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# Consumption vs. income taxes when private human capital investments are imperfectly observable

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**Abstract**

This paper considers optimal taxation in an endogenous growth model where private education investments are imperfectly observable. Consumption taxation is better than labor income taxation for public provision of goods unless educational investment is completely unobservable. If subsidies are feasible for observed education investment, the consumption tax rate is independent of the degree of observability but the subsidy rate is higher the lower is the observability. If subsidies are not feasible, the consumption tax rate is lower the more limited is the observability. Optimal tax rates for goods that provide consumption and education investment simultaneously are below normal rates for observed pure consumption. Growth and welfare are positively related to (independent of) the degree of observability without (with) subsidies. © 2000 Elsevier Science S.A. All rights reserved.

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## 1. Introduction

The conventional optimal taxation literature based on a representative agent focuses on efficiency arguments and draws conclusions in favor of consumption

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taxes or taxes on initial capital stock over income or labor income taxes; see, e.g., Atkinson and Stiglitz (1981), Auerbach et al. (1983), Chamley (1986), Cooley and Hansen (1991), Devereux and Love (1994), Jones et al. (1993), Judd (1987), King and Rebelo (1990), Lucas (1990), Pecorino (1993, 1994), Perroni (1995), Rebelo (1991), Summers (1981), Trostel (1993). When the importance of human capital is recognized a key question arises: can governments distinguish private human capital investment from private consumption when a consumption tax is used? For many goods and services, the answer tends to be negative. A wide range of goods and services have both a pure consumption and human capital investment component. Major commodities like food, shelter, and clothing, for example, are all in this category — they are essential for bringing children up and also for maintaining the human capital of adults. Also, books, magazines, computers, radio, TV, and private lessons are recreational as well as educational. In fact, it is easier to make a list of things which have very little human capital investment aspect — e.g. tobacco — than it is to list all the goods and services which people use to build up or maintain their human capital. Thus, it is prohibitively costly to impose different taxes based strictly on actual uses, and it is realistic to take as a fact that governments have only a partial ability to distinguish private consumption from private educational investment.

Owing to this fact, the publicly identifiable portion of private investment in education is generally exempted from a consumption tax or subsidized while the remaining portion is taxed. Clearly, taxing private educational investment to some extent under a consumption tax distorts individuals' decisions. Thus, governments' partial ability to differentiate private consumption from private educational investment poses some challenging questions. Firstly, can a consumption tax do better than other taxes in terms of welfare when private educational investment is (at least partly) subject to this tax? Secondly, what are the implications of the degree of this partial ability for growth and for the level of government expenditure which should, and perhaps will, be chosen?

Much work on optimal taxes focuses on lump-sum transfers of tax revenue to individuals. In practice, however, there are substantial uses of tax revenue to provide goods and services, including public consumption and investment in education in many countries. Most of the OECD countries spend more government revenue on the provision of goods and services than transfers net of social security.[1] Using the neoclassical growth model, Krusell et al. (1996) have recently shown that if government outlays are used for redistribution through lump-sum transfers, then income taxes are not necessarily worse in welfare terms, and may even be better than consumption taxes. In the political equilibrium of their model,

[1]According to ILO (1987), many OECD countries in fact have earning-dependent social security which conditions an individual's benefits on his contribution made from payroll taxes. Evidently, such a social security program differs from redistributive transfer programs assumed in the taxation literature. For the effects of social security on growth, see Zhang (1995) and others.

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