



Optimal income taxation with human capital accumulation and limited record keeping

Marek Kapicka

Department of Economics, University of California, 3052 North Hall, Santa Barbara, CA 93106, USA

Received 8 March 2005; revised 16 May 2006

Available online 24 July 2006

Abstract

This paper characterizes optimal income taxes in a dynamic economy where human capital is unobservable and the government is restricted to use taxes that depend only on current income. I show that unobservability of human capital tends to decrease the labor wedge, while the effect on the human capital wedge is uncertain. I also analyze the relationship between optimal taxes in economies with and without endogenous human capital and identify two qualitative reasons why the optimal tax codes will differ. I perform numerical simulations to calculate the quantitative relevance of endogenous human capital formation for optimal tax policy. I find that endogenous human capital lowers marginal tax rates by about 9% on average, as compared with a static model without human capital.

© 2006 Elsevier Inc. All rights reserved.

JEL classification: E6; H2

Keywords: Optimal taxation; Income taxation; Human capital

1. Introduction

This paper analyzes optimal income taxes in a dynamic heterogeneous agent economy where people can accumulate human capital over time and human capital is unobserved by the government. Income taxes in such an environment affect two margins. As is well known from the static models, they distort the labor-leisure trade-off. Additionally, they discourage investment in human capital. The government's ability to redistribute resources from more able people to less able ones is thus limited even more severely than in a model without human capital.

E-mail address: mkapicka@econ.ucsb.edu.

The effect of income taxes on human capital formation has been much studied.¹ The literature typically tries to assess the effects of a given tax code but stops short of asking the related question: what does the optimal income tax look like? The contribution of this paper is to answer this normative question. I solve for optimal tax policies in a steady state, relate them to optimal tax policies in an economy without human capital, and offer several new insights into the problem of optimal taxation.

I analyze the problem of optimal taxation in an environment that contains two types of frictions. The first is that the agents have private information about their productivity, labor supply and human capital. To simplify the structure of the problem I assume that an individual's productivity is permanent and does not change over time. The second friction is that the government is unable to keep track of individuals' past information. The limited record keeping friction is clearly very restrictive. But, in its absence, the optimal tax code will probably be very complex, and difficult to implement in a real world.² One of the goals of this paper is to analyze optimal taxation in an environment which is dynamic but at the same time delivers tax policies that are simple enough to be directly comparable to current tax policies. The assumption of limited record keeping achieves this. Section 4 proves a version of the Taxation principle and shows that, with both frictions, the optimal tax system takes a very simple form: income taxes depend only on current income.

Compared to a frictionless economy, the efficient allocations imply two types of wedges, i.e. inequalities between marginal products and marginal rates of substitution. The two wedges are a labor wedge and a human capital wedge. The labor wedge is defined as a wedge between the marginal product of labor and the marginal rate of substitution between consumption and labor. Similarly, the human capital wedge is defined as a wedge between the marginal product of human capital and the marginal rate of substitution between consumption and human capital. While the labor wedge has been standard in the literature, the human capital wedge is new.

In Section 5, I focus on the steady state and compare both wedges to their counterparts in an economy where human capital is observable. I show that unobservability of human capital has asymmetric effects on the wedges. While the labor wedge tends to decrease when human capital becomes unobservable, the effect on the human capital wedge is uncertain. To see the intuition, note first that when human capital is unobservable, the social planner is forced to choose only allocations that obey an Euler equation for agents' human capital investment. The Euler equation equates marginal benefits of investment in human capital with its marginal costs. This constraint is binding in a steady state since, in its absence, the social planner would set the marginal costs higher than the marginal benefits. I show that a small increase in labor supply tends to increase both marginal benefits and marginal costs of human capital investment. But it increases marginal benefits by more than it increases marginal costs and therefore helps to alleviate the inefficiency coming from the Euler equation. Thus, there is an extra benefit from having higher labor supply or, equivalently, from having a smaller labor wedge. In contrast, an increase in human capital increases marginal costs of investment in human capital, but not necessarily marginal benefits. Therefore, the effect on human capital wedge is in general uncertain. I find that for my particular parametrization, the human capital wedge tends to increase.

¹ See Heckman et al. (1998), Erosa and Koreshkova (2006) or Caucutt et al. (2001), and others.

² See Werning (2001) for an example of the optimal tax code in a simpler environment with no human capital. The tax code depends on the present value of all past and future incomes.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات