

Capital Mobility and Tax Competition: Empirical Evidence from South Asia

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Does increased capital mobility lead to race to the bottom? This paper empirically examines this issue for South Asian countries for the 1990 to 2006 period. Estimates from a fixed effects model suggest that globalization measured by increased capital mobility has insignificant effects on tax revenue. The findings have important policy implication for developing countries.

Field of Research: Capital mobility, tax competition, fixed effects, South Asia

1. Introduction

Rapid increase in electronic commerce coupled with trade liberalization has increased mobility of capital dramatically in recent years. In general, foreign capital and foreign direct investment are expected to have positive effects on growth and on social welfare. To attract capital each governments will have an incentive to reduce its tax rates. If this process of tax reductions continues, with perfect capital mobility, capital taxation is zero- a term called race to the bottom in capital taxation (Razin and Sadka 1991). So tax policy in one country might affect the welfare services of other countries. With less revenue for allocative and distributive purposes, governments may be forced to shift the tax burden from elastic to non-elastic tax base; and a greater dependence on consumption tax is predicted. However, a democratic government may not be able to make this shift because of the likely strong political pressure. The consequent fiscal crisis force to cut provision of public good and welfare services and welfare states need to look for alternative ways to provide social protection.

The issue is at the center of much debate in the public economics literature. Several OECD countries show a declining trend of corporate tax rates (Tanzi 1996). Most empirical studies for OECD countries find that the impact of globalization on capital taxes is positive (Garrett 1995, Swank 1998, Rodrik 1997, Quinn 1997). Stewart and Webb (2003) find similar results for European countries.

Empirical research on developing countries is scarce, mostly due to unavailability of data. Following the structural adjustment process in the 1980s, most South Asian countries removed capital controls and deregulated their financial markets in the 1990s. After that foreign investment increased significantly in those countries. Under certain conditions, greater capital mobility is expected to bring significant benefits to developing countries by

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accumulation of capital and transfer of technology. It has also been argued that small and vulnerable developing countries can be seriously disadvantaged by international tax competition, leading to a race to the bottom (Morshed 2001).

This paper addresses the following questions: does increased capital mobility and the consequent increase in tax competition reduce tax base in South Asian countries? Our empirical analysis covers a relatively recent period, from 1990 to 2006, for six countries: Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka. These countries are struggling with persistent budget deficits and tax revenue is one of the major sources of government revenue. Social protection is necessary in these countries to finance targeted anti-poverty programmes and social safety nets. Our empirical estimates from a fixed effects model suggest that increased capital mobility has insignificant effects on tax revenue in those countries for the period of analysis.

The paper is organized as follows. After introduction in Section 1, Section 2 describes the econometric model and data used in the paper. Section 3 explains empirical methodology. Section 4 provides conclusion and policy recommendations.

2. Methodology

This section outlines the empirical model, describes the data and finally explains the choices of the explanatory variables used in the analysis.

The general specification of the empirical model is as follows, where the dependent variable, tax revenue, is explained by openness to capital and openness to trade.

$$\ln TR_{it} = \alpha_1 \ln CAP_{it} + \alpha_2 \ln TRA_{it} + \theta_t + \mu_{it} + \varepsilon_{it}$$

where $\ln TR_{it}$ denotes the log of the tax revenue in country i at time t . The variable $\ln CAP_{it}$ denotes measures of capital mobility, while $\ln TRA_{it}$ is a measure of openness to trade. Finally, θ_t is a time effect, μ_{it} is a country fixed effect and ε_{it} is a disturbance term where i indexes individual countries in a cross section and t indexes time.

2.1 Data

The revenue of corporate taxation as a percentage of the GDP is the commonly used proxy for tax policy in developed countries. Unfortunately such data are typically not available for South Asian countries. We use tax revenue as a percentage of GDP as a proxy for tax policy. In general, income (individual and corporate) and consumption taxes are main sources of tax revenue in most of these countries. Being poor, the countries have very low income tax base. Corporate and consumption taxes constitute the major part

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of total tax revenue. Assuming that there is no decline in consumption taxes over the years and increase in foreign direct investment, an increase or decrease in corporate taxes will show a major trend in total tax revenue. Therefore using total tax revenue as a proxy for corporate tax revenue seems appropriate.

A satisfactory measure of capital mobility is still not available. We use FDI inflows as a percentage of GDP as a proxy for capital mobility.ⁱ The most commonly used proxies for measuring the consequences of trade policies are the outcome-based measures; we use exports plus imports as a percentage of GDP. The source of these data to construct the variables (i.e. openness to trade and openness to capital) is World Development Indicator (2006). Table 1 presents the descriptive statistics of the variables used in the analysis.

Table 1. Descriptive Statistics

Variables (in logarithms)	Mean	Standard Deviation	N
Tax revenues as a percentage of GDP	2.29	0.320	87
Foreign Direct Investment inflows as a percentage of GDP (capital mobility)	-0.69	1.14	73
Trade as a percentage of GDP (Openness to trade)	3.81	0.47	75

3. Empirical Results

It may be difficult to identify the effects of increased capital mobility on tax revenue, because omitted variable may play an important role here. The fixed effects (FE) models are useful to control for unobserved country fixed effects and provides more robust estimates in the case of an incomplete model specification. Our data span a relatively long period (1990-2006) and so are able to control for time invariant unobserved heterogeneity across countries by using fixed effect approach.

First a simple specification of equation (1) is estimated using only the key variable capital mobility (FDI) as explanatory variable. Then the model is re-estimated by adding openness to trade variable. The results are presented in Column 1 and Column 2 of Table 2. The coefficient for capital mobility is negative in both column 1 and column 2 but not significant. This suggests that increase capital mobility has no significant effects on changes in tax revenue. The openness to trade coefficient (in column 2) is also negative but significant. This suggests that increase in trade is associated with a reduction in tax revenue.

Table 2: Capital Mobility and Tax Competition

Dependent variable: Tax revenue	(1)	(2)
Capital mobility	-0.031 (0.019)	-0.016 (0.017)
Openness to trade		-0.030*** (0.078)
Constant	2.65 (7.08)	-24.90*** (8.62)
Observations	73	61
Number of country	6	6
R-squared	0.224	0.06

4. Conclusion

With increased capital mobility tax competition is becoming more important in recent periods. Foreign capital and foreign direct investment are expected to bring benefits particularly to capital-scarce developing countries in many ways. But to attract capital, governments feel pressure to reduce capital tax rates. For many developing countries this can increase budget deficit. Many high-income OECD countries have taken numerous defensive measures to protect their tax base against tax competition (OECD 1998). Many however are treating it as an opportunity (for example, Ireland).

By analyzing data for six South Asian countries for the period 1990-2006, this article provide empirical evidence based on fixed effects regressions. The results suggest that increased capital mobility has insignificant effects on tax revenue in South Asia in recent periods. This implies that from our analysis we cannot conclude whether tax competition was racing to the bottom during the period of analysis. Policy recommendation for these capital scarce countries is to continue developing their financial markets and reduce capital controls in order to attract foreign capital and foreign direct investment. Further empirical research is needed on this issue with better data.

Endnotes

ⁱ FDI inflow is the sum of equity capital, reinvested earnings, and intra-company loans.

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