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Inflation and capital gains taxes in a small open economy

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Abstract

Inflation distorts an economy through many channels. This paper highlights the interaction between inflation and capital gains tax and their distortions to a small open economy through the financial market. This research captures several observations. First, capital formation or investment is an important channel for consumption smoothing over the life cycles. Second, capital gains are taxed only when the gains are realized. Third, inflation introduces an upward bias in the calculation of tax base. Thus, a capital gains tax in the presence of inflation can have a significant welfare effect even though its contribution to the government revenue is relatively small. The quantitative analysis shows that high inflation alone can lower social welfare. This problem becomes more severe when capital gains tax is introduced in an inflationary economy. The implicit inflation tax can be more hazardous to the economy than the explicit counterpart. © 2000 Elsevier Science Inc. All rights reserved.

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1. Introduction

As the financial markets mature in a modern economy, capital gains tax concerns more to economists and policy makers. This tax has been adopted in a certain number of countries such as Canada and the United States. The pros and cons has been discussed extensively in the literature.¹ However, the literature typically focuses on

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the effect of capital gains tax on portfolio choices and asset returns. It has ignored the joint distortion of capital gains tax and inflation tax.² By constructing a life-cycle economy, we plan to investigate how capital gain tax distorts consumption and investment decisions in an inflationary economy. We are more interested in the policy implications to some small open economies such as Canada and Hong Kong.

The consequences of such a distortion on individuals' behavior may be complicated. On the one hand, inflation imposes a tax through the cash-in-advance constraint and encourages investors to reallocate their portfolio towards capital.³ On the other hand, capital gains tax will decrease the total amount of investment. This in turn will affect the wage rates. In addition, purchasing power is also redistributed to the "poor" through the transfer financed by taxes. The total effect on consumption and other macro variables is very complicated, and therefore a dynamic general equilibrium model is developed to capture and quantify these interactions.

This paper attempts to quantify the joint welfare loss due to inflation and capital gains taxes in a small open economy.⁴ As it is standard in the literature, the interest rate in the small economy is assumed to be constant and determined in the world capital market. Then the paper provides some estimates of the welfare cost of inflation and capital gains tax.⁵

The general equilibrium inflation tax literature typically focuses on the distortions related to the "real side" of the economy.⁶ This paper, however, concerns how inflation distorts the economy through the financial side. In spirit, this paper is close to Altig and Carlstrom (1991) which analyzes how inflation amplifies the distortion caused by the income tax. However, our model is different from theirs in two ways. First, in their model money acts as a unit of account only, while here money exists as a medium of exchange. In addition, inflation is also a vehicle of income redistribution in this paper. Second, they focus on capital income tax but this paper studies the capital gains tax, which applies only when investors decide to realize the nominal gain. It has the "option feature." Postponement of the sale of capital is coupled with the deferral of capital gains tax. To quantify such a discontinuity in the income stream as well as the tax payment, this paper adopts an algorithm different from many of the existing studies, which is a generalization of Imrohroglu, Imrohroglu, and Joines (1993).

The next section provides a formal description of the baseline model. Section 3 describes the calibration and discusses the results. The final section concludes.

2. The model

Time is discrete and the horizon is infinite. This is a multiperiod overlapping generation model without any uncertainty. An agent lives for exactly J periods but retires at age of R , $R < J$. When the oldest cohort dies, a new cohort of exactly the same size will be born. Thus, at any given time, there are J different age cohorts in the economy, each of equal size $1/J$. The total population is constant over time and is normalized to unity.

There is only one kind of good produced, which can be either consumed or invested in the economy. Continuous monetary growth drives the nominal price of consumption

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