J. Japanese Int. Economies 36 (2015) 56–72

Contents lists available at ScienceDirect

Journal of The Japanese and International Economies

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

Laffer curves in Japan ☆

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ARTICLE INFO

Article history:
Received 12 November 2013
Revised 22 December 2014
Available online 13 February 2015

JEL classification:
E13
E62
H20
H30
H60

Keyword:
Laffer curve
Fiscal policy
Labor tax
Capital tax
Consumption tax
Japan

ABSTRACT

Nutahara, Kengo—Laffer curves in Japan

This paper investigates the Laffer curves in Japan, based on a neoclassical growth model. It is found that while the labor tax rate is smaller than that at the peak of the Laffer curve, the capital tax rate is either very close to, or larger than, that at the peak of the Laffer curve. This problem is more serious when the consumption tax rate is high. It is also found that to maximize total tax revenue, the government should increase the labor tax rate but decrease the capital tax rate. *J. Japanese Int. Economies* **36** (2015) 56–72. Senshu University, Japan; University College London, United Kingdom; The Canon Institute for Global Studies, Japan.

1. Introduction

Arthur B. Laffer stated that "there are always two tax rates that yield the same revenues" during a business dinner in 1974 (Wanniski, 1978). An increase in a tax rate would have two opposing effects.

☆ I would like to thank Hiroshi Gunji, Keiichiro Kobayashi, Masaru Inaba, and Daichi Shirai for comments and discussions. I'm also grateful to Shin-ichi Fukuda (Editor) and two anonymous referees for their helpful comments. This work is supported by a Grant-in-Aid for Scientific Research (B) (Grant Number 24330094).

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http://dx.doi.org/10.1016/j.jjie.2015.02.002
0889-1583/

One is to increase tax revenue directly. The other is to reduce tax revenue because a high tax rate decreases the incentive to supply labor and to investment. As a result, tax revenue is possibly a hump-shaped function of tax rate; this is the so called "Laffer curve."

Tax revenue is a very important issue for the Japanese government. Japan has the highest debt-to-GDP ratio in the world, and the best way to improve Japan's fiscal health is discussed often. Increasing government expenditure associated with the aging population, and long economic stagnation are often cited as reasons to increase tax rates. However, there is a possibility where an increase in tax rates may reduce tax revenue. In this case, knowledge of the peak levels of the Laffer curves for each tax is important for policy makers.

This paper investigates the Laffer curves for labor, capital and consumption taxes in Japan based on a neoclassical growth model à la Trabandt and Uhlig (2011). The model is calibrated to the Japanese data, and the average marginal taxes estimated by Gunji and Miyazaki (2011) are used to calculate the marginal labor and capital taxes of the model. The Laffer curves for labor and capital taxes have single peaks, but that for the consumption tax is monotonically increasing in the tax rate as shown by Trabandt and Uhlig (2011). We find that while the labor tax rate is lower than that of the peak of the Laffer curve, the capital tax rate is very close to that of the peak of the Laffer curve or even larger than it under certain specifications. Trabandt and Uhlig (2011) report that the capital tax rates in Sweden and Denmark are higher than those at the peaks, and this paper finds that Japan is similar to these countries. When the consumption tax rate is high, the tax rate at the peak of the Laffer curves for labor and capital taxes is smaller, and this problem becomes more serious. We also find that to maximize total tax revenue, the government should increase the labor tax rate but decrease the capital tax rate. Our result implies that the current plan of the Japanese government to decrease the corporate tax rate might have positive effects on tax revenue because capital taxes in our model include corporate taxes.[1]

It is important to note that an increase in tax revenue is a different problem from an increase in welfare. In the model, taxes are distortionary, and if an increase in tax revenue is not used for government expenditure or if government expenditure yields no utility to households, increasing tax revenue would be welfare reducing. Even if government expenditure yields utility to households, the welfare implications are dependent upon the situation. On the other hand, some economists find that an increase in tax revenue or the tax rate might have beneficial effects in certain situations. Yanagawa and Uhlig (1996) show that an increase in the capital tax rate can increase the rate of economic growth theoretically. Braun and Uhlig (2006) find that an increase in the capital tax rate has positive welfare effects in an economy with incomplete markets. Miyazawa and Nutahara (2013) find that an increase in tax revenue has positive effects on the Japanese economy in the medium term using a structural VAR with sign restrictions. However, welfare analysis is beyond the scope of this paper, and we mainly focus on the effect on tax revenue. Instead of welfare analysis of increasing tax revenue, in Section 3.4, we will consider the optimal taxation problem of the model given the total tax revenue level. It is found that to finance only by consumption tax is optimal in our model.

This paper is closely related to Trabandt and Uhlig (2011, 2013), who investigate the Laffer curves of the US and EU economies using a neoclassical growth model. This paper follows their methodology. The marginal labor and capital tax rates are important in our research, and we calculate them base on the estimates of Gunji and Miyazaki (2011), who use the methodology of Joines (1981). Because the estimates of the average marginal taxes by Gunji and Miyazaki (2011) include consumption tax revenue, we deduct consumption tax revenue from their estimates. The present paper is close in nature to the studies on fiscal policy reform in Japan. Hiraga (2011) considers the effects of a corporate tax rate reduction. Braun and Joines (2013) and Hansen and Imrohoroglu (2013) investigate fiscal policy as it relates to the sustainability of the Japanese economy.

The remainder of the paper is organized as follows. Section 2 introduces the model. Section 3 explains the calibration of the model, and presents the main results. Section 4 makes some concluding remarks.

[1] Corporate tax is imposed on firm's profit while capital tax is imposed on capital income. However, these two taxes are closely related. Capital stock is held by firms in the real world while it is held by households in standard models. Then, capital income in models is a source of firm's profit.