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Shift from gross profit taxation to distributed profit taxation: Are there effects on firms?

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ABSTRACT

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This paper investigates the consequences of the corporate tax reform in Estonia in 2000. This unique reform nullified the taxation of retained earnings and maintained corporate income tax only on distributed profits. We investigate the outcome of the reform by comparing the performance of the affected firms in Estonia with that of firms from Latvia and Lithuania, the two other Baltic countries. We use firm-level financial data and the difference in differences approach for our analysis. The results are consistent with an increase in holdings of liquid assets and lower use of debt financing after the reform. A positive relationship of the reform with post-reform investment and productivity has also been found. The results point to a stronger effect on smaller firms. *Journal of Comparative Economics* **41** (4) (2013) 1092–1105. Faculty of Economics and Business Administration, University of Tartu, Narva mnt 4, 51009 Tartu, Estonia; Eesti Pank (Bank of Estonia), Estonia pst 13, 15095 Tallinn, Estonia.

1. Introduction

Corporate income tax rates and their linkages with economic performance have received persistent attention in both academic literature and policy debates. International tax competition has reduced the taxation of capital in recent decades (Devereux et al., 2002). Falling statutory corporate income tax rates have been coupled with a widening of the tax base. Several studies have endeavoured to use these reforms to study the effect of taxes on international profit shifting (see, e.g., the meta-analysis by De Mooij and Ederveen, 2008), debt shifting (e.g., Egger et al., 2010), and investment and productivity (Vartia, 2008; Schwellnus and Arnold, 2008).

In this paper we estimate how the Estonian corporate income tax reform in 2000 is associated with changes in the capital structure, liquidity, investment, and productivity of firms. The reform of 2000 introduced a system that was unique in the world, as the reform meant that firms' profits are taxed only if they are distributed to shareholders in the form of dividends,

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while retained earnings are untaxed.[1] Unlike the previous system, taxation is postponed until the moment of profit distribution.[2] This marks a difference from the trend in most countries because the reform narrowed the tax base and left the tax rate at a relatively high level – 26%.[3] As the law was adopted on 15 December 1999 and came into force immediately from 1 January 2000 we can argue that there was no anticipation effect because the period of notice was so short and the stimuli for changes in the behaviour of firms emerged in 2000, not earlier.

The government expected the reform to promote investment, create new jobs and promote entrepreneurship (according to a survey of policy-makers, see Tartu Ülikool and Praxis, 2010). However, related literature shows that several additional consequences are possible, and we aim to evaluate these in our study. In addition to cross-country studies (e.g., Schwellnus and Arnold, 2008), empirical investigations have also looked at the impact of tax reforms (e.g., Kari et al., 2009 on Finland) on firms. The advantage of our study is the focus on the consequences of a big change in tax rates as a result of the reform: the statutory tax rate on retained earnings dropped from 26% to 0% due to the reform and the average implicit tax rate fell from the average 1996–1999 level of 10% to 5% in 2000–2006 (see European Commission, 2010 for the statistics on implicit tax rates). One earlier tax reform that was quite similar was a reform introduced in Chile in 1984 that sharply reduced the taxation of retained earnings, from 46% down to 10% for public companies (Hsieh and Parker, 2007). Following the reasoning of Hsieh and Parker (2007), we would expect the reform to have an especially strong effect in an economy characterised by financially constrained firms whose investments are heavily dependent on the availability of internal funding from cash flows, as was also the case in Estonia in the period under consideration (Mickiewicz et al., 2004; Masso, 2002).

Although the non-taxation of undistributed profits has so far only been introduced in Macedonia in 2008 in addition to Estonia, it has still attracted a lot of attention from researchers. Funke (2002) and Funke and Strulik (2006) found, using a theoretical dynamic general equilibrium model of economic growth, that although the tax reform of 2000 led to higher capital accumulation and per capita GDP, welfare may have decreased due to the short-term reduction in private consumption. Masso and Meriküll (2011) using a similar approach in a discrete-time setting also found that the reform increased equity finance and reduced debt finance. The theoretical modelling by Azacis and Gillman (2010) showed that the welfare of society would have increased more if the taxation of capital and labour had been more balanced. A report from the OECD (2009) argued that the Estonian system of tax exemption for retained earnings may reduce the economy's ability to restructure, as it may motivate firms to keep their funds in current business instead of investing them in new growing areas. However, surveys of Estonian firms do not indicate that this is a noticeable problem (Tartu Ülikool and Praxis, 2010). Other interviews with financial managers (Sander, 2003; Sander and Trumm, 2006) have indicated that corporate income tax plays only a modest role in the investment decisions of Estonia's companies, but that it is more important for profit distribution decisions.

Based on an empirical analysis of Estonian firm-level data without a comparison with a control group, Hazak (2009) found that the tax reform increased the share of retained earnings in total assets by 4.7% points, decreased the share of liabilities in total assets by 12.2% points and increased liquid assets as cash and equivalents to total assets by 5.6% points. Our results indicate that Hazak's (2009) before and after analysis without a control group significantly overestimates the reform effect on firm liquidity and liabilities, and significantly under-estimates the effect on retained earnings.

We estimate the outcomes of the Estonian tax reform with a difference in differences (DIDs) analysis using the firms of the two other Baltic countries, Latvia and Lithuania, as the control group for Estonian firms. These three countries have very similar historical backgrounds as they all regained independence in 1991 after the dissolution of the Soviet Union and joined the EU in 2004; they have similar institutions, and highly correlated business cycles. This means that firms from Latvia and Lithuania could constitute an appropriate control group for Estonia's firms. In addition to the DID analysis, we also use the propensity score matching to test the robustness of the results.

We construct our firm-level panel database from three sources: the international firm-level database Amadeus, the Estonian Commercial Register and the Latvian Commercial Register. We calculate the indicators from the firms' annual reports. While the literature has concentrated more on the effect of corporate income taxation on investment and productivity, we also look into changes in capital structure and liquidity. The effect on capital structure or dividend payments could be expected to appear relatively quickly after the reform, while the effects on investments and productivity may take longer to materialise. Hence, the analysis is based on two estimation periods, 1996–2003 and 1996–2008.

The paper is organised as follows: the next section presents the institutional developments in the treatment and control group during the analysis period; Section 3 presents the data from all three countries; Section 4 describes the methodology; Section 5, the results of the DID analysis, robustness test of the matching analysis and placebo treatment; and the last section presents a summary.

[1] Hereafter we refer to income as gross income. The gross income is income before taxes. The income after taxes consists of two major parts: first, the part distributed to owners as dividends; and second, the part reinvested to the company or retained to the company as cash and equivalents. The second part is hereafter referred to as retained earnings.

[2] To be more precise, until 2000 firms paying dividends paid income tax of 26/74 of the dividends paid out, but this tax could be deducted from the taxes on profits (a method similar to the imputation system). Since 2000, firms need to pay taxes only on dividends, expenses not related to commercial activities and hidden profit payouts.

[3] The tax rate was reduced later on: to 24% in 2005, to 23% in 2006, to 22% in 2007 and to 21% in 2008. Section 2 discusses these changes in more detail.