Laissez-faire versus Pareto*

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Abstract. Consider two principles for social evaluation. The first, 'laissez-faire', says that mean-preserving redistribution away from laissez-faire incomes should be regarded as a social worsening. This principle captures a key aspect of liberal political philosophy. The second, weak Pareto, states that an increase in each individual's disposable income should be regarded as a social improvement. We show that the combination of the two principles implies that total disposable income ought be maximized. Strikingly, the relationship between disposable incomes and laissez-faire incomes must therefore be ignored, leaving little room for liberal values.

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1 Introduction

Libertarianism ascribes intrinsic value to laissez-faire outcomes. Proponents of this political philosophy accordingly regard redistributive taxation as an inherent injustice. For example, Nozick (1974, p. 169) states that "[t]axation of earnings from labor is on a par with forced labor. ... taking the earnings of n hours labor is like taking n hours from the person; it is like forcing the person to work n hours for another's purpose." The respect for laissez-faire outcomes is not restricted to the 'rightward' extreme of the liberal spectrum. It is a component also of egalitarian liberalism, which disapproves redistribution to redress inequalities resulting from the exercise of personal responsibility.[1]

We introduce a 'laissez-faire' principle to capture the above ethical role for laissez-faire outcomes. To do so, we distinguish between an individual's 'market income' without government intervention and her 'disposable income' after government intervention. Consider a social state in which disposable incomes coincide with market incomes. The laissez-faire principle simply says that redistribution that moves disposable incomes away from market incomes (while preserving total income) results in a socially worse social state.

We show that the laissez-faire principle, when combined with the Pareto principle, puts strong demands on the social ranking. According to the 'weak Pareto' principle, an increase in the disposable income (which we assume to measure utility) of every individual is a social improvement. Our main result says that a social ranking satisfies laissez-faire and weak Pareto only if it maximizes total disposable income (Theorem 1). That is, with the exception of comparisons involving equal total disposable incomes, the social ranking must ignore distributional considerations altogether. The result is striking,

[1] As Arneson (1990, p. 176) puts it, "distributive justice does not recommend any intervention by society to correct inequalities that arise through the voluntary choice or fault of those who end up with less, so long as it is proper to hold the individuals responsible for the voluntary choice or faulty behavior that gives rise to the inequalities." Inequalities arising from other sources do call for redistribution according to egalitarian liberalism. See also Dworkin (1981), Rawls (1982) and Cohen (1989).

as it is counter to treating the relationship between disposable incomes and market incomes as intrinsically important. We further show that there is no social ranking that satisfies the laissez-faire principle and the 'Pareto indifference' principle (Theorem 2).

Our results reveal a strong tension between the laissez-faire principle and the Pareto principle. This poses a clear challenge for the important task of incorporating liberal political philosophies into the standard 'Paretian' economic framework for social evaluation.

2 Results

The set of individuals is $N = \{1, 2, \ldots, n\}$. For each individual i in N, the real number x_i denotes her disposable income (after government intervention) and the real number m_i denotes her market income (without government intervention).[2] Let $x = (x_1, x_2, \ldots, x_n)$ and $m = (m_1, m_2, \ldots, m_n)$. We refer to a pair (x, m) as a social state.[3] The set $S = \mathbb{R}^n \times \mathbb{R}^n$ collects all social states. We assume that each individual ranks the social states in S in accordance with her own disposable income. That is, individual i in N weakly prefers social state (x, m) to social state (x', m') if and only if $x_i \geq x'_i$.

The aim is to compare social states on the basis of social welfare. A social ranking R is a reflexive and transitive binary relation in S. The asymmetric and symmetric parts of R ('is at least as good as') are denoted by P ('is better than') and I ('is equally good as').

We impose two principles on the social ranking. The first principle expresses respect for laissez-faire outcomes. Consider a social state that gives each individual a disposable income equal to her market income. Laissez-faire demands that any redistribution (that preserves total disposable income) is regarded as a social worsening.

[2]Because of individual responses to government intervention, incomes 'before' intervention need not coincide with incomes 'without' intervention. The latter are the ones relevant for our purpose.

[3]For a social state (x, m), we allow total disposable income $\sum_i x_i$ to be greater than, equal to or smaller than total market income $\sum_i m_i$. Note that the proofs of Theorems 1 and 2 still work if we impose, for each social state (x, m), that $\sum_i x_i = \sum_i m_i$.

Laissez-faire. For all social states (x, m) and (x', m) in S such that $\sum_i x_i = \sum_i x'_i = \sum_i m_i$, if $x = m$ and $x' \neq m$, then $(x, m)\, P\, (x', m)$.

The second principle is a weak form of the Pareto principle. Weak Pareto requires that an increase in the disposable income of every individual is regarded as a social improvement.

Weak Pareto. For all social states (x, m) and (x', m') in S, if $x_i > x'_i$ for each i in N, then $(x, m)\, P\, (x', m')$.

Our main result says that the combination of laissez-faire and weak Pareto forces the social ranking to maximize total disposable income.

Theorem 1. *If a social ranking R satisfies laissez-faire and weak Pareto, then, for all social states (x, m) and (x', m') in S,*

$$\textstyle\sum_i x_i > \sum_i x'_i \quad \textit{implies} \quad (x, m)\, P\, (x', m').$$

Proof. Let R satisfy laissez-faire and weak Pareto. Let (x, m) and (x', m') be social states in S such that $\sum_i x_i > \sum_i x'_i$. We have to show that $(x, m)\, P\, (x', m')$. Let 1_n be the n-vector with a one at each entry.

Assume first that there is a positive real number μ such that $x = x' + \mu 1_n$. Then we have $(x, m)\, P\, (x', m')$ by weak Pareto.

Assume next that there is no positive real number μ such that $x = x' + \mu 1_n$. Let δ be the positive real number for which $\sum_i x_i - \sum_i x'_i = 2\delta n$.

By weak Pareto, we have

$$(x, m)\, P\, (x - \delta 1_n, x - \delta 1_n).$$

Note that $\sum_i (x_i - \delta) = \sum_i (x'_i + \delta)$ and, by the above assumption, $x - \delta 1_n \neq x' + \delta 1_n$. Hence, by laissez-faire, we have

$$(x - \delta 1_n, x - \delta 1_n)\, P\, (x' + \delta 1_n, x - \delta 1_n).$$

By weak Pareto, we have

$$(x' + \delta 1_n, x - \delta 1_n)\, P\, (x', m').$$

Using transitivity, we obtain $(x, m)\, P\, (x', m')$. $\square$

Laissez-faire and weak Pareto are surprisingly demanding if imposed jointly on a social ranking.[4] Comparisons of social states with different total disposable incomes must be made solely on the basis of total disposable income. In all such comparisons, the social ranking must therefore ignore the relationship between disposable incomes and market incomes. Proponents of liberal political philosophies may find this implication hard to swallow. They may reject, for example, a policy that only marginally increases total disposable income, but at the cost of a major shift of disposable incomes away from market incomes.[5]

Next, we consider the implications of strengthening weak Pareto. The 'full' Pareto principle is usually defined as the combination of strong Pareto and Pareto indifference. Strong Pareto demands that if the disposable income of at least one individual increases and the disposable income of no individual decreases, then this is deemed a social improvement.

Strong Pareto. For all social states (x, m) and (x', m') in S, if $x_i \geq x'_i$ for each i in N with at least one strict inequality, then $(x, m)\, P\, (x', m')$.

Pareto indifference requires that if each individual is indifferent between two social states, i.e., has the same disposable income in both, then these two social states are regarded as socially equally good.

Pareto indifference. For all social states (x, m) and (x', m') in S, if $x_i = x'_i$ for each i in N, then $(x, m)\, I\, (x', m')$.

[4]The following example shows that there exist social rankings that satisfy laissez-faire and weak Pareto. For each social state (x, m) in S, let $v(x - m)$ denote the variance of the vector $x - m = (x_1 - m_1, x_2 - m_2, \ldots, x_n - m_n)$. Let R be the social ranking such that, for all social states (x, m) and (x', m') in S, we have that (i) if $\sum_i x_i > \sum_i x'_i$, then $(x, m)\, P\, (x', m')$ and (ii) if $\sum_i x_i = \sum_i x'_i$, then $(x, m)\, R\, (x', m')$ if and only if $v(x - m) \leq v(x' - m')$. The (complete) social ranking R satisfies laissez-faire and weak Pareto.

[5]Consider an example with two individuals. Let (x, m) be such that $x = m = (0, 100)$ and let (x', m) be such that $x' = (100 + \varepsilon, 0)$ with $\varepsilon > 0$. It is clear that in social state (x', m) the disposable incomes and market incomes are far apart. A mild extension of laissez-faire would be that (x, m) should be socially preferred to (x', m) for some small $\varepsilon > 0$. But Theorem 1 says that $(x', m)\, P\, (x, m)$ for each $\varepsilon > 0$.

A direct implication of Theorem 1 is that the combination of laissez-faire and weak Pareto implies strong Pareto.

Corollary 1. *If a social ranking R satisfies laissez-faire and weak Pareto, then R satisfies strong Pareto.*

Pareto indifference cannot, however, be combined with laissez-faire. Hence, a social ranking that satisfies laissez-faire must violate the full Pareto principle.

Theorem 2. *There is no social ranking that satisfies laissez-faire and Pareto indifference.*

Proof. The proof is by contradiction. Assume that R is a social ranking that satisfies laissez-faire and Pareto indifference.

Let x and x' in $\mathbb{R}^n$ be such that $\sum_i x_i = \sum_i x'_i$ and $x \neq x'$. We have $(x, x')\, I\, (x, x)$ by Pareto indifference, $(x, x)\, P\, (x', x)$ by laissez-faire and $(x', x)\, I\, (x', x')$ by Pareto indifference. Using transitivity, we obtain $(x, x')\, P\, (x', x')$. But we have $(x', x')\, P\, (x, x')$ by laissez-faire. $\square$

To end this section, we discuss the relation between our results and a result by Kaplow and Shavell (2001), which states that a social ranking "that is not purely welfarist violates the Pareto principle" (p. 284). Laissez-faire makes the social ranking non-welfarist, as it makes it dependent on non-preference information, viz., the market incomes. Nevertheless, it would be a mistake to regard Theorem 2 as a mere implication of the result by Kaplow and Shavell. What their result in fact shows is that a complete and continuous[6] social ranking that satisfies weak Pareto (which they identify with 'the Pareto principle') must satisfy Pareto indifference (which they identify with 'welfarism').[7] Therefore, the result of Kaplow and Shavell concerns a relationship between two components of the full Pareto principle, whereas our

[6] A social ranking R satisfies continuity if, for all social states (x, m) and (y, m) in S, if a sequence of vectors $\{y^k\}_{k \in \mathbb{N}}$ converges to y and $(x, m)\, R\, (y^k, m)$ (respectively, $(y^k, m)\, R\, (x, m)$) for each k in $\mathbb{N}$, then $(x, m)\, R\, (y, m)$ (respectively, $(y, m)\, R\, (x, m)$).

[7] See also the exchange between Fleurbaey, Tungodden and Chang (2003) and Kaplow and Shavell (2004).

results in Theorems 1 and 2 concern relationships between a component of the full Pareto principle on the one hand and the (non-welfarist) laissez-faire principle on the other hand.

3 Conclusion

The economic literature has traditionally stressed the role of laissez-faire as an instrument for welfare maximization. Our results show the difficulties in treating the respect for laissez-faire outcomes as an end in itself. If the full Pareto principle is required, then no social ranking can satisfy the laissez-faire principle. If only weak Pareto is required, then there are possibilities, but these are very restricted. In cases where the social states differ in total disposable income, market incomes must be ignored and the social state with greater total disposable income must be chosen, leaving little room for liberal values.

We end with a digression on two taxation principles, viz., equal sacrifice and liberal reward. Interpret m as the pre-tax income distribution and x as the post-tax income distribution. The question is how to divide the total tax burden $\sum_i m_i - \sum_i x_i$ among the individuals. The equal sacrifice principle says that taxes should be such that each individual incurs the same utility loss.[8] Let $u : \mathbb{R} \to \mathbb{R}$ be an increasing function, to be interpreted as the common utility function. The equal sacrifice principle demands that, for all social states (x, m) and (x', m) in S such that $\sum_i x_i = \sum_i x'_i$, if $u(x_1) - u(m_1) = u(x_2) - u(m_2) = \cdots = u(x_n) - u(m_n)$ and $x \neq x'$, then $(x, m)\, P\, (x', m)$. It is immediate that equal sacrifice implies laissez-faire. Indeed, equal sacrifice implies that if the tax burden $\sum_i m_i - \sum_i x_i$ is zero (the case laissez-faire deals with), then pre-tax income and post-tax income should coincide.

The liberal reward principle says that, if individuals differ only with respect to responsibility characteristics, then taxes should be such that each

[8] The equal sacrifice principle was proposed by, among others, Mill (1848). See Musgrave (1959) for a historical account. For modern uses of the principle, see, e.g., Young (1987, 1990) and Weinzierl (2014).

individual incurs the same income loss.[9] The liberal reward principle is obtained from the equal sacrifice principle by setting u equal to the identity function. Again, provided we regard all individuals as equals with respect to non-responsibility characteristics, liberal reward implies laissez-faire.

Both equal sacrifice and liberal reward extend laissez-faire. By consequence, our results are also relevant for the study of these principles. The principles are difficult to incorporate into a social ranking together with the natural requirement of the Pareto principle.[10]

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[9] The principle is one of the two components of the equality of opportunity idea of egalitarian liberalism (see the introduction), the other being the compensation principle, which says that taxes should be such that post-tax incomes of individuals who differ only with respect to non-responsibility characteristics are equal. On this literature, see Fleurbaey (2008), Fleurbaey and Maniquet (2011) and Roemer and Trannoy (2013).

[10] Theorem 1 is particularly interesting in the context of the liberal reward principle. The result says that in many comparisons we must follow instead what is known as the utilitarian reward principle, which advocates maximization of incomes rather than, as liberal reward, minimizing deviations from the market incomes. See Roemer (1993) and Van de gaer (1993).

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