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Tariff and tax reform: Dynamic implications

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Abstract

In an endogenously growing small open economy with a capital good and a consumption good, we characterize the optimal combination of an import tariff and consumption taxes under the revenue neutrality constraint. Focusing on the case in which the economy imports the capital good, we obtain two main results. First, consumption of the capital good is distorted more than the consumption good at the optimum. Second, the optimal tariff rate is positive, implying that free trade is not optimal even for a small open economy with no market failure.

Keywords: Endogenous growth; Capital good; Revenue-neutral tariff and tax reform; Optimal tariff and tax structure; Tax base

JEL classification: F43; H20

1. Introduction

Under pressure from the GATT/WTO, governments in developing countries have been reducing tariffs. To compensate for the resulting loss in government revenue, they have been mainly relying on indirect taxes, such as value-added taxes. According to the World Bank (2002), in low- and middle-income countries, the share of taxes on international trade in total current revenue fell from 17% to 9%, and the share of taxes on goods and

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services rose from 26% to 36% during the period 1990–1999. The share of taxes on income, profits, and capital gains, plus social security taxes, which are regarded as direct taxes, remained at 22% over the same period.

How, then, should the government coordinate tariff and tax reform while maintaining government revenue? Michael et al. (1993), Abe (1995), Hatzipanayotou et al. (1994), and Keen and Ligthart (2002) tackled this problem by formulating static general equilibrium trade models. Michael et al. (1993) identified conditions under which revenue-neutral substitution of consumption taxes for import tariffs raises welfare. In an economy with a public good, Abe (1995) demonstrated that a combination of tariff and tax changes that neutralizes direct price effects on the household budget constraint raises government revenue and hence welfare. Hatzipanayotou et al. (1994) and Keen and Ligthart (2002) took a simpler approach: they showed that lowering import tariffs and raising consumption taxes on the corresponding imports, with consumer prices unchanged, raises both welfare and government revenue.[1] The rise in welfare results from an improvement in production efficiency because of the tariff reduction. On the other hand, the rise in government revenue comes from an increase in the tax base; the tax base of an import tariff is consumption minus production, whereas that of a consumption tax is consumption. Hatzipanayotou et al. (1994) and Keen and Ligthart (2002) differ from Michael et al. (1993) and Abe (1995) in that the sizes of tariff and tax changes do not depend on the pre-reform equilibrium values of the endogenous variables.

Although the static literature on tariff and tax reform under a revenue constraint gives powerful policy recommendations, it overlooks the dynamic aspects of tariff and tax reform. Most developing countries import several types of equipment for investment, which has a central role in the growth process (e.g., Eaton and Kortum, 2001; Caselli and Wilson, 2004). In this situation, changes in the relative price of capital goods to consumption goods, often caused by changes in trade barriers, affect the incentives for investment and thus economic growth (e.g., De Long and Summers, 1991; Lee, 1993; Eaton and Kortum, 2001). Tariff and tax reform is surely one of the causes of such changes in the relative price. The dynamic implications of expanding consumption taxes have been analyzed by macroeconomists: Jones et al. (1993) and Gómez (2003), among others, showed numerically that replacing income taxes with consumption taxes raises both the growth rate and welfare by encouraging savings. However, the tax reform they studied is more appropriate to developed countries, where direct taxes are the main source of government revenue. The purpose of this paper is to examine analytically how tariff and tax reform affects the welfare and government revenue of a developing country in a dynamic general equilibrium model.

We develop a two-good, one-factor endogenous growth model of a small open economy. Following Baxter (1992) and Kaneko (2000), we assume that a capital good (called good 1) is either invested or consumed, whereas a consumption good (called good 2) is only consumed. Each good is produced from capital, which is an aggregate of physical and human components. In the sense that technology exhibits constant returns to aggregate capital, this model is in line with the *AK* models of endogenous growth and

[1] Hatzipanayotou et al. (1994) dealt with a uniform reduction in import tariffs and an offsetting increase in consumption taxes, whereas Keen and Ligthart (2002) generalized their scheme to arbitrary tariff reductions and offsetting tax changes.