Generalized Social Marginal Welfare Weights for Optimal Tax Theory

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MOTIVATION

Welfarism is the dominant approach in optimal taxation

Welfarism: social objective is a sole function of individual utilities: $G(u^1, \ldots, u^I)$

Tractable and coherent framework that captures the equity-efficiency trade-off but generates puzzles:

(a) 100% taxation absent behavioral responses
(b) Whether income is deserved or due to luck is irrelevant
(c) What transfer recipients would have done absent transfers is irrelevant
(d) Tags correlated with ability should be heavily used

We propose a new generalized framework nesting welfarism which can resolve those puzzles
STANDARD TAX REFORM APPROACH

Consider classic optimal income tax problem. Individuals \( i = 1, \ldots, I \) have utilities \( u^i(c, z) \) increasing in consumption \( c \), decreasing in earnings \( z \).

Planner sets \( T(z) \) to maximize \( G(u^1, \ldots, u^I) \)

subject to (a) \( \sum_i T(z_i) \geq E \), (b) \( z_i \) maximizes \( u^i(z_i - T(z_i), z_i) \)

Equivalent to **tax reform approach**: \( T(z) \) is optimal if

For any budget neutral small tax reform \( dT(z), \sum_i g_i dT(z_i) = 0 \) with \( g_i = G_{u^i u_c^i} \geq 0 \) social marginal welfare weight on indiv. \( i \)

Sum mechanical gains and losses across individuals, behavioral responses matter only for govt budget constraint

\( \Rightarrow \) Generates optimal tax formulas function of \( g_i \)'s and behavioral response elasticities
GENERALIZING THE TAX REFORM APPROACH

Social planner uses generalized social marginal welfare weights $g_i \geq 0$ to value marginal consumption of individual $i$

g_i$ can vary with $T(z)$ and other economic circumstances

Optimal tax criterion: $T(z)$ is optimal if

For any budget neutral small tax reform $dT(z)$, $\sum_i g_i dT(z_i) = 0$

with $g_i \geq 0$ generalized social marg. welfare weight on indiv. $i$

1) Nests welfarist case when $g_i = G_u i u_c^i$

2) Generates same optimal tax formulas as welfarist approach

3) Respects (local) constrained Pareto efficiency $(g_i \geq 0)$

4) No social objective is maximized
Application 1: Optimal Tax with Fixed Incomes

Utilitarian approach has degenerate solution with 100% taxation when \( u'(c) \downarrow c \)

Public may not support confiscatory taxation even absent behavioral responses

Generalized social marginal welfare weights: \( g_i = g(c_i, T_i) \)

\( g(c, T) \downarrow c \) (ability to pay)

\( g(c, T) \uparrow T \) (contribution to society)

Optimum: \( g(z - T(z), T(z)) \) equalized across \( z \)

\( \Rightarrow T'(z) = 1/(1 - g_T/g_c) \) and \( 0 \leq T'(z) \leq 1 \)
Application 1: Optimal Tax with Fixed Incomes

Preferences for redistributions embodied in $g(c, T)$

Polar cases:

1) Utilitarian case: $g(c, T) = u'(c) \Rightarrow T'(z) \equiv 1$

2) Libertarian case: $g(c, T) = g(T) \Rightarrow T'(z) \equiv 0$

We use online survey to estimate $g(c, T)$

We find that revealed preferences depend on both $c$ and $T$

$z=\$40K, T=\$10K, c=\$30K$ more deserving than $z=\$50K, T=\$10K, c=\$40K$

$z=\$50K, T=\$15K, c=\$35K$ more deserving than $z=\$40K, T=\$5K, c=\$35K$
Application 2: DESERVED VS. LUCK INCOME

Taxing luck income is fair while taxing deserved income is not

Suppose \( z = w + y \) with \( w \) deserved income and \( y \) luck income (\( w, y \) mix not observable)

Person is deserving if \( c = z - T \leq w + Ey \) with \( Ey \) average luck income \( \Rightarrow g_i = 1 \) if \( c_i \leq w_i + Ey \), \( g_i = 0 \) if not.

\( \int_{w+y=z} g_i \) provides micro-foundation for \( g(c,T) \) increasing in \( T \)

Beliefs in share of income due to luck at each income level is key
Application 3: FREE LOADERS

Our online survey shows strong public preference for redistributing toward deserving poor (unable to work or trying hard to work) rather than undeserving poor (who would work absent transfers)

Generalized social welfare weights can capture this by setting $g_i = 0$ on free loaders (transfer recipients who would have worked absent the transfer) ⇒

1) Behavioral responses reduce desirability of transfers (over and above standard budgetary effect)

2) In-work benefit ($T'(z) < 0$ at bottom) may become optimal in Mirrlees (1971) optimal tax model
Application 4: TAGS AND HORIZONTAL EQUITY

Tagging (e.g. taxing height) desirable in welfarist framework

In practice horizontal equity concerns

Horizontal equity concerns can be captured with generalized social marginal welfare weights as follows:

If individual suffers from horizontal inequity (e.g., she is taxed more because of her height) then her generalized social welfare weight increases sharply (Endogenous Rawlsian criterion)

⇒ Tagging is desirable only if it benefits those discriminated against by the tax system

⇒ Dramatically reduces the scope for tagging
LINK WITH OTHER JUSTICE PRINCIPLES

Various alternatives to welfarism have been proposed.

Each alternative can be recast in terms of implied **generalized social marginal welfare weights** (as long as it generates constrained Pareto efficient optima)

1) Rawlsian: $g_i$ concentrated on worst-off individual

2) Fleurbaey-Maniquet Restud’06 compensation and responsibility principles: $g_i$ concentrated on minimum wage workers working full-time

3) Roemer ’98 equality of opportunity: $g_i$ concentrated on those coming from disadvantaged background

In all cases, we can use simple and tractable optimal income tax formula for heterogeneous population from Saez Restud’01:

$$T'(z) = [1 - G(z)]/[1 - G(z) + \alpha(z) \cdot e]$$ with $G(z)$ average of $g_i$ above $z$
CONCLUSION

Tax reform approach + generalized social marginal welfare weights create a tractable and powerful framework for optimal tax analysis

1) Nests welfarist case, retains the same optimal tax formulas, can address most puzzles

2) Puts social preferences at the core of the optimal tax problem: 2 approaches

a) Positive approach: analyze actual social preferences for redistribution using online surveys

b) Normative approach: set social marginal welfare weights based on justice principles