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The Effect of a Tax Exemption of Retained Profits on Firm's Equity - Evidence from Croatia

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Abstract

A tax exemption of retained profits (TERP) exempts firms' profits from taxation as long as the profits are retained and not distributed to shareholders. Several tax legislators have used a TERP in the past, promoting it as to stimulate an increase in firms' equity. Although a TERP reduces a firm's corporate tax payment, it also imposes a lock-in effect on corporate equity. We argue that agency issues related to the lock-in effect might outweigh the tax benefits of a TERP. To test our assumption, we examine the Croatian TERP that was in place over the period 2013-2016. We find that, on average, Croatian firms used the TERP, but its application varies substantially depending on the ownership structure of the firm. Although Croatian firms significantly increased their subscribed capital after the introduction of the TERP, total equity did not increase.

Keywords: retained profits, tax exemption, equity, ownership, tax policy

JEL-Classification: H20, H25, H32, G31, G32, G35

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1 Introduction

A higher level of equity makes firms less vulnerable during economic downturns and decreases the probability of bankruptcy (Bonfim, 2009; Brownlees and Engle; 2016). Thus, securing or strengthening the equity base of firms is a typical tax policy objective, especially during economic crises. Tax incentives can contribute to this objective if they are appropriately designed. Some European countries have recently provided for a tax exemption of retained profits (TERP). A TERP usually exempts profits from taxation as long as the profits are retained by the firm and not distributed to shareholders. Thus, it strengthens the firms' equity base by locking in profits. In this paper we empirically evaluate if and under which circumstances firms use a TERP and whether a TERP increases firms' equity.

Empirical evidence on whether a TERP incentivizes firms to increase equity is mixed. Austria applied a TERP from 2004 to 2008. The tax exemption was, however, granted only for partnerships and only a half of the retained profits were tax-exempt. Consequently, Petutschnig and Rünger (2016) cannot identify any positive effects of the Austrian TERP on firms' equity. The Estonian corporate income tax system, introduced in 2000, taxes profits only upon distribution and thus assembles a TERP. Funke and Strulik (2006) and Masso and Merikuell (2011) find a significant positive effect of the Estonian TERP on liquid assets and a significant negative effect on the use of debt financing.

Croatia provides a more recent example for a TERP. Beginning in 2013, profits of Croatian firms could be exempted from corporate income tax to the extent the subscribed capital is increased with these retained profits. Although this is a substantial tax benefit, the drawback of the Croatian TERP is that subscribed capital, once increased by retained profits, had to remain undiminished indefinitely and the exempted profit is therefore locked into the firm indefinitely. Any reduction of

subscribed capital in the future triggers a recapture taxation and revokes the benefit of the TERP. Thus, firms have to balance the current tax benefit against the long-term lock-in effect of equity.

From a tax perspective, we can show that it is always tax-efficient for a firm to use the Croatian TERP. However, principal-agent theory suggests that the tax incentives can be crowded out by agency costs related to information asymmetries. In this paper, we address two specific agency conflicts that might have an effect on the use of the TERP. First, higher monitoring cost for foreign subsidiaries incentivize the management at the headquarter to repatriate foreign profits, even if retaining earnings in foreign subsidiaries would be tax-optimal. Thus, we expect Croatian subsidiaries of foreign parent companies to use the TERP to a lesser extent. Second, coordination among shareholders and heterogeneity in their tax preferences hinders firms from retaining profits. Thus, we expect the use of the TERP to decrease with the number of shareholders of the firm.

Our results document that, on average, Croatian firms use the TERP. We observe a significant increase in subscribed capital of Croatian firms after the introduction of the TERP, compared to a control group of Slovenian firms. In economic terms, the increase in subscribed capital of Croatian firms is about EUR 0.83 million higher than for Slovenian firms. Furthermore, our results document that the ownership structure of the firm moderates the use of the TERP. Consistent with agency theory, closely-held firms with one individual majority owner use the TERP to a greater extent and Croatian subsidiaries of a foreign parent company use the TERP to a lesser extent. We additionally document that tax incentives for retaining profits work best when there is no information asymmetry and little heterogeneity in tax preferences among shareholders.

In an additional analysis, we find that the introduction of the TERP, despite increased subscribed capital, did not increase overall equity of Croatian firms. It appears that Croatian firms that had already been retaining profits in the past use the possibility to exempt retained profits from taxation.

However, the tax benefits were too low to incentivize firms that have not been retaining profits in the past to start accumulating additional equity.

Our findings contribute to literature in several ways. First, we add to the debate on whether firms use a TERP and the effect of a TERP on firms' equity. Our results document that the lock-in effect caused by the Croatian TERP prevented firms from accumulating additional equity. Second, our findings help to improve the understanding of how agency costs of certain ownership structures are associated with firm's equity. In especially, we provide evidence that higher monitoring costs of foreign subsidiaries prevent parent companies from retaining profits in their foreign subsidiaries, even if this would be tax-efficient. Third, our results inform tax legislators about how to design incentives for equity accumulation more precisely. For a TERP to incentivize firms to build up additional equity, reducing the lock-in effect of the incentive seems to be an important aspect.

Our paper is structured as follows. In section 2, we describe the institutional setting and derive our hypotheses. Section 3 presents the data and our estimation strategy. In section 4, we show the empirical results. Section 5 concludes.

2 Institutional Background and Hypotheses

2.1 The Croatian Tax Exemption for Retained Profits

The Croatian TERP was introduced starting from the fiscal year of 2012. When applying for the TERP, a firm could claim for its current year profits to be fully tax-exempt. In order to be eligible for the exemption, a firm had to meet the following two criteria: First, the current year's profit had to be retained and used to formally increase the company's subscribed capital in the following year. Second, for profits realized after 2014, an investment and employment restriction for firms using TERP had to be met. Retained profits added to subscribed capital had to be invested in long-term assets and the proof of investments had to be presented to tax authorities by the end of the year

(e.g. contracts, invoices). In addition, the number of jobs in the company using TERP must not decline over the two years following the period for which the tax exemption was claimed. If, for example, the 2015 profit qualified for the exemption, then the employee headcount of 01.01.2015 must not decline during 2016 and 2017 (Cipek and Herceg, 2013).

Importantly, once profits had been used to formally increase the company's subscribed capital, the subscribed capital had to remain undiminished indefinitely. Any reduction of subscribed capital in the future would trigger an immediate recapture taxation and increase future income. Thus, the Croatian TERP created a strong lock-in effect for profits that were claimed to be tax-exempt.

The government's aim when introducing the TERP was to stimulate development and investment (Vlada Republike Hrvatske, 2012). Profits from firms in the banking or financial non-banking sector were excluded from TERP. This is consistent with the intention to incentivize the real sector, considered best able to create growth and jobs.

The TERP was first announced in February 2012 and abolished by the end of 2016. However, the proof of investment in long-term assets and employee headcount for past use of the TERP remained in effect. Also, the increased subscribed capital must remain undiminished indefinitely, as the law includes no expiration date for this requirement.

2.2 Theoretical Background and Hypotheses Development

To model the decision whether or not a firm should use the Croatian TERP we compare the after-tax profit of using the TERP and the after-tax profit of not using the TERP. Since the tax exemption affects the possibility to distribute profits to shareholders, we look at the after-tax profit at the shareholder level and thus take corporate taxes and shareholder-level taxes into account.

If a firm decides not to use the TERP, one dollar of pre-tax profit is taxed at the corporate tax rate τ_c, which amounted to 18% during our entire observation period. The remaining $(1-\tau_c)$ dollars are distributed to the shareholders as dividends and taxed at the shareholder's dividend tax rate τ_d. The after-tax profit realized by the shareholder thus amounts to $(1-\tau_c)(1-\tau_d)$. For domestic individual shareholders, the dividend tax rate in Croatia at the time the TERP was in place was $\tau_d = 12\%$, plus a local surcharge.[1]

In contrast, if the firm decides to use the TERP, pre-tax profits are not taxed the corporate level. To remain untaxed, however, profits cannot be distributed to shareholders, but need to stay locked into the firm. If the firm decides to pay a dividend in the future, it triggers recapture taxation at the corporate level and dividend taxation at the shareholder level, so that the after-tax is $(1-\tau_c)(1-\tau_d)$. As soon as profits are distributed as dividends, the tax benefits of the TERP are offset by recapture taxation.[2]

Dividends represents, however, only one potential channel of profit distribution (Chetty and Saez, 2005; Jacob and Jacob, 2014; Moser, 2007; Sarig, 2004). Alternatively, the firm can decide to use the TERP, re-invest retained profits and increase firm value. Rather than receiving annual dividend payments, the shareholders can sell their shares and realize a capital gain. Such a strategy would not trigger recapture taxation as selling the shares does not decrease the subscribed capital of the firm.

Like many other countries, Croatia taxes dividends and capital gains at different tax rates. For individual shareholders, capital gains from disposing shares are tax-exempt if the shareholder holds

[1] Dividends earned in the period of 1 January 2005 to 28 February 2012 were tax-exempt at the individual level. See International Bureau of Fiscal Documentation (2018).

[2] Depending on the time span between the use of the TERP and the actual dividend distribution, shareholders can benefit from a deferral in taxation (timing effect). However, timing effects can be assumed to be small in times of low interest rates.

his shares for at least three years (International Bureau of Fiscal Documentation, 2018). A tax-optimizing strategy is therefore to refrain from paying a regular dividend and to realize a tax-exempt capital gain by selling their shares untaxed, hereby avoiding tax at the corporate and the individual level. Such a strategy results in an after-tax profit of 1 and leaves the shareholder better off than in the case of not applying for the TERP. If the shareholder is a corporation, dividends are tax-exempt and realized capital gains are taxable at the ordinary corporate tax rate τ_c. Whether applying for the TERP and selling the shares in the future or not applying for the TERP any paying regular dividends always results in an after-tax profit if $(1 - \tau_C)$. Individual shareholders, who sell their shares after at least three years prefer to use TERP, whereas corporate shareholders are indifferent.

In order to use the TERP, firms have to increase their subscribed capital by (part of) the previous year's profit. Thus, we can formulate the following baseline hypothesis:

Hypothesis 1: Croatian firms increase their subscribed capital after the introduction of the TERP.

Although from a tax perspective it is beneficial to use the TERP, non-tax-related agency issues might hinder firms from doing so.

Jiang, Kim, Nofsinger, & Zhu (2017) document an ownership structure pecking order that sorts out which ownership structures are likely to have relatively lower agency costs. Their findings show that firms with a single controlling shareholder have the lowest agency costs. We expect firms with a single individual controlling shareholder to have the largest response to the tax reform, since these firms have the highest tax benefit of the TERP and the lowest agency costs.

Hypothesis 2a: The increase in subscribed capital is higher for Croatian firms with an individual shareholder.

Jensen (1986) documents that from an agency perspective, managers have an incentive for empire building. Consequently, managers prefer to have more assets under their control rather than to delegate management of assets to subsidiaries. This problem is further aggravated in multinational corporations (MNCs), because monitoring costs are higher in cross-border settings due to geographical distances and differences in corporate law and language (Grinblatt & Keloharju, 2001; Robinson and Stocken, 2013). In a competition for funds within hierarchical organizations, management at the headquarter might thus exert its power to repatriate profits, even if retaining earnings in foreign subsidiaries would be tax-optimal (Rajan, Servaes and Zingales, 2000; Dischinger, Knoll, & Riedel, 2014a). Dischinger, Knoll and Riedel (2014b) support this conjecture and provide empirical evidence that MNCs are reluctant to shift profits away from their headquarters, even if they are located in high-tax countries. The finding of Laplante and Nesbitt (2017), that trapped cash is negatively related to firm value, especially for firms with poor governance, is consistent with these results. We thus expect Croatian firms that are subsidiaries of a multinational parent to use TERP to a smaller extent than domestic firms.

Hypothesis 2b: The increase in subscribed capital is lower for Croatian firms that are held by a foreign parent.

Due to the lock-in effect of the TERP, firms applying for the exemption cannot pay a dividend to their shareholders by reducing subscribed capital without triggering recapture taxation. The need to pay dividend might thus hinder firms from using TERP. Prior literature has found dividend payments of firms to be sticky and smoothed from year to year as shareholders react positively to dividend increases and negatively to dividend decreases. Steady dividends may thus keep firms in the capital market and lower the costs of monitoring (Fama and Babiak 1968; Easterbrook, 1984; Healy and Palepu, 1988; DeAngelo, 1991; Michael et al., 1995, Benartzi et al. 1997, Brav et al.,

2005). There is evidence that the propensity to smooth dividends is closely linked to the ownership structure of the firm as widely held firms pay (higher) dividends to reduce agency costs (Michaely and Roberts, 2012). Contrary, if ownership and control are not separated, monitoring and risk-taking issues disappear, reducing the necessity of dividend payments (Jensen and Meckling, 1976). Recent empirical evidence suggests that there is significant variation in the dividend policy not only between widely-held and closely-held firms, but also within closely-held firms. Jacob and Michaely (2017) document that coordination among shareholders, heterogeneity in their tax preferences, and conflicting objectives between managers and shareholders reduce the dividend-tax sensitivity of firms. In particular, if a firm has five or more owners, the owners' tax preferences have very little impact on the payout policy.

We build on the results of Jacob and Michaely (2017) and expect coordination among shareholders and heterogeneity in their tax preferences to hinder firms from cutting dividends by using the TERP. Thus, we expect closely-held firms to use TERP to a larger extent, the lower the number of shareholders.

Hypothesis 2c: The increase in subscribed capital of Croatian closely-held firms is higher, the lower the number of shareholders.

3 Data and Research Methodology

3.1 Sample

Since all Croatian corporations could apply the TERP, identifying the effect of the tax reform, absent a mere time trend, requires adding a control group to the analysis. We choose corporations from Slovenia as our control group. Croatia and Slovenia are neighboring countries and share a common history as formerly Yugoslav republics, with the aftermath of communism still affecting

the economic development. Both economies can be considered as transition economies. Macroeconomic indicators as displayed in Figure 1 show the similarities between the countries.[3]

[Insert Figure 1 about here]

Both countries were severely affected by the financial and economic crisis, which lasted longer in Croatia and Slovenia than in most Western economies (see Eurostat, 2018a). Importantly, Slovenia has not experienced any changes in tax treatment of equity during our observation period.[4]

Our sample is based upon unconsolidated firm-level data for Croatian and Slovenian firms from Bureau van Dijk's AMADEUS database over the period 2008-2016. To avoid survivorship bias, we require firms to exist over all years of the observation period. We further require firms to report financial statement information in all sample years. We exclude firms with negative total assets or negative shareholder equity. In total, our sample consists of 8,912 firms (2,850 Slovenian firms, control group, and 6,062 Croatian firms, treatment group) and 80,208 observations.

3.2 Estimation Strategy and Identifying Assumptions

We identify whether Croatian firms react to the tax-exemption from a difference-in-difference (DD) approach. We compare subscribed capital of Slovenian firms (control group) to subscribed capital of Croatian firms (treatment group) over the five years prior to the introduction of the TERP (2008-2012) as well as for the four years where the TERP was in place (2013-2016). We estimate the following linear DD regression:

[3] In contrast to Slovenia that joined the Euro area in 2007, Croatia still has its own currency, but the exchange rate of the Croatian Kuna to the Euro has been very stable over our observation period (see Croatian National Bank, 2018).
[4] We do not use Croatian partnerships or sole proprietorships as a control group, because these legal forms are not very popular among larger and medium-sized firms in Croatia. For example, 61,6% of active firms in Croatia were limited liability companies at the beginning of our observation period in 2013, compared to 35,1% in the EU average. Moreover, 83% of employees in Croatia were employed by limited liability companies in 2013, compared to 64,1% in the EU average. See Eurostat (2018b).

$$Capital_{i,t} = \beta_0 + \beta_1 Croatia_i \times Post_t + \gamma X_{i,t} + \alpha_i + \delta_t + \varepsilon_{i,t}. \quad (1)$$

The dependent variable $Capital_{i,t}$ is the natural log of subscribed capital of firm *i* in year *t* and the coefficient for β_2 thus represents a semi-elasticity. Our main variable of interest is the difference-in-difference (DD) coefficient *Croatia* × *Post.* We expect that, relative to unaffected Slovenian firms, Croatian firms increase subscribed capital as a response to the introduction of the TERP ($\beta_2 > 0$). Our baseline empirical strategy includes firm-fixed effects (α_i) as well as year fixed effects (δ_t). These fixed effects capture any time- or firm-invariant effects on subscribed capital and also capture $Post_t$ and $Croatia_i$, which is why we cannot report separate coefficients for them.

Additionally, we add firm-level control variables ($X_{i,t}$) to our analysis. The vector of firm-level controls comprises six variables that have been used in prior capital structure research: *NOL* and *Depreciation* represent tax shields other than interest payments as suggested by DeAngelo and Masulis (1980). *NOL* is a dummy variable taking the value 1 if a firm has a negative EBIT in the previous year and 0 otherwise and *Depreciation* is the overall depreciation of the current year. Furthermore, we follow Kraus and Litzenberger (1973), Myers and Majluf (1984), Jensen (1986) and Wald (1999) and include *Profitability*, the current year's net profit deflated by total assets as a control variable. To control for size effects, we add *Size* to our model, measured as the natural logarithm of total assets as suggested by Schulman et al. (1996) and Frank and Goyal (2009). Additionally, we control for *Tangibles*, tangible assets deflated by total assets (Scott, 1977, and Harris and Raviv, 1990). Lastly, we control for firm age, *Age*, calculated as the natural logarithm of the years between incorporation and the year under investigation (Pfaffermayr et al., 2013). To control for outliers, we winsorize all continuous variables at the 1% and 99% level. The statistical inference is based on robust standard errors clustered at the firm level.

The DD design relies on the assumption that, absent the tax change, the difference in subscribed capital between firms in Croatia relative to firms in Slovenia would have evolved similarly. While untestable for the post-reform years, we can test whether the subscribed capital of our treatment and control groups follow a common trend prior to the tax reform. Panel A of Figure 2 shows that average subscribed capital indeed follows a similar trend in the pre-reform years.

{Insert Figure 2 about here.}

Following the approach in Patel and Seegert (2017) and Jacob et al. (2018), we formally test for the parallel trend over the 2008–2012 period by regressing subscribed capital on year fixed effects and interactions of year fixed effects with $Croatia_i$. The coefficients on the interactions of year fixed effects with $Croatia_i$ estimate the difference in the trends between our two groups. The coefficient estimates along with the 95% confidence bounds for these interactions are presented in Panel B of Figure 2. All interactions of $Croatia_i$ with any of the year fixed effects are insignificant as indicated by the 95% confidence bounds that include zero. In further support of the common trend assumptions, we test for joint significance of the interactions. We fail to reject the joint test that all interactions are zero with a p-value well above 10%.

3.3. Descriptive Statistics

Panel A in Table 1 reports descriptive statistics for our variables.

{Insert Table 1 about here.}

Firms have an average subscribed capital of 1.63 million Euros. On average, about 17% of firms have had a negative EBIT in the previous year and average profitability, measured as net profit over total assets is 4.08%. Firms are on average 15.79 years old and have, on average, total assets of nearly 14 million Euros.

As a first test for the reaction of Croatian firms to the introduction of the TERP, we analyze changes in subscribed capital for the control and treatment group over the period 2008-2016. We denote all firms with a positive change in subscribed capital with $Increase_{i,t} = 1$ and all firms with a negative change in subscribes capital with $Decrease_{i,t} = 1$. In Panel B in Table 1, we show the percentage of firms with a change in subscribed capital for Croatia and Slovenia over our observation period. Prior to the Croatian tax reform, about 3.4-6.4% of all Croatian firms in our sample have increased their subscribed capital. Numbers are slightly smaller for Slovenian firms. Whereas the fraction of Slovenian firms with an increase in subscribed capital remains rather constant after 2012, we observe a strong increase for Croatian firms. In 2013, the first year after the introduction of the TERP, about 16.41% of our Croatian sample firms increase their subscribed capital, which is about three times the pre-reform value. In 2016, however, the percentage drops to 9.25%. This might be an indicator that the investment and employment requirements introduced in 2015 reduced the incentive to use the TERP. Throughout the sample period, we observe a small number of firms with a decrease in subscribed capital, ranging from 0.68% to 1.70% in Croatia and 0.70% to 1.89% in Slovenia.

During the post-reform period we observe 3,448 increases in subscribed capital by 1,948 Croatian firms. This is about 32% of our Croatian sample firms. Contrary, we observe only 11.65% of Slovenian firms to increase their subscribed capital in at least in one year over the post-reform period. The overall increase in subscribed capital of Croatian firms after 2012 totals 4,99 billion Euros. Given the Croatian corporate tax rate of 18%, this translates into (at least temporary) tax savings of the use of the TERP of about 900 million Euros for our sample firms. This figure represents almost 2% of Croatian GDP in 2016 (see Croatian Bureau of Statistics, 2018, p. 208), which could be an explanation for the early abolishment of the TERP.

4 Regressions Results

4.1 Baseline Results: Difference-in-difference Analysis

We present the baseline DD results obtained from Equation (1) in Table 2.

{Insert Table 2 about here.}

The DD results indicate that, relative to Slovenian firms, Croatian firms increase their subscribed capital as a response to the tax reform. In economic terms, the DD coefficient estimate in column (2) can be interpreted as follows: Relative to Slovenian firms, firms in Croatia increase their subscribed capital by 50.62%. Based on the mean subscribed capital of 1.63 million Euros, the increase in subscribed capital of Croatian is about 0.83 million Euros higher than of Slovenian firms in the past-reform period. This increase should be compared to the *median* value of subscribed capital of Croatian firms in our sample, which is only 0.05 million Euros. This result highlights the pronounced asymmetry of the distribution of capital (and profits) of Croatian firms, indicating that the mean effect is driven by a rather small number of large and profitable firms.

Among our firm-level control variables we find firm size and age to have a positive impact and profitability to have a significant negative impact on subscribed capital.

4.2 Cross-Sectional Test: Effects of Ownership

We expect the use of the TERP to depend on the ownership structure of the firm. To test our expectations, we collect ownership information for the last available year for our sample firms from the AMADEUS database. Ownership information is available for 7,085 firms.

First, we identify the majority owner of the firm, that is the shareholder owning more than 50% of the firm. We distinguish between three groups firms with majority owners: Firms with a domestic corporate majority owner *(Corporate)*, firms with an individual majority owner *(Individual)*, and

firms with a corporate foreign majority owner *(Foreign)*. Most of the firms in our sample (54.21%) have an individual majority owner, while 28.37% have a corporate majority owner and 12.95% are held by a foreign parent. Only 4.47% of our sample firms have no majority owner, but are widely held.

To control for the firm-specific majority owner, we define two dummy variables. *Individual* takes the value 1, if the firm has a majority owner that is an individual and 0 otherwise. *Foreign* takes the value 1 if the firm is held by a foreign parent company and 0 otherwise. Next, we separately interact the two ownership dummy variables with the DD variable from Table 2 to obtain a triple difference-in-difference approach (DDD). We present the results for the DDD test in columns (1) to (2) of Table 3.

{Insert Table 3 about here.}

The significant and positive coefficient for *Croatia x Post* in columns (1) and (2) shows that, on average, subscribed capital is always larger for Croatian firms than for Slovenia firms after the introduction of the TERP. However, the DDD coefficients show substantial differences with respect to majority owners.

Firms with an individual majority owner show a significantly larger increase in subscribed capital. This supports our expectation that firms held by individual owners will benefit most from the tax exemption due to the possibility to avoid recapture taxation and due to low agency costs associated with their ownership structure. Also consistent with an agency costs argumentation, we find that Croatian firms held by a foreign parent company have a significantly lower increase in subscribed capital. The lock-in effect of the TERP seems to hinder foreign parent companies from using the tax-exemption for their Croatian subsidiaries.

For our next cross-section analysis, we rely on the finding of Jacob and Michaely (2017), who show that the tax sensitivity of individual owners gradually decreases as the number of individual owners increases. To test whether this relation also holds for the Croatian TERP, we use the subsample of 3,480 firms that are closely held (i.e., that are majority-owned by one or more individuals, *Individual* =1). Next, we count the number of individual owners per firm and find an average of 1.78 individual owners. The majority (58.76%) of the firms is held by one single individual owner. Another 21.66% (9.02%) of the firms is held by two (three) individual owners. 3.57% of the firms are held by four individual owners, and the remaining 6.99% are held by more than four individual owners. Given the distribution of individual owners among our sample firms, we define dummy variables for firms with 1 to 4 owners and interact them with the DD variable from Table 2. We present the results of this analysis in column (3) of Table 3.

Analyzing the coefficients of the DDD interaction terms *Individual x Post x Croatia,* we find a significant response to the tax reform only for firms with one to three individual owners. Once the firm has four or more individual owners, conflicts among shareholders might prevent firms from choosing a tax-optimal behavior. A possible explanation could be that minority shareholders are facing difficulties in finding a buyer for their shares so that a tax-exempt disposal (without recapture taxation of the TERP) may not be possible.

4.3 Effect on Equity Ratios

The observed increase in subscribed capital is an indicator that Croatian firms indeed used the TERP. However, to answer the question whether the use of the TERP simultaneously increased total equity of Croatian firms, we have to focus on changes in total equity rather subscribed capital. If the TERP, on average, incentivizes firms to cut dividends and build up retained earnings, we would expect to find an increase in total equity of Croatian firms. If the tax exemption is

predominantly used by firms that did not distribute profits prior to the tax reform, the Croatian TERP would not be an efficient tool in increasing the equity base of Croatian firms. Rather, it allowed firms to accumulate tax-free profits without the need to change their payout behavior.

For this test, we repeat the estimation of equation (1) and use the natural logarithm of total equity as the dependent variable. We find that the DD estimator has a significant negative coefficient.

{Insert Table 4 about here.}

Compared to Slovenian firms, we observe a decrease in total equity of Croatian firms after the introduction of the TERP. In economic terms, the increase in total equity of Croatian firms is about 4.21% or about EUR 0.15 million lower than in Slovenian firms. It appears that Croatians firms that used to retain earnings already in the pre-reform period also used the TERP. However, the TERP has not been successful in incentivizing dividend-paying firms to retain profits. Our results indicate that the Croatian TERP mainly constitutes a deadweight effect with high costs in terms of foregone tax revenues, but low effects if measured by increased total equity.

5 Conclusion

We investigate if and to what extent firms used the Croatian tax exemption of retained profits (TERP) and whether this regulation stimulated equity accumulation among Croatian firms.

Our DD approach documents that Croatian firms significantly increased their subscribed capital as a result of the TERP. Compared to firms from Slovenia, the increase in subscribed capital of Croatian firms is about 0.83 million Euros higher during the TERP period. However, agency issues related to information asymmetries have a significant impact in the use of the TERP. Consistent with agency theory, closely-held firms with one individual majority owner use the TERP to a greater extent and Croatian subsidiaries of a foreign parent company use the TERP to a lesser

extent. Furthermore, the use of the TERP decreases with the number of individual owners. Firms with less information asymmetry and thus less heterogeneity in tax preferences use TERP most extensively.

Our study permits some tax policy conclusions. As we observe a significant impact of capital increases in the post-reform period on investment, the reform appears to have the desired effects. The average increase in subscribed capital is substantial and accounts for 5.87% of average total assets. As a consequence, the desired lock-in effect did indeed occur. The total equity effect, however, is rather small, and – compared to the control group of Slovenian firms – even negative. Thus, the TERP seems to be a fairly inaccurate tool to incentivize equity accumulation.

Of course, our study is subject to several limitations. Although we include year-fixed effects in the regression analysis, our results may be affected by the aftermath of the economic crisis, which was especially persistent in Croatia and Slovenia. The recession in Croatia lasted until 2014, with growth picking up only in 2015 and 2016. Another caveat could be our focus on corporations. While about 80% of employees in Croatia and Slovenia are employed by corporations, a substantial number of firms in these countries are sole proprietorships and partnerships (see Eurostat, 2018b). However, data on non-incorporated firms is scarce and we are not convinced that partnerships are an adequate control group due to differences in size. Another aspect that we are not able to analyze with the data at hand is the question whether liquidity constraints of the owner (dividends for consumption) might prevent firms from using TERP.

It should be noted that equity accumulation was only one objective of the Croatian TERP besides securing investment and employment. Other European states tried to boost investment and increase employment by TERP-like regulations as well. As a consequence, the tax legislator might benefit from future research on the relationship of TERP, investment incentives and ownership structure.

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Appendix

Table 1: Descriptive Statistics.

Panel A in this table presents descriptive statistics of our main variables for 8,912 firms and 80,208 observations over the 2008–2016 period. *Capital* is the subscribed capital of the firm. *NOL* takes the value 1 if the firm had a negative EBIT in the previous year, *Depreciation* is the depreciation of the firm, *Profitability* is profit after taxes divided by total assets, *Size* is measured as the natural logarithm of total assets, *Tangibles* is fixed tangible assets and *Age* is the natural logarithm of firm age in years.
In Panel B, we present the percentage of firms with an increase in subscribed capital over the sample period 2009–2016 for Croatian firms (treatment group) and Slovenian firms (control group).

Panel A: Main Variables.

Variable	Obs	Mean	Std. Dev.	Min	Median	Max
Capital	80,208	1,625.27	5,629.14	2.48	64.11	42,665.45
NOL	80,208	0.1694	0.3751	0	0.00	1
Depreciation	80,208	567.07	3,910.93	-5.43	89.53	450,296
Profitability	80,208	0.0408	0.8711	-208.95	0.03	14.99
Size	80,208	13,998.36	149,193	0	2271.32	9,863,581
Tangibles	80,208	13,440.86	1,602,943	0	598.91	4,510,000
Age	80,208	15.7947	10.98	1	16.00	319

Panel B: % of Firms with Change in Subscribed Capital.

	Increase		Decrease	
Year	Croatia	Slovenia	Croatia	Slovenia
2009	4.40%	4.67%	1.60%	1.89%
2010	6.37%	4.11%	1.17%	1.12%
2011	3.98%	4.95%	0.68%	0.74%
2012	3.43%	3.40%	0.97%	1.16%
2013	16.41%	4.77%	1.19%	0.70%
2014	14.95%	2.67%	1.70%	1.33%
2015	16.27%	4.84%	1.04%	1.74%
2016	9.25%	1.58%	1.11%	0.98%

Table 2: Effects of TERP on Subscribed Capital.

This table presents difference-in-differences (DD) estimates on subscribed capital after the introduction of the TERP in Croatia. All variables are described in Table 1. We report robust standard errors clustered at the firm-level in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)
Variables	ln(Capital)	ln(Capital)
Croatia x Post	0.4832***	0.5062***
	(0.0230)	(0.0229)
NOL		0.0015
		(0.0126)
Depreciation		0.0085
		(0.0162)
Profitability		-0.5127***
		(0.0723)
Size		0.5160***
		(0.0251)
Tangible		0.0059**
		(0.0030)
Age		0.0882***
		(0.0120)
N	80,208	80,208
R^2	0.9203	0.9266
Cluster/SE	Firm	Firm
Firm-FE	Yes	Yes
Year-FE	Yes	Yes

Table 3: Cross-Sectional Results on Ownership Structures.

This table shows cross-sectional estimates on subscribed capital around the introduction of the TERP in Croatia. In columns (1) and (2) we compare responses of Croatian firms with either a foreign or majority owner. In column (3) we show results for Croatian firms with more than 50% of shares held by individual owners, but different numbers of individual owners. We report robust standard errors clustered at the firm-level in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Variables	(1) foreign	(2) individual	(3) number individual
Croatia x Post	0.5771***	0.2903***	0.0514
	(0.0307)	(0.0334)	(0.0470)
Foreign x Croatia x Post	-0.1763***		
	(0.0471)		
Individual x Croatia x Post		0.3693***	
		(0.0434)	
Individual1 x Croatia x Post			0.6310***
			(0.0551)
Individual2 x Croatia x Post			0.6333***
			(0.1073)
Individual3 x Croatia x Post			0.6374***
			(0.1765)
Individual4 x Croatia x Post			0.2622
			(0.1737)
N	63,761	63,761	34,560
R^2	0.9298	0.9303	0.8995
Cluster/SE	Firm	Firm	Firm
Year-FE	yes	yes	yes
Firm-FE	yes	yes	yes
Controls	yes	yes	yes

Table 4: Effects of TERP on Equity.

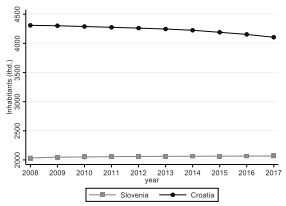
This table presents difference-in-differences (DD) estimates on total equity after the introduction of the TERP in Croatia. All variables are described in Table 1. We report robust standard errors clustered at the firm-level in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)
Variables	ln(Equity)	ln(Equity)
Croatia x Post	-0.0509***	-0.0421***
	(0.0179)	(0.0123)
NOL		-0.1465***
		(0.0101)
Depreciation		0.0285***
		(0.0110)
Profitability		2.0694***
		(0.0569)
Size		0.9190***
		(0.0156)
Tangible		-0.0014
		(0.0019)
Age		0.0284***
		(0.0087)
N	80,208	80,208
R^2	0.8944	0.9393
Cluster/SE	Firm	Firm
Firm-FE	Yes	Yes
Year-FE	Yes	Yes

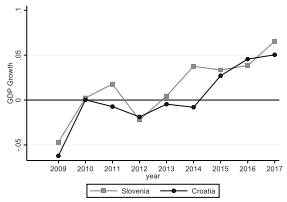
Figure 1: Macroeconomic Indicators for Croatia and Slovenia.

These figures present core macroeconomic indicators for Croatia and Slovenia. Panel A shows inhabitants in thousand, Panel B annual GDP per capita growth, Panel C unemployment rates and Panel D fiscal deficit or surplus. All data is taken from Eurostat (2018a).

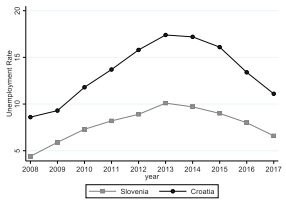
Panel A: Inhabitants.



Panel B: GDP per capita growth.



Panel C: Unemployment rate.



Panel D: Fiscal deficit or surplus.

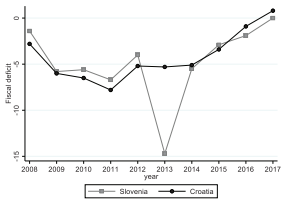
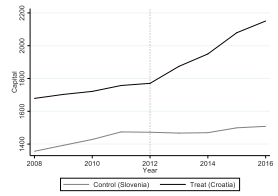


Figure 2: Subscribed Capital and Pre-Reform Trends.

Panel A of this figure plots average subscribed capital of treated (Croatian) and counterfactual (Slovenian) firms. Panel A provides visual and Panel B statistical evidence that the trend in subscribed capital is similar for Croatian and Slovenian firms. Panel B reports the coefficient estimate of the interaction between year fixed effects and the Croatia variable, respectively. Following Patel and Seegert (2017) and Jacob et al. (2018), the common trend assumption is supported by the failure to reject the hypothesis that these coefficients are zero.

Panel A: Level of subscribed Capital, 2008-2016.



Panel B: Difference in subscribed Capital, 2009-2012.