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Do Corporate Tax Cuts Boost Small Firms?

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FIRMS AND ENTREPRENEURS play a vital role in creating new jobs and innovations that would not otherwise exist, leading to greater welfare for society. Cutting business taxes is often viewed as a relevant policy tool to boost firm investments and growth, and many developed countries have reduced their corporate taxes over the last decade to achieve these goals.

This report summarizes and discusses the effects of large corporate tax rate cuts implemented in Finland over the period 2012–2014, presented in a recent working paper.* We focus on the impact on the investments and economic performance of small and young firms, which are generally considered very important for economic growth. We find that corporate tax rate cuts did not significantly increase the investment rate of small corporations. However, we find a moderate increase in sales and variable costs after the reform, implying that tax cuts helped spur the overall economic activity of small firms.

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* See Harju et al. 2022.

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"Reforms in business taxation are often viewed as relevant tools for affecting growth and investments."

Introduction

There is a common consensus that firms and entrepreneurs form the backbone of modern economies. They play a vital role in creating new jobs and innovations that would not otherwise exist, leading to greater welfare for society. Recent empirical evidence underlines that small and especially young firms are very important for economic development and growth. For example, in the US, it has been argued that new businesses account for 20 percent and high-growth businesses contribute up to 50 percent of total gross job creation.[1] However, even though firms and their development are considered important, we still know surprisingly little about how various tax policies affect their investments and growth.

Reforms in business taxation are often viewed as relevant tools for affecting growth and investments. Consequently, many developed countries have reduced their corporate and dividend tax rates in recent years to boost firm-level investments and economic activity. For example, corporate tax rates were cut in Germany in 2008, the UK in 2008, 2011, 2012, and 2013, and the US in 2017. Nordic countries have also actively reduced their corporate tax rates during the last decade: Sweden cut its corporate tax rate in 2009, 2013, and 2019, Denmark in 2014, 2015, and 2016, and Norway in 2014, 2016, 2017, and 2018.

In addition to corporate tax rate cuts, many countries have implemented various temporary investment subsidy policies to increase investments, such as more favorable deduction regulations and temporary bonus depreciation or accelerated depreciation policies. Empirical evidence from the US and UK suggests that these policies have been relatively effective in increasing investments that are qualified for the subsidy, at least among large capital-intensive firms.[2] Furthermore, dividend tax rates for business owners have been cut in many countries over the last decades to boost investments, but recent causal evidence on their impact does not support significant effects on investments.[3]

These recent developments in business taxes around the world raise the question of which policies are effective in boosting investments and the economic activity of firms. Knowledge of the impact of different policy choices is increasingly relevant, as cutting business taxes without achieving improved economic activity and growth can further aggravate the predicted imbalance between tax revenues and increasing public and health expenditures due to aging populations in many countries. Moreover, business tax cuts are more often directed toward high-income individuals compared to those with lower incomes. This increasing effect on income inequality needs to be considered together with the potential gains of the tax cuts through increased investments and growth.

Despite the recent evidence on the effects of investment subsidies and dividend tax cuts mentioned above, there is scarce firm-level evidence on the impact of statutory corporate tax rate cuts on investments. Furthermore, evidence on the effects of business tax reforms among young and growing firms is very limited, even though these firms are argued to play a key role in economic growth and employment.

We add to this discussion in our recent working paper (Harju, Koivisto, and Matikka 2022), where we study the impacts of significant corporate tax rate cuts in Finland. Our empirical findings aim to provide new insights into how corporate tax policies influence the eco-

1. See Decker et al. 2014.
2. See, for example, Zwick and Mahon 2017 and Maffini et al. 2019.
3. See Yagan 2015.

nomic decisions of small and younger firms. We focus on analyzing the effects of tax cuts on firm-level investments and other measures of the economic performance of firms, such as total sales, variable costs, and labor costs.

During 2012–2014, the Finnish corporate tax rate was cut by 6 percentage points from 26 to 20 percent. These reforms were motivated by their expected positive impact on investments and growth, as the reduced tax rate increases the financial incentives for investment and overall business activity of firms. Furthermore, the cuts were motivated by the international development of reduced corporate tax rates in other countries, particularly among other Nordic countries. Thus, by cutting the domestic tax rate, the Finnish government aimed to address the concern that the corporate tax rate would affect the destination country choices of large multinational corporations. However, as our study focuses on smaller firms, we concentrate on analyzing the potential growth and investment effects and do not evaluate responses related to international tax competition.

We use extensive administrative data on business tax records and financial statements to compare the development of small corporations with annual sales between 100,000 euros and 2.5 million euros to similar-sized partnership firms operating in similar industries. We limit our analysis to small firms since partnerships only offer a reliable comparison group with regard to relatively small corporations. Partnership firms are not subject to the corporate tax and therefore did not face changes in business taxes during this period. These firms thus serve as a comparison group to describe the economic development of small businesses in the absence of tax cuts, enabling us to analyze the causal impact of corporate tax reforms on small corporations.

Recent Literature on Investment Effects

Business tax reforms in various countries aimed at boosting investments have prompted researchers to study the effects of these reforms. Consequently, empirical evidence on the causal impacts of financial incentives on firm investment decisions has increased significantly in recent years.

Recent literature has focused on studying the effects of various investment subsidy policies that are particularly aimed at increasing investments, in contrast to general reductions in business tax rates. These include, for example, temporary bonus depreciation and accelerated depreciation policies that are often targeted at some specific types of industries or investments, such as machinery and equipment. These policies are designed to incentivize firms to invest in physical capital assets by offering them a temporary possibility for a larger or accelerated depreciation of their investment costs. By temporarily increasing the amount of costs that can be deducted from reported taxable profits, these policies provide improved financial incentives to carry out new investments or expedite existing investment plans.

By reducing the taxable profits of firms through larger tax deductions on investment costs, these subsidy policies affect the investment incentives of firms in a similar fashion as a statutory corporate tax rate cut. However, they are often designed to be temporary, and their effect on financial incentives for investments is typically much smaller than the recent statutory cuts in the corporate tax rate in many countries.[4] Additionally, these policies often reduce tax liability only for the return on new capital investments qualified for subsidy treatment, whereas a more general corporate tax rate cut also increases the after-tax returns for all investments.

In summary, the literature studying the effects of these targeted investment subsidy policies in the US and UK finds that these types of policies are effective in increasing investments, or at least within those investment categories that are qualified for the subsidy.[5] These findings have often led to a more general policy conclusion that improving financial incentives can effectively boost firm investments, at least temporarily.

Recent literature has also studied the effects of dividend tax rate cuts on investments. A dividend tax rate cut affects the incentives of the firm owner(s) to finance investments with new equity installments, as it reduces the tax burden on the returns on these investments when the returns are later withdrawn from the firm as dividend income. In other words, cutting the dividend tax rate primarily increases incentives for new investments that are financed by owners investing new capital in their firms.

A study on the causal effects of a massive 23-percentage point dividend tax rate cut in the US in 2003 finds no detectable effect on investments. This suggests that improving the financial incentives for investments financed by new equity installments through dividend tax cuts has no significant direct impact on firm-level investments.[6] Moreover, the literature studying the

4. For example, a federal bonus depreciation policy in the US reduces the present value of qualified investments by approximately 5.5 percent and state-level bonus depreciations by 1.1 percent (see Ohrn 2019).
5. See, for example, Zwick and Mahon 2017, Ohrn 2018 and 2019, and Maffini et al. 2019.
6. See Yagan 2015.

effects of a smaller dividend tax rate cut (5–10 percentage points) in Sweden in 2006 finds no impact on overall firm investments, similar to the US. However, evidence from Sweden suggests that a reallocation may occur as firms with more limited available cash resources invest more compared to cash-rich firms. This suggests that dividend tax rate cuts could help spur investments among firms that have more limited resources to finance their investments with other means, such as assets retained in the firm or debt financing.[7]

However, there is scarce firm-level evidence on the potential impacts of universal corporate tax rate cuts, even though the level of the corporate tax rate is a central question in policy debates and many countries have implemented significant tax rate cuts in recent years. Compared to the more targeted investment subsidy policies discussed above, a cut in the corporate tax affects all firms and all types of investments with no expiration date. Furthermore, corporate tax rate cuts increase incentives for investments that are financed by debt or retained assets in the firm; that is, incomes that are retained in the firm after corporate taxes are paid instead of being distributed to shareholders. In comparison, the predicted effects of dividend tax rate cuts are mainly limited to investments financed by new equity installments by the firm's owners. Therefore, knowledge on how a more generally applied business tax, concerning all firms and the return on all types of investments, affects the overall investment rate and the economic activity of firms is highly relevant for evaluating the effectiveness of different tax policy tools.

Moreover, there is only scarce empirical evidence on how tax policy changes affect the investment and business activity of smaller firms, despite the general notion that young and growing firms are considered important for economic development and employment. In particular, earlier studies on investment subsidies typically focus on much larger firms; these studies provide limited guidance on how improving financial incentives would affect smaller and younger firms, which often tend to be less capital intensive. Our study on the impacts of universal corporate tax rate cuts aims to provide more insight into the effects of corporate taxes on firm-level decisions, focusing on smaller firms.

Corporate Tax Rate Cuts in Finland

Many countries have in recent years decided to reduce their tax rate on corporate profits to boost economic activity and investments and as a response to the increased international tax competition regarding corporate taxation. This development has also been followed by Nordic countries. Sweden cut its corporate tax rate in 2009, 2013, and 2019, Denmark in 2014, 2015, and 2016, and Norway in 2014, 2016, 2017, and 2018.

Finland also joined this trend by introducing significant corporate tax rate cuts in 2012 and 2014. The corporate tax rate was first cut from 26 to 24.5 percent in 2012 and then further down to 20 percent in 2014. These two reforms induced a 6-percentage point or 23-percent cut in the statutory corporate tax rate. After these tax cuts, the Finnish corporate tax rate is currently the lowest in the Nordic countries together with Iceland (20%) and Sweden (20.6%).

As discussed above, the Finnish government motivated corporate tax rate cuts by their expected positive impact on investments and growth. Additionally, the cuts were motivated by increased international corporate tax competition, especially the recent corporate tax rate cuts in the neighboring country of Sweden. Thus, by cutting the tax rate, the Finnish government aimed to affect the destination country choices of large multinational corporations. However, as we focus on smaller firms in our study, we do not analyze the potential impacts related to these types of outcomes.

Cutting the tax rate on corporate profits reduces the tax liability of firms and thus increases available resources for investments and the after-tax return on investments. Therefore, tax rate cuts can incentivize firms to increase their investments. Furthermore, a cut in the corporate tax rate induces a mechanical increase in the available cash resources of a firm. When everything else remains unchanged in the firm, it now has more available after-tax profits than before the corporate tax rate cut. If these additional resources within the firm are important for boosting overall business activity, we could expect the corporate tax rate cut to also increase turnover and other business activity measures among corporations.

An important detail in the Finnish corporate tax reforms was that the statutory tax rate on dividends from privately held (nonlisted) corporations was increased at the same time for the owners of small corporations. Conse-

7. See Jacob 2020 for a summary on the evidence from the Swedish reform.

quently, the so-called effective dividend tax rate, including both the statutory dividend tax and the corporate tax, remained unchanged in the reform (26% both before and after the reform for owners in our sample). In practice, this means that there was no significant change in the overall tax rate on income withdrawn from small corporations in our estimation sample.

The stable effective tax burden on dividends implies that the reform did not change incentives for investments that are funded by capital raised from existing or new shareholders by new equity installments. As discussed above, the effective dividend tax is typically thought to affect the after-tax rate of return on investments funded by new equity, as in the case of dividend tax cuts studied in the previous literature. Therefore, the potential ex ante impacts of the Finnish reforms are mostly limited to investments financed by debt or retained earnings in the firm.[8]

However, small and younger firms are typically more dependent on the available cash resources within the firm. Moreover, these firms tend to be more cash-constrained than mature corporations. Therefore, it is reasonable to assume that the tax cuts affected investment and business activity incentives for a significant share of small corporations in our sample.

"The corporate tax rate cuts affected all public and privately held corporations in Finland."

Data and Analysis

We use population-wide administrative data covering all Finnish businesses and their main owners in our study. The data consist of firm- and individual-level tax record information provided by the Finnish Tax Administration.

The data include information on firm-level sales, costs, wages, assets, debts, and investments. Investments refer to the purchase price of all newly installed gross capital assets included in tax records. These include, for example, investments in machinery, equipment, buildings, and intangible assets. Additionally, the data include important background information such as industry and the characteristics of the owners of the firms. This dataset enables us to rigorously analyze the impacts of corporate tax reforms on firm-level investment decisions and other economic outcomes such as sales growth.

The corporate tax rate cuts affected all public and privately held corporations in Finland. In contrast, other types of businesses were not affected by the cut. In our analysis, we utilize partnership firms as a so-called control group for corporations. Partnership firms are not separate tax entities, and their profits are directly allotted to their owners and taxed as personal income. This means that these firms are not subject to the corporate tax and thus did not face changes in their tax rates in the reform.

Investments and other firm outcomes are typically highly cyclical, meaning that they tend to closely follow the general economic trends in each country. For example, firm sales and investments typically increase in growth periods and decrease in recessions. Moreover, the economic development of firms operating in similar markets or industries tends to follow each other over time.

This means that to reliably study the impacts of corporate tax cuts, we need to contrast the outcomes of corporations to other firms operating in the same industries and regions that did not face a change in taxes. We utilize partnership firms not affected by the reforms for this purpose, characterizing how the outcomes of firms that did not face a tax rate cut developed over the same period.

However, partnership firms offer a suitable comparison group only for relatively small corporations. Almost all the largest firms in Finland are corporations, and only very few of them are partnerships. The economic development of smaller and larger firms can vary at different times, which underlines the need for the corporations we study to resemble the comparison group as much as possible. This means that in our analysis, we concentrate on the impact of tax rate cuts among small corporations for whom we can find several suitable comparison firms among partnerships.

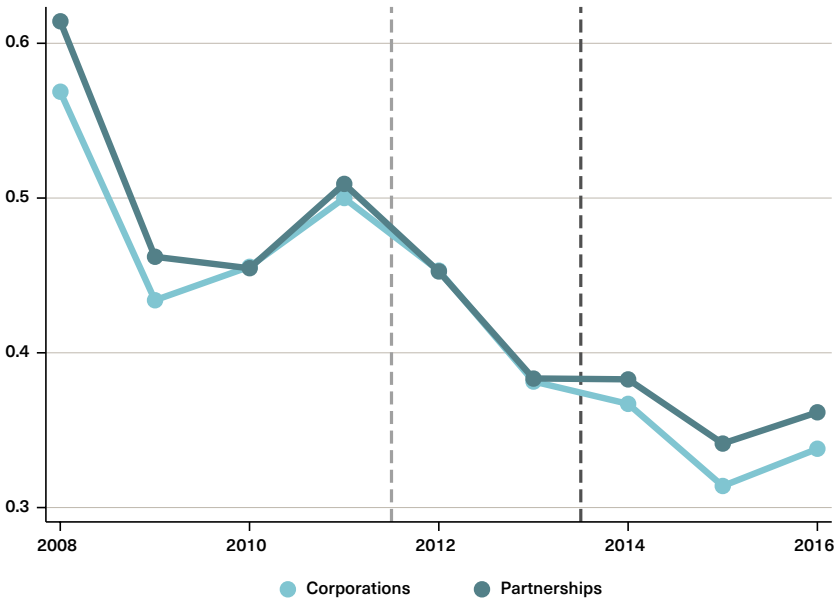
For this purpose, we restrict our baseline sample to firms with annual sales between 100,000 and 2.5 million euros and with net assets (assets minus debts) below 750,000 euros in 2011. We then follow the development of these firms before and after the corporate tax reforms. Our baseline sample includes approximately 44,000 firms in 2011, of which 31,000 are corporations.

We further improve the comparability of small corporations and partnership firms by using a similar reweighting approach that has been employed in the previous literature.[9] This procedure enables us to better match small corporations to similar-sized partnership firms that operate in similar markets and industries.

In our analysis, we find that the economic development of small corporations in our sample closely follows that of the partnership firms before the tax

8. See our working paper (Harju, Koivisto, and Matikka 2022) for a more detailed discussion and the theoretical background on the incentives of the reform depending on the financial sources used for investments. Furthermore, the paper includes a more detailed description of the recent reforms in corporate and dividend taxes in Finland.
9. See Yagan 2015 and Zwick and Mahon 2017.

Figure 1. Development of investments relative to existing capital assets, 2008–2016.



Note: The figure plots the rate of investments (investments per lagged capital assets) for corporations and partnership firms. The first vertical line denotes the smaller tax cut in 2012 from 26% to 24.5%, and the second line the larger tax rate cut from 24.5% to 20% in 2014. Source: Harju, Koivisto, and Matikka 2022.

rate cuts. This similarity in the outcome trends before the reforms occurred indicates that partnership firms offer a suitable comparison group to reliably study how the corporate tax rate cuts potentially affected small corporations.

We then study the impact of tax cuts on firm investments and other indicators of economic activity. First, we analyze new investments relative to existing capital assets, which illustrates how the reform affected the overall rate of capital investment among small corporations. It has generally been argued that investments are a key factor in determining productivity and growth in the economy, thus making it a key outcome that has been analyzed in various theoretical and empirical studies.

We then turn to analyze whether corporate tax cuts affected overall business activity by studying the development of firm sales (turnover), variable costs, labor costs, and value added (sales minus variable costs) before and after the reforms. These outcomes are less frequently considered in earlier studies that evaluate the impacts of corporate tax policies, even though they provide important additional measures of business activity that may potentially be affected by the corporate tax rate.

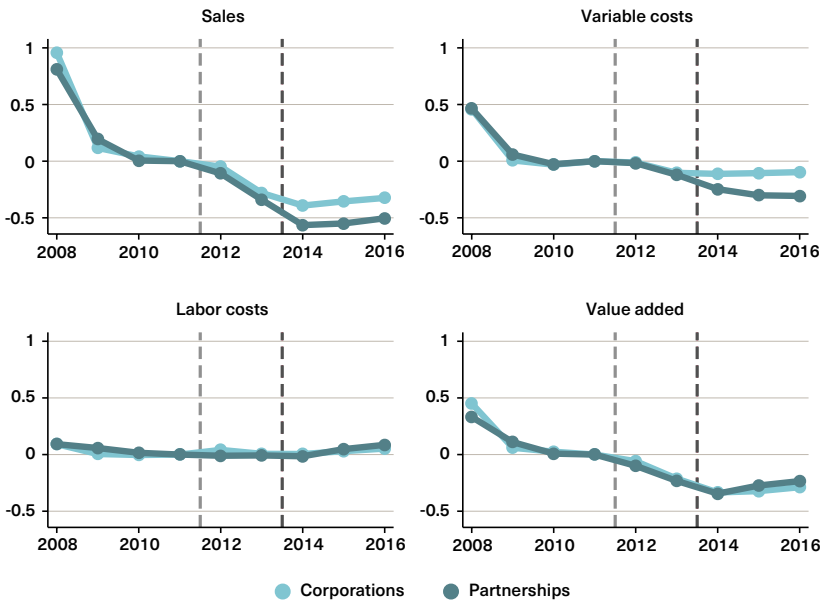
Effects on Investments

We find that cuts in the corporate tax rate did not induce a significant overall impact on investments in physical capital (see Figure 1). The development of the investment rate, defined as new investments relative to existing capital assets, among small corporations and comparable partnerships followed each other closely before the corporate tax cuts. The development remains similar after the reforms, and there is thus no visible increase in the investments of small corporations.

Our empirical point estimate indicates no significant increase in the overall investment rate (the average investment rate is approximately 50% for corporations in 2011 in our sample). Therefore, this evidence implies that the reform had no impact on overall investments.

In addition, we find no impact on the share of small firms with new investments. At the time of the reforms, approximately 58 percent of small corporations and 51 percent of partnership firms in our sample had positive new investments each year. This share remained practically the same before and after the reform for both groups, indicating that the tax cuts did not increase the number of

Figure 2. Development of sales, variable costs, labor costs, and value added for corporations and partnership firms, 2008–2016.



Note: The figure shows the development of sales, variable costs, labor costs, and value added scaled by firm-level sales in 2011. The first vertical line denotes the smaller tax cut in 2012 from 26% to 24.5%, and the second line the larger tax rate cut from 24.5% to 20% in 2014. Source: Harju, Koivisto, and Matikka 2022.

firms that invested in new capital assets.

However, we find that the investment response is positive (3.8 percentage points) for younger firms below the age of ten in our sample compared to older firms. This suggests that younger firms can be more responsive to increasing their investments when their corporate tax burden is reduced compared to more mature businesses. Moreover, we find a small positive effect (3.4 percentage points) for firms with less available cash resources compared to firms with more cash resources before the reforms. This suggests that the cash injection induced by the corporate tax rate cut could alleviate cash constraints among these firms.

Effects on Sales, Costs, and Value Added

We then examine the impact of tax cuts on other business activities. We analyze how the tax rate cuts affected the total sales (turnover of the firm), variable costs, labor costs, and value added of the corporations in relation to similar partnership firms not facing the tax cuts (Figure 2). We measure the development of these variables in relation to firm-level sales in 2011, one year before the first reform. Moreover, the figure presents the development in relation to 2011 for both firm groups such that the values in this year are normalized to zero.

First, we observe that the development of these outcomes followed each other closely before the reforms. After the tax cuts, we find that both total sales and variable costs increased slightly among corporations compared to partnership firms. Furthermore, we find no significant increases in labor costs and value added.

In more detail, we observed an average 1.6-percent increase in sales and a 2.0-percent increase in variable costs relative to sales in 2011. However, we do not observe statistically significant effects in labor costs or value added. Overall, these results illustrate that corporate tax rate cuts caused a moderate average increase in the business activity of small firms.

We further observe that the responses are clearly larger among those firms that are both owned and managed by the same individual compared to firms with more passive owners who do not work in the firm or hold a position on the company board. This implies that owners who are more actively involved in managing the firm respond more actively to improved financial incentives. This finding also

"Cutting the corporate tax rate is not a particularly effective tool for increasing investments among small firms."

suggests that a corporate tax rate cut could affect the work input and effort of active owner-managers. As we focus on small firms with, on average, only six employees, the work input and effort of the main owner can have a particularly large impact on firm business outcomes, which is supported by the larger observed response to the tax cut by active owner-managers compared to more passive owners. This finding also aligns with recent evidence from the US that highlights the key role of the main owner with regard to firm decisions and performance.[10] Furthermore, we observe slightly larger responses in sales and variable costs for more cash-constrained firms compared to less constrained firms. However, the investment responses are similar and insignificant across firms with active and passive owners.

The reforms were not followed by an increased number of new corporations, suggesting that the tax cuts did not affect business creation. This finding is interesting, as it is sometimes argued that reducing the tax liability of firms would spur new business creation, but our evidence from the large corporate tax rate cuts in Finland does not support this view.

Discussion

SUMMARY OF THE FINDINGS

We find no increase in the overall investment rate of small corporations after the significant 6-percentage point corporate tax rate cuts implemented in Finland during 2012–2014. However, we find a small response for firms younger than ten years and firms with less available cash resources, suggesting that investments by younger and more cash-constrained firms can be more responsive to business tax cuts compared to more mature and cash-rich firms.

We find that tax cuts slightly increased the business activity of firms, as we observe a simultaneous average increase in both firm sales and intermediate inputs used for production. We find clearly larger sales and cost responses for firms with active owner-managers, suggesting that firms with owners who are more actively involved in firm operations and decisions respond more actively to business tax cuts than firms with more passive owners and investors.

What do these results imply in terms of earlier empirical evidence? To put our investment results into perspective with other studies, we scale our estimated responses to the size of the drop in the tax rate. This tells us how much investment responded relative to the size of the drop in financial incentives. In our case, this relates to the drop in the corporate tax rate of 23 percent (from 26% to 20%). This so-called elasticity of investments with respect to the net-of-corporate tax rate enables us to compare our results to the recent results derived from investment subsidy policies in other countries.

Previous investment subsidy studies, particularly those analyzing investment subsidy policies in the US, find very large elasticities with respect to the size of the incentive in the range of 6–7.[11] This number means that, on average, a 1-percent cut in the tax rate would increase the investment rate by as much as 7 percent.

In contrast, our estimates indicate an average investment elasticity of zero. In comparison to estimates obtained in the investment subsidy literature, our 95-percent confidence interval suggests an upper bound elasticity of 0.74, which is still significantly below the previous estimates in the literature. However, the small investment estimate is well in line with the recent literature on dividend tax cuts, which finds no significant investment effects.[12]

Our findings, therefore, indicate that more general business tax cuts can potentially create small positive investment responses, particularly among younger and more cash-constrained firms, but the effects are well below those that could be assumed based on the investment subsidy literature. One interpretation of this is that it is not feasible to assume that the estimated effects from investment subsidy policies would generalize to a broader context of cutting universal business taxes for all firms. Instead, we should have observed a very distinct increase in investments after the large corporate tax rate cuts in Finland if the results from the investment subsidy literature were generalizable to this context.

SOME IMPLICATIONS FOR POLICY

Overall, our evidence suggests that cutting the corporate tax rate is not a particularly effective tool for increasing investments among small firms, at least when compared to more targeted investment policies for larger and more capital-intensive firms. This also means that the empirical evidence from investment subsidy policies can only offer limited guidance on how more general business tax reforms would affect the firm population and average investment rates, especially among smaller and younger firms. Together with the previous findings on insignificant investment effects of statutory dividend tax rate cuts, this suggests that more

10. See Smith et al. 2019.
11. See, for example, Zwick and Mahon 2017 and Ohrn 2018 and 2019.
12. See Yagan 2015 and Jacob 2020.

targeted investment subsidy policies can be more efficient in affecting investments, but these responses can be limited to a narrower group of firms that are actively investing.

However, our evidence shows that a cut in business taxes can also affect the economic activity of small firms by other means. These other effects can be particularly relevant for small and younger firms since corporate tax cuts increase available financial resources that can help stimulate business activity. The scale of the effects on business activity we observe, however, is rather modest. For example, the average sales elasticity relative to the change in the corporate tax rate is approximately 0.27.

While our evidence offers new insights into how the business activity of small corporations is affected by corporate taxes, there are limitations on how much we can say regarding the overall effectiveness of tax rate cuts and their effects on tax revenue. One obvious limitation is that we only study small corporations. It is, of course, possible that large corporations responded to the tax cut differently than smaller firms. Furthermore, earlier empirical evidence suggests that the location choices of large multinational firms can be at least somewhat affected by the corporate tax rate, but we do not have estimates available on the extent of this phenomenon for Finland. Therefore, more research is needed to thoroughly unpack the potential effects of corporate tax and other business tax cuts on firm outcomes and economic activity, as well as their impact on income inequality.

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