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From Costs to Corporations: Can Lower Startup Costs Enhance Corporate Quantity and Quality?*

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Abstract

This paper investigates the societal impacts of lowering the minimum capital requirement (MCR) for establishing limited liability corporations (LLCs). By examining the Danish policy changes of 2014, which reduced the MCR for standard LLCs and introduced entrepreneur companies (IVSs) with an MCR of one DKK, we assess both the positive and negative effects on entrepreneurship. Our analysis reveals that the policy changes led to a significant increase in the number of new corporations, higher aggregate sales, and increased employment. However, they also resulted in a higher rate of forced dissolutions, indicating potential risks associated with lower entry barriers. Using a matched difference-in-differences approach, we find that limited liability per se *enhances firm performance; however, the new IVS type demonstrates a weaker performance than that of standard LLCs. These findings provide valuable insights for policymakers in balancing the encouragement of entrepreneurship with ensuring the sustainability of new firms.*

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1. Introduction

Policymakers and the public often view new businesses as engines of growth, making firm creation a high priority on the policy agenda (e.g., Acs and Szerb 2007; Aghion 2017). Entrepreneurs typically choose between two main types of firms when establishing a business, namely, corporations, particularly limited liability corporations (LLCs), and sole proprietorships (SPs).[1] The primary difference between these two types is that an LLC has a separate legal identity from the entrepreneur and offers limited liability, whereas an SP is legally identical to its owner, who has unlimited personal liability. To obtain the limited liability of an LLC, the entrepreneur must deposit the minimum capital requirement (MCR), whereas an SP does not require share capital. The analysis of this paper aims to identify the advantages and disadvantages of reducing the MCR.

The optimal statutory cost for establishing new entrepreneurial firms remains questionable. Many European governments have reduced the upfront statutory cost of registering a new business by continuously lowering the MCR. Examples include countries such as Germany and France (see Bracht et al., 2024; Lilja, 2021). Understanding the balance between encouraging entrepreneurship and ensuring the sustainability of new firms is crucial for fostering long-term economic growth. In that context, it remains questionable whether the number of new firms increases because of such policies and whether the quality of new firms improves. Moreover, it could be asked if the cost can be too low, leading to the proliferation of "bad" projects or poor-quality entrepreneurs, thereby crowding out the positive effects from "good" new projects or entrepreneurs.

[1] In Denmark, another important corporate form consists of stock-based corporations called an "aktieselskab" (A/S). In addition to differences in the minimum share capital requirements, an A/S requires that the differences between the A/S and the standard LLC primarily relate to the composition of management and other formalities.

We analyze the effects of decreasing the statutory costs for newly established firms in the context of Denmark. Recent policy changes and the increasing availability of high-quality data make Denmark an important setting for studying key policy mechanisms that encourage successful entrepreneurship. The Danish reductions in the minimum capital share have been significant, particularly the decrease that occurred in 2014. Prior to 2014, the MCR for establishing a firm was DKK 80,000. A new law implemented on January 1, 2014, reduced the MCR for standard LLCs to DKK 50,000, representing a 37.5% reduction. Additionally, a new type of LLC, called "entrepreneur companies" (IVSs), was introduced with an MCR of only DKK 1. This new LLC type required that 25% of the annual profit be saved until the private equity amounted to DKK 50,000; dividend payments were not allowed until this threshold was reached. This policy change is the key event analyzed in this paper.[2] By analyzing the impact of lowering statutory costs, this paper provides valuable insights for policymakers. In particular, the findings can guide future policy decisions, not only in Denmark but also in other countries that have implemented similar changes.

This paper will assess both the direct and indirect impacts of a declining MCR and suggest how effectively entrepreneurs create value in their firms.[3] More specifically, our analysis can be distinguished into three main points. First, we analyze the direct effects of the increase in new companies. The question remains as to whether the number of new corporations increases after the MCR is lowered. It is expected that more new corporations will be established due to the reduced cost of incorporation. However, it is unclear whether the total number of new companies will increase, as some entrepreneurs who would have opened SPs before the policy change may now choose to open LLCs. Second, we determine whether the

[2] There may even be entry of new firms with the primary purpose of fraud such as VAT fraud, defaulting on debt to private creditors, etc., where individuals are shielded behind the LLC. Unfortunately, we are not able to identify entrepreneurs with these motives.

[3] The administrative burdens for LLCs are higher than for SPs. LLCs have to make an annual report, and depending on size, an audit may be mandatory.

average quality of new LLCs is unchanged before and after the policy change. There are several reasons why this might not be the case; e.g., the projects established after the policy change may be of lower quality or riskier, and the entrepreneurs behind these new firms may be of lower quality than those before the policy change. Thus, we ask whether reductions in the MCR for LLC business creation increase the number of LLCs above a certain activity level (i.e., sales or employment). Third, we analyze the indirect effects of the policy change. If new LLCs are of lower quality after the policy change, then they may be more likely to fail, resulting in bankruptcies and losses for creditors (other firms, banks, and the public sector). Corporations may also experience forced dissolution, which incurs costs for the public sector. We investigate this question by studying the effects on different types of firm exit.

We use Danish registry data to answer the question of the consequences of reducing the MCR. These data contain a rich set of variables related to firm founders and their respective firms. Therefore, we include aspects that extend beyond the usual determinants, such as the entry and sales of firms with a certain activity level (e.g., Shaw and Sørensen 2024). Specifically, this research includes firms with limited levels of "activity," which is important because the risk of bad projects or entrepreneurs opening as IVSs is high due to the minimal entry and exit costs. In this paper, we focus on all newly started firms, not just the subset of "active firms." Including firms with limited or no activity is crucial because these firms can incur costs to society. For example, firms that do not comply with the Danish Companies Act may be dissolved by the Danish Business Authority at the expense of the public sector, or bankrupt firms may lead to losses for private creditors and tax authorities. To measure the benefits and costs of low statutory costs accurately, we include all new firm registrations.

We perform the analysis in two steps. First, we study the aggregate effects of lowering the MCR via regression discontinuity in time (RDiT) design. Specifically, we investigate whether the number of new LLCs increases. Additionally, we examine the aggregate and mean

sales and employment of new firms by legal form and the share of failures by LLCs. Second, we conduct a microdata analysis to investigate the effect of limited liability on sales and employment for the new firm type. We use SP and LLC firms that are as similar as possible to the IVS firms as control units to construct a control group for the new firm type. This approach enables us to apply difference-in-differences regressions to determine the effect of the new firm type on its success.

We find that policy implementation leads to several notable aggregate effects. The number of LLCs increases, both in terms of the total number of LLCs and the original type of LLC. However, the total number of all firms, including SPs, does not increase. Aggregate sales and employment increase, the aggregate number of bankruptcies and forced dissolutions also increases. Despite these aggregate changes, average sales and employment do not change, nor does the share of firms going bankrupt. Interestingly, the share of firms exiting due to forced dissolution increases after 2014. These findings highlight the dual effects of the policy aimed at reducing the costs of establishing new corporations; i.e., while it stimulates economic activity through increased sales and employment, it also results in a greater share of firms being forced to dissolve.

Moreover, we find that the new LLC type with an MCR of almost zero performs much worse than regular LLCs, where founders must deposit an MCR of DKK 50,000. However, the performance of the SP is weaker than that of the new LLC type, although the gap is not as large as that between standard LLCs and the new LLCs. This suggests that IVSs are more similar to SPs than to standard LLCs. Importantly, we measure differences across legal types, which can originate from firm-specific and founder-specific differences. To explore this, we use microdata to study the performance of the new firm type and compare it to the firm types that existed before the policy change, i.e., the original LLC and the SP. We find that sales in IVS firms are closer in magnitude to those in SPs than to those in LLCs. The question is whether the new

LLC type leads to higher sales because more capable entrepreneurs open these firms or because of the firm type itself, e.g., due to downside insurance. We aim to understand whether the new legal type performs better per se by considering founder-specific differences. Using a matched difference-in-differences approach, we find that limited liability per se increases survival, sales, and employment.

The literature on this topic is sparse; however, two previous analyses should be mentioned. Shaw and Sørensen (2024) studied the 2010 reduction in the Danish MCR and estimated the causal impact of LLC (limited liability incorporation) on firm sales. They used a theoretical model that predicted two outcomes. First, LLC firms are larger on average because LLC status protects the founder from paying personal downside losses when he or she closes the firm; in contrast, the SP founder has to pay debts out of his or her personal assets. Second, when Denmark lowered the required bank deposit for opening a new LLC firm, or MCR deposit, from DKK 125,000 to DKK 80,000 in 2010, the probability of becoming an incorporated founder increased. Together, these outcomes formed a causal IV model of LLC on firm sales. After estimating the model via Danish biannual sales data and the natural experiment of MCR reduction, the results showed that LLC firms have sales that are 400% greater than those of other firms.

Braun et al. (2013) studied both the reduction and elimination of the MCR of nonpublic LLCs in Spain, France, Hungary, Germany and Poland to determine if the adoption of such policies encourage entrepreneurship. Using a difference-in-differences approach, the authors found a strong effect on the establishment of new nonpublic LLCs when the MCR is either reduced or abolished. In the abovementioned study, the treatment and control groups were nonpublic LLCs and public LLCs, respectively. In the current paper, a different comparison is studied, namely, nonpublic LLCs and SPs.

The remainder of the paper is organized as follows. Section 2 describes the policy change that took place in 2014. Section 3 details the data, while Section 4 outlines the methodology. The results of the analysis are presented in Section 5, and Section 6 concludes the paper.

2. Policy Change of 2014

On January 1, 2014, IVSs were introduced to bolster entrepreneurship. The Minister for Business and Growth, Annette Vilhelmsen, expressed optimism about the new entrepreneur companies, stating, "I have very positive expectations for the new entrepreneur companies. The government is working intensively to make it easier to start a business. The company structure should not be a barrier to testing whether a business idea is sustainable. In developing the legislation, we have been inspired by experiences from Germany and Norway, where capital requirements for companies were also recently lowered. In both countries, this has led to immediate success in the form of significantly more new companies.".[4] For this new LLC type, the MCR at the time of establishment was only DKK 1. Additionally, 25% of the annual profit had to be saved until the share capital reached DKK 50,000. Dividend payments were not allowed until the private equity reached DKK 50,000, at which point the IVS could be transformed into a standard LLC (ApS).

In addition to the introduction of IVSs, the MCR for standard LLCs was also reduced in 2014. Previously, DKK 80,000 was required as an MCR, meaning that founders had to deposit DKK 80,000 as private equity when establishing the firm. The new law, implemented on January 1, 2014, reduced the MCR for standard LLCs to DKK 50,000, representing a 37.5% reduction.

[4] The change in the law is described at the following: https://www.em.dk/aktuelt/nyheder/2013/maj/ny-selskabslov-vedtaget-af-folketinget (in Danish).

Between 2014 and 2018, approximately 56,000 IVS firms were founded. However, the entrepreneur company concept was abolished in the spring of 2019. A report from the Danish Business Authority (2018) stated, "Although there are indications that the introduction of the IVS has attracted new entrepreneurs, it is not possible to conclude that these companies would not have been formed even if the IVS had not been introduced." The Danish government decided to abolish the IVS firm type in 2019, with the last possible registration date being April 15, 2019. The final date for reregistration from IVS to standard LLC was set for October 15, 2021. IVSs that were not reregistered as standard LLCs by that date would be forcibly dissolved. In conjunction with this change, the MCR for nonpublic LLCs was reduced from DKK 50,000 to DKK 40,000, whereas the MCR for public LLCs was reduced from DKK 500,000 to DKK 400,000.

Importantly, MCRs are not the only cost that entrepreneurs face when opening a limited liability corporation. Corporations face more administrative burdens than unincorporated firms do. For firms of certain sizes, audits are no longer mandatory. Additionally, management reports must be included as part of the annual report. SPs do not face mandatory audits and do not have to write management reports, among other requirements. Therefore, it may still be optimal to open as an SP to avoid administrative burdens, even though the MCR is negligible.

3. Data

We use Danish register data to analyze the impact of lowering the MCR for establishing LLCs. This approach allows us to combine individual characteristics with those of the respective founded firms. For the latter, we use data from newly founded firms between 2010 and 2019. Therefore, we include SPs (Enkeltmandsvirksomhed), public LLCs (Aktieselskab A/S), nonpublic LLCs (Anpartselskab ApS), and entrepreneurial companies (Iværksætterselskab IVS) that existed between only 2014 and 2019.

In the aggregate analysis, we use all newly founded firms (excluding holding companies). We do this because we want to investigate the aggregate, as well as the average, consequences of the policy. Only companies registered in the present year and subject to VAT in the private sector are included. Excluded are firms such as public and municipal entities, defense and social funds, and government-supported enterprises. This approach ensures that the data cover only profit-oriented firms.

In the microdata analysis, we use the definition of a "new firm" that relies on Statistics Denmark's effort to identify newly founded firms and related entrepreneurs. Therefore, emphasis is placed on truly new firms. This excludes firms that have reopened or already operated under a different name. See Shaw and Sørensen (2019) for a more detailed description of this process. Moreover, the data for the microdata analysis cover only active firms where firms are declared active if employment amounts to at least 0.5 full-time equivalent (FTE) employees for one year and/or if revenues of a certain size are achieved. The revenue threshold varies according to the sector in which the firms operate to account for the respective heterogeneity.

An advantage of using Danish register data is that we can combine firm- and person-level data. Thus, we use individual-level data from 1990 to 2019. We focus on the full population between the ages of 18 and 65 who are eligible to find a firm. We use Statistics Denmark's identification of the entrepreneur to capture firm founder characteristics. This approach allows us to directly determine the founder of the focal firm.

Our extensive dataset allows us to exploit a rich set of founder-related characteristics. We first use basic personal characteristics such as age, gender, and citizenship. Next, we extend these findings by adding information regarding the respective person's family background. We thereby consider whether the person is married and has children separately. To capture

influences related to the founder's education, we add five categories that range from primary school to PhD degree (primary education, secondary education, vocational training, bachelor's, and master's/PhD). Furthermore, we include a set of wealth-related measures, as these likely also influence the probability of founding and success. For this purpose, we add net wealth as the difference between a person's liabilities and assets. To reduce the influence of outlier observations and improve comparability among individuals, we scale net wealth by half of the sum of liabilities and assets, similar to applying the symmetric growth rate (e.g., Chodorow-Reich 2014). As an additional determinant related to a person's wealth, we add a variable indicating the homeownership of the focal person.

We extend these baseline person characteristics by adding labor market and experience-related information. First, we add a set of variables that capture the person's status in the previous year. We differentiate between being employed, self-employed, a hybrid status of being employed and a firm owner, and retired. In addition to these employment status-related variables, we add an indicator that captures whether the person has switched jobs in the last three years. Another variable that covers a person's work experience is constructed as an indicator of whether the individual has worked as CEO or in upper management. Furthermore, we cover sectoral experience by using a variable related to a person's work experience in the same industry as the firm was founded. We add a final variable that captures entrepreneurial experience in the past. The indicator for founding experience before takes a unit value if one of the following conditions was met between 1990 and 2019: the person founded an 'active' firm, the person was a self-employed business owner with profits greater than salary and pension, or the person was full-time employed and 'self-employed' with profits lower than salary and pension.

While the variables described above allow us to determine family relations in a narrower sense, we extend this by including further details regarding the focal person's parents. Since

we can distinguish between a person's mother and father, we add the following variables. First, we add an indicator for the mother's and father's founding experience. This variable is constructed in the same way as the indicator for the focal person. To capture the parents' financial background, we add the parent's wealth, which is constructed like that of the potential founder. This approach allows us to capture the potential wealth background of the founding person.

In addition to the extensive set of individual characteristics, we add firm-related variables. First, we add a set of indicators related to the business sector in which the firm operates via the 3-digit NACE classification, the region in which the firm is located, and the firm's legal form. Additionally, we employ a dummy variable that captures whether the firm is an LLC. For this purpose, we group public and nonpublic LLCs (A/S and ApS) and entrepreneurial companies (IVS). The reference group is formed from SP entrepreneurs. We add firm-related variables that serve as outcome measures to determine whether an entrepreneur was successful. First, we apply an indicator variable that takes a unit value if the firm survived n years after the founding year t, i.e., until year $t + n$. Survival is thereby indicated by the active status defined above (i.e., at least 0.5 FTE employees in the respective year and/or revenue above the specified threshold value). Furthermore, we add two success measures related to sales and employment. First, we construct a dummy variable that takes a value of one if the firm is in the upper 10% of the distribution of the respective measure of the starting cohort in the n years after founding. Second, we extend this definition by constructing an indicator that takes a unit value if the firm stays in the upper part of the distribution over n years.

4. Methodology

In this paper, we perform two analyses. First, we apply the regression discontinuity in time (RDiT) design to study the consequences of the policy change. Second, we use a combination of matching and difference-in-differences regressions to analyze microdata and investigate firm performance.

4.1 Aggregate Analysis

In the aggregate analysis, we employ the regression discontinuity in time (RDiT) design, with time used as the running variable. The cutoff point is the treatment date, with subjects being treated after this date and untreated before. Similar to the regression discontinuity (RD) design, this method facilitates causal inference in nonexperimental settings. The treatment effect is identified by a discontinuity in outcome variables at the cutoff, assuming that any potential time-varying confounders change smoothly around the threshold.

We identify the cutoff as January 1, 2014, which is the date the new policy took effect. This continuous variable serves as the basis for assignment to treatment. Firms established just before or after this threshold are considered for the control or treatment groups, respectively. For more information on the use of calendar time as the running variable, see Hausman and Rapson (2018) and Cattaneo, Díaz, and Titiunik (2022). We compare outcomes between firms just above and just below the cutoff, assuming that firms near the cutoff are similar in all aspects except for their treatment status. Therefore, any differences in outcomes can be attributed to the treatment.

The application of RDiT presents challenges. One key challenge is the availability of only one observation per time unit, unlike many other RD applications where the running variable is discrete. To achieve a sufficient sample size, researchers often use wide bandwidths, sometimes spanning 8–10 years (see Hausman and Rapson, 2018). However, during such

extended periods, various factors that are unrelated to the treatment can influence the outcome variable, such as time-varying explanatory variables or underlying time trends. These long time spans may also capture treatment effects that evolve over time. Fortunately, in our case, we observe high-frequency data on the establishment of new firms on a daily basis. As a result, the standard assumptions of smoothness and continuity in the conditional expectation function, which links the running variable to the outcome (and potential explanatory variables), are more likely to be satisfied.

We test the sensitivity of the results by using several estimation methods. First, we use polynomial functions and choose the order of the polynomial via the Bayesian information criterion (BIC), where the global polynomial specification allows up to order nine, and the polynomial is separated into a pre-period polynomial and post-period polynomial. Moreover, we use the local treatment effect by employing a local linear approximation of the conditional expectation functions and a triangular kernel (see Calonico et al., 2014 and Calonico et al., 2017). We follow the recommendations of Cattaneo et al. (2020), who suggest the use of the mean square error (MSE)-optimal and coverage error-rate (CER)-optimal bandwidths, which are two data-driven procedures.

Additionally, we estimate the treatment effect via the augmented local linear method, as described by Hausman and Rapson (2018). In the first stage, we regress the outcome on weekday and month dummies (excluding the treatment variable) across the full sample. In the second stage, we use the residuals from this regression to estimate the treatment effect with a narrower bandwidth, resulting in a more precise estimate.

Manipulation of the running variable can introduce bias into the RDiT framework. For example, firms might delay their establishment in anticipation of a lower MCR. Consequently, we use a “donut” RDiT approach where observations are excluded immediately before and

after the treatment date. This approach reduces the risk of bias from behaviors such as anticipation that may concentrate around the treatment cutoff. In addition, we conduct placebo RDiT estimations via artificial treatment dates.

4.2 Microdata Analysis

In this section, we describe the methodology used to study whether limited liability per se leads to higher performance. We analyze the introduction of IVSs in 2014 via a difference-in-differences approach. A key challenge in this setting is the absence of a treatment group, i.e., entrepreneurs who opened IVSs, before the policy change in 2014. To address this issue, we create an artificial treatment group of IVSs from the 2010–2013 population of SP firms. We identify a pre-policy treatment group consisting of SP entrepreneurs with characteristics similar to those of post-treatment IVS entrepreneurs. More specifically, we perform two nearest-neighbor matching approaches.

To determine whether differences in sales and employment across SPs and IVSs are due to firm type or the selection of entrepreneur type, we illustrate the design of the analysis in Table 1. The green areas indicate the treatment group and highlight the challenge posed by the absence of IVSs from 2010 to 2013. The red area represents the control group. Specifically, we apply nearest neighbor matching to identify the control and treatment groups. The starting point is IVSs (new LLCs) from 2014 to 2019. These individuals are matched with their counterparts from the pre-period of 2010 to 2013 to create "artificially matched new LLCs." These two sets of entrepreneurs constitute the treatment group before and after the policy change. Next, we use the remaining individuals in the group of SP firms from the 2010–2013 period, which are labeled "control twins." This group of entrepreneurs is matched with SP entrepreneurs from 20142 to 2019, forming the control group.

Table 1: Assignment of control and treatment statuses

	Firm type	Time period and firm status	
		2010–2013	2014–2019
	IVS	No IVS	IVS
	SP/ApS	Artificial IVS	
		Control twin	Control twin

To find the appropriate units for both matching approaches, we proceed as follows in each of these periods. We start by estimating the propensity score to determine the probability of being an IVS firm. For this purpose, we apply a rich set of variables for the year the firm was founded. These variables include employment status in the previous year, years of entrepreneurial experience, the previous year's wage, home ownership, marital status, wealth, gender, citizenship, and education. After calculating the propensity score, we pick a control unit with the closest score for each IVS firm. Owing to the extensive set of potential control units, we set the maximum distance to the treated IVS firm to 0.0001. This allows us to assign the treatment status for the artificial treatment units between 2010 and 2013. For the period between 2014 and 2019, we use this approach to determine the control units for the IVS types. Consequently, this approach ensures that the resulting set of treatment and control observations are characterized by no differences in observable characteristics. Using this methodology, we apply a difference-in-differences approach by estimating the following equation:

$$y_{it+n} = \beta_1 + \beta_2 IVS_{it} + \beta_3 Post2014_t + \beta_3 IVS_{it} \times Post2014_t + \beta \mathrm{X_{it}} + \varepsilon_{it} \qquad (1)$$

where the dependent variable, y_{it+n}, is a success measure, such as log sales, log employment, or survival, for the entrepreneur of firm i founded in year t. IVS_{it} is a dummy variable equal to 1 if the firm is an IVS and 0 if it is an SP. $Post2014_t$ is a dummy variable equal to 1 if the firm was established in 2014 or later and 0 otherwise. X_{it} is a vector of characteristics of the

entrepreneur of firm i at the year the firm was founded, including employee status, years of entrepreneurial experience, wage last year, home ownership, marital status, wealth, gender, citizenship, and education. Since we already apply these variables in the matching approach, introducing them in the regression approach again allows us to apply a doubly robust approach (e.g., Imbens and Wooldridge 2009). This approach ensures that we account for the observable differences between the units if the regression or the propensity score model is not correctly specified. In addition, an advantage of the DiD methodology is that it reduces the influence of unobservable time-invariant characteristics. Consequently, the parameter of interest β_3 displays the effect of the change in outcomes of the IVS firm type after it was introduced relative to the non-IVS firms in the previous period.

5. Results of the Empirical Analysis

In this section, we present the results of our empirical analysis. In the first step, we analyze the aggregate impact of the policy change. First, we examine whether a reduction in the MCR affects the number of companies and corporations. Next, we analyze various average performance measures to determine whether the quality of new firms has deteriorated. Finally, we investigate whether the results from aggregate data are driven by the selection of entrepreneurs of different qualities before and after the policy change or by a shift in the share of firms with downside insurance, i.e., corporations. In the second step, we analyze the impact of the introduction of the new firm type from a disaggregate perspective. For this purpose, we apply difference-in-differences regressions to determine the effect of outcomes such as sales, employment, and firm survival.

5.1 Aggregated Results

Number of Corporations

Figure 1 shows the number of newly established corporations, with separate panels for the number of LLCs. Two specifications are presented on the basis of the raw LLC numbers, and two are based on residuals after removing weekday and month fixed effects, with lines fitted to those residuals. The left-hand panels use a quadratic (global polynomial) approach with 3 years of observations on each side of the treatment threshold, whereas the right-hand panels use 3 months of observations on each side. All specifications indicate a positive treatment effect. To quantify the numerical effect and significance, we turn to the RDiT estimation results.

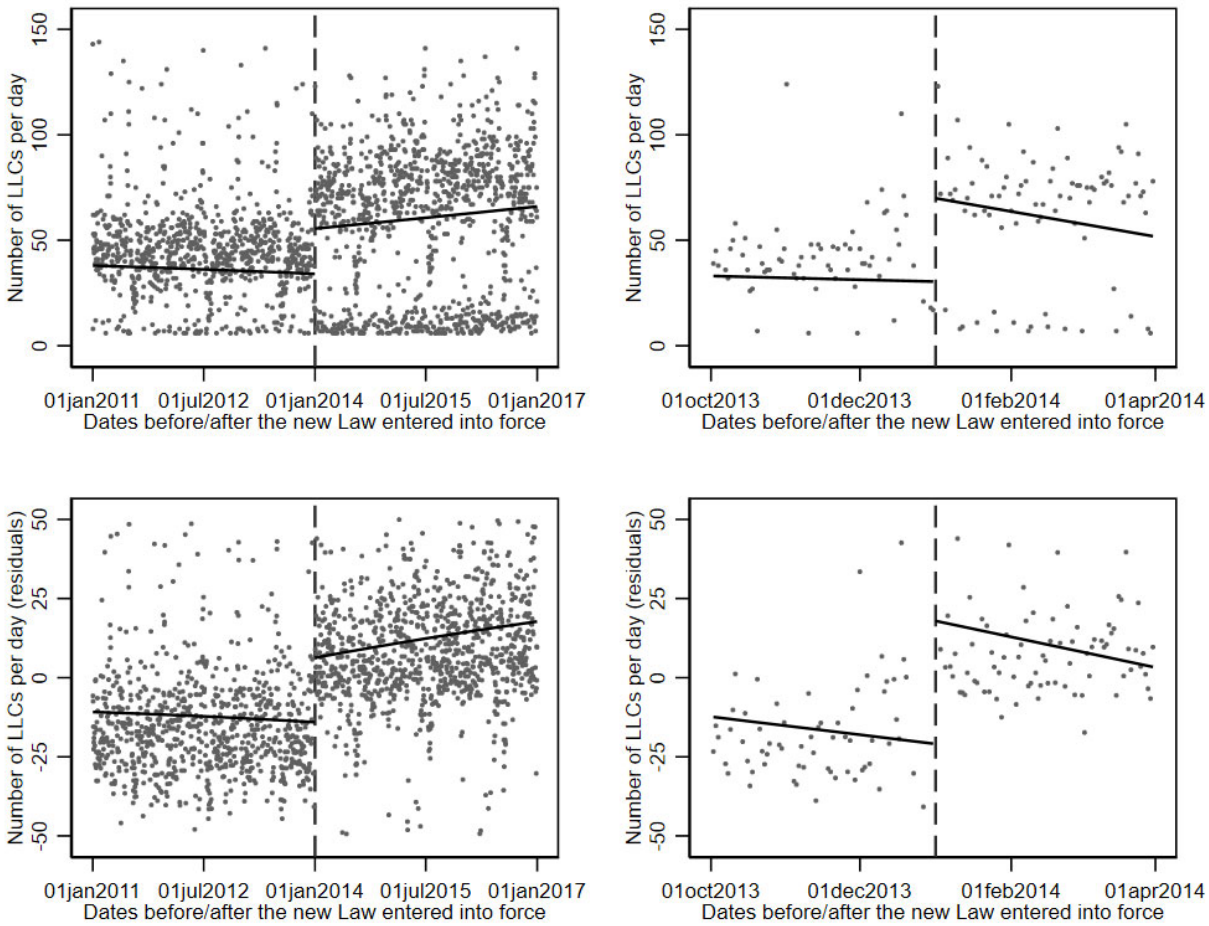
Table 2 presents the main RD estimates for the number of LLCs. Column 1 shows the BIC-chosen separate polynomials following Hausman and Rapson (2018). Both regressions estimate a highly significant beta of 19.7, suggesting that the reduction in the MCR led to an additional 20 new corporations per day. However, the global estimate does not have desirable properties when the effect of interest is local.

Columns 2 and 3 include estimates from the local linear approach, whereas Columns 4 and 5 present estimates from the augmented local linear approach, which follows Hausman and Rapson (2018) and uses residuals of LLC after controlling for month and weekday fixed effects. These estimates are bootstrapped via 1000 replications. The local treatment effect is computed via a triangular kernel, and robust bias-corrected confidence intervals are provided (see Calonico, Cattaneo, and Titiunik 2014; Calonico, Cattaneo, Farrell, and Titiunik 2017). The bandwidth is chosen on the basis of recommendations by Cattaneo et al. (2020), who use MSE-optimal and CER-optimal bandwidths. The MSE criterion balances the tradeoff between bias and variance in the RD point estimate, whereas the CER criterion measures the probability that the true parameter value lies outside the constructed confidence interval. Using these procedures, we find that the number of new corporations equals 38.5 and 40.0 per day for the

local linear method and 28.8 and 32.1 for the augmented local linear method. These estimated betas are larger than those obtained via polynomials.

The main insight from Table 2 is that there is a positive and significant effect of the policy change on the daily number of newly opened corporations. Notably, the local treatment effects from the local linear and augmented local linear regressions are greater than those from the polynomial approach. We employ a local linear approximation of the conditional expectations function and a triangular kernel, along with robust bias-corrected confidence intervals (Calonico, Cattaneo, and Titiunik 2014; Calonico, Cattaneo, Farrell, and Titiunik 2017).

Figure 1: Regression Discontinuity in time (RDiT) graphs



Notes: The scatter plots include only points representing more than 5 new LLCs founded per day. The graphs at the bottom of the figure present residuals from the augmented local linear method, as described by Hausman and Rapson (2018). In this method, the number of LLCs is regressed on weekday and month dummies (excluding the treatment variable) across the full sample in the first stage to predict residuals, which are then used to estimate the treatment effect shown in the graph. Days with fewer than 5 new LLCs are excluded from the graphs. The upper graphs display data for 5 to 150 LLCs founded per day.

Table 2: Number of LLCs - Regression discontinuity in time estimates

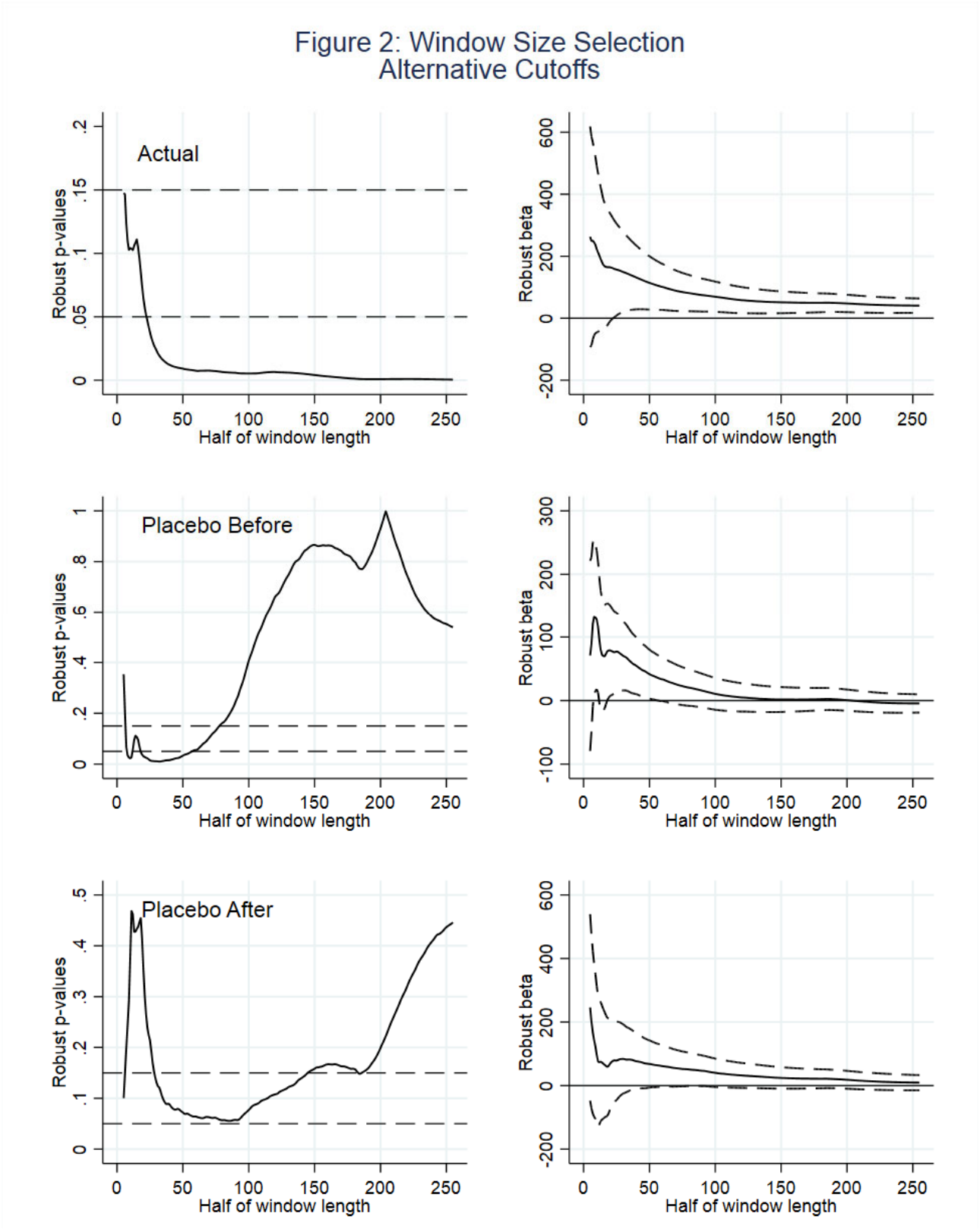
	BIC-chosen: separate polynomials	Local linear	Local linear	Augmented local linear	Augmented local linear
Triggered	19.67***				
	(2.46)				
Robust		38.53***	39.98***	28.83***	32.09***
		(8.40)	(9.94)	(6.08)	(7.36)
Number of observations	2189	2189	2189	2189	2189
Days before cutoff		233	159	285	194
Days after cutoff		251	171	181	123
Bandwidth method		msetwo	certwo	msetwo	certwo

Note: * p<0.10, ** p<0.05, *** p<0.01

One potential reason for obtaining higher estimates from the local linear approach than from the polynomial approach is biases arising from anticipation behaviors. The law reducing the MCR was passed in June 2013 but was implemented on January 1, 2014. This may have led entrepreneurs to postpone establishing their firms until after the MCR reduction. To address this, we estimate a "donut" RDiT that excludes 30 days of observations on each side of the threshold. The results, presented in Table 3, show a positive and significant local treatment effect, with approximately 20 new corporations per day.

We also conduct placebo RDiT estimations via artificial treatment dates to further validate our findings. Specifically, we use dates one year before and one year after the policy implementation. The results are presented in Tables 4 and 5. Table 4 shows that the local treatment effect is zero for a placebo date of January 1, 2013, except for two specifications, where the estimated treatment effect is negative, whereas Table 5 shows that all estimated local treatment effects are nonsignificant for a placebo date of January 1, 2015.

In Figure 2, we present robust beta estimates and p values for different window sizes. The upper part of the figure shows that the effects on the number of LLCs are positive and significant at the 5% level when the window is at least 25 days on each side of the cutoff. We never fail to reject the null hypothesis when the p value equals 0.15; see Cattaneoz, Díaz, and Titiunik (2022). In the middle and lower parts of the figure, placebo effects are estimated with a cutoff date one year before and one year after the actual cutoff date, respectively. The placebo one year after the actual cutoff date is never significant at the 5% level, whereas the placebo before is significant at the 5% level but negative for small windows.



Notes: In the left-hand side graphs, the lower dotted line corresponds to a p value of 0.05, whereas the upper dotted line corresponds to a p value of 0.15. In the right-hand side graphs, the dotted lines represent the 95% confidence intervals.

Table 3: Number of LLCs - Regression discontinuity in time estimates - DONUT

	BIC-chosen: separate polynomials	Local linear	Local linear	Augmented local linear	Augmented local linear
Triggered	18.3***				
	(2.5)				
Robust		34.2***	36.5***	25.0***	29.5***
		(10.0)	(11.7)	(6.6)	(7.7)
Number of observations	2130	2130	2130	2130	2130
Days before cutoff		195	123	228	146
Days after cutoff		196	124	195	123
Bandwidth method		msetwo	certwo	msetwo	certwo

Note: Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 4: Number of LLCs - Regression discontinuity in time estimates - Placebo before

	BIC-chosen: separate polynomials	Local linear	Local linear	Augmented local linear	Augmented local linear
Triggered	1030.9				
	(3633.9)				
Robust		-2.0	-1.4	-10.9***	-9.8**
		(5.9)	(6.3)	(4.1)	(4.6)
Number of observations	2132	2132	2132	2132	2132
Days before cutoff		231	157	268	183
Days after cutoff		307	208	300	204
Bandwidth method		msetwo	certwo	msetwo	certwo

Note: Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 5: Number of LLCs - Regression discontinuity in time estimates - Placebo after

	BIC-chosen: separate polynomials	Local linear	Local linear	Augmented local linear	Augmented local linear
Triggered	-551.8				
	(644.1)				
Robust		7.3	6.6	-0.0	2.0
		(8.0)	(8.9)	(5.1)	(5.7)
Number of observations	2651	2189	2189	2189	2189
Days before cutoff		377	257	406	277
Days after cutoff		269	183	217	147
Bandwidth method		msetwo	certwo	msetwo	certwo

Note: Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Before examining other outcomes, we present the results for the number of new original LLCs, new SPs, and all new firms, in addition to the total number of LLCs. We also use a measure of truly new and active entrepreneurial firms that have never been opened as other firm types, as well as new firms that are active, i.e., with an activity level of at least 0.5 full-time equivalent employees. Tables 6 and 7 show that new original LLCs and IVS firms together, as well as original LLC firms, have a positive local treatment effect. All firms have a positive and significant local treatment effect at the 10% significance level, including truly new and active entrepreneurial firms and active firms. However, when the augmented local linear method is used, only the total number of LLCs and original LLCs have positive and significant local treatment effects. The remaining firm types or active firms do not show significant positive local treatment effects. A significant increase in the number of active firms is one of the policy goals, but this condition is not met.

Finally, Table 8 presents the share of firms that open as LLCs, as well as the share of new firms that are truly new and active. We find that the local treatment effect on the share of firms that are LLCs increases significantly.

Table 6: Number of Firms - Regression discontinuity in time estimates - Other firm types

	LLC	LLC org	SP	ALL	Truly new and active	active
Robust	38.9***	20.5***	76.4	116.0*	49.3**	51.9**
	(8.6)	(6.5)	(52.5)	(59.7)	(22.5)	(24.9)
Number of observations	2189	2189	2189	2189	2189	2189
Days before cutoff	235	252	380	353	325	330
Days after cutoff	256	256	285	274	248	240
Bandwidth method	msetwo	msetwo	msetwo	msetwo	msetwo	msetwo

Note: Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 7: Number of firms - Regression discontinuity in time estimates - Other firm types via the augmented local linear method

	eLLC	eLLC org	eSP	eALL	e Truly new and active	eactive
Robust	37.3***	18.9***	27.4	61.0	23.9	19.2
	(6.9)	(5.0)	(44.9)	(51.3)	(19.0)	(20.9)
Number of observations	2189	2189	2189	2189	2189	2189
Days before cutoff	233	245	496	451	422	435
Days after cutoff	183	183	353	316	293	308
Bandwidth method	msetwo	msetwo	msetwo	msetwo	msetwo	msetwo

Notes: e in the variable name represents the predicted residual from the augmented local linear method. avg stands for average. Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 8: Number of firms - Regression discontinuity in time estimates - Other firm types

	LLC_avg	ln_IVPSE_avg	active_avg	eLLC_avg	Truly new and active avg	eactive_avg
Robust	0.1**	0.1**	0.1***	0.2***	0.0	0.0
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Number of observations	2189	2189	2189	2189	2189	2189
Days before cutoff	333	266	281	328	369	227
Days after cutoff	383	195	155	228	220	192
Bandwidth method	msetwo	msetwo	msetwo	msetwo	msetwo	msetwo

Notes: e in the variable name represents the predicted residual from the augmented local linear method. avg stands for average. Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Other Dependent Variables

In this section, we examine different outcome measures beyond the number of firms. First, we investigate the treatment effects on aggregate measures of new firms. Specifically, we look at the log of aggregate sales in new firms, the log of aggregate employment in new firms, and the aggregate number of bankruptcies and forced dissolutions of new corporations. Forced dissolution refers to the process in which a company is legally required to dissolve by authorities, typically due to noncompliance with legal obligations or regulatory breaches.

Table 9a presents the treatment effects for these outcome measures via the local linear method. We observe that aggregate sales increase by up to 1.34 log points, whereas aggregate employment increases by 0.95 log points. Additionally, firm failure, including bankruptcies and forced dissolutions, has a positive treatment effect. Specifically, the treatment effect

indicates that approximately 10 newly established firms per day go bankrupt at some point after establishment, while 6.6 newly established firms per day undergo forced dissolutions. When the augmented local linear method is used, significant effects are still observed, although they are somewhat lower, as shown in Table 9b.

Tables 10a and 10b present the treatment effects for the mean measures of the outcomes in Tables 9a and 9b. We find that neither (log) sales, (log) employment, nor bankruptcies have treatment effects different from zero. However, forced dissolutions have a positive and significant treatment effect of approximately 0.04, implying that the share of companies undergoing forced dissolution increased by approximately 4 percentage points after the policy implementation.

In summary, the policy implementation leads to the following effects. First, the number of LLCs increases, both in terms of the total number of LLCs and the original type of LLC. However, the total number of all firms, including SPs, does not increase. Aggregate sales and aggregate employment increase for all firms, and there is also an increase in the aggregate number of bankruptcies and forced dissolutions. Despite these changes, both average sales and employment remain unchanged, as does the share of firms going bankrupt. Notably, the share of firms exiting due to forced dissolution increases after 2014. These findings highlight the dual effects of the policy aimed at reducing the costs of establishing new corporations. On the one hand, it generates more economic activity in the form of increased sales and employment. On the other hand, it leads to a greater share of firms being forced to dissolve.

Table 9a: Other outcomes - Regression discontinuity in time estimates - Aggregate

	Sales	Empl	Bankr	f diss
Robust	1.34***	0.95***	9.79***	6.64***
	(0.43)	(0.34)	(1.74)	(0.94)
Number of observations	2189	2139	2189	2189
Days before cutoff	238	260	232	276
Days after cutoff	252	319	204	333
Bandwidth method	msetwo	msetwo	msetwo	msetwo

Note: Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 9b: Other outcomes - Regression discontinuity in time estimates – Aggregate via the augmented local linear method

	eSales	eEmpl	eBankr	e f diss
Robust	0.72**	0.49**	7.69***	5.05***
	(0.29)	(0.22)	(1.32)	(0.74)
Number of observations	2189	2139	2189	2189
Days before cutoff	252	286	264	328
Days after cutoff	247	332	192	300
Bandwidth method	msetwo	msetwo	msetwo	msetwo

Notes: e in the variable name represents the predicted residual from the augmented local linear method. Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 10a: Other outcomes - Regression discontinuity in time estimates - mean

	Salesm	Emplm	Bankrm	f dissm
Robust	0.27	0.17	0.04	0.04***
	(0.21)	(0.15)	(0.03)	(0.02)
Number of observations	2189	2139	2157	2157
Days before cutoff	285	392	346	234
Days after cutoff	305	373	272	398
Bandwidth method	msetwo	msetwo	msetwo	msetwo

Note: Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 10b: Other outcomes - Regression discontinuity in time estimates – mean via the augmented local linear method

	eSalesm	eEmplm	eBankrm	ef dissm
Robust	-0.09	-0.12	-0.00	0.04***
	(0.16)	(0.13)	(0.03)	(0.02)
Number of observations	2189	2139	2157	2157
Days before cutoff	309	421	484	252
Days after cutoff	351	323	346	304
Bandwidth method	msetwo	msetwo	msetwo	msetwo

Notes: e in the variable name represents the predicted residual from the augmented local linear method. Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

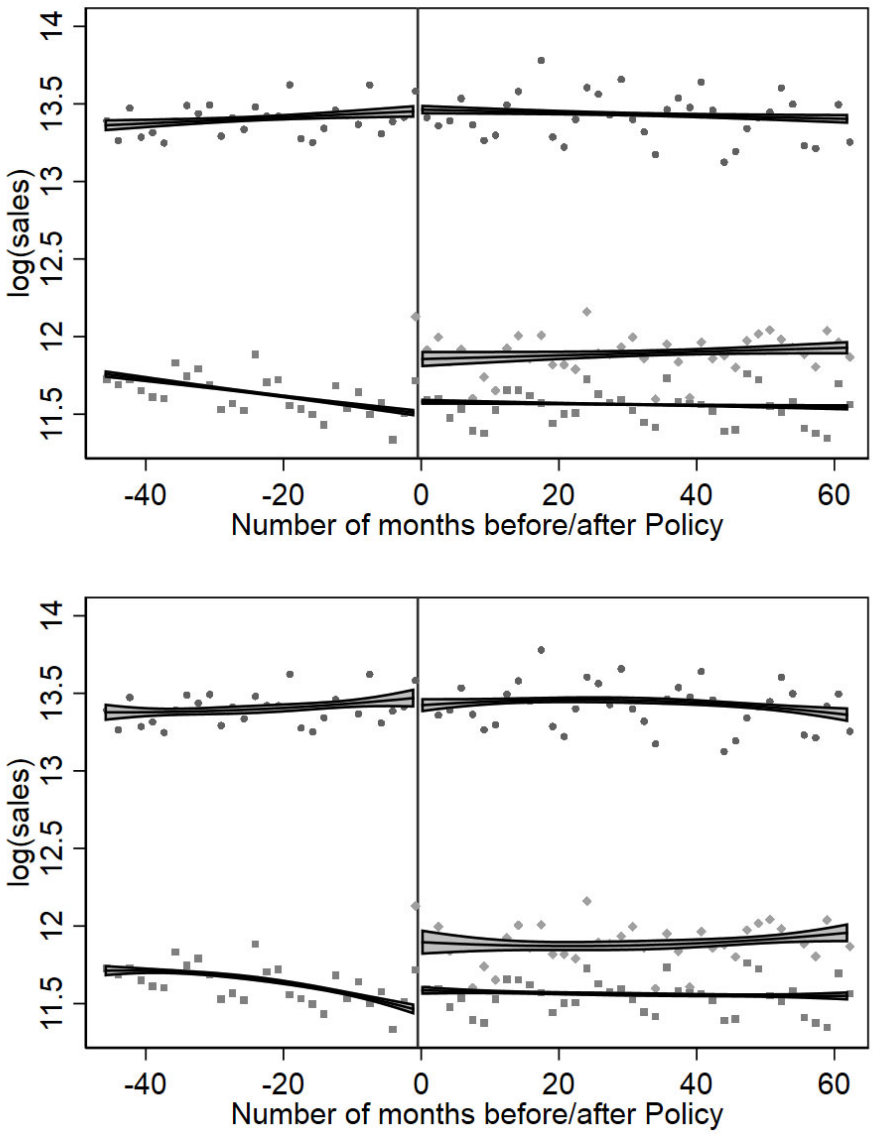
5.2 Microanalysis – Is it Ability or Firm Type?

In the next step, we complement the aggregate analysis by providing evidence of the effects of the introduction of the IVS firm type at the firm level. For this purpose, we apply the same combination of matching and difference-in-differences regressions as that outlined above (Section 3).

We begin with a graphical inspection of the average firm sales before and after the policy's implementation, as depicted in Figure 3. Several observations can be made from the figure. First, average sales in original LLCs and SPs do not seem to change significantly before and after the policy implementation. However, sales in IVSs are positioned between those of original LLCs and SPs, although much closer to SPs than to original LLCs. If the entrepreneurs behind SPs and IVSs are similar, then the difference in sales between the two firm types could be attributed to downward insurance. Alternatively, if the entrepreneurs behind IVSs are more capable than those behind SPs are, then the difference in sales could be due to differences in the characteristics of the entrepreneurs.

In alignment with our empirical strategy described in Section 3, we first show the descriptive statistics of the firm types in Table 11. When we compare SPs to LLCs in general (Columns 1 to 10), we find that SP entrepreneurs are younger, more likely to be females, less likely to be married, less likely to have entrepreneurial experience, and less wealthy than their counterparts. These observations hold for the time before the new IVS type was introduced (2010–2013) and after its introduction (2014–2019). When comparing these observations to the IVS firm type shown in Column 9, we find that the characteristics of these firms seem to be closer to those of SP founders than to those of LLC founders. This finding indicates that SP firm founders constitute a better control group than do LLC founders. Thus, although the IVS firm type provides downside insurance, the founders seem more similar to SP founders.

Figure 3: log(Sales) after firm type



Notes: The figure includes regressions for the pre- and post-policy implementation samples of log(sales) for LLCs, SPs, and IVSs. Specifically, it shows log(sales) for LLCs and SPs before and after the policy implementation and log(sales) for IVSs after the policy implementation. In the upper graph, the prediction for the number of LLCs per day is estimated via linear regression on the running variable. The lower graph presents the results from a regression of the number of LLCs per day on the running variable and its square.

Table 11: Descriptive statistics for firm types over time

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	SP 2010–2013		LLC 2010–2013		SP 2014–2019		LLC 2014–2019		IVS 2014–2019	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age	34.500	(8.188)	37.621	(7.581)	36.699	(8.508)	39.820	(8.021)	37.311	(8.095)
Female	0.369	(0.483)	0.163	(0.369)	0.393	(0.488)	0.165	(0.371)	0.226	(0.418)
Danish citizenship	0.943	(0.231)	0.956	(0.204)	0.950	(0.217)	0.945	(0.229)	0.899	(0.301)
Highschool degree	0.505	(0.500)	0.482	(0.500)	0.478	(0.500)	0.452	(0.498)	0.432	(0.495)
Vocational training	0.056	(0.230)	0.085	(0.279)	0.055	(0.227)	0.084	(0.277)	0.077	(0.267)
University degree	0.034	(0.181)	0.032	(0.176)	0.029	(0.168)	0.033	(0.178)	0.042	(0.200)
PhD degree	0.260	(0.439)	0.279	(0.449)	0.316	(0.465)	0.327	(0.469)	0.297	(0.457)
Married	0.483	(0.500)	0.589	(0.492)	0.508	(0.500)	0.605	(0.489)	0.514	(0.500)
Has children	0.745	(0.436)	0.853	(0.354)	0.880	(0.325)	0.935	(0.246)	0.914	(0.280)
Has siblings	1.384	(1.042)	1.349	(1.011)	1.343	(1.003)	1.350	(1.015)	1.404	(1.112)
Entrepreneurial experience	0.135	(0.341)	0.659	(0.474)	0.167	(0.373)	0.697	(0.460)	0.602	(0.490)
Entrepreneurial experience (father)	0.429	(0.495)	0.465	(0.499)	0.451	(0.498)	0.499	(0.500)	0.470	(0.499)
Entrepreneurial experience (mother)	0.440	(0.496)	0.466	(0.499)	0.463	(0.499)	0.498	(0.500)	0.480	(0.500)
Wealth last year (father)	0.587	(1.213)	0.724	(1.207)	0.605	(1.208)	0.740	(1.184)	0.495	(1.270)
Wealth last year (mother)	0.595	(1.325)	0.807	(1.256)	0.623	(1.299)	0.815	(1.245)	0.573	(1.325)
Wage last year	11.296	(3.664)	10.326	(5.045)	11.400	(3.779)	10.929	(4.731)	10.763	(4.536)
Home owner	0.605	(0.489)	0.747	(0.434)	0.651	(0.477)	0.781	(0.414)	0.621	(0.485)
Wealth last year	-0.181	(1.154)	-0.076	(0.997)	-0.129	(1.113)	0.001	(0.958)	-0.305	(1.086)
Management experience	0.022	(0.146)	0.115	(0.319)	0.027	(0.163)	0.151	(0.358)	0.056	(0.230)
Industry experience last three years	0.409	(0.492)	0.398	(0.489)	0.382	(0.486)	0.357	(0.479)	0.329	(0.470)
Job switch last three years	0.533	(0.499)	0.501	(0.500)	0.486	(0.500)	0.479	(0.500)	0.527	(0.499)
Employee last year	0.811	(0.391)	0.599	(0.490)	0.808	(0.394)	0.635	(0.481)	0.626	(0.484)
Retired last year	0.003	(0.059)	0.003	(0.053)	0.003	(0.055)	0.003	(0.050)	0.007	(0.085)
Observations	13541		11615		12958		16532		4783	

Next, we compare the groups of firms with each other to illustrate the balance of the cohort characteristics. The variables, means, and differences are shown in Table 12. In contrast to Table 11, the differences between the IVS and SP groups are almost nonexistent. Thus, the control group closely resembles the treatment group in terms of observable characteristics. This outcome implies that the matching process has been successful.

Table 12: Balancing of control variables after the matching process

	(1) IVS (Treated)	(2) SP (Control)	(3) Difference (1)-(2)	(4) *p* value
Age	37.828	37.950	-0.123	0.284
Age squared	1549.396	1556.763	-7.366	0.425
Female	0.252	0.250	0.002	0.679
Danish citizenship	0.824	0.820	0.005	0.252
Highschool degree	0.454	0.451	0.003	0.582
Vocational training	0.063	0.066	-0.002	0.379
University degree	0.034	0.034	0.000	0.931
PhD degree	0.259	0.258	0.001	0.885
Married	0.429	0.433	-0.004	0.431
Wage last year	10.242	10.214	0.028	0.573
Wealth last year	-0.208	-0.216	0.007	0.588
Home owner	0.493	0.493	-0.001	0.874
Entrepreneurial experience	0.471	0.479	-0.008	0.145
Employee last year	0.655	0.654	0.001	0.807
Observations		35974		

Notes: The table shows the comparison of means between the control and treatment groups.

The results of estimating Equation (1) are presented in Table 13, which shows the results one year and three years after establishment, respectively. The dependent variables reflect whether the firm survived up to the specific year (i.e., one or three years after establishment) in Column 1, is in the top ten for sales distribution (Column 2), or is in the upper decile of the employee distribution (Column 3). We first turn to the results reflecting the effects one year after the establishment of the firm (Panel A). For all outcome variables, the coefficient of the interaction term is positive and significantly different from zero. With respect to the size of the effect, firms are approximately 8% more likely to survive the first year of their existence (Column 1). Next, for the firm outcome success factors, we observe that the effect size

decreases compared with the result of the firm's survival. Therefore, IVS firms are approximately 2% more likely to be at the top of the sales distribution after one year than the control SP firms are (Column 2). Finally, IVS firms are approximately 4% more likely to be at the top of the distribution related to employment (Column 3) than are their counterparts. This implies that IVS firms are more likely to survive and be at the top of the distribution of firm success measures than control SP firms are.

The results concerning the impact of the IVS firm type on firm success are reinforced when we analyze firm outcomes three years after establishment in Panel B of Table 13. Interestingly, the probability of survival decreases slightly to approximately 6.6% (Column 1). However, the likelihood of observing an IVS firm at the top of the sales distribution increases to approximately 3.4% (Column 2). This reflects an approximately 1.5-fold increase in the coefficient for the one-year outcome (Panel A, Column 2). For the probability of being at the top of the employment distribution, we find that the effect is approximately 4.4% (Column 3). This finding is similar to the result after one year (Panel A, Column 3). This coincides with the incentives of the entrepreneurs of these companies. Because they have to pay the MCR, the founders are probably more incentivized to increase their sales than their employment.

Table 13: Regression results concerning the success of the new firm type

	(1) Survival	(2) Sales	(3) Employment
Panel A: Outcomes first year after the establishment			
IVS	0.009	0.003**	-0.002
	(0.005)	(0.001)	(0.002)
IVS × Post 2014	0.078***	0.022**	0.042***
	(0.013)	(0.007)	(0.007)
Constant	0.440***	-0.022*	0.002
	(0.028)	(0.011)	(0.022)
Control variables	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
R-squared	0.031	0.024	0.033
Number of observations	35974	21790	21790
Panel B: Outcomes three years after the establishment			
IVS	0.000	-0.002	-0.003
	(0.006)	(0.003)	(0.002)
IVS × Post 2014	0.066**	0.034***	0.044***
	(0.023)	(0.008)	(0.003)
Constant	0.165***	-0.002	-0.025
	(0.048)	(0.019)	(0.023)
Control variables	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
R-squared	0.036	0.030	0.026
Number of observations	28205	15742	15742

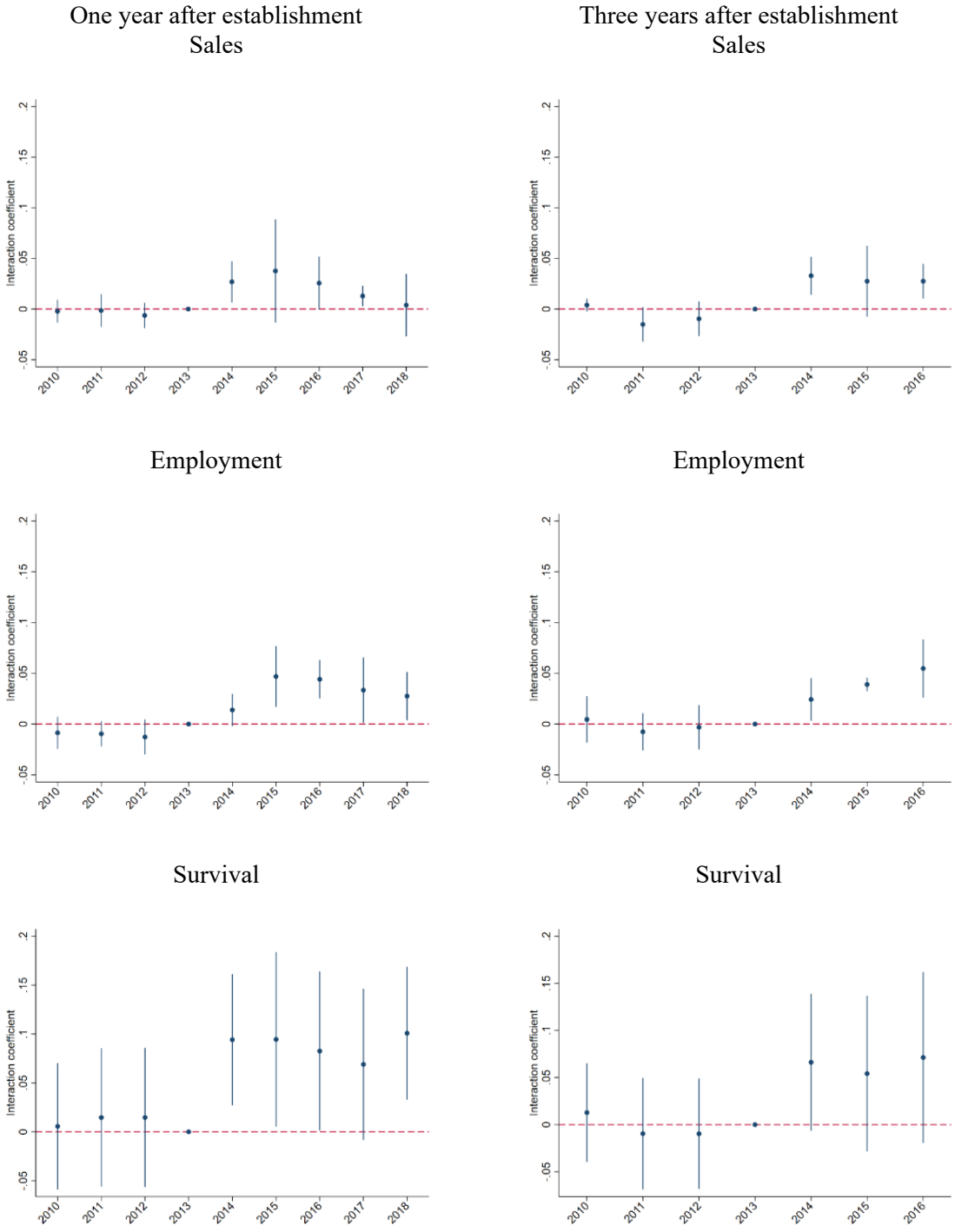
Notes: The table shows the results of estimating Equation (1) for the matched sample of IVS and SP firms. The dependent variables are success determinants of the firm one year (Panel a) or three years (Panel b) after its establishment. These are either indicators of survival, being in the top 10 of the distribution of sales, or being in the top 10% of the distribution of employment. The corresponding extended estimation results are shown in Appendix A, Tables A1 and A2. Robust standard errors are shown in parentheses. Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Finally, we analyze the effects of each cohort over time. Thus, we adjust Equation (1) by interacting the IVS dummy with a cohort indicator. This approach allows us to analyze the outcome differences between firms before and after the policy change. On the one hand, we use this exercise to determine whether significant differences between the firm types existed before the IVS type was introduced. If so, this finding would negatively affect the validity of the results provided in Table 13. On the other hand, we determine whether the results are heterogeneous according to the entry cohorts. In that respect, we can, for example, test

whether the first cohorts of entrepreneurs might reach different firm outcomes than the later cohorts.

The results are shown in Figure 4. The related regression results are shown in Appendix A, Tables A3 and A4. For the time before the introduction of the IVS type, we do not observe significant differences between the firms. This points toward the validity of the difference-in-differences approach regarding nonexistent differences between the groups before the policy change. For the time after the introduction of the IVS type, the probability of being at the top of the distribution for both sales and employment is greater in IVSs than in SPs after the policy is implemented. Moreover, survival rates are higher in IVSs than in SPs. More precisely, we find elevated effects for each of the measures already for the first founding cohorts of IVS firms. The results remain relatively stable across post-IV founding cohorts for employment and survival. For sales, however, the probability is greater for the earlier cohorts than for the later cohorts. For the outcomes after three years, we observe that the probability of being in the upper decile of employment increases with each cohort. The probability of being at the top of the distribution for sales and for survival is relatively constant over time. However, for survival, importantly, the effect is not significantly different on conventional levels after the introduction of the IVS type. In conclusion, using the policy change of 2014, we find that the new LLC firm type results in significantly higher success levels than SPs do.

Figure 4: Success of the new LLC firm type



Notes: The figure shows the results of adjusting Equation (1) by replacing the post dummy with year indicator variables for the matched sample of IVS and SP firms. The dependent variables are success determinants of the firm three years after its establishment, which are either indicators of survival, being in the top 10 of the distribution of sales, or being in the top 10% of the distribution of employment. The corresponding estimation results are shown in Appendix A, Tables A3 and A4. The vertical lines indicate 95% confidence intervals.

6. Conclusion

This paper explores the societal impacts of lowering the minimum capital requirement (MCR) for establishing limited liability corporations (LLCs) by examining Danish policy changes implemented in 2014. These changes included reducing the MCR for standard LLCs and introducing the entrepreneur company (IVS) with an MCR of one DKK. Our analysis reveals several key findings. First, the policy change led to a significant increase in the number of new corporations established daily. This surge in new businesses contributed to higher aggregate sales and employment, indicating a boost in economic activity. Second, LLCs, including the newly introduced IVS, demonstrated higher sales and employment levels than SPs did. This suggests that the LLC structure, with its limited liability protection, may encourage more robust business performance. Third, while the policy did not lead to an increase in the share of bankruptcies among LLCs, it did result in a greater share of forced dissolutions. This indicates that while more businesses were being created, a significant proportion of them faced challenges that led to their dissolution. Fourth, our results imply that the introduction of IVS attracted a diverse range of entrepreneurs. Using a matched difference-in-differences approach, we find that limited liability per se increases survival, sales, and employment. The differences in sales and employment between SPs and IVSs could be attributed to both the firm type and the characteristics of the entrepreneurs behind them.

Our findings highlight the dual effects of the 2014 policy aimed at reducing the costs of establishing new corporations. On the one hand, the policy stimulated economic activity by increasing the number of new corporations and increasing sales and employment. On the other hand, it led to a higher rate of forced dissolutions, highlighting the risks associated with lower entry barriers. These findings underscore the importance of balancing policies that encourage entrepreneurship with measures that ensure the sustainability and quality of new businesses.

In conclusion, while the reduction in the MCR and the introduction of IVS fostered greater entrepreneurial activity, policymakers must carefully consider the trade-offs between encouraging new business formation and maintaining the overall health and stability of the entrepreneurial ecosystem. The current research provides valuable insights for future policy decisions, not only in Denmark but also in other countries that are considering making similar changes.

References

Acs, Z. J., & Szerb, L. (2007). Entrepreneurship, economic growth and public policy. Small business economics, 28, 109-122.

Aghion, P. (2017). Entrepreneurship and growth: lessons from an intellectual journey. Small Business Economics, 48, 9-24.

Ahn, K., & Winters, J. V. (2022). Does education enhance entrepreneurship?. Small Business Economics, 1-27.

Anderson, Michael L. (2014), "Subways, Strikes, and Slowdowns: The Impacts of Public Transit on Traffic Congestion", *American Economic Review*, 104(9): 2763–2796, http://dx.doi.org/10.1257/aer.104.9.2763

Azoulay, P., Jones, B. F., Kim, J. D., & Miranda, J. (2020). Age and high-growth entrepreneurship. American Economic Review: Insights, 2(1), 65-82.

Bracht, F., Mahieu, J., & Vanhaverbeke, S. (2024). The signaling value of legal form in entrepreneurial debt financing. Journal of Business Venturing, 39(3), 106380.

Braun, R., H. Eidenmüller, A. Engert, and L. Hornuf (2013) "Does Charter Competition Foster Entrepreneurship? A Difference-in-Difference Approach to European Company Law Reforms", JCMS 2013 Volume 51. Number 3., 399–415, DOI: 10.1111/jcms.12003

Cattaneoz, M.D., C. Díaz, and R. Titiunik (2022) "Breaking the Code: Can a New Penal Procedure Affect Public Safety?", memeo

Calonico, S., Cattaneo, M. D., Farrell, M. H., and Titiunik, R. (2017). "rdrobust: Software for regression-discontinuity designs", Stata Journal, 17(2), 372-404.

Calonico, S., Cattaneo, M. D., and Titiunik, R. (2014), "Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs," Econometrica, 82, 2295-2326.

Cattaneo, M. D., Idrobo, N., and Titiunik, R. (2020), "A Practical Introduction to Regression Discontinuity Designs: Foundations", Cambridge Elements: Quantitative and Computational Methods for Social Science, Cambridge University Press.

Chodorow-Reich, G. (2014), "The Employment Effects of Credit Market Disruptions: Firm-level Evidence from the 2008–9 Financial Crisis," *The Quarterly Journal of Economics*, Volume 129, Issue 1, February, Pages 1–59, https://doi.org/10.1093/qje/qjt031

Decker, R. A., Haltiwanger, J., Jarmin, R. S., & Miranda, J. (2016). Where has all the skewness gone? The decline in high-growth (young) firms in the US. European Economic Review, 86, 4-23.

Guzman, J., & Stern, S. (2020). The state of American entrepreneurship: New estimates of the quantity and quality of entrepreneurship for 32 US States, 1988–2014. American Economic Journal: Economic Policy, 12(4), 212-43.

Hausman and Rapson (2018), "Regression Discontinuity in Time: Considerations for Empirical Applications", Annual Review of Resource Economics, Volume 10, 533-552

Hurst, E., & Pugsley, B. W. (2012). What Do Small Businesses Do?. Brookings Papers on Economic Activity, 42(2 (Fall)), 73-142.

Imbens, G. W., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. Journal of economic literature, 47(1), 5-86.

Iversen, J., Malchow-Møller, N., & Sørensen, A. (2016). Success in entrepreneurship: a complementarity between schooling and wage-work experience. Small Business Economics, 47(2), 437-460.

Kerr, S. P., Kerr, W. R., & Xu, T. (2018). Personality traits of entrepreneurs: A review of recent literature. Foundations and Trends® in Entrepreneurship, 14(3), 279-356.

Lilja, Troels Michael (2019) "Entrepreneur Companies abolished in Denmark and Belgium– For very different reasons and with very different results", Copenhagen Business School Law Research Paper Series No. 19-43

Malchow-Møller, N., Schjerning, B., & Sørensen, A. (2011). Entrepreneurship, job creation and wage growth. Small Business Economics, 36(1), 15-32.

Nazemi, A., & Fabozzi, F. J. (2018). Macroeconomic variable selection for creditor recovery rates. Journal of Banking & Finance, 89, 14-25.

Pugsley, B. W., & Şahin, A. (2019). Grown-up business cycles. The Review of Financial Studies, 32(3), 1102-1147.

Reichstein, T., Dahl, M. S., Ebersberger, B., & Jensen, M. B. (2010). The devil dwells in the tails. Journal of Evolutionary Economics, 20(2), 219-231.

Sedláček, P., & Sterk, V. (2017). The growth potential of startups over the business cycle. American Economic Review, 107(10), 3182-3210.

Sterk, V., Sedláček, P., & Pugsley, B. (2021). The nature of firm growth. American Economic Review, 111(2), 547-79.

Vereshchagina, G., & Hopenhayn, H. A. (2009). Risk taking by entrepreneurs. American Economic Review, 99(5), 1808-30.

Vladasel, T., Lindquist, M. J., Sol, J., & Van Praag, M. (2021). On the origins of entrepreneurship: Evidence from sibling correlations. Journal of business venturing, 36(5), 106017.

Zhang, T., & Acs, Z. (2018). Age and entrepreneurship: nuances from entrepreneur types and generation effects. Small Business Economics, 51(4), 773-809.

Appendix A – Additional Tables

Table A1: Regression results concerning the success of the new firm type—Outcomes after one year

	(1) Survival	(2) Sales	(3) Employment
IVS	0.009	0.003**	-0.002
	(0.005)	(0.001)	(0.002)
IVS × Post 2014	0.078***	0.022**	0.042***
	(0.013)	(0.007)	(0.007)
Age	0.009***	0.002**	0.001
	(0.001)	(0.001)	(0.001)
Age squared	-0.000***	-0.000***	-0.000*
	(0.000)	(0.000)	(0.000)
Female	-0.005	0.000	0.004
	(0.013)	(0.002)	(0.005)
Danish citizenship	0.002	-0.001	-0.019**
	(0.018)	(0.003)	(0.007)
Highschool degree	0.030*	-0.002	0.006*
	(0.014)	(0.007)	(0.003)
Vocational training	-0.013	0.004	0.007
	(0.011)	(0.003)	(0.007)
University degree	-0.056***	-0.002	0.009
	(0.015)	(0.005)	(0.006)
PhD degree	-0.037***	-0.006	0.001
	(0.011)	(0.006)	(0.003)
Married	0.022**	0.007**	0.009**
	(0.009)	(0.003)	(0.003)
Wage last year	-0.001	-0.001*	0.000
	(0.000)	(0.001)	(0.000)
Wealth last year	0.011***	0.001	0.002*
	(0.002)	(0.001)	(0.001)
Home owner	0.055***	0.005	0.003
	(0.008)	(0.003)	(0.004)
Entrepreneurial experience	-0.042***	0.014**	0.015**
	(0.008)	(0.004)	(0.006)
Employee last year	0.023**	0.009*	0.005
	(0.009)	(0.005)	(0.007)
Constant	0.440***	-0.022*	0.002
	(0.028)	(0.011)	(0.022)
R-squared	0.031	0.024	0.033
Number of observations	35974	21790	21790

Notes: The table shows the results of estimating Equation (1) for the matched sample of IVS and SP firms. The dependent variables are success determinants of the firm one year after its establishment, which are either indicators of survival, being in the top 10 of the distribution of sales, or being in the top 10% of the distribution of employment. Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table A2: Regression results concerning the success of the new firm type—Outcomes after three years

	(1) Survival	(2) Sales	(3) Employment
IVS	0.000	-0.002	-0.003
	(0.006)	(0.003)	(0.002)
IVS × Post 2014	0.066**	0.034***	0.044***
	(0.023)	(0.008)	(0.003)
Age	0.011***	0.001	0.002*
	(0.002)	(0.001)	(0.001)
Age squared	-0.000***	-0.000	-0.000**
	(0.000)	(0.000)	(0.000)
Female	-0.010	-0.005	0.005
	(0.018)	(0.003)	(0.006)
Danish citizenship	0.007	0.001	-0.008
	(0.024)	(0.003)	(0.006)
Highschool degree	0.058***	0.006	0.009
	(0.012)	(0.004)	(0.006)
Vocational training	0.017	0.016	0.018
	(0.021)	(0.009)	(0.010)
University degree	-0.018	0.002	0.010
	(0.025)	(0.004)	(0.014)
PhD degree	-0.006	0.004	0.004
	(0.010)	(0.004)	(0.004)
Married	0.027***	0.002	-0.000
	(0.004)	(0.004)	(0.003)
Wage last year	-0.002*	-0.001**	-0.000
	(0.001)	(0.000)	(0.000)
Wealth last year	0.023***	0.002**	0.001
	(0.003)	(0.001)	(0.001)
Home owner	0.065***	0.017***	0.012**
	(0.011)	(0.004)	(0.005)
Entrepreneurial experience	-0.070***	0.015*	0.013*
	(0.020)	(0.008)	(0.007)
Employee last year	0.020	0.002	0.002
	(0.014)	(0.003)	(0.002)
Constant	0.165***	-0.002	-0.025
	(0.048)	(0.019)	(0.023)
R-squared	0.036	0.030	0.026
Number of observations	28205	15742	15742

Notes: The table shows the results of estimating Equation (1) for the matched sample of IVS and SP firms. The dependent variables are success determinants of the firm three years after its establishment, which are either indicators of survival, being in the top 10 of the distribution of sales, or being in the top 10% of the distribution of employment. Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table A3: Regression results concerning the success of the new firm type over time—Outcomes after one year

	(1) Survival	(2) Sales	(3) Employment
IVS	0.001	0.005	0.005
	(0.019)	(0.004)	(0.005)
IVS × Post 2010	0.006	-0.002	-0.009
	(0.029)	(0.005)	(0.007)
IVS × Post 2011	0.015	-0.001	-0.010
	(0.031)	(0.007)	(0.005)
IVS × Post 2012	0.015	-0.006	-0.013
	(0.031)	(0.006)	(0.008)
IVS × Post 2013		*Reference*	
IVS × Post 2014	0.094**	0.027**	0.014*
	(0.030)	(0.009)	(0.007)
IVS × Post 2015	0.095**	0.038	0.047***
	(0.039)	(0.022)	(0.013)
IVS × Post 2016	0.083**	0.026*	0.044***
	(0.036)	(0.012)	(0.008)
IVS × Post 2017	0.069*	0.013**	0.033**
	(0.034)	(0.004)	(0.014)
IVS × Post 2018	0.101***	0.004	0.028**
	(0.030)	(0.014)	(0.010)
Age	0.009***	0.002**	0.001
	(0.001)	(0.001)	(0.001)
Age squared	-0.000***	-0.000***	-0.000*
	(0.000)	(0.000)	(0.000)
Female	-0.005	0.000	0.004
	(0.013)	(0.002)	(0.005)
Danish citizenship	0.002	-0.002	-0.019**
	(0.018)	(0.003)	(0.007)
Highschool degree	0.030*	-0.002	0.006*
	(0.014)	(0.007)	(0.003)
Vocational training	-0.013	0.004	0.007
	(0.011)	(0.003)	(0.007)
University degree	-0.057***	-0.002	0.009
	(0.015)	(0.005)	(0.006)
PhD degree	-0.037***	-0.006	0.001
	(0.011)	(0.006)	(0.003)
Married	0.022**	0.007**	0.009**
	(0.009)	(0.003)	(0.003)
Wage last year	-0.001	-0.001*	0.000
	(0.000)	(0.001)	(0.000)
Wealth last year	0.011***	0.001	0.002*
	(0.002)	(0.001)	(0.001)
Home owner	0.055***	0.005	0.003
	(0.008)	(0.003)	(0.004)
Entrepreneurial experience	-0.042***	0.014**	0.015**
	(0.008)	(0.004)	(0.006)
Employee last year	0.023**	0.009*	0.005
	(0.009)	(0.005)	(0.007)
Constant	0.441***	-0.023*	0.001
	(0.028)	(0.011)	(0.022)
R-squared	0.031	0.025	0.034
Number of observations	35974	21790	21790

Notes: The table shows the results of adjusting Equation (1) by replacing the post dummy with year indicator variables for the matched sample of IVS and SP firms. The dependent variables are success determinants of the firm three years after its establishment, which are either indicators of survival, being in the top 10 of the distribution of sales, or being in the top 10% of the distribution of employment. Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table A4: Regression results concerning the success of the new firm type over time—Outcomes after three years

	(1) Survival	(2) Sales	(3) Employment
IVS	0.002	0.004	-0.002
	(0.015)	(0.004)	(0.005)
IVS × Post 2010	0.013	0.004	0.005
	(0.023)	(0.003)	(0.010)
IVS × Post 2011	-0.010	-0.015*	-0.008
	(0.026)	(0.008)	(0.008)
IVS × Post 2012	-0.010	-0.010	-0.003
	(0.026)	(0.008)	(0.010)
IVS × Post 2013		*Reference*	
IVS × Post 2014	0.066*	0.033***	0.024**
	(0.032)	(0.008)	(0.009)
IVS × Post 2015	0.054	0.027	0.039***
	(0.037)	(0.015)	(0.003)
IVS × Post 2016	0.071	0.028***	0.055***
	(0.040)	(0.008)	(0.013)
Age	0.011***	0.001	0.002*
	(0.002)	(0.001)	(0.001)
Age squared	-0.000***	-0.000	-0.000**
	(0.000)	(0.000)	(0.000)
Female	-0.007	-0.004	0.004
	(0.018)	(0.003)	(0.006)
Danish citizenship	0.010	0.001	-0.007
	(0.025)	(0.003)	(0.006)
Highschool degree	0.060***	0.006	0.009
	(0.013)	(0.004)	(0.006)
Vocational training	0.020	0.016	0.018
	(0.021)	(0.009)	(0.010)
University degree	-0.013	0.002	0.010
	(0.028)	(0.004)	(0.014)
PhD degree	-0.003	0.004	0.005
	(0.010)	(0.004)	(0.004)
Married	0.030***	0.002	0.000
	(0.005)	(0.004)	(0.003)
Wage last year	-0.002**	-0.001**	-0.000
	(0.001)	(0.000)	(0.000)
Wealth last year	0.022***	0.002**	0.001
	(0.003)	(0.001)	(0.001)
Home owner	0.071***	0.017***	0.012**
	(0.012)	(0.004)	(0.005)
Entrepreneurial experience	-0.067***	0.015*	0.013*
	(0.020)	(0.008)	(0.007)
Employee last year	0.023	0.002	0.002
	(0.014)	(0.003)	(0.002)
Constant	0.161***	-0.003	-0.025
	(0.048)	(0.019)	(0.024)
R-squared	0.035	0.030	0.026
Number of observations	26541	15742	15742

Notes: The table shows the results of adjusting Equation (1) by replacing the post dummy with year indicator variables for the matched sample of IVS and SP firms. The dependent variables are success determinants of the firm one year after its establishment, which are either indicators of survival, being in the top 10 of the distribution of sales, or being in the top 10% of the distribution of employment. Significance: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.