Indirect taxes for redistribution: Should necessity goods be favored?

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ABSTRACT

The Atkinson–Stiglitz Theorem shows that with weakly separable preferences, differential commodity taxes are not needed if an optimal nonlinear income tax is imposed. Redistributive objectives can be achieved with the income tax alone even if goods differ considerably in their income elasticities of demand. Deaton showed that if the government is restricted to a linear progressive income tax along with commodity taxes, the latter are superfluous if preferences are not only weakly separable but also yield linear Engel curves whose slopes are common to all households. These have potentially strong policy implications since they suggest that the common practice of giving preferential commodity tax treatment to necessities is not warranted. Assuming the Deaton conditions are satisfied, we derive two results to the contrary, regardless of whether labor supply varies along the intensive or extensive margin. First, if income tax, linear or nonlinear, is less progressive than optimal, necessities should be taxed preferentially relative to luxuries. Second, if a linear income tax is optimal but low-income households are unable to afford any luxury goods, it may still be optimal to tax necessity goods at lower rates than luxuries.

1. Introduction

A key issue in tax policy concerns the use of differential commodity tax rates as part of the tax system. Most nations (a notable exception being the USA) now use value-added taxes (VATs) alongside direct taxes to raise the bulk of their revenues. Virtually all of them give preferential treatment to selected commodities using exemptions, zero-rating or reduced rates. In some cases, this reflects difficulties in taxing consumer services properly, as in the cases of housing and financial services. There are other instances where some goods are subject to higher tax rates because of externality arguments or as user charges. These include tobacco, alcohol and petroleum products. The case of interest to us is where differential commodity taxes are deployed as redistributive devices. Commodities that are taken to be relatively important for poorer taxpayers, such as food, children's clothing and home heating, are often taxed at reduced rates. While there is some *prime facie* appeal to taxing more lightly goods with low elasticities of demand to improve redistributive outcomes,

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forceful arguments have been made that redistribution is better carried out by relying solely on progressive direct tax-transfer schemes, especially given the avoidable complexity and loss in revenue-raising efficiency that preferential rates cause for a VAT system.[1]

Recently, the Mirrlees Review (Mirrlees et al., 2010) has taken this position, proposing that differential VAT rates be abolished by moving to uniform rates and adjusting the income tax system to maintain approximate distribution-neutrality. This is bound to be a controversial proposal politically since the cost of fully taxing necessities may be more salient to taxpayers than the relief given through income tax changes. Our focus is on the normative arguments for such reforms. The purpose of this paper is to shed some light on when it is reasonable to tax necessities preferentially for redistribution purposes. In doing so, we set aside arguments of administrative ease and political feasibility, and focus purely on tax reform principles based on optimal tax theory.

The theoretical basis for uniform commodity taxation originates with the Atkinson–Stiglitz Theorem (Atkinson and Stiglitz, 1976). This states that, in a standard nonlinear income tax world Mirrlees et al. (2010) with multiple commodities that can be taxed indirectly, if the government imposes an optimal nonlinear income tax, the commodity tax structure should be uniform if preferences are weakly separable in goods and leisure. Deaton (1979) showed that if the government is restricted to a linear income tax and sets it optimally, the commodity tax structure should be uniform if preferences are weakly separable and Engel curves for all goods are linear with the same slopes for all households (e.g., preferences for goods are quasi-homothetic, like Stone–Geary preferences).

More recently, Konishi (1995), Laroque (2005a) and Kaplow (2006, 2008) have derived a powerful generalization of the Atkinson–Stiglitz Theorem. Suppose preferences are weakly separable in goods and leisure, and start with a tax system that includes both differential commodity taxation and an arbitrary nonlinear income tax. A Pareto-improving tax reform can be implemented that moves to uniform goods' taxation and adjusts all persons' income tax liabilities such that government budget balance is maintained and incentive constraints are satisfied. Hellwig (2009, 2010) provides a comparable extension of Deaton's result. Suppose preferences satisfy Deaton's restrictions, and start from any linear progressive income tax combined with differential commodity taxes. A Pareto-improving tax reform can be found that eliminates differential commodity taxes and revises the parameters of the linear progressive income tax while maintaining budget balance.[2] Note the relevant point for our purposes that weak separability (with or without linear Engel curves) does not rule out very different income elasticities for different goods.

If preferences are not weakly separable, the theory can no longer recommend uniform taxation. The analogue of the well-known results of Corlett and Hague (1953) apply: goods that are relatively more complementary with leisure should bear correspondingly higher tax rates (Christiansen, 1984; Edwards et al., 1994; Nava et al., 1996; Jacobs and Boadway, 2013). Other variations of the classical optimal tax model can also generate plausible arguments for differential taxation. Boadway et al. (1994) argue that indirect taxation can be desirable to the extent that it leads to less evasion than income taxation. Cremer and Gahvari (1995) show that if consumer durables must be purchased before wage rates are known, a case can be made for preferential tax treatment of durables to offset the excessive precautionary saving to self-insure against wage uncertainty. Differential goods' taxation can also be called for if unobserved endowments of particular goods differ among individuals (Cremer et al., 2001), if preferences differ (Saez, 2002a; Marchand et al., 2003; Blomquist and Christiansen, 2008), or if needs for consumption for particular goods differ (Boadway et al., 2003). Boadway and Gahvari (2006) show that when the time taken to consume goods is a substitute in utility for labor, a higher tax rate should be imposed on goods whose consumption is more time-intensive.

While each of these studies provides a rationale for differential commodity taxes, they generally do not single out goods with low elasticities of demand for special treatment. An exception is Revesz (2014), who studies optimal commodity and piecewise linear income taxation with Stone–Geary preferences where some goods are necessities and others luxuries. He assumes both that preferences differ between high- and low-income persons and that the latter consume only necessities. It is this assumed difference in preferences that leads to differential taxation of necessities and luxuries in a setting where otherwise commodity taxes would be uniform. Another exception is Cremer et al. (2001). They show that when the endowments of some goods differ among individuals and the tax authority cannot observe endowments, the tax rates on goods for whom endowments are identical should increase with the income elasticity of demand if cross-substitution effects are all zero (compensated demands depend only on own prices). In the likely event that cross-substitution effects are not zero, little can be said. We assume in this paper that endowments of all commodities are zero.

The proposals of the Mirrlees Review were informed by the Atkinson–Stiglitz Theorem and its generalization. The Review relied on consumer demand estimates that showed that for the most part, necessity goods that were favored by the UK VAT were not complementary with leisure, with some notable exceptions such as child care. Based on that and setting aside arguments such as compliance costs and differences in preferences and needs, its proposal for a roughly distribution-neutral reform that moves to uniformity is supported by the Konishi–Laroque–Kaplow analysis.

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[1] See Keen (2013) and International Monetary Fund (2013), among others, for studies on the *C*-efficiency of the VAT (VAT revenue divided by the product of the standard rate and aggregate private consumption) that indicate that rate differentiation and exemptions can be quantitatively important in preventing the VAT from fully realizing its revenue-raising potential.

[2] The proof in Hellwig (2009) assumes that preferences are homothetic in goods. However, as he points out in Hellwig (2010), the analogous proof applies to the case where preferences are quasi-homothetic in goods so Engel curves are linear.