Available online at www.sciencedirect.com
SCIENCE DIRECT®
ELSEVIER
European Economic Review 48 (2004) 1–23
EUROPEAN ECONOMIC REVIEW
www.elsevier.com/locate/econbase

Agglomeration, integration and tax harmonisation

Richard E. Baldwin[a,*,1], Paul Krugman[b]

[a] Graduate Institute of International Studies, 11a, av de la Paix, Geneva CH-1202, Switzerland
[b] Department of Economics, Princeton University, Princeton, NJ 08544, USA

Accepted 7 October 2002

Abstract

Consideration of agglomeration reverses standard theoretical propositions in international tax competition. We show greater economic integration may lead to a 'race to the top' rather than a race to the bottom. Also, 'split the difference' tax harmonisation may harm both nations, a result that may explain why real-world tax harmonisation is rare. The key is that industrial concentration creates 'agglomeration rent.' The 'core' region can thus charge a higher tax rate without losing capital. The size of such rent is a bell-shaped function of the level of integration, so the tax gap first widens before narrowing as integration increases.

JEL classification: H00; H87; F2; F12

Keywords: Economic geography; Trade; Tax competition; Tax harmonization

1. Introduction

Does close economic integration, especially in the face of the growing mobility of capital both physical and human, require harmonisation of tax rates? Many observers believe that it does. It is often argued that the nations of the European Union, in particular, must agree on common tax rates if they are to avoid a "race to the bottom" that will undermine their relatively generous welfare states. The logic seems straightforward: other things being equal, producers will move to whichever country has the lowest tax rates, and absent any coordination of tax-setting the attempt to attract or hold on to employment will lead to a competition that drives tax rates ever lower.

* Corresponding author. Tel.: +41-22-734-3643; fax: +41-22-733-3049.
E-mail addresses: baldwin@hei.unige.ch (R.E. Baldwin), pkrugman@princeton.edu (P. Krugman).
[1] This paper was written while Baldwin was visiting MIT in 1998/1999, with the first draft in December 1998 and revisions in June 2000 and April 2002.

0014-2921/$ - see front matter
doi:10.1016/S0014-2921(02)00318-5

But things are not necessarily equal. Countries with generous welfare states tend to be countries that have long been wealthy; such nations offer capital the advantages of an established base of infrastructure, accumulated experience, etc. – in short, they offer favourable external economies. And within limits this presumably allows them to hold on to mobile factors of production even while levying higher tax rates than less advanced nations. On the other hand, should the tax rate get *too* high, the results could be catastrophic: not only will capital move abroad, but because that movement undermines agglomeration economies it may be irreversible.

What this suggests is that in the face of the sort of agglomerative forces emphasised by the "new economic geography", the tax game played in the absence of harmonisation may be something subtler than a simple race to the bottom. Advanced countries may be more like limit-pricing monopolists than Bertrand competitors; their interaction with less advanced countries need not lead to falling tax rates, and might well be consistent with the maintenance of large welfare states.

The purpose of this paper is to think about international tax competition and harmonisation in the presence of significant agglomeration economies and goods market integration. The existing literature in this area is limited. Most of the vast tax-competition literature – see the survey by Wilson (1999) for instance – works with the 'basic tax competition model' (BTCM). This is a one-period model featuring a single good produced by two factors; labour, which is immobile between regions and capital, which is mobile. Trade costs are zero, firms face perfect competition and constant returns, so there is no trade among regions and capital faces smoothly diminishing returns. Typically, governments chose the capital tax rate (the labour tax rate is either ignored or assumed to be identical to capital's) in a Nash game. The standard approach is to compare equilibrium tax rates with no capital mobility and with perfect capital mobility; or to compare non-cooperative with cooperative tax setting both under prefect capital mobility. The customary result – equilibrium taxes are sub-optimally low – has been greatly extended and modified, but still remains the received wisdom on tax competition among social welfare maximizing governments. In one extension, where governments are assumed to deviate from social welfare maximisation, tax competition may improve welfare by moving equilibrium rates closer to the social optimum (in a typical second-best fashion). Two aspects of this literature are noteworthy. First, an analysis of tighter goods market integration and tax competition is absent since the focus is on heightened capital mobility. Second, although a small branch of this literature (e.g. Janeba, 1998) does consider imperfectly competitive firms, the standard tax-competition literature entirely ignores issues of agglomeration externalities.

Baldwin et al. (2003) review the tax and agglomeration literature that has emerged since the 1998 draft of our paper in detail, but three papers are particularly noteworthy. The first paper in this area is Ludema and Wooton (2000). This paper studies the impact of varying both factor-mobility costs and trade costs and seems to find that lowering either cost may – in contrast to the standard BTCM result – result in higher taxes being chosen in a tax competition game among governments. These authors, together with Andersson and Forslid (1999), and Kind et al. (1998) make the important point that agglomeration creates rents for the mobile factor that can be taxed. This point also plays an important role in the analysis below. Our paper focuses solely on the case