1969), Urban Institute researchers were aware of and debated the theoretical relationship between redistribution and voting rules that Buchanan raised. Richard Wagner, a Senior Research Associate at the Urban Institute from 1972 to 1973 after studying under both Buchanan and Hochman at UVA, recalls that members of Hochman's team discussed the relevance of A.V. Dicey's (1905) *Lectures on the Relation between Law and Public Opinion*, which decried the enfranchisement of recipients of poor relief in England (see especially Lecture VIII).[19]

Ultimately, Buchanan (1974a) rejected his own proposal for the restriction of the franchise in democracies where it had already been expanded, not because a restricted franchise was analytically unpersuasive to him, but because it was impractical and "a shift [away from universal suffrage] would harm some members of the community" and therefore be inconsistent with Paretian standards (Buchanan 1974a, 71). This argument against franchise restrictions is interesting in light of Levy and Peart's (2020) work on Buchanan's views on the economics of natural equals. Here Buchanan is *not* opposing franchise restrictions because natural equals deserve an equal vote. In theory, he sees franchise restrictions as justified. Instead, he is opposing franchise restrictions because it would not be a Pareto improvement in the U.S. case where the franchise was already (essentially) universal. But this acceptance of universal suffrage combined with the paradox posed by the Samuelsonian conditions under universal suffrage painted the public choice analysis of Pareto optimal redistribution into a corner. To get out of that corner, Buchanan made a remarkable observation that is worth quoting at length:

> Because political transfers seem to violate the standard Pareto norms, we have tended to opt out of any discussion and say that nothing further can be constructed on the basis of individual evaluations. I now propose to modify this stance, and to do so in a substantial sense. Failure to carry out income transfer policy in a political setting such as that sketched out in the models above would represent a

[18] Buchanan (1974a) assumes voters vote directly on transfer policy. He provided no discussion of how to translate the disenfranchisement principle to representative government, where voters did not vote directly on policy.
[19] Richard Wagner, interview, December 1, 2021.

> fundamental shift in the real assignment of rights, a shift in favor of those with the nominally higher incomes. Once the franchise has been extended to all adults, and once the constitution has allowed income transfers to take place collectively, the formal act of transfer becomes fully predictable from positive economic analysis. The basic property right inheres in the voting franchise, and the economic value of this franchise reflects the measure of the contingent claim to the incomes and wealth nominally imputed to individuals in the whole community. (Buchanan 1974a, 70)

This was, in Buchanan's own words, an acknowledgement that the prior understanding of Pareto optimality and redistribution "has been seriously deficient" (Buchanan 1974a, 62) because it had not considered the broader political context for redistributive policy. The first claim of the quoted passage, that 'we have tended to opt out of any discussion' of Paretian transfers was clearly untrue of Hochman, Rodgers, and their collaborators and elaborators, but it was a fair description of most of the rest of the profession. Rather than proceed in older ways of thinking, Buchanan argued that the constitutional decision to expand suffrage implied a contingent claim to the whole political community's income and wealth. Buchanan argued that if redistribution was on the table as a constitutionally admissible policy choice in a given constitutional order, then clearly the constitutional order recognized that voters had a 'contingent claim' to all wealth and income that could *potentially* be redistributed (even if actual policy did not redistribute all potentially redistributable wealth). Buchanan's analysis essentially collapsed Musgrave's (1970) distinction between primary and secondary redistribution, opening the door to a wider range of redistributive opportunities than even Hochman and Rodgers (1969) envisioned.

In the discussion that followed Buchanan's paper at the Friedman conference, Bill Niskanen confessed that Buchanan's proposition about claims to social wealth as the "economic value" of the franchise was "one that I am queasy about". Responding to Niskanen, Buchanan conceded that "it does suggest a tremendous broadening of this whole concept of Pareto optimality". Almost as if to reassure his queasy audience, Buchanan then admitted "I don't claim to have worked out all these implications" (Buchanan 1974a, 85–86).

Buchanan's paper and the transcript of the discussion that followed his presentation leaves the reader with a palpable sense of tension, incompleteness, and lack of direction. The conferees were intrigued by the analysis but uneasy, and Buchanan seemed to share their hesitance.

"The Political Economy of Franchise in the Welfare State" was Buchanan's most thoroughly developed analysis of Pareto optimal redistribution, and it is also one of the few cases where he treated the theory as relevant to the constitutional stage of decision making. In most other analyses where he cites Hochman and Rodgers (1969) directly, he cites them only briefly as one consideration of voters in their *post*-constitutional decision making—one possible reason among many to vote for redistribution in the post-constitutional policymaking period (see, for example, Buchanan and Bush 1974; Brennan and Buchanan 1980).

Although Buchanan never analyzed the Hochman and Rodgers (1969) model in any detail after the two 1972 conferences, the queasy idea that voters had a 'contingent claim' to all the wealth of society was an idea that he did not shake off lightly or immediately. In May 1974, at a conference on markets and morals at the Seattle Research Center of the Battelle Memorial Institute, Buchanan asserted the point even more definitively that "the individual's right to vote, held on an equal basis with other people, implies an ultimate equality in a political claim to all wealth in society" (Buchanan 1977, 70).[20] This was an extraordinary claim, and one Buchanan took seriously.

It is perhaps unsurprising that Buchanan took Hochman and Rodgers's interdependent utility functions so seriously in the first half of the 1970s, since this is also the period when he was engaging in a deeper reading of 'the full Adam Smith', including Smith's views on sympathy in *The Theory of Moral Sentiments*.[21] Smith's analysis of sympathy anticipates both the versions of the impartial spectator concept developed further in Vickery (1945), Harsanyi (1955), and Rawls (1971) and the interdependent utility functions of Hochman and Rodgers (1969) and Becker (1974). Buchanan found the arguments of *The Theory of Moral Sentiments* appealing and cited them in his analysis of Rawls (Buchanan 1976b) and to counter arguments by Gordon Tullock.[22]

[20] Buchanan's writings can be notoriously sparing in citations, and remarkably he does not even cite this point to his own paper, "The Political Economy of Franchise in the Welfare State", although that is clearly the origin of the argument.

[21] I owe this insight to and borrow the nice turn of phrase 'the full Adam Smith' from an anonymous reviewer.

[22] See Levy and Peart (2020, 40) for a detailed discussion of Buchanan and *The Theory of Moral Sentiments*, including a transcription of Buchanan's 1971 letter to Tullock, which cited the book in an argument against Tullock's theory of revolution.

IV. BUCHANAN'S DEMOGRANT AND THE NARROWING APERTURE OF CONSTITUTIONAL REDISTRIBUTION

By 1972 Buchanan had followed the thread of Pareto optimal redistribution to the startling conclusion that universal suffrage implied a claim to the wealth of everyone living under the constitutional order. Actual patterns of redistribution required democratic consensus, but the franchise implied a collective right to redistribute. A nagging question for Buchanan was how a constitutional order that opened the door to such radical redistribution could ever be agreed to in the first place. To answer these types of questions, Buchanan drew on the emerging economics of anarchy research program at Virginia Tech.[23] The economics of anarchy was in many ways the economics of conflict, where theft and appropriation by physical force was always a threat.[24] The question was, how did a stable constitutional order emerge from that fundamental conflict? As Buchanan (1992, 101) later described, "the research problem seemed to be to explain and understand the emergence of order out of anarchy rather than to grasp the meaning of a stable order that already existed". This reorientation proved well suited to avoiding some of the undesirable conclusions that Buchanan drew from the theory of Pareto optimal redistribution at the 1972 conferences discussed above.

Winston Bush, the star of the group at Virginia Tech working on anarchy, was thinking about redistribution, stable orders, and anarchy alongside Buchanan in the early 1970s. Bush developed a model of distribution with an anarchic starting point where property rights were mutually agreed upon to secure wealth against predation, but at the loss of some initial wealth that weaker parties could not defend in the absence of property rights. The model did not imply the sort of claims to social wealth derived by Buchanan (1974a), and Bush (1972, 15) dismissed interdependent preferences specifically as "questionable". Instead, Bush (1972) envisioned a stable order of balanced conflict emerging out of anarchy. Geoffrey Brennan (1973) made a similar argument at approximately the same time, which he called the 'non-altruistic dimension' of Pareto optimal redistribution. Redistribution in this post-anarchic constitutional context of balanced conflict took Buchanan down a different analytic path in his own

[23] See Buchanan (1972) for a forthright statement about the limits of traditional social contract theory and the prospects of the economics of anarchy to extend constitutional economics.

[24] See Bush and Mayer (1974) for a classic Virginia Tech style model of the economics of anarchy, equilibrium conditions, and 'orderly anarchy'.

work. Buchanan (1975a) argued that indulging demand for redistribution can maintain the constitutional peace and provide a better outcome for net donors than revolution and anarchy.[25]

Hobbesian anarchy became a principal lens through which Buchanan analyzed questions of inequality and redistribution. He scrutinized Rawls' original position (Buchanan 1976a) and Nozick's entitlement theory (Buchanan 1975c) using the Hobbesian model. Although Buchanan's (1975b) Samaritan's dilemma paper did not explicitly draw on the economics of anarchy, it was motivated by similar concerns about distributional conflict. In these papers, Buchanan criticized the new contractarians' unrealistic conflict-free original state, but he did not explore what type of redistribution was implied by the economics of anarchy. However, in a recent paper, Lehto and Meadowcroft (2021) persuasively argue that Buchanan's demogrant proposal represents his principal resolution to the prisoner's dilemma posed by the economics of anarchy.[26]

The demogrant, more commonly known as a guaranteed income, was developed by Buchanan (1997), Brennan and Buchanan ([1985] 2000), and Buchanan and Congleton ([1998] 2003) as a uniform per-capita transfer payment made to every citizen, financed by a flat tax. Buchanan argued that because the demogrant and flat tax offered no scope for preferential treatment they could eliminate the distributional conflict implied by the economics of anarchy (and for that matter, majoritarianism). This justification for the demogrant was a major break with Buchanan's earlier reactions to Pareto optimal redistribution theory. Brennan and Buchanan ([1985] 2000, 143) justified a flat tax *not* by arguing that it meets Paretian standards but because it allegedly constrains coalitions of high-income individuals from "organizing large scale transfers to themselves".[27] Buchanan and Congleton ([1998] 2003) called this a 'political efficiency' argument for a flat tax, in contrast with more traditional conceptualizations of efficiency invoked by Hochman and Rodgers.

Buchanan and his coauthors stress the importance of a demogrant that is built into the constitution, to guard against opportunistic or

[25] See Petach (forthcoming) for a careful discussion of Buchanan's views on these points.
[26] The demogrant proposal was primarily developed in Buchanan (1997), Brennan and Buchanan ([1985] 2000), and Buchanan and Congleton ([1998] 2003).
[27] My qualifier that it 'allegedly' constrains self-interested coalitions is deliberate. Brennan and Buchanan ([1985] 2000) provide no real argument for why the aspirations of political coalitions would be eliminated by lump sum payments and flat taxes. This is an underappreciated criticism that I think applies to most invocations of the generality norm by Buchanan, Hayek, and others. Generality may or may not be desirable, but it surely offers no guarantees against opportunism.

cycling adjustments to redistribution policy. Lehto and Meadowcroft (2021, 161) call this design decision "welfare without rent seeking". Thomas Romer's (1988) discussion of redistribution in his *Journal of Economic Perspectives* review of Buchanan's contributions, following the 1986 Nobel Prize, is almost entirely concerned with this insistence on embedding redistributive decisions at the constitutional stage.

Buchanan had not always supported demogrants or other universal basic income schemes. In his 1968 paper, "What Kind of Redistribution Do We Want?", he dismissed Milton Friedman's negative income tax proposal as incompatible with voter preferences. Voters do not particularly care, Buchanan argued, about inequality or even deprivation *per se*. He argued that:

> It is not the low income of the family down the street that bothers most of us; it is the fact that the family lives in a dilapidated house and dresses its children in rags that imposes on our sensibilities. And we are willing to pay something to remove this external effect; it is relevant for behavior. (Buchanan 1968, 189)

If inequality itself did not assault voters' "sensibilities" then "substantial transfers of general purchasing power" (Buchanan, 1968, 189) are not warranted.

When the negative income tax was proposed at the outset of the Nixon administration, Buchanan aired his skepticism to fellow members of Nixon's Taskforce on Urban Affairs. Reacting to a draft of the Taskforce Report, Buchanan wrote that "reality suggests that the negative income tax can never substitute for other programs. For this reason, I am opposed to its enactment".[28] In his initial list of "policy objectives" sent to the Taskforce chairman, Edward Banfield, Buchanan outlined a new approach to means-tested welfare as an alternative to the negative income tax. He proposed that welfare programs should have "uniform or differentially reversed welfare payment standards". 'Differentially reversed' referred to using welfare policy to reconfigure incentives, which for Buchanan

[28] Memorandum, "Statement of Dissent on Particular Points in Report of the Task Force on Urban Affairs," n.d., Correspondence Box 79, Task Force on Urban Affairs, James M. Buchanan Papers, Special Collections Research Center, Fenwick Library, Fairfax. The statement is undated but it refers to the second draft of the Taskforce Report, which is dated December 25, 1968. In a separate January 1, 1969 letter to Edward Banfield, Buchanan refers back to his dissent, so the dissent must have been written and sent at some point in the prior week.

included “subsidies to migration toward rural areas and towards suburbs” and “subsidization of unwed females who do not bear children”.[29]

Compared to these earlier recommendations to use welfare policy for detailed social engineering, Buchanan’s later demogrant proposal is clearly more egalitarian. But understood in the broader context of his response to the Hochman and Rodgers (1969) Pareto optimal redistribution theory, the demogrant proposal emerges out of a new analytical approach that narrowed the scope for redistribution. Ironically, Buchanan did not narrow his views by staying within the guardrails of Pareto efficiency that he previously demanded of Musgravian and Samuelsonian public finance. Instead, he introduced the external standard of political efficiency and the risk of Hobbesian conflict as a justification for the flat tax and the demogrant. This is in contrast with Buchanan and Tullock’s ([1962] 1999) foundational principle that external standards are inappropriate and only unanimity guaranteed that no one’s preferences were imposed on another.

As Buchanan’s willingness to entertain a more expansive constitutional vision narrowed, he also began to once again entertain the possibility of franchise restrictions on net transfer recipients, and particularly voters on welfare. In 1978, six years after 1972 UVA conference, Buchanan encouraged Paul Craig Roberts (a UVA alumnus and then staff assistant to Senator Orrin Hatch) to “think of the potential” of a system where “welfare recipients could not vote”. Buchanan warned Roberts that the federal government was creating “a whole voting constituency who pays no taxes” and that “this group will vote, en bloc, for continued expansion, indeed without limit”.[30] These concerns are consistent with Melinda Cooper’s (2021) point about Buchanan that anxiety over an expanded franchise beginning in the 1960s was a crucial backdrop for his role in the ‘tax revolt’ of the 1970s.

V. CONCLUSION

Geoffrey Brennan (1975, 240) provides a useful distillation of the emergence of Pareto optimal redistribution out of the intellectual environment of UVA and the Urban Institute when he writes that “the significance one attaches to the possibility of Pareto-desirable redistribution depends

[29] Buchanan to Edward Banfield, December 10, 1968, Correspondence Box 79, Task Force on Urban Affairs, Buchanan Papers.

[30] Buchanan to Paul Craig Roberts, April 10, 1978, Correspondence Box 51, Folder “Correspondence Paul Craig Roberts, 1/2”, Buchanan Papers.

largely on the sort of Paretian one is". Harold Hochman and James Rodgers were 'the sort of Paretian' interested in the theory of public finance and filling the gaps in Musgrave and Samuelson. Their Urban Institute colleagues were, in contrast, 'the sort of Paretian' interested in making actual improvements (Pareto or otherwise) in public policy and grappling with Okun's efficiency and equity tradeoff. Buchanan, like Hochman and Rodgers, was a Paretian theorist. But for Buchanan, Pareto had to be considered at both the constitutional and policy-making stage of analysis. This opened entirely new questions and considerations.

At the 1972 conference in honor of Milton Friedman, Buchanan's (1974a, 77) solution was, in his words, "close to that expressed by Musgrave" in Musgrave's comment on Hochman and Rodgers (1969) because it brought in the property rights considerations that structured the "primary distribution". Cast in Musgrave's (1970) terminology, Buchanan's later demogrant proposal is better thought of as a secondary redistribution that is designed in full cognizance of the primary distribution of resources and their interaction with political power dynamics. Both Buchanan's (1974a) property in franchise arguments and his demogrant proposal were therefore attentive to Musgrave's distinction between primary and secondary redistribution, but addressed the problem in different ways.

A final conclusion that falls out of this study is that scholars wrestle with ideas over the course of decades, and the different ideas that they wrestle with often interact in unexpected ways. Buchanan first confronted Pareto optimal redistribution as 'the sort of Paretian' that wrote *The Calculus of Consent*: unanimity was imperative, and the implications of voting rules could not be ignored. Following that thread, Buchanan came to the unexpectedly expansive conclusion that the franchise implied a contingent claim to the wealth of the whole community. By the 1970s Buchanan was struggling with a different set of intellectual problems. To his eyes, the barbarians were at the gate and rather than study the parameters of theoretical constitutions he turned his attention to political arrangements that would bring order to anarchy for the benefit of all (or at least most) citizens. For Buchanan, this new research agenda implied a demogrant—a universal and expansive, but at the same time much narrower approach to redistribution and public welfare programs than he had entertained in the early 1970s.

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