



Contents lists available at ScienceDirect

International Review of Economics and Finance

journal homepage: www.elsevier.com/locate/iref

Dynamic Laffer curves, population growth and public debt overhangs

Yoichi Tsuchiya*

Tokyo University of Science, 500 Shimokiyoku, Kuki, Saitama 346-8512, Japan

ARTICLE INFO

Article history:

Received 27 February 2015

Received in revised form 5 October 2015

Accepted 5 October 2015

Available online xxx

JEL classification:

E62

H62

H63

O41

Keywords:

Dynamic Laffer curve

Dynamic scoring

Taxation

Population

Debt management

ABSTRACT

This paper extends the Ireland (1994) model to incorporate population growth and examines a dynamic effect of a tax reduction on a long-run government budget. We find evidence suggesting that the dynamic effect of a tax cut improves the government budget situation in the long-run. Our numerical analysis suggests that a population growth rate consistent with the U.S. economy has positive effects on a long-run government budget. It is likely that low population growth leads to the deterioration of a long-run government budget. However, dynamic Laffer curves fail to arise incorporating a moderate initial debt level into the model. Furthermore, a public debt overhangs experiment casts doubt on the dynamic Laffer curves.

© 2015 Elsevier Inc. All rights reserved.

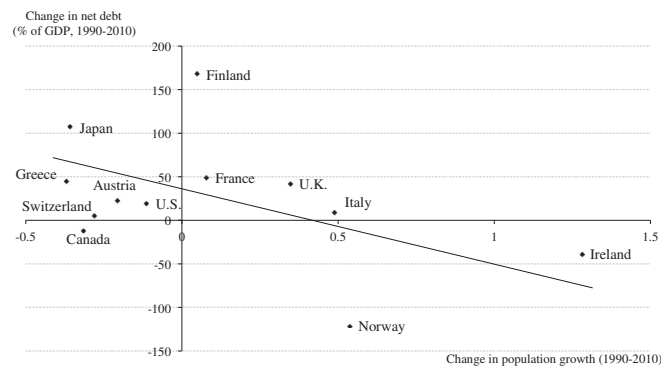
1. Introduction

Considerable attention has been given to the dynamic effects of a tax reduction on a long-run government budget from both policy-oriented and theoretical perspectives. Recently, the 2001 tax reform by the Bush administration has triggered both academic and policy debates on the issue. As Mankiw et al. (2009) observe, top marginal income tax rates have declined and marginal income tax schedules have flattened as predicted by theory. Most developed countries have a large amount of outstanding debt, and thus discussions about cutting taxes should take the issue into account. Although a tax cut is expected to bring about an improvement in the long-run situation, it will undoubtedly bring about a worsening of the short-run debt situation, and the recent sovereign debt crisis in the European Union inevitably demands tax hikes.

There is also a growing concern of a decrease in population growth in many developed countries. The relationship between population growth and government debt has been discussed in the context of debt neutrality.¹ Weil (1987) shows that even with infinitely lived agents, positive population growth alone would destroy debt neutrality. However, whether population growth improves a government's fiscal situation has received little attention. Easterly (2001) provides evidence that growth slowdowns cause public debt crises. Therefore, it is likely that a high population growth causes a deterioration of a government budget

* Tel.: +81 480 21 7600; fax: +81 480 21 7603.

E-mail address: ytsuchiya@rs.tus.ac.jp.¹ There is debt neutrality if, given a program for public expenditure on current goods and services over time, the real equilibrium of the economy is not affected by a change in the pattern over time of lump-sum taxes.



Source: World Economic Outlook (IMF) and World Population Prospects: The 2010 Revision

Fig. 1. Relationship between population growth and debt (% of GDP): change between 1990 and 2010.
Source: World Economic Outlook (IMF) and World Population Prospects: The 2010 Revision.

since a standard neoclassical growth model suggests that a high population growth leads to a low economic growth. In contrast to the simple implication, Fig. 1 indicates a sharp contrast that illustrates an inverse relationship between population and government debt, that is, a decrease in population growth is associated with an increase in government debt. Although further empirical investigation of the relationship is of importance, it is beyond our scope in this paper. The aim of the figure is only an illustration of the negative relationship. Note that the correlation is -0.44 , and is not statistically significant. Both population growth and the debt-GDP ratio are measured as the change from 1990 to 2010. The data cover thirteen countries²: Austria, Canada, Finland, France, Greece, Ireland, Italy, Japan, Norway, Portugal, Switzerland, the U.K., and the U.S.

This paper focuses on how population growth affects a dynamic effect of a tax reduction on a long-run government budget, which has been referred to as the dynamic Laffer curve in the recent literature³ or dynamic scoring⁴. To investigate effects of population growth on the dynamic Laffer curve, I introduce population growth into a simple endogenous growth model and examine how it affects the results of the model without population growth in Ireland (1994). In line with his pioneering work, Novales and Ruiz (2002); Pecorino (1995) find positive evidence while the works by Agell and Persson (2001); Bruce and Turnovsky (1999) cast doubt on the dynamic Laffer curve. Dalamagas (1998) shows support for the dynamic Laffer curve in an econometric framework of a multiple equation system. In neoclassical settings, since the dynamic scoring exercise of Mankiw and Weinzierl (2006) that examines the extent to which a tax cut is self-financing when incentive feedback effects are taken into account, Ferede (2008); Leeper and Yang (2008); Trabandt and Uhlig (2011); Chang and Peng (2012); Strulik and Trimborn (2012) extend their analyses in several dimensions.

An impact of the initial debt level on the dynamic Laffer curve is also examined, which has rarely been addressed in the literature. Furthermore, we incorporate insights of recent studies on public debt overhangs into the discussion of the dynamic Laffer curves. Among the recent studies, Reinhart and Rogoff (2010) show that the relationship between government debt and real GDP growth is weak for debt-GDP ratio below a threshold of 90%, but growth rates fall considerably above the threshold. Since debt accumulation is likely to contribute to slower economic growth, it makes a sustainable fiscal path much harder to achieve and thus cast doubt on the dynamic Laffer curves if a tax cut is financed via a large amount of debt. We also examine the implications of the unit elasticity of intertemporal substitution in consumption.

A tax cut has two opposing effects. A tax cut increases the growth rate of an economy, and thus increases the size of the tax base and the tax revenue in the future. On the other hand, a tax reduction leads to a decrease in revenue from taxation. A dynamic Laffer effect arises if debt by a decrease in tax revenue can be financed by a future increase in tax revenue.⁵ When debt is completely financed, how long it takes to repay its debt is another crucial issue from the policy-makers' perspective: thus, we take a closer look.⁶ We incorporate insights of the recent literature on public debt overhangs into the examination of debt evolution.

Similarly, population growth has two opposing effects. A high population growth decreases the per capita growth rate of an economy since a larger labor force enters an economy and more capital has to be distributed to them. On the other hand, a high population growth enables a government to have a larger body of tax payers. Therefore, it becomes easier for government to finance a budget deficit.

² Some advanced countries such as Australia and Germany are not presented in the figure because of data availability concerning net debt.

³ Although our model and numerical analysis are based on Ireland (1994), we use the dynamic Laffer curve in this paper instead of his terminology "supply-side economics."

⁴ In particular, "Dynamic scoring" that incorporates feedback effects of tax changes on tax bases in the government revenue estimation was adopted by the Congressional Budget Office and the Joint Committee on Taxation, whereas "static scoring" does not incorporate the feedback effects from tax changes. See Auerbach (2005).

⁵ Feldstein (1986) suggests that if tax cuts cannot completely finance themselves, the important question of to what extent the tax cut is self-financing (i.e., dynamic scoring) arises. Dynamic scoring and the dynamic Laffer curve address essentially the same issue.

⁶ Some studies mentioned above discuss the welfare effects of a tax cut. However, this paper does not address these because our motivation is to draw an implication for policy-makers whose concern includes debt management.

Download English Version:

<https://daneshyari.com/en/article/5083234>

Download Persian Version:

<https://daneshyari.com/article/5083234>

[Daneshyari.com](https://daneshyari.com)