Market failure, inequality and redistribution*

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ABSTRACT

We consider the following question: does market failure justify redistribution? We argue that the general answer to this question is no, in the sense that policies for correcting market failures do not aim at producing a "desirable" income distribution. This follows from the fact that, by construction, market failure is a deviation from "efficiency" that does not involve any notion of a desirable distribution of welfare (or income). However, there are special cases where a "corrective measure" involving redistribution can offset a market failure, so this can provide a form of efficiency-based justification for redistribution.

Keywords: positive economics; normative economics; welfare economics; market failure; externality; taxation; social choice; public choice.

JEL classification: A1, B4, D3, D6, D7, I3.

* The author thanks an anonymous referee and the editor Peter Dietsch for several useful comments. A more elaborate version of this paper is available from the author's homepage (www.jeanmariedufour.com).

1. INTRODUCTION

In this text, we consider the following question: does market failure justify redistribution? Our short answer to this question is no. The argument that leads to this answer can be summarized as follows.

We take for granted that market failure as well as measures that aim at correcting such failures can have an impact on income inequality. After recalling the basic distinction between positive and normative economics, we emphasize that normative economics involves two different styles of analysis: (1) "distribution-free" normative economics, which is based on separating aggregate wealth creation (*efficiency*) from distribution (*equity*) and focuses on the analysis of efficiency; (2) "distribution-sensitive" normative economics, where the levels of welfare (utilities) of different individuals are compared and weighted, for example through *social welfare functions*. "Distribution-free" normative economics avoids controversial choices on weighing different economic agents, but remains "incomplete".

Efficiency analysis provides a partial ranking of economic outcomes, which allows one to eliminate certain outcomes (or policies) as *inadmissible*. Such procedures are quite common and useful in *decision theory*, because they can lead to substantial reductions of the set of possible solutions, though usually not to a unique one (which may require relatively controversial criteria).

Market failure is a situation where an (idealized) market equilibrium model appears to generate inefficiencies, so the welfare of some economic agents can be improved without reducing the welfare of others. The notion of market failure is linked in a fundamental way to the distinction between efficiency and equity issues. By construction, market failure does not involve any notion of a desirable distribution of welfare (or income).

In view of the above distinctions, it is possible to distinguish efficiency-enhancing policies and redistribution policies. Given redistribution policies (which may take the form of a comprehensive income security scheme, a negative income tax, etc.), equity issues can be treated through such policies.

We conclude that market failure does not justify redistribution, in the sense that policies for correcting market failures do not aim at producing a "desirable" income distribution. However, the "neutrality" of efficiency analysis does not mean that distribution (equity, inequality) or other ethical considerations are deemed to be unimportant for economic policy.

As a qualification to the efficiency/equity dichotomy, we also point out that measures aimed at "correcting" market failures (such as taxes and subsidies) typically involve some redistribution, hence providing a form of "justification" for redistribution. For example, redistribution may be viewed as a way of increasing "social consensus", which could alleviate violence in society and foster cooperation. However, when they are viewed in the

broader context of "distribution-sensitive" normative economics, such distributive effects can be mediated and cancelled by redistribution policies.

Below, we elaborate the above arguments. We also discuss the role of "distribution-sensitive" normative economics, as well as limitations and problems associated with "distribution-free" and "distribution-sensitive" normative economics.

2. POSITIVE AND NORMATIVE ECONOMICS

To understand the relation between market failure and redistribution, it is important to remember some basic distinctions: between positive and normative economics, as well as between different forms of normative economics.

Positive economics aims at describing, explaining and predicting "economic phenomena", such as the prices and quantities of goods and services sold in various markets, income, wealth, etc. In the view of many economists, positive economics makes economics a *scientific* discipline. In particular, the latter consists of two main types of activities: abstract theory construction, and empirical analysis. Abstract economic theory usually takes the form of models formulated in a mathematical language, where assumptions are explicitly specified and consequences are derived in a formal way. Coherence and the search for widely applicable assumptions play a major role in economic theory. Empirical analysis involves both the search for statistical regularities and the estimation and testing of economic models derived from economic theory (for example, through the use of econometric methods). The interaction between economic theory and empirical data is a central feature of modern economics. We think it is fair to say that the majority of research in economics involves empirical analysis and the assessment of theory with data.

Normative economics aims at providing instruments for comparing economic outcomes (such as policy outcomes) in a way that can be useful to decision making. This requires the expression of tastes and value judgments. For this reason, it is not usually viewed as part of economics as a *science*. However, normative economics provides a framework for a highly rational form of decision making and may require elaborate calculations. The possibility of using normative economics for *policy analysis* certainly constitutes one of the main reasons for the influence and the social importance of economics as a discipline.

Despite this basic difference, there is a close relationship between positive and normative economics, first through the dependence of normative economics on the findings of positive economics, but also through its general outlook on rational decision making. A basic claim of microeconomic theory -- the fundamental field of positive economics -- is that human behavior can be explained by preferences which provide a partial ordering of alternative possible choices (such as good baskets), without the need to introduce "cardinal" measures of utility. In particular, some choices may be equivalent, so they cannot be ranked in a strict sense: classes of equivalent choices constitute "indifference curves".

The fact that preferences do not yield a complete ordering of possible choices does not preclude them from playing a central role in decision modeling: once a reasonably well-behaved constraint is added, such as a budget constraint or a concave production possibility frontier (which define "feasible" choices), a much reduced (typically unique) "optimal choice" can be derived. In such problems, a feasible choice to which another choice is strictly preferable can be deemed "non-admissible". Indeed, this situation is a general feature of "rational decision making".[1] The problem of hypothesis testing constitutes another classical example where no unique ranking between alternative decision rules is available, because different types of risk trade off with each other (the type I and II error risks); this situation has led to the Neyman-Pearson approach to hypothesis testing [for discussion, see Lehmann (1986) and Dufour (2000, 2003)].

On the other hand, ordinal utility makes interpersonal comparisons difficult and largely arbitrary. For this reason, *economists remain reluctant to make interpersonal comparisons* [Kaldor (1939), Hicks (1939)]. Against this background, assessing economic outcomes typically requires taking into account the welfare of many individuals who may be differently affected by an economic situation (or by a policy). Since interpersonal comparisons are difficult, this has led to a *dual approach* to normative economics, which can be called *distribution-free* normative economics and *distribution-sensitive* normative economics.

3. DISTRIBUTION-FREE NORMATIVE ECONOMICS AND MARKET FAILURE

Distribution-free normative economics is based on the following ideas. This discussion entails our basic answer to the question asked at the beginning.

First, resource allocations are ranked following the Pareto criterion. According to this criterion, a resource allocation is inefficient if it is possible to improve the welfare of at least some individuals while not lowering the welfare of the others. Otherwise, it is deemed to be efficient (in the sense of Pareto). Correspondingly, a policy is Pareto improving if it allows some agents to see their welfare improved, while losers can be compensated by a redistributive scheme. In other words, a Pareto improving policy makes the size of the "pie" larger. It is important to note that the Pareto ranking is only *partial* (by far not a complete one), like preferences in the basic consumer model.[2] Following the language of decision theory, it defines *admissible* and *inadmissible* allocations: under quite general assumptions, the search for an "optimal" allocation can be reduced to this potentially much reduced set. As pointed out above, the incompleteness of many rankings is a pervasive feature in decision

[1] On the role of admissibility in decision theory, see Berger (1997).
[2] For an example of the incompleteness of Pareto rankings in welfare analysis, see Samuelson (1950).

theory: relatively uncontroversial rankings must usually be combined with more "subjective" -- hence controversial -- criteria in order to produce unique decisions.

Second, a *market failure* is a situation where the market equilibrium produces a Pareto inefficient allocation. Classical examples with respect to perfect competitive equilibrium include: monopoly and cartels, externalities -- which may be positive (scientific knowledge) or negative (pollution) -- public goods, imperfect information, etc. Such a characterization depends crucially on specific features of the model used. For example, what appears to be a "market failure" or a "market inefficiency" in the context of a perfect information model (where information is free) may vanish once information is represented as a costly commodity along with other commodities.

Third, the concept of a Pareto ranking suggests to compare resource allocations A and B by checking whether moving from A to B allows the gainers to *compensate* the losers: if this is the case, moving from A to B produces an *efficiency gain*: the "pie" to be shared has become larger. Note that the *capacity to pay*, not *willingness to pay*, is what matters here.[3] Such features can be analyzed without resorting to interpersonal comparisons. Except for the assumption that more utility is preferable to less, all the analysis is based on the "scientific" techniques of positive economics. The "pie" to be shared has become larger.

Fourth, in efficiency analysis, distribution issues are "bracketed" to focus on aggregate wealth. Issues related to production (efficiency) are separated from distribution, a methodology which has a long tradition in economics [see, for example, Kaldor (1939) and Hicks (1939b)]. Distribution-free normative economics can be viewed as a way of ranking economic outcomes under minimal "ethical assumptions", so that issues depend mostly on positive economics assumptions and results. *This does not mean that distribution (equity, inequality) or other ethical considerations are deemed to be unimportant.* Many techniques used in welfare analysis, such as *cost-benefit analysis*, are based on such ideas. [For reviews of these methods, see Ng (1980) and Just, Hueth and Schmitz (1980).]

The above discussion shows that the notion of market failure is associated in a fundamental way with the distinction between efficiency and equity issues. By its very definition, market failure analysis involves the identification of situations where more wealth could be created while keeping its distribution constant. By construction, it is meant to abstract from distributive issues. This entails that *"market" failure cannot "justify" redistribution*, in the sense that policies for correcting market failures do not aim at producing a "desirable" income distribution.

[3] Efficiency analysis focuses on income and wealth effects. Income and wealth constitute measures of the *capacity to consume* by its owner, which is quite distinct from the *willingness to consume* or the *willingness to pay*.

4. DISTRIBUTION-SENSITIVE NORMATIVE ECONOMICS

Efficiency analyses are not sufficient for government and political decision making. A final assessment usually requires taking into account distribution issues, so the welfare of different individuals (groups) must be compared and weighted, and other, "ethical" criteria may become relevant, too.[4]

The notion of a social welfare function [Bergson (1938)] provides a systematic way of doing this. Distributional weights can be included in traditional cost-benefit analysis [see Harberger (1978)]. Under appropriate assumptions, using such a function leads one to pick a unique allocation among the Pareto optimal ones. But this may be too restrictive. Other approaches consist in developing criteria for deciding that certain allocations are not acceptable from a distribution viewpoint, such as allocations which allow for extreme poverty (this leads to policies aimed at satisfying *basic needs*).

From classical results in social choice theory, we know that aggregating individual preferences can be a daunting, if not impossible, exercise. Formulating a social welfare function boils down to expressing preferences on the distribution of welfare in relation with other values (e.g., individual freedom), possibly on the basis of ethical and religious arguments. Differences of opinion on distributional issues depend crucially on attitudes towards economic inequality (different aversions to inequality), risk, individual freedom, the role of the state, etc. So, not surprisingly, getting different people to agree on some welfare function is likely to be highly controversial if not impossible. This may motivate many economists to focus on the narrower distribution-free approach.

5. DISCUSSION

Due to the emphasis on efficiency, the problems associated with inequality and redistribution may be neglected (although certainly not ignored) in economic research. Economics cannot and does not try to have the final say on that. But it can provide useful information on the consequences of alternative redistribution policies. Important related issues concern both distribution-free and distribution-sensitive analyses.

As a first caveat to the notion that efficiency analysis is "neutral" to redistribution, it is important to note that measures that aim at correcting market failures (e.g., taxes, subsidies) almost always have distributive effects. Such effects can, however, be cancelled through specifically redistributive policies. Furthermore, it is possible to argue that redistribution may help increase "social consensus", hence potentially reducing "non-cooperative behaviour" such as rebellions or criminality. If such behavior is interpreted as representing a negative externality, then this could provide a direct "justification" for redistribution based on an efficiency argument. However, in the broader context of distribution-sensitive

[4] For a general discussion, see Hausman and McPherson (2006).

normative economics, such distributive effects can be mediated and cancelled by redistribution policies. Indeed, the very idea of "paying" people to refrain from aggression may be controversial from an ethical viewpoint.

In our view, a significant limitation of the traditional separation between efficiency and distribution problems lies in restrictions on carrying out compensating transfers. In practice, transfers are not costless and may be difficult to perform for various reasons (technical, political, etc.). A state apparatus with the ability to tax citizens is typically needed to make transfers between the members of society, whether such transfers are monetary or in-kind. What are the costs (eventually, efficiency costs) of taxation schemes needed to finance redistribution? Can a general redistribution scheme (such as a negative income tax, or some improvement) fulfill the task of redistributing economic well-being in any desired way?

This raises a more technical question: is it possible to modify traditional efficiency analysis to allow for non-neutral redistribution? In principle, nothing precludes one from taking such difficulties into account. In particular, this involves the addition of restrictions affecting the transfer process to the usual analysis, and second-best techniques may be applied [Lipsey and Lancaster (1956)]. These complications have received relatively little attention and may be worth further research.

If we agree that efficiency analysis should be completed with the introduction of distributional and ethical considerations, this raises other problems. Besides the obvious difficulty of achieving agreement on appropriate distributional and ethical criteria, the following questions should be raised. (1) What are the most appropriate measures of economic inequality: income, wealth, consumption, or something else? Indeed, income, wealth and consumption distributions may evolve quite differently [see Krueger and Perri (2006)]. (2) What are the actual distributive consequences of alternative policies once all the adjustments have taken place (short-run versus long-run effects)? For example, policies that may be favorable to the poor in the short-run may have the opposite effect in the long-run. (3) The political process which leads to redistribution policies involves a competition between political and opinion entrepreneurs (political parties, religious groups, public intellectuals, etc.). What are the likely consequences of this process? These issues have been extensively studied in *public choice* theory and point to central difficulties for the design of "politically acceptable" social welfare functions [Buchanan (2003)].

These difficulties underscore the wisdom of separating efficiency and distribution issues in the analysis of economic policies, even though this involves limitations. However, both types of normative economics matter for the economic policy process.

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