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From Optimal Tax Theory to Tax Policy: Retrospective and Prospective Views

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A Practitioner's View

"Mirrlees' lecture was on optimal taxation, a branch of public finance that had conquered the academic world and, so far, has been largely ignored by the real world. Enormous intellectual resources have gone into it and, literally, thousands of papers have been written analyzing all possible ramifications of the theory. The problem is that no tax reform that I know of has ever applied it. The statistical or informational requirements are just beyond what countries can produce and the political requirements are beyond what governments want to live with. Thus, in terms of concrete results, optimal taxation theory must be considered a highly unproductive activity. Its recommendations often conflict with what governments want to do or what taxpayers expect them to do."

Vito Tanzi, referring to a lecture by James Mirrlees at the 1997 IIPF Congress in Kyoto, in Tanzi (2008), pp 116–7.

Overview

- Role of scientific ideas in informing and influencing policy
- Focus on normative, second-best optimal tax policy analysis
- Brief review of landmarks of optimal tax analysis
- Evolution of tax policy
- Some key findings of applied optimal tax analysis
- Lessons for policy
- Challenges facing tax design analysis from the recent literatures on behavior economics, social choice and political economy

Role of Normative Scientific Ideas

- Not a blueprint for actual tax systems
- Incubator of ideas that inform policy process
- Focus on limited dimensions of normative policy analysis
- Valuable as indicating a way of thinking about policy problems
- Ideas get disseminated in many ways
- Some core ideas that have direct policy implications
- Example: Tax Reform Commissions

Main Currents of Tax Reform

- Widespread adoption of VAT systems
- Income tax evolution
- Gradual demise of wealth and wealth transfer taxes
- Stand-alone transfers, in-kind transfers and social insurance
- Experiments in business taxation
- Environmental charges, user fees, sin taxes

Landmarks in Linear Optimal Tax Theory

- Ramsey, Hotelling: Optimal commodity taxes for individual
- Corlett-Hague: Tax reform analysis for three commodities
- Meade, Lipsey-Lancaster, Harberger: Second-best applied welfare analysis
- Atkinson-Stern: Marginal cost of public funds
- Ahmed-Stern: Tax reform analysis
- Atkinson-Sandmo, King: Intertemporal optimal tax
- Fischer: time-inconsistency of second-best optimal policy
- Sandmo, Bovenberg-de Mooij: Second-best Pigouvian taxes
- Diamond-Mirrlees: Production Efficiency Theorem

Genesis of Information Approach to Normative Analysis

- de Van Graaff (1957) on incentive constraint: *"If we tax able men more than dunderheads, we open the door to all forms of falsification: we make stupidity seem profitable and any able man can make himself seem stupid. Unless we really do have an omniscient observing economist to judge men's capabilities, or a slave-market where prices they fetch reflect expert appraisals of their capacities, any taxing authority is bound to be guided by elementary visible criteria like age, marital status and above all ability to pay. We are back with an income tax".* (p. 78).

Mirrlees Standard Model

- Continuum of persons who differ only in their fixed wage rates
- Identical utility functions in consumption and leisure
- Government observes income, maximizes additive & symmetric SWF
- Marginal tax rates $\geqslant 0$ (endogenous)
- Average tax rate pattern not characterized
- Real message is that optimal income tax not that progressive, even in first-best

Relevant Extensions to Mirrlees Model

- Multiple commodities: Atkinson-Stiglitz Theorem
- Discrete skill distribution: Stiglitz, Guesnerie-Seade
- Maximin case: declining MTRs, concave ATR
- Extensive margin: MTR < 0 at bottom (Diamond, Saez)
- Quantity & price controls: Nichols-Zeckhauser 1982, Guesnerie-Roberts 1984
- Acquisition of information: tagging (Akerlof 1978)

Dynamic Optimal Taxation

- Infinite-horizon Ramsey analysis: zero long-run capital taxation (Judd, Chamley)
- Dynamic OLG case: zero capital tax no longer holds (Erosa-Gervais)
- Dynamic Mirrlees analysis: case for capital taxation (Golosov-Tsyvinski-Werning, Diamond)
- Inability to commit: sub-optimal time-consistent saving and redistribution (Roberts)
- Efficient business taxation: Cash-flow, ACE, RRT

Summary of Policy-Relevant Findings

- Earlier norm: comprehensive income tax as ability to pay (Shanz, Haig, Simons, Musgrave)
- Distinguished consumption tax detractors (Mill, Pigou, Marshall, Fisher, Kaldor) the definitive statement
- Taken up by US Treasury Blueprints for Basic Tax Reform (1977) and UK Meade Report (1978)
- Until recently, most systems hybrids of income & consumption tax: sheltered pensions, housing, human capital, with single rate structure

Normative Case for Some Capital Income Taxation

- Optimal tax arguments clarified case for taxing capital income
  - Risky future earnings and education
  - Liquidity constraints
  - Different utility discounting rates
  - Unobserved wealth and wealth transfers
  - Human capital investment: progressive earnings tax
  - Absence of age-dependent earnings tax
  - Effect on saving
  - Effect on relative wages
- Reinforced by time-consistency arguments

Case for Schedular Tax on Earnings and Capital Income

- Presumption that capital income should have lower rate than earnings tax
  - Optimal tax arguments
  - Inability to tax all forms of capital income
  - Cascading effect of capital income tax
  - Mobility of capital
  - Horizontal equity: high savers
- Presumption of More Progressive Earnings Tax
  - Earnings more important source of inequality
  - Difference in tax base elasticity
  - Administrative costs of progressive capital tax
- Dual income tax a reasonable compromise
- Mix of payroll, income and VAT effectively schedular

The VAT Revolution

- Two key features of VATs
  - Uniform tax rates
  - Production efficiency
- VAT most effective if accompanied by progressive personal tax
- Apparent regressivity addressed by refundable tax credits: NIT
- Compromised by large informal sectors: LDCs
- Tax compliance and morale affected by VAT
- Standalone excise taxes useful complement

Evolving Business Taxes

- Withholding vs Rent collection
- Rent taxes in resource industries
  - Especially relevant in LDCs
  - Resource rent tax, auction of rights
  - Royalties inefficient unless used to control extraction when producers have time-limits on property rights
  - Many special problems in resource taxation: uncertainty, longevity, asymmetric information

Progressivity

- Contribution of optimal tax theory less apparent
- Standard theory suggests less progressivity than expected
- Relatively flat marginal tax rate schedule
- ATR pattern concave with enough aversion to inequality
- MTR at bottom negative if labor varies along extensive margin
- Tax evasion lowers progressivity significantly
- Uncertainty has ambiguous effect on progressivity

In practice, income taxes have become less progressive at top and more at bottom, with negative MTRs at bottom from refundable tax credits: conforms with theory

Non-Tax Redistribution

Many forms conform with theory

- Stand-alone welfare and disability transfers
- State pensions for the poor elderly
- Unemployment insurance for temporary unemployed
- In-kind transfers
- Health insurance, pharmaceuticals
- Minimum wages, rent controls

Summary of Lessons for Tax Policy

- VAT: uniformity, production efficiency, compliance
- Personal tax base: case for taxing capital income, but using separate, flatter rate schedule
- Refundable tax credits: progressive (targeted) negative income tax, encourage participation, equal opp for children
- Stand-alone transfer and social insurance programs complement tax-transfer system
- Minimum wages can be welfare-improving
- In-kind transfers a useful supplement to income tax
- Efficient business taxes possible
- Excise taxes for behavioral problems and externality pricing

Theory vs Practice

Not all practice derives from normative theory
Remain many areas where practice contradicts normative theory

- Inadequate support for the neediest
- Too little targeting relative to universality
- Inadequate monitoring and deterrence in many programs
- Demise of wealth transfer taxation
- Inefficient business taxation

Differences remain across countries

Challenges for the Theory of Tax Policy

Five Basic Challenges for Normative Optimal Tax Policy

1. Inapplicability of results from abstract models
2. Inability of benevolent government to commit
3. Individual heterogeneity
4. Behavioral issues
5. Political economy constraints

1 Abstract Models

- Some key results are model-specific
- Information constraints not binding
- Atkinson-Stiglitz Theorem assumes government applies optimal nonlinear tax
- Production Efficiency Theorem assumes optimal taxation
- Lerner Principle based on insufficient reason
  - Expected costs of deviating from best-guess principles are positive
  - Reason: Damages of distortions are convex in the size of the distortion
- In some cases, good reasons to deviate
  - Multi-period commodity tax: capital income taxation
  - Deviation from Samuelson Conditions: MCPF

2 Commitment

Second-best dynamic policies generally time-inconsistent

Time-consistent policies highly inferior

Environments where commitment a possible problem

- Dynamic Ramsey optimal tax problem
- Optimal redistribution problems after individuals reveal types
- Long-run investments: natural resources, human capital, lifetime wealth

Commitment, cont'd

- Potentially devastating consequences for normative analysis; nonetheless,
- Commitment a reasonable working assumption:
- Governments typically do not re-optimize based on new personal information
- Inertia in government decision-making: length of time to legislate
- Some political economy models offer some explanations for commitment or ways of pre-committing (strategic delegation, retrospective voting)

3 Heterogeneity of Individual Utility Functions

- Standard model assumes identical utility functions
- Preference orderings may differ
- Utility functions may differ
- Some sources of utility or revealed preferences may be problematic

Preference Differences

- Individuals make very different choices, given the same opportunities
- Comparing welfare levels with different preferences difficult/controversial
- One approach: Principles of Responsibility and Compensation, but
  - Identifying responsibility not clear
  - Principles cannot both be satisfied
  - Not obvious how to trade them off

Problems with Utility Functions

- Differences in ability to generate utility
- What sources of utility should count?
- Meaning of utility?
- Has important policy implications (eg, treatment of family)

4 Behavioral Issues

1. Bounded rationality when decision-making complex and information costly
2. Irrational decision-making
3. Non-selfish choices

Case for government intervention mixed

5 Political Economy Constraints

Arguments against imposing political constraints

- Normative analysis studies what ought to be done, rather than what can be done
- Normative analysis serves as a benchmark
- Normative models focus on specific aspects of policies and abstract from others
- Normative arguments can persuade policy-makers, so political constraint endogenous
- Political constraints ill-defined and inherently complex
- Political economy models implicitly include value judgments, maybe even normative values of voters
- In political economy literature, political outcomes deterministic ands specific to model

Use of Political Revealed Preference for Normative Purposes

To what extent can we use revealed outcomes from political (and market) decisions to inform values for normative analysis?

- Intergenerational discounting (Stern report social discount rate vs market interest rate)
- Society's aversion to inequality
- Treatment of persons with different preferences for leisure
- Treatment of responsibility for personal choices