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Becoming an Entrepreneur - The Role of Profit Taxes

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Becoming an Entrepreneur - The Role of Profit Taxes*

PRELIMINARY DRAFT - DO NOT CITE!

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Abstract

In this paper we study the effects of profit taxation on the creation of new firms using a unique data set covering all firms created in Germany since 2000 irrespective of whether they are German or foreign owned. We exploit the fact that each municipality in Germany is able to independently set the rate of local profit taxation, whereas all tax-base related regulation is identical across municipalities. Our analyzes show that firms react to some incentives induced by profit taxes, but to a small extent and depending on the legal status of the firm.

JEL-Classification: H25, H71

Keywords: Profit Taxation, Location Decision, Firm Entry, Count Data

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1 Introduction

From a policy perspective, new firms entering the market are considered to be critical for job creation and aggregate growth. Obviously, many factors determine if and where an entrepreneur decides to open a new firm. These include agglomeration effects, distance to input and output markets and the general business environment which refers to factors like economic policy, regulation and taxation. In this paper, we focus on the latter effect, in particular, the role of profit taxation. In Germany, municipalities have few instruments other than lowering profit taxation that they could use to promote entrepreneurship. However, as it is one of the most important sources of local revenue, from a policy perspective, it is important to understand if and to what extent lowering the tax rate attracts additional economic activity that, at least potentially, helps keeping revenue stable over the medium run. For our empirical analysis, we exploit differences in profit taxation between German municipalities. The context is therefore very homogenous. All tax base-regulation is identical, and as the German constitution prescribes the aim of equal living conditions, there are no large and systematic differences in infrastructure provisions between different geographical regions. Focusing on the rate of taxation is further justified as it is, in our context, easily measurable and is perfectly observed by all potential entrepreneurs.

The objective of the present study is to investigate the relationship between local profit taxation and the entry of new firms. The case of Germany is very suitable as we are able to exploit the variation of tax rates on the municipal level. We primarily focus on the market entry of newly founded firms, thus concentrating on the determinants of entrepreneurship. In contrast, we do not study optimal location decisions or the relocation of existing firms.

According to the work of Domar and Musgrave (1944), Gentry and Hubbard (2000), Gentry and Hubbard (2005) and, Cullen and Gordon (2007) there are three different channels through which profit taxation can encourage or discourage the entry of new firms. The first one is the "income-shifting effect" which occurs because profit is taxed at a lower rate compared to personal income. The second is called the "risk-subsidy" channel and depends on the exact tax schemes for personal and corporate taxes. The third one is about "risk-sharing" since higher marginal tax rates support risk sharing with the tax authority. In the case of lower tax rates, the first two channel encourage firm entry while the third one discourages it. However, the overall effect is unclear.

In a recent paper Becker et al. (2012) estimate the effect of the local profit tax on the location decision of foreign multinationals willing to open a new subsidiary in Germany. They exploit the unique setting of the German local profit tax with a nationwide identical tax base and variations in the tax rate on municipal level. The authors estimate the effect of the profit tax on the location decision of MNE, finding that a decrease in the effective tax rate by one percent

leads to 0.45 new firms. To attract one new firm, the average municipality would need to lower its tax rate by 2.2 percentage points. Since only a few municipalities seem to be engaged in this kind of tax competition for firms, they argue that the discovered effect is substantial and suppose that there need to be other factors determining location decisions.

Our work ties up to the aforementioned study and others which are conducted in the field of profit taxation. With our work we are able to meet the following three criteria, which other studies do not fully meet. First there is a singularity in our sample used for the analysis, which makes a difference in the generality of the results. In contrast to the study of Becker et al. (2012), we are able to exploit a data set containing all firms located in Germany. Thus we can estimate a more precise elasticity of entrepreneurship to the local profit tax rate as we include a broader range of firms into our analysis. The group of multinationals seems to be relatively mobile and flexible regarding the choice of the municipality, while we potentially include more immobile firms. The second advantage concerns the legal regulations underlying the German profit tax rate. All regulations, for example regarding the tax base, are identical across all municipalities since they are determined by the federal government, but tax rates depend on the local multiplier set independently by each municipality. This is a unique setting, as in many other cases varying tax rates on county or municipal level are also associated with differing tax regulations. Thus we study a more homogenous case compared to studies using tax data from the US, France or Switzerland (see e.g. Bartik (1985), Rathelot and Sillard (2008) and Brülhart et al. (2012)). The third point involves the comparability to other studies. As is explained above we exploit the same unique setting in Germany as Becker et al. (2012) but include a broader range of firms. Thus the two studies and their results, namely their elasticities, can easily be compared.

We find that after controlling for additional municipal characteristics, the effective profit tax rate has a negative impact on the market entry of corporations but not for partnerships. Quantitatively our results suggest that a decrease in the profit tax rate of one percentage point increases (decreases) the number of corporations (partnerships) in a municipality on average by about 3.4 (4.2) percent. We presume that profit taxation is one factor influencing the decision to open a new firm. Furthermore we find that firms in the nearer vicinity of their owner do not seem to react to incentives of the profit tax. Finally, municipalities which are affected by the tax reform in 2008 experience significantly higher entrances of partnerships.

The paper is structured as follows. The next section explains the German profit tax with a special focus on the computation of the effective tax rates. Then, hypotheses are deducted by reviewing existing empirical evidence. Section 4 describes our data bases including descriptive statistics of the main variables. Afterwards section 5 clarifies the identification and estimation strategies, while section 6 shows the main results. The paper ends with some concluding remarks.

2 The German Profit Tax

2.1 Institutional Background

In Germany there are different types of taxes according to the recipient of the tax revenues. They can either go to the central government, the federal states, the municipalities or to more than one layer at a time. The profit tax is a so called municipal tax, which means that the main part of revenues go to the municipalities. Accordingly, it is the most important source of revenue for German municipalities and it is the only tax for which they have discretionary power in setting the tax rate. In addition they have the right to define the local property tax, but it is less important in terms of revenue. In 2010 the property tax accounted for only 2.1 percent of the total tax revenues in Germany, the profit tax accounted for approximately 6.7 % (Bundesministerium der Finanzen (2011)). Based on number for 2012, the local profit tax was the largest source of revenue for German municipalities as it amounted to approximately 76 % of overall municipal earnings from taxation (Bundesministerium der Finanzen (2013)).

The local profit tax in Germany is designed to tax profits only. It is levied on business operations of both domestic partnerships and corporations. Certain types of businesses are exempted from the tax, e.g. liberal professions or agricultural producers. The tax base is defined as the income from business corrected for several surcharges and deductions. However, it is important to note that the profit tax interacts with the personal income and the corporate tax depending on the legal status of the firm.

In 2008 the government introduced a tax reform which should increase incentives for firms to locate in Germany by lowering the tax burden. As is stated in Buettner et al. (2014), the overall tax burden decreased for corporations but the profit tax makes up a higher fraction of a firms overall tax burden (assuming a local multiplier of 380 %). The effect on the tax burden for partnerships is not clear ex ante.

2.2 Computation of Statutory and Effective Tax Rates

This chapter aims at defining the statutory profit and the effective profit tax rate. We will distinguish between corporations and partnerships as well as between pre- and post-reform years.

Statutory Tax Rate. In general, the definition of the profit tax liability comprises two steps due to the special characteristic of the German profit tax, resulting in the following statutory tax rate which applies both to partnerships and corporations.

$$\tau_B = \frac{h}{100} \cdot m \tag{1}$$

The basic federal rate m (*Steuermesszahl*) applies to all firms across all municipalities. It was set to 5 percent until 2008, after that it was reduced to 3.5 percent in course of the corporate tax reform of 2008. The level of the rate and all legal regulations underlying the German profit tax are centrally defined at the federal level.

The second component is the local multiplier h (*Hebesatz*) which may differ across municipalities. The local multiplier may vary over time as it is determined at the end of each year by municipalities. Special regulations like reduced multipliers or exemptions to attract additional firms are prohibited. Since 2004 all municipalities have been forced to levy a multiplier of at least 200 percent which is the automatic default in case of non-compliance. To sum up, the variation in the taxation of firm profits is generated by the independent setting of local multipliers by municipalities. Other legal taxes, e.g. corporate or personal income taxes, vary at the federal level only. The same is true for the legal regulations underlying the profit taxation, as was pointed out above.

Effective Tax Rates. The section derives effective tax rates for partnerships and corporations in Germany (it is based on e.g., Homburg (2010)). The corporate tax reform of 2008 implies differences in effective tax rates for pre- and post-reform years and for different legal positions. A short overview of the changes induced by the reform can be found in Table 1.

Table 1: Computation of Effective Tax Rates

	Partnerships		Corporations	
	Before 2008	Since 2008	Before 2008	Since 2008
Tax Deduction BT	$\tau - T_B$	–	$\tau - T_B$	–
Tax deduction CIT/PIT	$\tau - T_B$	–	$\tau - T_B$	–
Min. Threshold BT	24,5000	24,5000	–	–
Tax Credit PIT	$1.8 \cdot \frac{T_B}{h} \cdot 100$	$\min(T_B; 3.8 \cdot \frac{T_B}{h} \cdot 100)$	–	–
Basic Federal Rate	1 % to 5 %	3.5 %	5 %	3.5 %
Solidarity Surcharge	5.5 %	5.5 %	5.5 %	5.5 %
CIT rate	–	–	25 %	25 %

Notes: The table shows the change in several items of the profit tax due to the tax reform in 2008. BT denotes the profit tax.

For computations referring to the time before 2008, we need to know the profit of the firm to determine the effective tax rate. Here we use our sample of firms and the information on the profits which are delivered with the Mannheim Enterprise Panel (MUP) data. Since the profit of some firms is missing, we approximate the values by a two-step procedure. First we compute the mean profit of all firms within a certain sector (using two-digit sector codes) and the same amount of employees for a given year. Then we replace all missing values with the approximated values.

Before 2008, the profit tax liability could be deducted from its own tax base and from the base of the corporate or the personal income tax, respectively. This special feature results in a

deviation of the effective tax rate from the statutory tax rate, as defined in Equation 1. The effective profit tax rate T_B^{eff} for corporations before 2008 can be stated as follows:

$$T_B^{eff} = T - \tau_{CI} \cdot (1 + \tau_S) \cdot \pi = \frac{m \cdot \frac{h}{100}}{1 + m \cdot \frac{h}{100}} \cdot (1 - \tau_{CI} \cdot (1 + \tau_S)) \cdot \pi \tag{2}$$

T represents the total tax due, τ_{CI} denotes the corporate tax rate (decreasing from 25% before 2008 to 15% thereafter), τ_S is the solidarity surcharge of 5.5% and π represents the profit before taxes. m and h are the basic federal rate and the local multiplier, respectively.

Accordingly, the effective tax for partnerships before 2008 is computed using Equation 3. In pre-reform years the basic federal rate increases from 1 % to 4 % for each additional €12,000 taxable profits. Above a threshold of €72,500 it stays constant at a level of 5 %. Furthermore, one needs to take into account that the profit tax can also be deducted from the personal income tax.

$$T_B^{eff} = T_B \left[1 - 1.055 \cdot (\tau_{PIT} + 1.8 \cdot \frac{100}{h})\right] + 1.055 \cdot (\tau_{PIT} - \tau_{P\acute{I}T}) \cdot \tau \tag{3}$$

With $\tau_{P\acute{I}T}$ being the average personal income tax rate of taxable amount without deducting the profit tax.

Since 2008, any possibility to deduct the profit tax from itself or from the corporate or personal income tax is eliminated. Thus, the computation of effective tax rates is simplified.

Since deductions are removed, the effective tax rate equals the statutory tax rate from Equation 1, with τ_B being the profit tax rate.

$$T_B^{eff} = \tau_B \cdot \pi = m \cdot \frac{h}{100} \cdot \pi = \tag{4}$$

Similar to the simplifications in computing the effective tax rates for corporations, it is easier for partnerships from 2008 on, too.

$$T_B^{eff} = m \cdot (\tau - 24.500) \cdot (\frac{h}{100} - 3.8 \cdot (1 + \tau_S)) \tag{5}$$

The deduction from the personal income tax base is removed, but the tax credit for the personal income tax increases from formerly 1.8 to now 3.8 times the base rate. Thus a fully compensation takes place up to a local multiplier of 400.

The development of effective tax rates over time is illustrated in Figure 1. Descriptive statistics for the effective tax rates from our sample are available from Table 3.

3 Hypotheses

In this chapter we analyze the existing literature in the field of firm foundation and its determinants to derive our hypotheses which will be tested afterwards. Our main hypothesis studies the effect of profit taxation on the number of entering firms in German municipalities. It is accompanied by two additional hypotheses which test the effect for selected sub-samples and a tax reform.

3.1 Firm Entries and Taxes

In our analysis, we firstly focus on the effect of profit taxes on the foundation of firms which enter the market. Empirical evidence for the entry of firms is scarce compared to that of location decisions. The studies presented have in common, that they focus on the market entry of new firms which is influenced by tax policy. In most cases market entry is measured as the number of firms entering in a given time span and geographical region. The study by Bacher and Brülhart (2013) investigates if the level of corporate tax rates influences the emergence of new firms in Switzerland. The results suggest that a one percent change in the tax rate decreases the number of firms by about 3.3 percent, this implies a semi-elasticity of -0.2. In addition they find that the progressivity of the tax schedule can exhibit positive effects on the birth of firms. Another study estimating a country-specific elasticity is the one by Fossen and Steiner (2009). They exploit two tax reforms in Germany which reduced the marginal tax rate of entrepreneurs earning income above a certain level. Applying micro-simulation techniques they find that both reforms together increased the rate of self-employment significantly by 0.79 percent. They compute a semi-elasticity regarding the marginal tax rate of -1.36.

In addition there are several studies working with cross-country data sets. Djankov et al. (2010) use data on 85 OECD countries to estimate the effect of the effective tax rate on entrepreneurial activity. By using a representative (hypothetical) firm which makes the analysis comparable across countries, they estimate that a 10 percentage point increase of the effective tax rate in the first year decreases the entry rate of firms by 1.4 percentage points. Da Rin et al. (2011) examine if tax policy, especially effective corporate income taxes, is able to promote the emergence of new firms. In their analysis they make use of a data set that covers 17 western European countries. In comparison to other studies they do not use the mere number of entering firms, instead they count the number of newly incorporated firms as new entries. They find that a decrease in the marginal tax rate from the median to the first quartile increases the number of entries by 0.107 percentage points. Interestingly a reduction in the higher tax bracket from the third quartile to the median shows a positive effect. In addition they test for non-linear effects and find that this is supported by their findings. Overall their estimations

suggest that the effect of corporate taxes on the entry of firms differs and varies quantitatively depending on the distribution of tax rates. Kneller and McGowan (2012) use a sample of 19 OECD countries to test the effect of reforms of corporate and income taxes on the entry and exit rate of firms. They extend previous work by considering all kinds of entrepreneurship in their analysis including e.g. sole-proprietors or limited liability companies. Their results suggest that a higher statutory corporate tax rate is negatively related to the entry of new firms.

A second strand of literature deals with the *optimal location choice* of newly founded firms. The objective is to estimate the effect of corporate taxes on the decision making of firms. In his paper from the 80s, Bartik (1985) uses data from the U.S. to examine how taxes affect the location decision of firms which decided to open a new plant. He finds that a 10 percent increase in the corporate income tax lowers the number of firms in a location by about 2 to 3 percent. Evidence for France can be found in a study by Rathelot and Sillard (2008). They employ a Regression Discontinuity Design to avoid endogeneity issues by exploiting tax differentials between closely located municipalities. The results show that an increase in the tax differential by one percentage point increases the probability that the low tax location is chosen by one percentage point. Duranton et al. (2011) uses geographical neighbors to identify the effect of taxation on location decisions. In the baseline estimates the effect of taxes on entering firms is positive. Once an instrumental variable approach is implemented, there is no significant effect of corporate tax rates left. A similar approach with closely located sites is used by Jofre-Monseney and Solé-Ollé (2010) who look at the location decision of newly founded Spanish firms in the region of Catalonia. They find an elasticity of -0.52 with respect to the profit tax rate. Another study on the country level is conducted by Brülhart et al. (2012) for the Switzerland. They combine the sensitivity of firms to taxes with agglomeration economies potentially lowering the effect of taxation. The results show that firms are less sensitive to corporate taxes in areas where the agglomeration intensity is among the highest. In contrast, when agglomeration intensity is comparably low, firms are more affected by changes in the corporate tax burden. One cross-country study by Devereux and Griffith (1998) estimates the elasticities for the UK, France and Germany. They investigate the role of profit taxation in the location decisions of multinationals and assume that the location with the highest after-tax profits compared to the other two alternatives will be chosen. If a firm is willing to produce in Europe, then a one percentage point increase in the average tax rate in the UK reduces the probability to choose this country as production site by 1.3 percentage points. Similarly an increase in the French or German tax by one percentage point leads to a reduction in the probability of choosing the location by 0.5 and 1 percentage point, respectively. They point out, that even though taxation seems to matter significantly, there are other factors like agglomeration which are important as well.

According to Holl (2004), the preferences of existing firms which decide to *relocate* to an-

other site might be different with respect to important characteristics of locations in contrast to location decisions of newly founded firms. One study by Strauss-Kahn and Vives (2009) explores the relocation pattern of headquarters located in the U.S. Besides some company related characteristics like firm age and size, the role of corporate taxation is examined as well. An increase in the corporate tax rate in a region is associated with a 2.2 percent lower probability that it will be chosen as the headquarters location.

Building on the existing evidence we would expect to find a negative effect of profit taxes on the entry of new firms in German municipalities. Since we are able to distinguish between two different legal status (partnerships and corporations), we will also test whether the sensitivity to profit taxation differs between these two groups. Due to the higher mobility of bigger and incorporated firms, we assume that corporations are more sensitive to higher profit taxes as partnerships would be.

Hypothesis 1 *A higher effective profit tax lowers the expected number of founded firms in a municipality. The effect should be more pronounced for corporations compared to partnerships as the former are more mobile.*

3.2 Firm Entries and Distance

Besides taxes and other important characteristics of places, researches suppose that there might be kind of a "home-bias" which leads entrepreneurs to stick to their home region. One can study both, the performance of local entrepreneurs as well as the attachment to the home region as a determinant of local choices. The former was e.g., studied by Dahl and Sorensen (2012) while we will focus on the latter when doing our analyzes. Studying firm owners who have left their home region and who have not, Figueiredo et al. (2002) find that these owners have different preferences regarding the location's characteristics. For owners outside their home region, the business environment, e.g., agglomeration and urbanity, are more important. In turn, owners in their home region are willing to bear some costs to start the business in their home region. Michelacci and Silva (2007) find similar pattern for Italian entrepreneurs. A greater share of entrepreneurs stays in the home region when starting a business. In addition these firms are bigger and financially more successful. The authors suppose that local owners have better access to financial resources due to social ties. A more detailed analysis is executed by Stam (2007) who studies location decisions of start-ups over their life-cycle. He argues that businesses are started in the near vicinity due to three reasons: first, entrepreneurs perceive to have more information about markets and opportunities in the nearer environment, second, personal motives play an important role. Most start-ups are loss-making in the beginning and the owner needs to rely on the social network. Third, owners are limited in the choice of location as they are financially constrained.

For our sample of both partnerships and corporations we would expect that owners who locate the firm near their home do this for others reasons than the profit tax rate. They might considers factors like the distance to the home, a sound knowledge of input and output markets and probably better access to financial support. Most partnerships, in contrast to corporations, are smaller and owner-managed, we would suppose to find no effect of taxes on the entry of firms when looking at partnerships.

Hypothesis 2 *We would expect firms with a smaller distance between owner and firm to be less sensitive to profit taxation.*

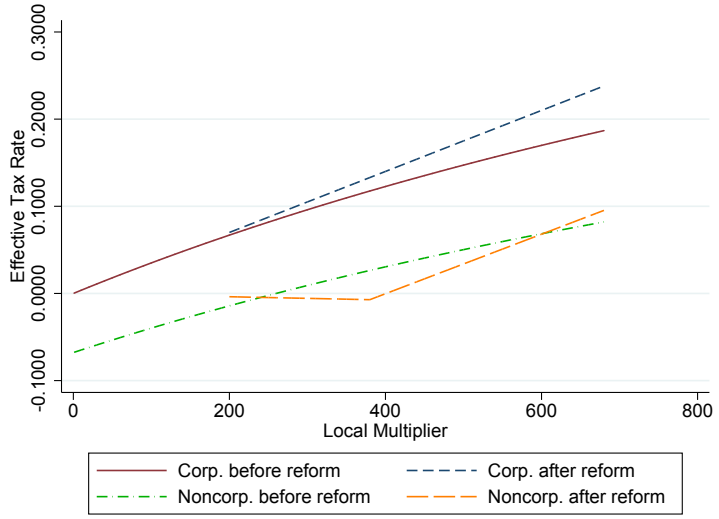
3.3 Firm Entries and the 2008 Tax Reform

The profit tax reform of 2008 aimed at improving the attractiveness of Germany as a potential location for business investments. Due to the changes which have been explained in 2 there have been changes in the effective tax rates for corporations and partnerships. Figure 1 displays these shifts in the effective tax rates. The effective tax burden of corporations slightly increases with the tax reform as deductions are removed (see red and blue dashed lines). However, we are more interested in the reaction of partnerships in the course of the tax reform. Before (green dash-dot line) they needed to pay lower effective tax rates as corporations, but the slope was similar and linearity persistent. The new law introduced a different pattern into the tax schedule (orange dashed line) which resulted in a kink around a local multiplier of approximately 380. While partnerships in municipalities with a local multiplier 250 and above 600 face higher effective tax rates, there is a region where effective tax rates decreased (and even get negative in some cases). One might wonder why and how effective tax rates fall below zero. This is due to the deductability of the solidarity surcharge in the personal income tax schedule.

Buettner et al. (2014) find that as a reaction to the tax reform in 2008, municipalities with a high fraction of partnerships and non-incorporated firms increase their local multipliers more compared to other municipalities. Building on this evidence, we analyze the reaction of firms to the tax reform. In addition, Harju and Kosonen (2013) study a similar setting as we do; they exploit a tax reform in Finland in the 90s to detect the effect of tax changes on the behavior of existing entrepreneurs. They figure out that they do react to these tax incentives.

We exploit this exogenous tax change and study if there is a significant increase in the number of entering partnerships in municipalities with a local multiplier between 250 and 600. Notably we use the kink at 380 where the effective tax rate is lowest and increase the corridor in three steps (from ± 10 to $\pm$ 30). Due to the peculiarities of the tax reform we would expect to find a significant increase in entries of partnerships in treated municipalities compared to non-treated ones.

Figure 1: Change in Effective Tax Rates in 2008



Notes: The figure shows the development of effective tax rates for corporations (corp) and partnerships (noncorp) from 2000 to 2012. We assume a taxable income of €1,000,000 for income and corporate taxes. Effects hold for other income categories as well.

Hypothesis 3 *The number of founded partnerships should rise in the aftermath of the tax reform in 2008 in municipalities with a local multiplier around 380. There should be no effect for corporations.*

4 Data

4.1 Mannheim Enterprise Panel

Our firm-level data comes from the Mannheim Enterprise Panel[1] (Mannheim Enterprise Panel (2012)), a panel data set of the population of all firms located in Germany. It is maintained at the Center for European Economic Research (ZEW) in cooperation with Creditreform, the largest business information service in Germany. Creditreform provides its firm data in six month intervals for ZEW, where the data is prepared and reconstructed to maintain the MEP. It enables the analysis of, for example, market entrances and exits (start-ups and shut-downs), changes in numbers of economically active firms in specific sectors and regions, the development of firms over time or the dynamics of job creation in firms.

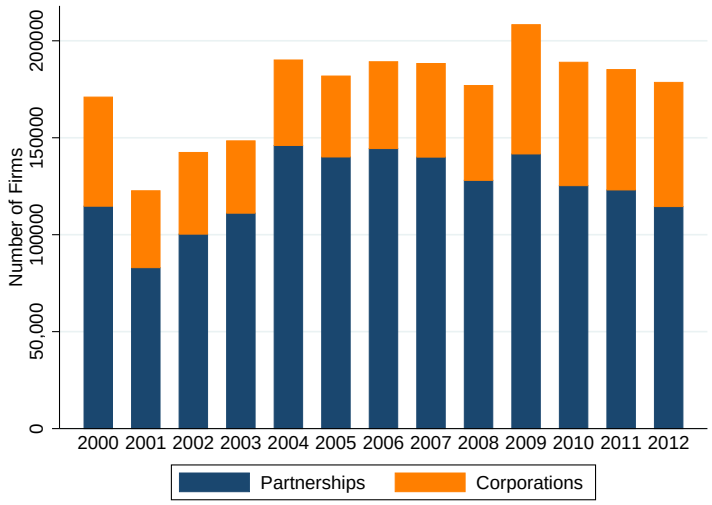
The data covers many characteristics of the firms regarding geographical information as well as business activities. Besides the number of employees and the yearly sales we obtain balance sheet information, too. In addition we are able to look at all shareholders of a firm including their address, their status in the firm and the share of their investment.

Creditreform collects data on all firms over a longer time span and allocates a unique identifier

[1]For more information on the project see http://www.zew.de/projekt102

to every firm. Thus we are able to track firms over time and can detect entering and leaving firms. To change the unique ID it is not sufficient to change the firms name, since Creditreform itself is interested in tracking the (credit) history of firms to judge their creditworthiness. Thus when a new ID enters the data set we can be quiet sure that it is a newly founded firm and not only a change in the name of an existing firm.

Figure 2: Number of Entering Firms



Notes: The figure shows the aggregate number of founded firms per year.

For our estimations we use the MEP over the years 2000 to 2012 including all firms during this period. Since we are only interested in newly founded firms, we always keep the first record of every firm (the entry year) and delete all subsequent years. We start with a sample of more than 100 Mio. firms for the whole time period. Since we study only the time span from 2000 to 2012, all firms which were inactive before 2000 depending on the year of market exit are deleted. In addition we exclude all legal forms which are not subject to profit taxes (e.g. liberal professions), firms which are not located in Germany and all sectors which are either not due to profit taxes or belong (primarily) to the public sector (e.g. education, energy, water) depending on the two-digit industry code delivered with the MEP. After these main adjustments we end up with a data set containing about 2.27 Mio. newly founded firms between 2000 and 2012. Figure 2 gives an impression of the size of the sample and the distribution of entering firms per year. As can see easily, there are more founded partnerships (orange bars) than corporations (blue bars). Over time the total numbers of entries varies from about 125,000 in 2001 to over 200,000 in 2009. These fluctuations might be due to different economic conditions over time, e.g., worsened employment conditions during the economic crisis.

4.2 Tax Data

The second data set we use for our analysis is provided by the German Federal Statistical Office (Destatis) and contains tax information on all German municipalities from 2000 to 2012. The data set has two features: first it provides us with all local multipliers levied by municipalities over the years 2000 to 2012 on a yearly basis. Second it shows the historical structure of municipalities since it includes places which were independent in early years, but merged with another municipality later on. We adjust the data to obtain a data set that includes all municipalities over the time span 2000 to 2012 even though they may have been merged at some point in time. Thus we try to identify mother municipalities and their independent daughters to correctly assign the local multipliers to the firms from the MEP data. In addition we add postcode data from the Mannheim Innovation Panel. Finally we end up with a data set covering about 14,000 municipalities over thirteen years. This adds up to about 167,000 observations over time. The structure of our panel is illustrated in Table 2.

Table 2: Number of Observations per Municipality

No. of Years	Obs.	Percent
1	60	0.42
2	285	2.02
3	248	1.75
4	283	2.00
5	355	2.51
6	113	0.80
7	132	0.93
8	166	1.17
9	196	1.39
10	235	1.66
11	231	1.63
12	196	1.39
13	11,642	82.32
$\sum$	14,142	100.00

Notes: The table reports the number and fraction of municipalities for which we observe a given number of years. The maximum number of observations is thirteen.

Over 80 percent of our municipalities could be tracked over the full time period of the analysis, while the remaining observations lack at least one yearly observation over time. This might be merely due to mergers of (small) municipalities or name changes which we could not fully track. Mergers and name changes happened mostly in the eastern part of Germany where land reforms took place on a regular basis during these years.

The traceability of municipalities over time makes it possible to analyze how local multipliers evolve over time. First it is interesting to see how the level of local multipliers change over time, e.g. if there is a general pattern of all municipalities to increase their rates. Second we are able to show the variation on the level of a single municipality. During the time period of our sample

from 2000 to 2012, about 14.900 changes in local multipliers happened. Since our sample consists of approximately 14.000 municipalities, on average every municipality changed its rate at least once. But about one third of all municipalities did not change the local multiplier at all, while 67 % experience one or more changes over time. The vast majority of municipalities changed their multiplier once or twice during our time period. Less than 10 % of all municipalities display three or more changes. The number of changes per year is relatively stable except for the time between the years 2007 and 2009 in which compared to all other years only half as many changes happened.

The level of variation of the local multiplier is displayed in Table 3 where descriptive statistics are presented. The mean change is 21 percentage points over all changes we consider within our time frame. Less than 10 percent of all changes are tax decreases while over 90 percent of all municipalities increased their local multiplier instead. The mean decrease is about -37 percentage points whereas the mean increase is a bit smaller with only 27 percentage points. These tax changes can be classified according to the reason why rates changed. We are able to identify the reason for about 15 percent of the approximately 14,900 changes. The majority of these classified changes(about 65 %) happened due to mergers of previously independent municipalities. In most cases the smaller municipality adapted the multiplier of the bigger one immediately or after a transitional period. It seems that changing the local multiplier is in general common among German municipalities when considering a longer time period. Thus we are able to exploit both variation over time and across municipalities.

4.3 Controls and Descriptive Statistics

In addition to the databases of MEP and Destatis, further variables are used as controls in our regressions. We obtain them from different sources, as will be described subsequently.

The number of persons living in a municipality in a respective year is taken from the tax data set from Destatis. The value of the variable can vary highly as municipalities can be small villages as well as big cities like Berlin with about 3.5 Mio. inhabitants. To control for the income structure on municipality level, we use information on the median income of a year. In contrast to all other variables the median income is only available on the county district level. The German Federal Labor Office collects data on gross income reported by employers liable to social security contributions (Bundesagentur für Arbeit (2014)). Since income is only subject to these contributions up to a certain threshold (between €4.500 and €6.500 over years), all earnings above that threshold are neglected and the contribution limit is reported. Thus it might be, that in counties with a high fraction of high income earners, the median income might be biased downwards. There is no data available for the year 2011 due to technical reasons. Hence we calculate the average of the years 2010 and 2011 and use these values as an

approximation for the year 2011. The average median income in our data set is €2.266. To control for the available work force in a municipality we include the unemployment rate per year and municipality into our data set (Bundesagentur für Arbeit (2012)). It is the number of all persons being officially unemployed divided by the total population. These figures are also provided by the Federal Labor Office. On average 4% of all inhabitants in a municipality are unemployed. A high fraction of unemployed may either signal a high number of available workers with potentially lower wages, but on the others side it may also reflect a low level of qualification.

Table 3: Summary Statistics

Variable	N	Mean	S.D.	Median	Min	Max
Entries	167,564	14	133	2	0	13617
Local Multiplier	167,547	331	39	330	0	900
Effective Tax Rate (in %)	148,819	0.05	0.02	0.05	-0.03	0.16
Population	160,411	6,567	43,942	1,443	3	3.52 Mio.
Unemployment Rate (in %)	155,864	0.04	0.03	0.03	0	0.90
Median Income (in €)	164,048	2,266	397	23,345	1,427	4,284
Stock 0-2.5 km	154,547	3	155	0	0	18,683
Stock 2.5-5 km	154,547	221	447	80	0	9,856
Stock 5-10 km	154,547	1,263	2,215	744	0	87,222
Stock 10-15 km	154,547	2,312	4,379	1,313	0	93,487
Distance (in km)	131,537	15	26	7	0	669
Tax Change (all)	14,913	21	31	20	-300	330
Tax Increase	13,549	27	23	20	1	330
Tax Decrease	1,364	-37	39	-22	-300	-1

Notes: The table reports descriptive statistics for the number of entering firms, the effective tax rate, the local multiplier, the population, the median income, the unemployment rate on municipality level. In addition, the tax change denotes the level in the change of the local multiplier and tax decrease and increase show the tax differential for increases and decreases in the local multiplier. The local multiplier is expressed in percent. Median income per month is only available on county level and measured in €. The stock variable counts all firms in the respective circle around a municipalities center.

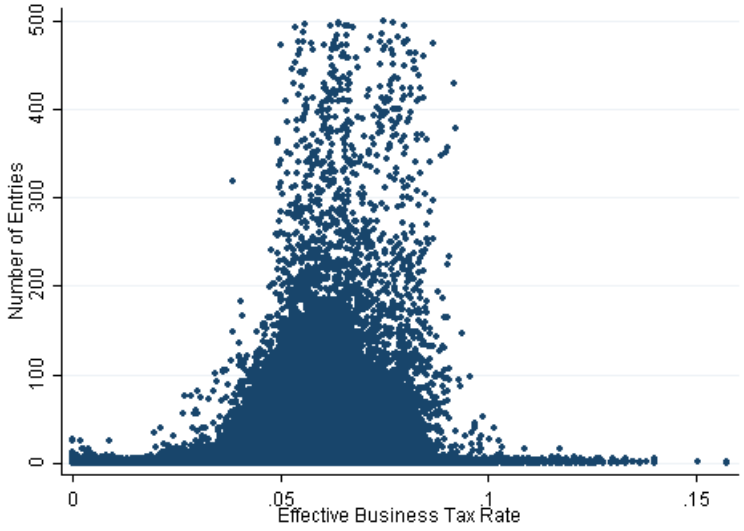
The average local multiplier levied by municipalities over the years 2000 to 2012 is about 331. Before the tax reform in 2008 the mean local multiplier was 326, while it increased slightly to 339 percent after the corporate tax reform.

The influence of agglomeration on firms in the short distance around a potential location is widely discussed in literature, e.g. Devereux et al. (2007), Bacher and Brülhart (2013) or Koh and Riedel (2014). Therefore we include a measure of agglomeration that possibly influences the founding and location choices of firms. By using geographical information we are able to count the number of firms which are located in concentric rings (0-2.5 km, 2.5-5 km, 5-10 km and 10-15 km) around every firm in our sample (for the choice of rings see e.g. Rosenthal and Strange (2003)). These numbers are averaged on municipality level. As expected the number of firms is smaller in the nearest vicinity and increases as distance increases. As the size of municipalities varies greatly, the stock of firms does as well. Some municipalities have no or

only a small number of firms in the nearest distance while others host a large stock of firms. In areas with a higher density of municipalities, like in western Germany, the number of firms in the vicinity should be greater compared to more remote places. We do not use the number of firms around the municipality center as it would be too imprecise especially for bigger municipalities. In addition, firms often locate in industry parks on the outskirts of cities which implicates that they are also influences by firms in surrounding municipalities.

Lastly, we do consider the distance between the firm owner's home and the firm's location. We transform the available address data into coordinates and compute the straight distance between these two points in kilometer. In case there is more than one owner we take the average distance of all owners. In the end, we average the distance information on municipality level to be able to use it in our regressions. The mean distance between owner and firm is about 15 km while there is huge variation. Sometime owner's and firm's address coincide while in other cases there are nearly 700 km between owner and firm.

Figure 3: Firm Entries and Effective Tax Rates



Notes: The figure shows the number of entering firms for a given positive effective profit tax rate. Each dot represents one municipality per year. The sample is restricted to observations having not more than 500 entries per year and a positive effective tax rate.

Some municipalities do not attract any firm over the year, while in most others there are between 1 and 100 new firms per year. The average number of entering firms per municipality and year is 14 while the median is 2. Separating them by the legal status, we see that on average about 10 partnerships enter but only 4 corporations. It shows that most municipalities have zero or few entries whereas the mean is driven by some municipalities with high entry rates. A first impression of the relationship between the number of entering firms in a municipality and the respective effective profit tax rate is given in Figure 3. Due to readability the sample

is restricted to municipalities with 500 or less entries entries per year, which covers the vast majority of observations (approx. 99.8 % of the sample). A clear relationship between the effective profit tax rate and the number of entering firms can not be detected so far.

5 Empirical Model

In this section we explain the strategies we apply to estimate the relationship between the number of entering firms and our variables of interest. Since the dependent variable, the number of entering firms per year and municipality, is a count variable the application of a Poisson model is necessary. In contrast to the conditional logit model, it does not assume a fixed number of firms deciding on their location, thus ones gain is not the loss of all other municipalities. The Poisson model rather suggests that an additional firm in one municipality has no effect on all other municipalities but increases the overall stock of firms (for a more thorough discussion see Schmidheiny and Brülhart (2011)). Regarding the rather strict assumption that the underlying data needs to fit the Poisson model, Cameron and Trivedi (2010) recommend to use robust standard errors in panel regressions. An additional concern might be the use of fixed-effects in Poisson regressions. It requires each entity to occur in at least two periods and to have at least one nonzero count over time. Thus municipalities occurring only once in our data set or never experiencing any firm entry are dismissed from the estimations (Cameron and Trivedi (2010)). A major concern which commonly arises when the effect of taxation is studied is the question of endogeneity. First an omitted variable bias might occur since our model cannot include unobserved heterogeneity between entities. The inclusion of municipality fixed-effect can reduce the problem since we control for characteristics that are constant over time but vary across sites. Second we have to deal with the possibility of reverse causality. In our estimations we want to study the effect of taxes on the entry of firm and assume tax rates are exogenous. But this assumption might not always be valid, for example politicians might react to the development of firm entries in their region and adjust taxes accordingly. In addition, local multipliers might be adjusted in order to attract certain firms looking for a location. However, in these cases taxes are not exogenous anymore. One solution is to equip the tax rate with appropriate instruments for a two-stage estimation. We argue that we can rule out these feedback effects by focusing on entering firms, which normally have less power to influence the setting of tax rates and are often smaller and loss-making in the first years.

For Hypotheses 1 and 2 we use a Poisson model to estimate the expected number of entering firms per year and municipality. In the former case we use our full sample of newly founded firms, while in the latter we concentrate on all entering firms within a distance of 15 km. Thus,

it is a sub-sample of the main sample.

$$exp(y_{i,t}) = exp(\beta_1 \cdot Tax_{i,t-1} + \beta_2 \cdot Tax_{i,t-1}^2 + \beta_3 \cdot log(X_{i,t-1}) + \gamma_t + \delta_i + \epsilon_{i,t}) \quad (6)$$

The dependent variable $y_{i,t}$ is the expected number of entering firms within a municipality i for a given year t, $Tax_{i,t-1}$ denotes the effective profit tax rate of the preceding year in a municipality (average of all entering firms per year and municipality), $X_{i,t-1}$ is a set of control variables on municipality level, also lagged by one year and in logarithm. Finally, γ_t introduces year dummies to account for influences changing over time which are the same across municipalities and δ_i denotes municipality fixed-effects. ϵ_{it} represents the error term. In the second part of the estimations we include the squared term of the effective profit tax rate, too.

In contrast to the former model, the estimations for Hypothesis 3 rely on a slightly different model.

$$exp(y_{i,t}) = exp(\beta_1 \cdot D_{Treat} + \beta_2 \cdot Entries_{i,t-1} + \beta_3 \cdot Entries_{i,t-2} + \beta_4 \cdot log(X_{i,t-1}) + \gamma_t + \delta_i + \epsilon_{i,t}) \quad (7)$$

The dependent variable still denotes the number of entering firms in a given municipality and year. The variable of interest is D_{Treat}, the treatment dummy, which marks all municipalities in a certain range around the local multiplier of 380 and since 2008. In addition we include the number of firm entries one and two years ago. The control variables vector is the same as in Equation 6.

6 Results

This section provides the estimation results of our regressions to test the above stated hypotheses.

6.1 Entries and Taxes

Our estimations of the model presented in Section 5 are displayed in Table 4. The table is divided into two parts, the first four columns report the estimation results for newly founded partnerships while the last four report results for incorporated firms. We test the model from Equation 6 with a linear effect of taxation and introduce non-linear effects only in the last columns, namely (4) and (8). Several studies already pointed out that taxation per se and corporate/profit taxation in particular, influence the behavior of firms through different channels, which makes it hard to predict the direction of the effect (see Domar and Musgrave (1944); Gentry and Hubbard (2005); Cullen and Gordon (2007)). Another concern is, that these channels might introduce any kind of non-linearity to the effect of taxes on firm entry, which asks for its implementation

into the model (Da Rin et al. (2011)).

First we always estimate the effect of taxes on entries without any controls (columns (1) and (5)), then additional explanatory variables are introduced. We include the municipalities' population, the median income and the unemployment rate to control for the size and income level of a region and the available work force (columns (2) and (6)). In addition, we try to measure the level of agglomeration for each municipality by counting the average number of firms within concentric rings around firms in a municipality (columns (3) and (7)). All variables are lagged for one year to avoid simultaneous shocks in the dependent and the explanatory variables. All explanatory variables, except for the effective tax rate, are in logs to obtain semi-elasticities which can be interpreted and compared to other studies easily. During all estimations standard errors are robust to heteroskedasticity and clustered on municipality level to account for the possibility of correlation within entities.

Table 4: Estimation Results

Legal Status	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Partnerships				Corporations			
Eff. Tax Rate	6.920**	6.405*	4.203	-13.533*	-3.269***	-3.409***	-3.277***	-2.415
	[3.428]	[3.834]	[4.183]	[7.916]	[1.113]	[0.942]	[0.849]	[1.928]
Eff. Tax Rate^2				175.315***		1.337***	1.369***	-3.732
				[52.522]		[0.104]	[0.113]	[9.418]
Population		1.197***	1.246***	1.403***		-0.822	-0.890	1.374***
		[0.119]	[0.102]	[0.085]		[0.565]	[0.567]	[0.112]
Median Income		-0.398*	-0.403*	-0.377*		0.030	0.031	-0.886
		[0.211]	[0.217]	[0.226]		[0.025]	[0.027]	[0.562]
Unemployment Rate		-0.037	-0.032	0.006			0.015	0.034
		[0.037]	[0.032]	[0.026]			[0.139]	[0.028]
Circle 0-2.5 km			-0.023**	-0.018*			0.014**	-0.017
			[0.010]	[0.010]			[0.007]	[0.018]
Circle 2.5-5 km			0.008	0.003			-0.039***	0.014**
			[0.008]	[0.006]			[0.012]	[0.007]
Circle 5-10 km			-0.035**	-0.014			-0.014	-0.039***
			[0.017]	[0.011]			[0.017]	[0.012]
Circle 10-15 km			-0.034	0.011				-0.014
			[0.041]	[0.016]				[0.017]
Wald test	–	–	–	289.02	–	–	–	17.21
Prob >chi2	–	–	–	[0.0000]	–	–	–	[0.0002]
Observations	128,864	125,616	118,350	118,350	111,556	109,623	103,253	103,253
Number of munid	12,153	12,088	11,430	11,430	10,047	9,981	9,487	9,487

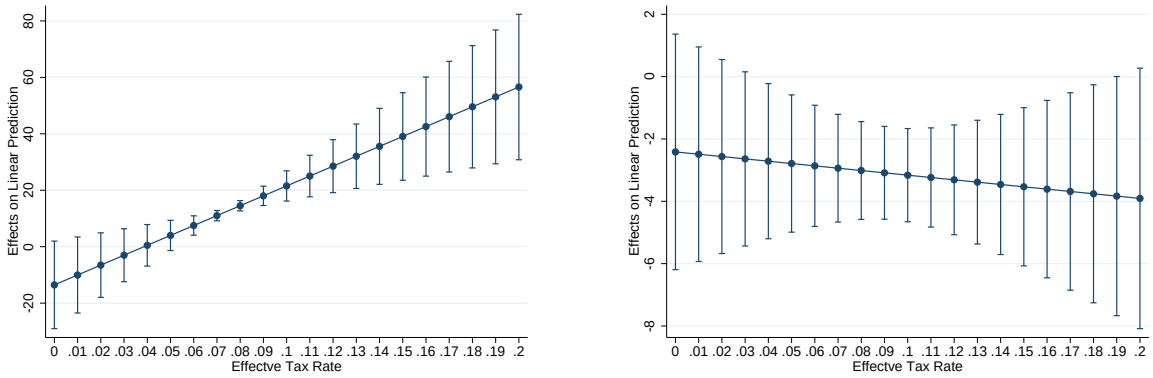
Notes: The dependent variable is the number of entering firms per municipality and year. All explanatory variables are in logs and lagged by one year, the effective tax rate is lagged. All regressions include year dummies and municipality fixed-effects. A dummy for concentric rings with zero counts is included as well. Robust-clustered SE on municipality level in squared brackets. The Wald test tests the joint significance of the effective tax rate and its quadratic term, p-values are reported in squared brackets below Wald test. ***/**/* indicates significance at the 1%, 5% and 10% level, respectively.

Partnerships. The basic regressions with a linear effect of the profit tax rate on the number of entering firms reveal a positive and significant relationship. Thus, increasing the effective profit tax of partnerships increases the number of entering firms. Based on the results from column (3), a one percentage point increase in the effective tax rate increases the number of entering firms by about 4.2 %. Even though the effect is not significant. This seems to be in contrast to our prediction from Hypothesis 1 which assumes a negative relation. In addition, it would mean that increasing the tax rate even further increases the number of founded firms even more. Introducing a non-linear effect into the model shows similar results as in the linear case:

a higher effective profit tax rate increases the number of entries. The effect is highly non-linear as can be seen in Figure 4. One explanation is offered by Da Rin et al. (2011). They argue that for high levels of taxation the "risk-sharing mechanism" with the collectivity comes into play. They find a statistically significant and positive effect for the 75th percentile of their distribution while in our case it is statistically significant at lower levels. Furthermore, bigger cities in terms of population seem to be more attractive to potential founders of partnerships while a higher income discourages them. However, once we include our measures of agglomeration into the model, the effect of the tax rate on the number of entering firms losses its significant effect. This might indicate that indeed, partnerships are less affected by the tax rate and merely influenced by the number of surrounding firms in a certain distance.

Corporations. In comparison, the results from the regressions for our sample of corporations show the expected sign. A higher effective profit tax rate seems to impede the entrance of new firms significantly. It is stable across all specifications and is only slightly affected by the introduction of control variables. Accordingly, a one percentage point increase in the effective tax rate lowers the number of entering corporations by 3.4 %. A comparable effect to ours is found by Strauss-Kahn and Vives (2009). Their estimates suggest that a reduction of the tax rate by one percentage point decreases the probability to relocate the respective headquarter to a certain location by 2.25 %. Concerning the non-linear effect we find less supportive evidence compared to partnerships. Figure 4 shows the marginal effects for the squared term of the effective profit tax rate. In the lower part of the distribution up to an effective tax rate of 0.04 the coefficient is not statistically significant, while it is for all higher values except for the highest value of 0.2 which is statistically significant at the 10 % level only. We cannot be sure that there is a strong and significant non-linear effect following the coefficients from Table 4, but looking at the graph seems to support our supposition, that there might be a small non-linear effect. Having a pure linear effect would result in a flat marginal effect valid for all points along the distribution which is not the case in our estimation. We observe a small negative slope which might point to a minor non-linear effect which is not highly significant. It seems that a change in the tax rate is more influential when the tax rate is already high compared to municipalities with relatively low rates. Our effect is lower than that found by Becker et al. (2012) who estimate an average increase in the number of firms of 12 %. One explanation could be that they look at multinationals which have already decided to locate in Germany, while only the exact location is unclear. Thus multinationals might be more sensitive to tax differentials compared to firms already based in Germany. In addition they focus on the location decision of firms while we examine the choice to open up a new firm. The decision to establish a firm might be less driven by tax considerations since especially small firms might not be able to predict their business income or are often loss making in the first years. Thus taxation might be less

Figure 4: Marginal Effects



(a) Partnerships (b) Corporations

Notes: The figures show the marginal effects of the effective tax rate using the regression output from Table 4, columns (4) and (8), respectively. The 95% lower and upper bound confidence intervals are displayed as well.

important compared to other factors. Similar to partnerships, the stock of firms around the firms' location seem to influence the decision to enter the local market with a new firm.

The size of the estimated effects can be judged best when they are evaluated at the mean of entries per legal status. For corporations, a municipality would have to decrease the effective profit tax rate by about 7.3 percentage points to attract one additional corporate firm. This is a huge effect as the mean effective tax rate for corporations is about 9 %. Accordingly, to attract one additional partnership, a municipality would have to increase its profit tax rate by approximately 2.38 percentage points. This is in absolute terms somewhat lower than for corporations, but the average effective tax rate for partnerships is lower, too, with only about 0.4 %. Thus when evaluating at the mean and comparing it to the actual effective tax rates, municipalities would have to reduce their effective tax rate significantly. When we compare our results with those from Becker et al. (2012), we see that their effect is closer to the semi-elasticity of partnerships, but with different signs. In contrast, corporations need a more dramatic decrease in tax rates.

To conclude, we see heterogeneous effects when studying the responsiveness of firm foundations to profit taxation. The number of entering partnerships increases with the effective profit tax rate, but the effect is not statistically significant when introducing agglomeration measures. Thus, partnerships might take into account other factors than taxes when deciding about founding a firm. In contrast, founders of corporations seem to react to profit taxation as expected, namely the are discouraged by higher rates. Finally, we find some empirical evidence in favor of our hypothesis.

6.2 Entries and Distance

Table 5 displays the results from regressions testing Hypothesis 2. We restricted the sample entries which have a distance between firm location and owner equal to or less than 15 km. We would suppose that for these firms the home bias matters more and rules out any effect of the effective profit tax rate.

Table 5: Estimation Results for Distance

Legal Status	(1) Partnerships	(2) Corporations
Eff. Tax Rate	-7.020	-0.681
	[5.920]	[1.194]
Population	0.461***	0.784***
	[0.128]	[0.181]
Median Income	-1.289***	-1.439**
	[0.457]	[0.601]
Unemployment Rate	0.070**	0.150***
	[0.032]	[0.034]
Circle 0-2.5 km	-0.002	-0.005
	[0.017]	[0.021]
Circle 2.5-5 km	0.047***	0.049***
	[0.015]	[0.015]
Circle 5-10 km	0.048**	0.045**
	[0.020]	[0.019]
Circle 10-15 km	0.009	-0.027
	[0.023]	[0.021]
Observations	81,526	44,459
Number of Groups	9,298	6,341

Notes: The dependent variable is the number of entering firms per municipality and year. The sample is restricted to firms with an average distance smaller than or equal to 15 km. All explanatory variables are in logs and lagged by one year, the effective tax rate is lagged. All regressions include year dummies and municipality fixed-effects. A dummy for concentric rings with zero counts is included as well. Robust-clustered SE on municipality level in squared brackets. ***/** indicates significance at the 1% and 5% level, respectively.

Apparently, there is no significant effect of the tax rate on the number of entering firms left. The coefficient for partnerships turns negative compared to results from Hypothesis 1. Again, it seems that the stock of firms in the vicinity matters when founding a firm. Thus we find some supportive evidence for our hypothesis.

6.3 Entries and Tax Reform 2008

Lastly, we test our prediction from Hypothesis 3 that municipalities which were treated during the 2008 tax reform experience more entries from partnerships. The treatment dummy denotes all municipalities in the year 2008 or later and which lie in a flexible range around the local multiplier of 380. First we study a narrow range of 370 to 390 (columns (1) and (4)), we then increase the range up to 350 to 410.

As can be seen in Table 6, there are significantly more entries in municipalities after 2008 and with the local multiplier in the treated range. For the sample of partnerships, which benefited from this particularity of the tax reform, we see a small positive effect. It is pretty stable in the first two ranges but vanishes when the region around a local multiplier of 380 exceeds 20 points. In line with our suggestion, we do not find any effect for the sample of corporations as they can not benefit from the reform design in the same way as partnerships can do.

Finally we find supportive evidence for our hypothesis, that the tax reform from 2008 affected the entry of firms differently depending on the legal status and the municipality.

Table 6: Estimation Results for the 2008 Tax Reform

	(1)	(2)	(3)	(4)	(5)	(6)
Legal Status		Partnerships			Corporations	
Region around 380	± 10	± 20	± 30	± 10	± 20	± 30
Treatment	0.097***	0.095***	0.024	0.024	0.036	0.017
	[0.031]	[0.027]	[0.017]	[0.039]	[0.031]	[0.021]
Population	1.364***	1.318***	1.356***	1.255***	1.372***	1.172***
	[0.098]	[0.086]	[0.094]	[0.177]	[0.166]	[0.147]
Median Income	0.100	0.039	-0.022	0.345	0.101	-0.173
	[0.353]	[0.303]	[0.353]	[0.438]	[0.354]	[0.250]
Unemployment Rate	-0.046	-0.040	-0.027	0.009	0.008	-0.007
	[0.031]	[0.028]	[0.033]	[0.032]	[0.029]	[0.029]
Circle 0-2.5 km	0.027	-0.003	-0.005	0.080***	-0.002	-0.012
	[0.018]	[0.012]	[0.012]	[0.030]	[0.015]	[0.012]
Circle 0-2.5 km	-0.000	0.002	0.002	-0.017	-0.004	-0.001
	[0.019]	[0.016]	[0.013]	[0.012]	[0.012]	[0.012]
Circle 0-2.5 km	-0.079**	-0.080***	-0.065***	-0.034*	-0.046**	-0.048***
	[0.035]	[0.029]	[0.023]	[0.020]	[0.018]	[0.016]
Circle 0-2.5 km	-0.089	-0.085*	-0.088**	-0.026	-0.021	-0.027
	[0.057]	[0.050]	[0.044]	[0.029]	[0.028]	[0.026]
Observations	49,490	57,736	77,343	46,895	54,676	73,403
Number of Groups	6,425	7,281	9,382	5,405	6,157	7,974

Notes: The dependent variable is the number of entering firms per municipality and year in all municipalities with a local multiplier of 380 ± X. All explanatory variables are in logs and lagged by one year, the effective tax rate is lagged. All regressions include lagged entries by one and two year(s), year dummies, municipality fixed-effects and a dummy for concentric rings with zero counts. Robust-clustered SE on municipality level in squared brackets. ***/**/* indicates significance at the 1%, 5% and 10% level, respectively.

7 Conclusion

We study the effect of the profit tax rate in Germany on market entry of firms. We exploit the unique setting of the German profit tax rate which allows the single municipality to set its local multiplier independently, while legal regulations are the same across all municipalities. By using a rich data base on the firm level from 2000 to 2012 we try to estimate the response of the number of entering firms when changing the effective profit tax rate. In addition we test

if there is an effect of the distance between owner and firm and by the introduction of the tax reform in 2008.

Our estimates suggest that firms, especially corporations, do react sensitive to the taxation of profits but to a lesser extend than e.g. MNE do (see Becker et al. (2012)). This might be due to the higher mobility of international firms compared to domestic firms. In addition we find that owners which found their firm in the near vicinity are pretty insensitive to profit taxes. This is true for both legal situations in our data set.

The setting of the corporate tax reform in 2008 shows that there is a significant increase in the number of entering partnerships in case a municipality locates its local multiplier around 380.

As was pointed out for other countries as well, even though profit taxation matters when making location and entrepreneurial decisions, it seems that there are other features which have an influence as well.

For future research we propose to test whether municipalities with and without entries are generally different, which would call for special models treating municipalities differently. Then an IV-estimation could be implemented to rule out all concerns with respect to endogeneity.

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