From Policy to Practice: Analyzing the Effects of Latvia's 2015 Entry Regulation Reforms on Business Creation and Employment

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Abstract

The present study investigates the effect of decreasing entry regulations on business creation and employment. The study uses Latvian law changes of 2015, in which business registration was made less complex for the entrepreneur both in time and currency. The study assembles a synthetic control group from 19 EU nations to find a counterfactual and uses difference-in-difference analysis to obtain statistical significance. The results suggest that in the short term business creation increases significantly, but in the long term, results are insignificant. Results for employment are regarded as insignificant due to problems with the variable and the model. Overall, the reforms have insignificant effects on the two variables specified. The nature and extent of the reforms combined with the entrepreneurial culture of the society are the likely factors that influenced the outcome. Concluding, entry regulations is not the only factor on which entrepreneurial decision is based and could possibly play a lesser role than previously illustrated in the literature.

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1 Introduction

1.1 Background

Ever since the 1980s economic liberalization has been the dominant ideology of the Western world. Almost every developing country was encouraged to participate in the so-called Washington Consensus (often defined as market fundamentalism or simply neoliberalism (Thorsen, 2010)). In the beginning, it was a ten-point policy system aimed to promote fiscal responsibility and macroeconomic stability but it morphed into a broader market and trade liberalization idea set, that was to be followed by most of the world's nations. Thus, ever since Latvia gained its independence in 1990 it has slowly but surely followed the guidelines of this thought(Bohle and Greskovits, 2007).

The study at hand will be focusing on specific law changes that occurred in 2014/2015. The Latvian parliament - Saeima amended the commercial law and the law that governs commercial registry (*Komerclikums* 2023; *Par Latvijas Republikas Uzņēmumu reģistru* 2023) with reforms that by and large target the ease of starting a business (hereinafter referred to as reforms), in other words, decreased entry regulations. The main reform is the introduction of a unified application, pre-reforms all responsible governmental agencies had to be petitioned in a specific order (Commercial registry, State revenue service, etc). After the reforms, the applicant completes a single submission that is received by respective institutions at once, greatly reducing the time and effort needed to start the business. There were additional reforms to improve the electronic registry and practical changes within the institutions in how the applications were processed. But the main and most important were to reduce the length and cost of business registration. The reforms were considered and debated through late 2014 and were to take place starting January 1st, 2015.

The results of the reforms were heralded as a major success by the World Bank (World Bank, 2015). Increasing Latvia's ranking in "Starting a Business" from 36 to 27 (regional average rank being 47) and DTF (distance to frontier, same category) score from 92.12 to 94.15. According to the World Bank, the reforms cut the time to start a business from 12.5 to 5.5 days and the cost to do so reduced from 3.6 to 1.5 percent of per capita income. Almost halving the time needed to start a business and reducing the fees noticeably. Overall deeming that the reforms will help foster a better business environment with increased competition and an increased number of firms.

1.2 Research Question

The study aims to examine how entry regulations and changes of them impact business creation and employment creation. The usage of these reforms help consider the effects the specific policy has on these specified variables. The nature of business registration has not changed afterward, meaning that it is possible to study the magnitude of the changes in a longer time frame. Within the specific research question:

How did the 2015 Latvian entry regulation reforms affect business creation and employment?

Two hypotheses were formulated to answer this question:

H1 - *The reforms had no significant impact on business creation.*

H2 - *The reforms had no significant impact on employment.*

Addressing both of the variables seems of high importance, as business creation has been the focus for much of the literature previously. Additionally, the specifics of reforms mean that the creation of businesses is easier, but other business "ecosystems" and industry specifics do not change significantly. Thus, a natural question then is whether these more easily created businesses even lasted to create employment and benefit the economy as a whole, if one assumes that the reforms did increase new business creation.

The exploration within this study uses the reforms as a possible identification point to evaluate the policy and the theoretical debate more generally. A synthetic control group consisting of many European nations is assembled to build a counterfactual to the Latvian actual after the reforms. Afterward, the policy was evaluated based on firstly its ability to create new businesses (new ventures) and secondly the benefits it brought to the labor market, namely employment. Utilizing the synthetic control as the not observed counterfactual combined with the difference in difference regressions to identify possible statistical significance.

1.3 Contributions

The investigation of these specific reforms has importance as there is uncertainty about said policy's effectiveness to improve general economic performance. The main contribution of this study would be to provide a review of the policy within the Latvian context. Determining the effects could have implications for policymakers within Latvia for further decisions regarding entry regulations and general liberalization efforts.

The generalizability of results is likely to be not the best as there are identification method issues. But as mentioned this review can work as a guide for Latvian or possibly Eastern European policy makers. But if causality is credibly proven it can be a guide to policy makers for a larger audience.

Another contribution is the usage of the synthetic control method adding to the recent trend of the usage of this method to evaluate policy. The specific method to my knowledge has not previously been utilized to explore Latvian policy. And has not been utilized to study policy in this specific niche and context.

The thesis structure further is as follows. First, there is a review of already existing literature concerning how entry regulations affect economic performance (both the two variables studied here and others) and the gap that this paper was to fill. Secondly, data description and an in-depth explanation of the methodology. Thirdly, results for both variables follow. Finally culminating with the discussion of said results and the conclusion of the study.

2 Literature Review

2.1 Existing Research

The debate about whether entry regulations deter business entry and harm economic performance is longstanding within the economic discipline. The proponents argue that entry regulations while could deter entry overall do not harm economic performance, but improve factors related to, but not exactly economic terms i.e. life quality, consumer protections, etc. The ideas are somewhat representative of the public interest theory of regulation, which states that markets often exhibit market failures and the government has to account for those with regulations (Pigou, 1938). The opponents argue that the decrease in difficulty in establishing a business increases competition and the general functioning of the economy. Resulting in more entry into industries and overall better outcomes for consumers and the population at large. Ideas that are similar to the public choice theory of regulation (Tullock, 1967; Peltzman, 1976; Stigler, 1971), which argues that the only beneficiaries of regulating the free market are public officials that are self-interested in nature, and often rent-seeking.

One of the cornerstone papers of this debate is Djankov et al. (2002). The authors survey startup procedures from 85 nations around the world, regarding the costs, length, and overall difficulty of setting up a business. Their findings indicate that countries with increased entry regulations are associated with higher levels of corruption, and a larger informal economy, but no increases in the public good. Findings also indicated that if the government is less democratic and larger in size it is more likely to regulate the entry into the market more heavily. All in all their results provide evidence for the public choice theory of regulation, explaining that regulations are meant as a rent-seeking tool for the officials. But the study seemingly only points to the fact that corruption is more widespread in countries with less democratic governments as it is a cross-countrywide correlation and establishing inference would be difficult due to the lack of counterfactual.

In a study that is more closely related to the topic at hand (Klapper, Laeven, and Rajan, 2006) authors examined how entry regulations affected specifically firm entry and entrepreneurship. They used a novel database that had information about a large variety of firms in 17 European countries. The database includes financial data about listed and non-listed companies from Western and Central Europe. As the authors themselves put it, the

database allowed them the unique possibility to compare entry rates within industries and countries across countries. They find that entry regulations hamper entry and the effect is even stronger within industries that naturally should have high entry (such as restaurants and others). Additionally, value added per employee grows slower in countries with higher entry regulations, suggesting lower productivity increases due to dampened competition. Thus, limiting the consequences of the "disciplining effect" that older firms experience. Overall the authors state that entry regulations have severe adverse effects and costs that are not only related to compliance and enforcement but regulations exhibit general indirect costs to society.

While the previous studies' focus was on entry regulations' overall relationship with business creation across nations. A different study (Kaplan, Piedra, and Seira, 2011) focused specifically on the extent of the effect lowering entry regulations have on business creation and formalization of business. The authors used evidence from Mexico, which implemented significant changes to business registration streamlining the process, reducing both financial costs and time needed. The key to this study is that the reforms were implemented at differing times across a multitude of regions (counties). The authors address the problems of endogeneity mentioned in previous papers with this identification method that is obtained due to the differences in implementation in both industries and locations. Their findings suggest that the liberalization program increased formal firm creation, but the effect is weaker than claimed by authorities. The reforms as the authors state "hardly will decrease informality or spur large growth". Concluding with the thought that cumbersome entry regulations are not the most important factor that affects business creation. Other factors such as the cost of paying taxes, scarcity of marketable ideas, and small benefits of being a formal entity play a larger role, according to the authors.

A paper similar in nature (Bertrand and Kramarz, 2002) investigated how employment creation changed by using retail store zoning approvals as a proxy in France. To open a large retail store in France one had to obtain a permit from a regional zoning board. The boards had both elected and not elected officials that voted on the permit. The authors' results suggest that this mechanism that provides extra entry barriers for these large retail stores was a major factor in slow employment creation within the retail industry. While the results are retail-specific and France specific the authors state that it points to a general issue on how entry regulations defer entry and employment creation.

The main personal inspiration for this proposed study comes from Branstetter et al. (2014), whose authors conducted a similar study to this proposed in Portugal. Similarly to Latvia, Portugal undertook liberalization efforts, and while much grander in scale the main idea is similar. Portugal eased their business entry regulation and established one-stop shops for registration. The reforms were implemented gradually and that became the main identification method for the authors. They studied counties that had these one-stop shops and counties that did not have them and how this affected said dependent variables. The authors examined results over the short and medium term and their findings suggest that these reforms significantly impacted business creation. Namely, employment creation and nascent entrepreneurship increased. But the results possibly indicate that less-abled businessmen turned to entrepreneurship. Additionally, results tend to suggest that companies had fewer sales per worker, lower wages, and were less likely to survive for two years after the reform. Overall the reforms were deemed effective within the realm the authors studied, that is the changes improved employment and increased business creation. But there are doubts whether the overall economic performance increased or even was affected at all.

To sum up, the literature mostly points towards the fact that liberalizing efforts have positive consequences for business creation. That is, reducing entry regulations mostly provides positive benefits for firm creation. But there is a lack of causal credibility to a large portion of said literature on this subject. Cornerstone papers utilize cross-nationwide correlations. Furthermore, papers that can obtain causality report that there are increases in business creation but often point to some problems with the new firms. Including but not limited to lower productivity, fewer sales, and lower wages, possibly indicating that lower ability individuals turn to entrepreneurship as the financial and time costs are lowered. Thus, answering the question of how entry regulations affect economic performance only partly, on the one hand having a significant impact on business creation, but on the other hand, possibly lowering the quality of said companies. Additionally, the employment increase is a debatable one, a part of the literature signals that new firms create fewer employment spots, but it's still not concrete. Macro-level analysis of total employment changes after these types of sets of policies is to my knowledge not usually done. The analysis is primarily concentrated on the micro-level new firms created and the characteristics of these new firms.

The sum up leads into this research that investigates having the previous thought in mind. Still exploring how entry regulations affected business

creation, with the additional model that looks at employment to understand whether the reforms had a significant lasting impact on this major economic indicator.

2.2 Contribution to Literature

The literature outlined in the section above has done similar studies that relate entry regulations to various economic indicators and performance markers. This study does the same and explores the relation of reducing entry regulations and how it affects specifically business creation and job creation. Concentrating specifically on this reduction of entry regulations and ease of starting a business and its implications on the economy, the said policy.

2.3 Gap in Literature

However, the entry regulations that are outlined in the literature review mostly cover highly developed Western European nations with some developing nations in the mix as well. This study can fill in the gap of the effects of liberalizing entry into the market in Eastern European countries. Namely, countries that are ex-soviet ones. As there is no clear understanding of how these types of policies affect these types of economies.

Further, we employ the synthetic control method to understand the impact of changes in entry regulations. Thereby we introduce this methodological tool to a body of literature that has struggled to implement it previously in order to find a suitable counterfactual.

3 Data and Methodology

3.1 Data Description

To test both of the specified variables explained above we employ two Eurostat data sets that cover these variables on a pan-European level.(*Home - Eurostat* 2023).

Two datasets from Eurostat were combined to create both models. The first data set comes from "business demography main variables" utilizing only the "new ventures" variable that corresponds to new businesses created in that year in absolute values. The data set consists of all EU and EEA countries and some other additional ones (Turkey, UK, Serbia etc). The terms new ventures and business creation will be used interchangeably in this study.

The second data input comes from "employment and activity by sex and age" using the absolute value of people's employment in each of the countries. Choosing to measure employment irrespective of sex with an age interval of 15-64 years, covering most of the working population. The employment is in absolute values but scaled by a hundred thousand, meaning the overall number of employed that year within that age category is divided by a hundred thousand.

The motivation for the usage of both of the data sets is firstly the availability of this data. It was easily accessible, reliable, and on a scale that covers a large enough geographical area that it can be utilized in this study. Secondly, the purpose of the study is to understand the nationwide, economy-wide effects of said policy. Thus, choosing absolute values of employment and business creation is more fitting compared to tracking new venture and their employment creation individually. The study does not aim to understand if and how the new ventures were or were not better than their counterparts before the reforms. Thus, the data selection follows, to better understand the macro effects of the reforms.

The combined data set consists of 20 countries including Latvia. The countries eliminated from this data set that is in the original Eurostat data are Montenegro, North Macedonia, Albania, Serbia, Türkiye, and more. Most eliminations were solely based on the lack of data entry for specific observations within the period of interest. Additionally, there were four eliminations from the donor pool due to employing similar policies (possibly on a smaller scale) at similar times, the countries were the Netherlands, Nor-

way, Ireland, and Austria. And there were some eliminations like Luxemburg and Cyprus, that interfered with the creation of the synthetic control group, likely due to their low absolute values for the variables.

The period of interest is from 2009 until 2020 (including). Giving ample time for the reforms to have an effect, and enough pre-intervention time to optimally construct the control group. Overall this equates to 240 observations for both of the studied variables. As each country reports one observation per year, the data is yearly in other words. This sums up to twelve observations per country.

Table 1: Business creation summary statistics

Group	Observations	Mean	standard deviation
Latvia (all years)	12	15108.33	2136.69
Whole sample (all years)	240	102869	109749
Latvia (pre-intervention)	6	14932.33	1358.28
Whole sample (pre-intervention)	120	99138.25	104346

The new ventures mean over all periods and pre-intervention (before 2015) can be seen period can be seen in Table 1. The table conveys that Latvia had higher business creation over all years compared to pre-intervention. Additionally, shows the noticeable differences between the mean of all countries and Latvia, as large countries bring the average high.

Table 2: Employment summary statistics

Group	Observations	Mean	standard deviation
Latvia (all years)	12	4.214	0.298739
Whole sample (all years)	240	133.2	238.9053
Latvia (pre-intervention)	6	14932.33	1358.277
Whole sample (pre-intervention)	120	128.371	234.4644

Similarly, employment summary statistics can be seen in Table 2. The same descriptors were used and largely the same characteristics as business creation are exhibited by this variables data set.

The summary statistics above show clearly the nature of the data at hand. Both new ventures and employment are absolute values with a wide

distribution of values corresponding to the size differences of nations. The magnitude differences offer no issue as the method assigns weights only to nations that are used to create a counterfactual to Latvia.

3.2 Methodology

The fundamental problem of this exploration is the lack of suitable counterfactuals to use a simple identification method since the policy takes place instantly throughout the whole country of Latvia at its onset. And finding the perfect different country comparison fit for a country is difficult. The mediation of this problem is done through a synthetic control method that assigns weights to the countries within the donor pool to assemble a control group that can be used to understand the effect of the intervention on both of the variables of interest (Abadie, Diamond, and Hainmueller (2010) and Abadie, Diamond, and Hainmueller (2015))

The section will be split into two parts to represent the two steps of the analysis. Firstly, the making of the synthetic control group for both variables. Secondly, the created synthetic control group is used within a difference-in-difference model to assess the results of the intervention for the dependent variables of interest.

3.3 Synthetic control

The creation of the synthetic control group rests upon covariates from which an imagined control group is made. Taking countries in the donor pool and assigning weights to them. After experimenting with covariates, the best-fitting models were assembled, which ended up having the dependent variable in previous years as the covariates.

The method starts off with an optimization problem to get the weights assigned for the donor pool countries. The idea is to minimize the difference between the dependent variable of business creation for Latvia and the made-up synthetic control group. It is done through an optimization problem in which the statistical program minimizes the root mean squared prediction error. The models for both variables are fundamentally the same, with the exception of the dependent variable. In one of the models, the dependent variable is business creation with covariates as values of business creation in the years 2009-2014. The second model type has employment as the

dependent variable and has values of employment from the years 2009-2014 as covariates.

$$\min_{\mathbf{w}} \left[\sum_{t=2009}^{2014} \left(Y_{1t} - \sum_{j=1}^{J} w_j Y_{jt} \right)^2 \right] \tag{1}$$

The Y_{1t} stands for business creation employment in Latvia in year T (for which the amplitude is 2009-2014). Afterward, W_j stands for the assigned weight for country j (one of the 22 countries in the donor pool), and Y_{jt} correspondingly variables business creation or employment value for country j in time t. The differences are squared to remove negative and amplify large differences. The function minimizes the differences with respect to w and obtains weights for the countries to be used in further analysis from the donor pool. As said previously the only covariates the model is based upon are the values of Y of each year of the pre-intervention period, which is reflected within the equation as having only one factor on which the differences to Latvia are minimized.

After the optimization is done and weights (for the results of the weights obtained refer to the results section) acquired the synthetic values of Y for each year of the pre-intervention period are made. Meaning, the control group is finished by the production of the dependent variables' values.

$$\bar{Y_t} = \sum_{j=2}^{n} (w_j * Y_{jt}) \tag{2}$$

The $\bar{Y_t}$ represents the synthetic control groups value of Y (business creation/ employment) at time t (years now can span from 2009-2020). The summation starts off with country j=2 as j=1 in this notation is Latvia and cannot be included. For countries that did not obtain weight in the optimization problem their w_j value is equal to zero. The values of the synthetic control group $\bar{Y}$ for each are assembled using the weights and values of the countries in the donor pool.

3.4 Difference in difference

After the synthetic control group is constructed and the assumptions that are outlined later on are fulfilled, the difference in difference analysis could be done to assess the significance of variation between the post-treatment period

values of the dependent variables for Latvia and post-treatment period values of the assembled synthetic control group.

$$Y_{it} = \beta_0 + \beta_1 \cdot TreatmentGroup_i + \beta_2 \cdot Post_t + \gamma(TreatmentGroup_i \cdot Post_t) \quad (3)$$

The equation above assesses the intervention's effect on said Y (business creation and employment). It assumes that the effect of the intervention does not change and it averages it out within the γ term. The Y_{1t} stands for Latvia resulting in the variable of interest. The $Post_t$ is a dummy variable indicating that time is post-intervention. TreatmentGroup variable is a dummy indicating being a part of the treatment group (equal to 1) and the synthetic control group (equal to 0). ϵ_{it} is the error term. It is a typical DiD regression using the interaction term as the treatment effect on Y. The main results are obtained using this regression, but an additional one (Equation 4) is used to test the validity of the parallel trends assumption that is crucial in difference in difference.

$$Y_{it} = \beta_0 + \beta_1 \cdot TreatmentGroup_i + \beta_2 \cdot Post_t + \sum_{k=0}^{q} \lambda \cdot T_{i,t+k} + \epsilon_{it} \quad (4)$$

The terms until Post stay the same and are interpreted the same way. Afterward, the summation sign starts with k=0 with k indicating the lag year, starting with lag k and until the end of lags = q in this instance, the maximum lag is 5 years as there are 5 pre-treatment years. The λ term signifies whether there are pre-treatment differences between the control and treated groups. This term ideally should be zero and insignificant, pointing to no differences at the start of the intervention. The T term stands for the aforementioned interaction term. The equation will be used to understand possible differences between the groups at the start of the treatment that could affect parallel trends assumption.

3.5 Assumptions

To utilize the Difference in Difference method the main assumption that has to be satisfied is the parallel trends assumption. As the whole idea of the method stands upon the assumption that the treated unit would have followed the same trend as the control group in the absence of treatment.

Thus, applying the trend of the control group to obtain the counterfactual. Which lastly can be evaluated. The parallel trends assumption is the most crucial in order for any inference to be determined as without the assumption it is impossible to create a counterfactual that can be compared to real post-intervention results. To ensure this holds a synthetic control method was used, as outlined above. The assumption is not testable and is in some way prone to bias from the researcher. Therefore, the pre-intervention and post-intervention graphs for both variables of interest compared with the synthetic control group can be found in the results section. The graphs show that the assumption holds strongly for these two variables within the time frame studied. But to further test this difference in difference using lags of the interaction term are used (refer to the results for outcomes).

The synthetic control method itself assumes a number of factors to be even applicable, which are discussed next. Firstly, the synthetic control method involves the assumption that the synthetic control group has to exist to be used, also called "convex hull" or "support condition"(Abadie, 2021). In other words, if the treated unit is outside the convex hull it means that there is no combination of control units that can represent the treated unit. The assumption is not testable but can be simply deduced from the output of the model. If the weights for the control units are either too distributed or too concentrated it could signal that the assumption does not hold. Additionally, an inspection of the graph of pre-treatment outcomes can be a valuable tool to determine the veracity of this assumption. The synthetic control group weights for both models are given after this paragraph (Table 3). Those indicate that the spread of the weights is decent and logical. The graphs overall indicate that there are suitable synthetic control groups.

Table 3: Weights

Country	Business creation	Employment
Estonia	0.625	0.502
Lithuania	0.059	0.01
Romania	0.015	0.487
Denmark	0.298	-
Slovakia	0.003	-

Another assumption the synthetic control method makes is the lack of shocks to the control group units in the post-intervention period. The as-

sumption is semi-testable using placebo tests, that are utilized later in the research and reported there. But another way is to examine the data and graph it to see how both variables of interest behave over the years post-treatment year 2015. Graphs can be seen in the results section (refer to Figure 1 and Figure 2 for respective variables) Inspection leads to the conclusion that there are no shocks to either business creation or employment in these countries that are used within the control group.

Important to evaluate the impact of these said business entry regulation reforms it is important to establish that there are no anticipation effects. It is an important assumption if those are not included in the model. The only way to test this is to graph the data, thus once again refer to the graph of pre-post treatment graph of business creation and employment. It can be deduced that there are no anticipation effects for business creation and certainly none for employment.

SUTVA - stable unit value assumption, is also fundamental in this research setting as it is fundamental in all in which causal inference is used. Two main elements are 1. no interference and 2. consistency of treatment. Regarding no interference, the treatment status of one unit cannot affect the outcomes of a different unit. In this respect, it is unlikely to be broken as the reforms are unlikely to incentivize business creation or higher levels of employment in these other European countries from which the control group is made. Secondly, the consistency of treatment refers to the fact that the treatment is standard across all treatment units. This is not broken as the aspects of law changes affect all of Latvia and thus all of the treated units are the same.

3.6 Limitations

Lack of large amounts of data for these specific variables and nations could be the most significant limitation in this usage of synthetic control method. The data employed has 12 years and yearly observations, making it 12 observations per country with 19 donor countries in the data set. While there are a lot of countries, it could be argued that there are too few data points pre-intervention to build the best possible fitting synthetic control group. Both variables being yearly contribute to this issue.

Another limitation could possibly be the measure of "new ventures" as measured by Eurostat not being the most accurate measure of business creation. It is not clear whether those are firms that are created or firms that

de facto start operating in that period. Overall there are problems with measuring this said variable as it is not clear what counts as a business and the definitions vary. While they are standardized for the data, the context of each country's economy could make the comparison of one nation's "new venture" not the same as a different country's one. It could possibly provide inaccurate results with regard to real business creation.

Furthermore, a possible shortcoming of evaluating this policy using employment is that employment as a variable is lagging in its nature. If the length of the data stretches 5 years after the intervention, it could be the case that the variable lag is higher than that. It could mean that the model developed to analyze this variable is fine, but the available data disallows it from reporting credible results about the effect of the intervention.

Lastly, there is a possibility that some nations implemented similar policies within the studied period. This could cause an issue but also could play a minor role depending on the severity of the law change and the period in which the change took place. If it was in the pre-intervention then the weight-based synthetic control group would incorporate it. It is a problem if these policies type of policies were implemented.

4 Results

The results section is split between the variables of interest. Within each variable results dissection results for both regressions will be described combined with synthetic control results. An additional exploration of the short-term effects of the intervention is done with the variable of business creation.

4.1 Business creation results

To start off the synthetic control group was assembled as laid out in the methodology part. The resulting control group consisted of 5 nations, the weights of whom are listed in Table 4 below.

Table 4: Weights

Country	weight
Denmark	0.298
Estonia	0.625
Lithuania	0.059
Romania	0.015
Slovakia	0.003

The allocated weight for Estonia seems high but is logical due to the close proximity and similar socioeconomic state of Latvia. Other weights are distributed to also similar countries in the regions, which is to be somewhat expected as the region usually follows similar trends for all involved. The graphed version for the control group and treated group in pre and post-treatment for this variable is graphed in Figure 1.

It can be seen that both units follow similar trends until a noticeable divergence in the year of intervention. The graph indicates a large increase in business creation right in the implementation of the reforms for the treated unit. But it seems judging from the graph that the increase is noticeably short-term, dropping substantially a couple of years after the determined intervention. On the other hand, the synthetic control group reports a large increase in new ventures around the same time the treated units drops. The pre-treatment root mean squared prediction error (further as RMSPE) is reported as 324.4553. As the observations in the business creation variable

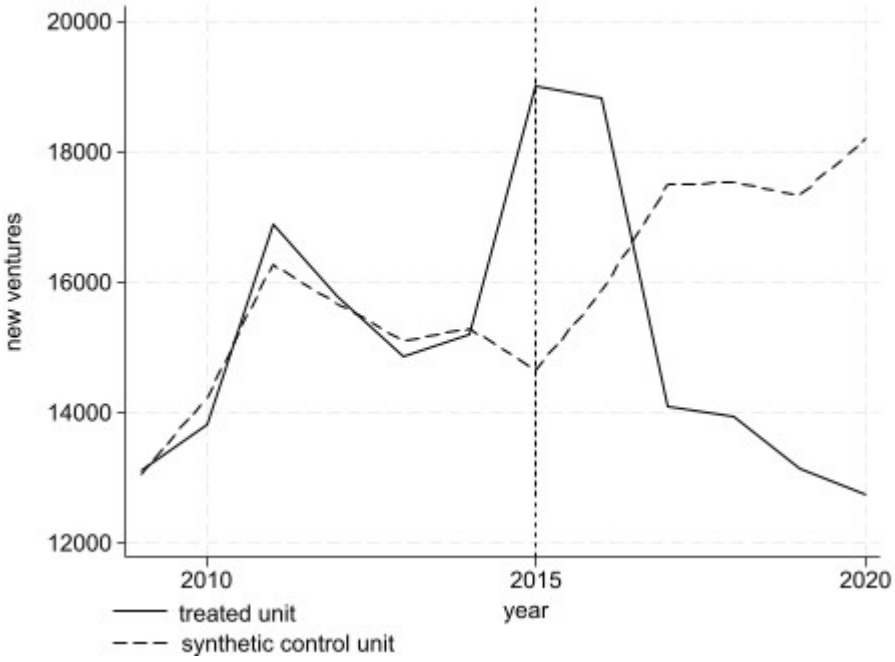

Figure 1: Business creation pre-post treatment

are in absolute values the RMSPE is deemed as optimal and satisfactory for further analysis.

To further test the assumption of parallel trends a DiD regression is used using leads of the interaction term (Table 5). The leads are to be interpreted as if the year of intervention was the year prior (lead 1) or 2 years prior (lead 2) etc (refer to Equation 4).

Table 5: Lead analysis for business creation

Year	coefficient	p-value
Lead 1	-105.7676	0.584
Lead 2	-255.6805	0.301
Lead 3	-165.1447	0.619
Lead 4	274.6540	0.394
Lead 5	-62.5132	0.781

It seems that none of the leads are significant, which is favorable as it

implies that there were no differences between the treatment group and the control group at the start of treatment as far back as 5 years.

Table 6: Businesses created yearly synthetic control group and treated unit

Year	Control group	Latvia (treated unit)
2009	13037	13093
2010	14218	13803
2011	16263	16880
2012	15671	15768
2013	15105	14856
2014	15279	15194
2015	14656	19003
2016	15864	18808
2017	17489	14102
2018	17534	13924
2019	17332	13143
2020	18193	12726

Table 6 lays out all of the values of businesses created in the treated country of Latvia and the hypothetical synthetic control group. The same data is graphed in Figure 1. The bizarre part of this data table is the absolute value of the businesses created in Latvia in 2017 which is more than a 4000 decrease from the year prior.

The sudden and inexplainable drop in business creation in 2017 prompted us to first examine the effects of the intervention on business creation in a smaller time frame. Meaning that observations in 2017 and further are dropped and then the DiD regression is done to determine the significance of the intervention.

Continuing on with testing the significance of the intervention using the difference in difference regressions. Refer to Table 7.

The variable treated is the interaction term for the regression. That variable determines the overall effect of the intervention on business creation. The other variables are first, the dummy variable for the treatment group which indicates belonging or not to the treatment group, and the constant.

The results for the variable with the shortened period of investigation output a positive and significant coefficient for the variable treated. This means that all other things equal the intervention caused 2320 new businesses

Table 7: DiD regression output business creation variable (year < 2017)

Variables	Business creation
treatment group	624.1
	(676.3)
treated	2,320**
	(676.3)
Constant	12,753***
	(471.2)
Observations	16
R-squared	0.808

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

to be created yearly. The results are only for two years after the intervention. While this seems to signal that the intervention was successful at least in the short run the results should be tested within the time frame set forth previously.

Regression testing of the full-time frame is done next and outputs are represented in Table 8.

The variable of most concern is the treated variable other variables are similar to the shortened result output of the short-term results with the additional inclusion of yearly dummies (Table 8). It seems to show that the intervention had a negative effect. Specifically, the coefficient states that the intervention lowered business creation yearly by 1564 all other things equal. But the coefficient is not significant for any of the usually used marks of significance. It seems that the significant decrease in business creation rates following 2017, drowns out the effect of the intervention making the coefficient negative and not significant.

Without the noticeable drop in business creation in 2017, the results (Table 7) are significantly different than the results if all years are included. The overall effect of the policy investigated seems to be contradictory or insignificant. There are some promising results indicating that the reforms increased business creation in the short term, but this does not seem to be the case in a longer time frame. The possible reasons for this are explored more broadly within the discussion section, but the core idea centers around the lacking scale of the reforms themselves.

Table 8: DiD regression output business creation variable

Variables	Business creation
treatment group	3.3539
	(145.5)
2010	945.2***
	(230.9)
2011	3,506***
	(337.5)
2012	2,654***
	(58.48)
2013	1,915***
	(141.4)
2014	2,171***
	(56.08)
2015	4,546
	(3,344)
2016	5,053*
	(2,608)
2017	3,512**
	(1,309)
2018	3,446**
	(1,405)
2019	2,954
	(1,669)
2020	3,176
	(2,301)
Treated	-1,564
	(1,689)
Constant	13,063***
	(78.14)
Observations	24
R-squared	0.466

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.2 Employment results

Similar structure as the other discussed model is used in the discussion of this variable. Starting with the formation of the synthetic control group, then the difference in difference equations.

The corresponding synthetic control group for this variable was assembled by using as covariates all of the pre-intervention years of employment data (Table 9).

Table 9: Weights

Country	weight
Estonia	0.502
Lithuania	0.01
Romania	0.487

The weight distribution among the countries is very similar (Table 9), but for this model, fewer countries are used to obtain the control group. The corresponding RMSPE was 0.0230127, which could be considered minuscule, but it should be noted that the variable is scaled in 100 thousand. Keeping that in mind, the RMSPE is still satisfactory for further analysis within the DiD model.

Table 10: Lead

Year	coefficient	p-value
Lead 1	0.045493	0.002
Lead 2	0.000741	0.983
Lead 3	-0.000558	0.982
Lead 4	0.0102277	0.657
Lead 5	0.0259025	0.148

The synthetic control group and the treatment group were graphed to check for any discrepancies otherwise missed. The corresponding figure (Figure 2) indicates that the parallel trend assumption is satisfactory, but there are some questions about whether there are no significant differences between the groups before the intervention. The leads regression (Table 10) also echo the same idea with lead 1 as statistically significant. Overall sowing some

doubts about the validity of using the control group in a DiD regression, at least claiming causality.

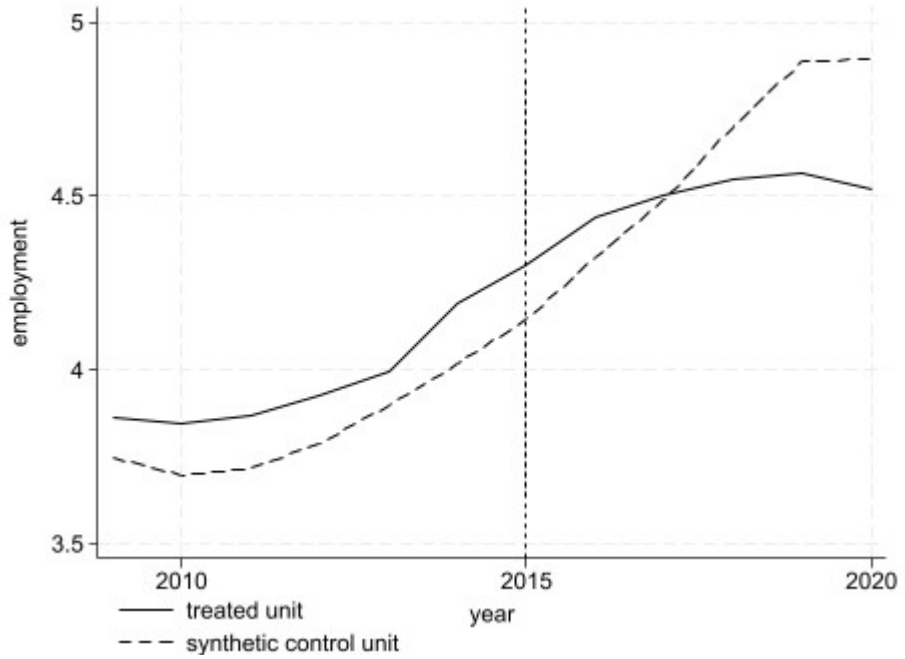

Figure 2: Employment pre-post treatment

Judging solely from the graph, it seems that there is no immediate effect from the reforms on the variable employment, which was to be expected as it could be considered a lagging variable. Further on it seems that the policy negatively affected the employment variable, with it declining while synthetic control continued to increase. Basing the idea solely on the graph it seems that the reforms had some effect on the variable at least in the medium term. But further testing should be done using DiD to obtain significance.

The variables in the result table (Table 11) are the same as for the business creation variable. The main variable of interest is "treated". The variable reports a negative coefficient of -0.232 and it is significant in all of the significance levels. Both the coefficient and significance are difficult to explain. It seems that the intervention did not create jobs but indeed decreased employment by 23200 workers. The absolute value of the decrease is noticeable and significant in size in relation to the total working population. The reasons for these results could be multiple either the policy decreased reliable job

Table 11: DiD regression output employment variable

Variables	Business creation
treatment group	0.137***
	(0.0109)
2010	-0.0358**
	(0.0126)
2011	-0.0140
	(0.0142)
2012	0.0501***
	(0.0119)
2013	0.141***
	(0.0234)
2014	0.298***
	(0.0239)
2015	0.532***
	(0.145)
2016	0.692***
	(0.124)
2017	0.804***
	(0.0747)
2018	0.934***
	(0.0573)
2019	1.037***
	(0.132)
2020	1.017***
	(0.162)
treated	-0.232**
	(0.0921)
Constant	3.738***
	(0.0130)
Observations	24
R-squared	0.961

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

creation or shrinking employment and overall population or other factors. The bottom line is that interpretation of these results should be done with caution for these and more reasons that are explained in the discussion part.

The seeming unreliability of the results prompted me to develop a whole separate investigation using 2 smaller data sets, the idea from Abadie and Vives-i-Bastida (2022). One of the data sets contains only countries within geographical and contextual proximity to Latvia (Appendix B). The other data set is randomized to decrease the number of countries in the donor pool to 9 countries in order to avoid any personal bias and possibly obtain different results from the intervention (Appendix C). Both of these are elaborated upon in Appendix B and C. Additionally, one other model serving as a placebo test is done in Appendix D, switching the treatment year from 2015 to 2014 to test the robustness of the model.

4.3 Placebo studies

To test whether the outcome of the proposed model is by chance or rather a clear consequence of said policy shift robustness tests have to be employed. Two types will be utilized firstly placebo studies by shifting the time of treatment to a different period or changing the treated unit. Large placebo results could indicate issues with the model and question the validity of the assumption that the cause of the variation between control and treatment is due to the intervention alone. Secondly, a boilerplate robustness test that drops countries that are part of the synthetic group, that is to say, have a coefficient weight >0. The whole section borrows heavily from Abadie, Diamond, and Hainmueller (2015) and Abadie, Diamond, and Hainmueller (2010)

Starting with placebo studies, the first employed will shift the time of treatment to the middle of the pre-treatment period (the test is often called the in-time placebo test) (Chen and Yan, 2023). The idea is to move the treatment from T_0 to a period that is before the actual treatment $\bar{T} < T_0$. $\bar{T}$ can be chosen by the researcher and in this instance will be taken to 2012. If the real treatment was in 2015 the fake treatment will now take place in 2012. Keeping the treated unit, Latvia, the same in this test. The resulting graphs for both variables of interest are reported in Appendix A. There is an additional placebo study done by shifting the treatment to 2014, laid out in Appendix D.

The results of this specific test for both of the variables seem inconclusive.

The trends are not on par to signal that the treatment was the only cause for the deviation of the trends between the control and treated groups. Both variables with the placebo treatment year of 2012 are graphed in Figure 4 and Figure 5. But there is a problem of too few time periods to use the treatment date of 2012. There are only 3 observations for each country making the synthetic control group highly unreliable. To illustrate this, weights, for instance, were assigned to every country in the donor pool (Table 13, Appendix A), certainly overfitting the model. It can be said with some certainty that this specific test offers no real robustness test for this specific model as there are too few time periods to test if the intervention at that specific time point had the effect.

The second placebo test will be an in-space test, that changes, not the intervention time, but the intervention subject. That is to say, the treatment country is changed from Latvia to each of the countries in the data set (a total of 20). Keeping the intervention period the same as the original model - 2015. This type of placebo test offers the opportunity to evaluate the effects of the treatment in Latvia on countries that did not receive that treatment. The resulting RMSPE (Root Mean Square Prediction Error) is graphed in Figure 3, within one graph all of the countries are represented with a post/pre RMSPE coefficient for both models. Post over pre as in post-intervention RMSPE and pre-intervention RMSPE. This coefficient represents the fit between the treated unit and the synthetic control group with respect to the period. If the intervention had a strong effect the post/pre-RMSPE should be the highest for Latvia as the deviation would be the highest. The RMSPE is to be interpreted with the country given on the axis as being the country of intervention, that is to say if the named country was the treated unit.

$$RMSPE = (\frac{1}{T_0} * \sum_{t=1}^{T_0} (Y_t - \bar{Y}_t)^2)^{\frac{1}{2}} \tag{5}$$

$$Post/Pre\ RMSPE = \frac{Post\ RMSPE}{Pre\ RMSPE} \tag{6}$$

The resulting RMSPE coefficients (Figure 3) imply that the model explaining business creation is a better fit than explaining employment. It could be argued that the business creation model is somewhat robust as its RMSPE post/pre-treatment coefficient is higher than most of the other countries within the donor pool. With some exceptions like Hungary, for which an explanation is absent. The country does not, to my knowledge, implement

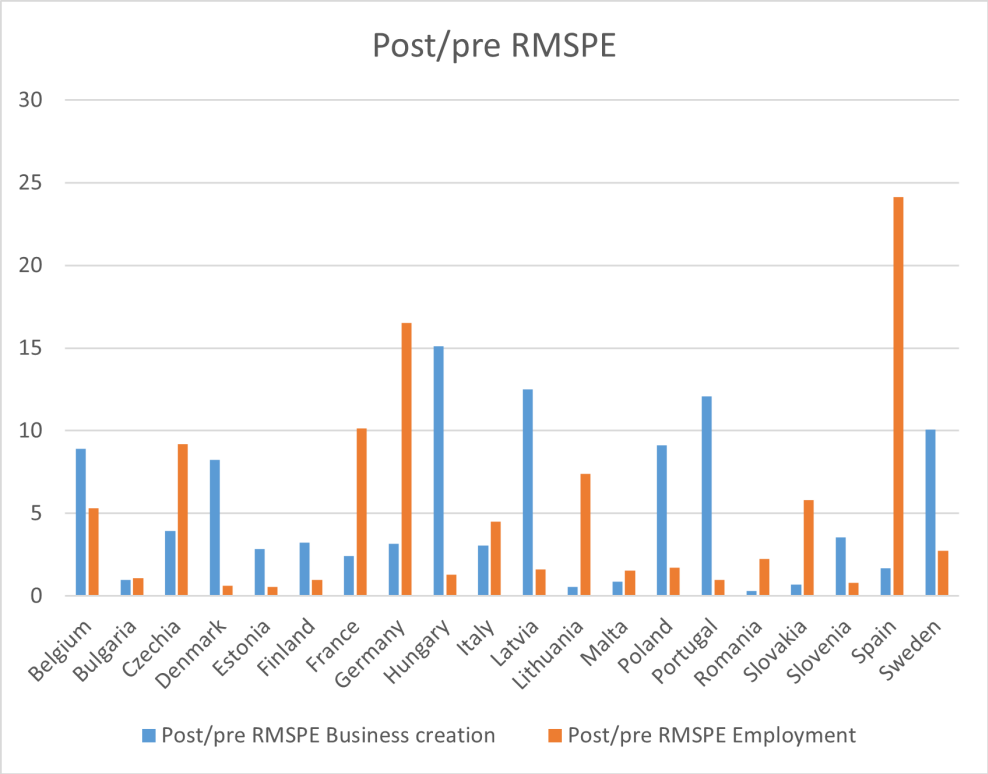

Figure 3: Both variables post/pre RMSPE coefficient

a similar policy during the time or any external shocks that could lead to are unknown. While Hungary is an outlier, the Latvian post/pre-RMSPE coefficient is high, thus providing some credibility to the model.

There are some issues when it comes to employment analysis. The treated country is not nearly at the top for the value of this coefficient. Issuing serious doubts about the validity of this model to predict employment. It is likely the effect of the intervention on this variable is hard to predict within this model as it is lagging and there are only some available time periods after the treatment. This placebo test offers some credibility to the model that examines business creation but discredits almost entirely the model that investigates employment as it seems to indicate that the variation between the treated unit and the synthetic control group is small. The full values of the coefficients for all nations can be found in Table 14 (Appendix A).

Overall the section gives little to solidify the notion that the models em-

ployed are suitable to test the said database and make consequential claims about the intervention's effect on said variables. While the possible causes will be explored more in the discussion part, mainly there are overall doubts about the reform's effectiveness to impact any of the variables and the crafted model's ability to test this.

4.4 Robustness tests

To test the models further a simple robustness test was done. The name of the test is leave-one-out, the simple idea is to drop one country with each iteration of the new models, that had a positive weight within the original models. This test helps to understand whether the results of the original models are driven by specific control countries. The table below evaluates the trade-off between sparsity and goodness of fit. Usually, not necessarily, in this case, fewer control nations are better as researchers report and explain each of the weighted countries. Thus, this test can be done if this reduction in control group size is worth the goodness of fit decreases.

The business creation variables' original model contains 5 donor countries, meaning there will be 5-1(the original model) iterations of the new models. All of them can be viewed in Table 12. And employment, the original model only used 3 donor countries to build its synthetic control group. Therefore, 3-1 iterations of the model were assembled and presented also in the table below (Table 12).

Table 12: Robustness test

Variable	Latvia	5	4	3	2	1
Business creation	15108	15677	15985	15936	15936	9340
Employment	4.188	-	-	4.192	2.477	2.008

The model loses quite a lot of goodness of fit for the variable employment but is rather robust when it comes to business creation.

5 Discussion and Conclusion

Obtaining general conclusions about the effectiveness of the intended policy to reach its explicit goal of increased business creation and thus competition and implicit goal of increased employment is difficult. The results are either contradictory to previous studies and the graphs that complement them or overall not significant.

The results for the business creation variable are contradictory in nature. The overall investigation containing all of the years intended in the study output a negative coefficient. Meaning that the intervention did not increase business creation but the data suggests that it had decreased it. But the coefficient is insignificant and should not be regarded for its sign. The negative sign of the coefficient stems from a large decrease in business creation in 2017, a phenomenon for which an explanation is absent. Seemingly, nothing changed to spark this significant drop. After the exclusion of years post-2017, the treatment showed a significant and positive coefficient for the intervention. Of course, this significant coefficient should be used with caution as there is no credible reason for the lowered rates of business creation in 2017. If the 2017 decrease was exogenous, then it would be possible to judge the policy as a success. But it is also possible that the decrease was due to the treatment itself. As can be seen in the corresponding graphs the increase after the reforms were done for 2 years is noticeable, it is possible that a state of entrepreneurial exhaustion set in. In which all of the people that wanted to become entrepreneurs quickly did and afterward it dropped heavily. This would explain the sudden drop in business creation, but it is puzzling why the level of business creation did not return to previous normal levels after several years.

Overall, hypothesis (1) which is laid out at the start of the paper cannot be fully rejected. It seems that the intervention had a significant effect on the variable business creation in a short window after the intervention. But overall it was not significant and likely had no real significant effect on the number of businesses created yearly. In other words, the liberalization of the entry regulations did not significantly increase new venture creation.

The reasons for these results could be multiple. First, it could be the case that the change in entry regulations simply was not significant enough. While the change in the World Bank-defined metrics seems expansive. It could be the case that the decrease in the barriers that govern entrepreneurship was not enough to push a significantly larger portion of people to become busi-

ness owners. The post-soviet economic structure and lack of entrepreneurial culture could lead to a lack of motivation to become self-employed. Meaning that these relatively small changes in the administrative law could not incentivize people traditionally employed to become entrepreneurs, since people that are highly motivated to become business owners already have or will irrespective of these changes. An additional problem is the lack of social and political participation in Latvian society as a whole. The lack of care and overall apathy for the government's work and its policies could play a role in understanding the insignificant effects of this policy. As it is possible that potential business owners simply did know that these reforms had taken place as it was incredibly difficult to understand the multitude of different laws that govern this issue in Latvian legislation with zero media coverage of this issue. The best source material for these reforms was surprisingly the World Bank itself, while it certainly is no evidence of a lack of information it somewhat points to the level of information accessibility.

Moving on to the second variable of interest - employment. There is even more complexity in answering whether the reforms affected employment. From the results, it can be deduced that employment decreased and highly significantly so. A result that is somewhat difficult to understand. The whole causality claim is based upon the fact that the parallel trends assumption holds, but there are significant doubts that this is the case. While it seems from the graph that it does, it showed some worrying signs in the leads DiD regression. If one assumes that the assumptions hold and results can be interpreted as they were shown in the regression outputs. Then the reforms significantly decreased employment. Thus the second hypothesis can be rejected as it stated that the reforms had no effect on employment.

The issues with analysis of the employment are multitude. As already mentioned there are questions about whether the assumptions are being met. Additionally, placebo tests seem to point to the fact that there is little relative variation during the period with its post/pre-RMSPE measure being among the lowest within the donor group. Furthermore, the variable employment is widely regarded as being a lagging one, since there are only 5 post-treatment periods it is possible that the effects from the reforms are not fully grasped. Similarly, as with the first variable, it is possible that these changes in legislation were simply too small to bring a noticeable increase to this variable.

The reasons for the negative coefficient and significance could be due to a couple of factors. Firstly, the Latvian population is decreasing and while

it has been so since the early 2000s, the rates have varied. If some years after treatment saw a higher rate of decrease this would skew results to show negative effects from the treatment itself. Secondly, the Latvian population is also aging, and as this variable captured the working population 15-64 years old, it is possible that some people fell out of this category and seemingly left the workforce while possibly did not do so. Overall there is a lot of doubt that these reforms significantly affected employment, but since the coefficient was significant the hypothesis stated at the start is nominally rejected. The interpretation of this rejection should be done with the caution stressed previously.

Overall it seems that the reforms had a small if any effect on the variables that were set out to test for. The numerous reasons are listed above, but it is believed that the main reason lies within the reforms themselves. Namely, the reforms were simply not expansive or grand enough to induce any significant or meaningful change in these variables.

Some additional remarks about the results. Furthering the doubts about the effectiveness and significance of the reforms it could be pointed out, that not only the business creation does not increase significantly. But also the size of the unofficial economy did not decrease as well, with 21.3% of GDP in 2015 and 25.5% in 2020 (Putniņš and Sauka, 2015; *Shadow Economy Index for the Baltic Countries — Stockholm School of Economics in Riga* 2023). Showing that not only it did not increase business creation, but it did not reduce the unofficial economy. The underlying assumption of which is that easier business creation rules lead to fewer entrepreneurs choosing the unofficial route instead of the official. While this is just illustrative, it points towards the same idea that entrepreneurial culture and inherent motivation could play a larger role in business creation than entry regulations and ease of starting a business. Furthermore, the studied factor is only the change in entry law, the overall business ecosystem as a whole does not change significantly. Good for understanding the effectiveness of the reforms, but also gives more understanding of its results. The sub-optimal overall business environment further pushes people away from entrepreneurship, a problem that simply changing the entry regulations cannot solve.

Further study to understand these types of policies is definitely needed. The examinations of the future could also feature Eastern European or post soviet nations to understand how these entrepreneurial cultures and lack of capitalistic traditions play a role when markets are further liberalized. Additionally, there could be an examination of this methodologies usage with

lagging variables and how credible the results the method obtains. Overall this study is a small stepping stone to better understanding the relationship between entry regulations and business creation and employment, specifically in less developed semi- "western" countries.

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6 Appendix

6.1 A

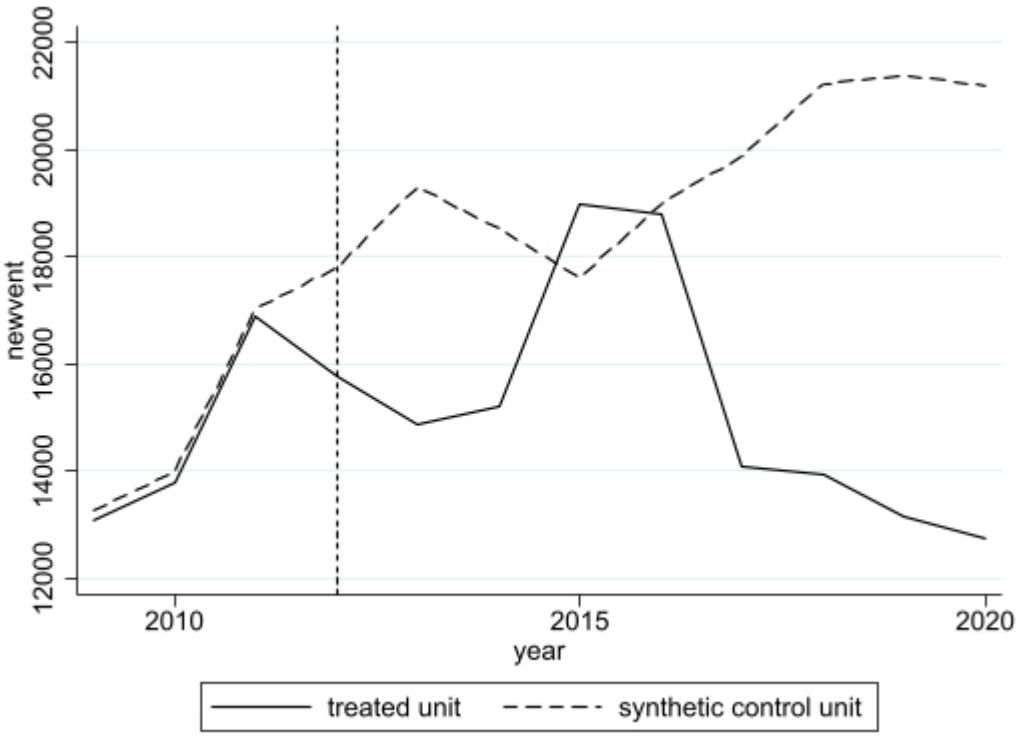

Figure 4: 2012 placebo business creation

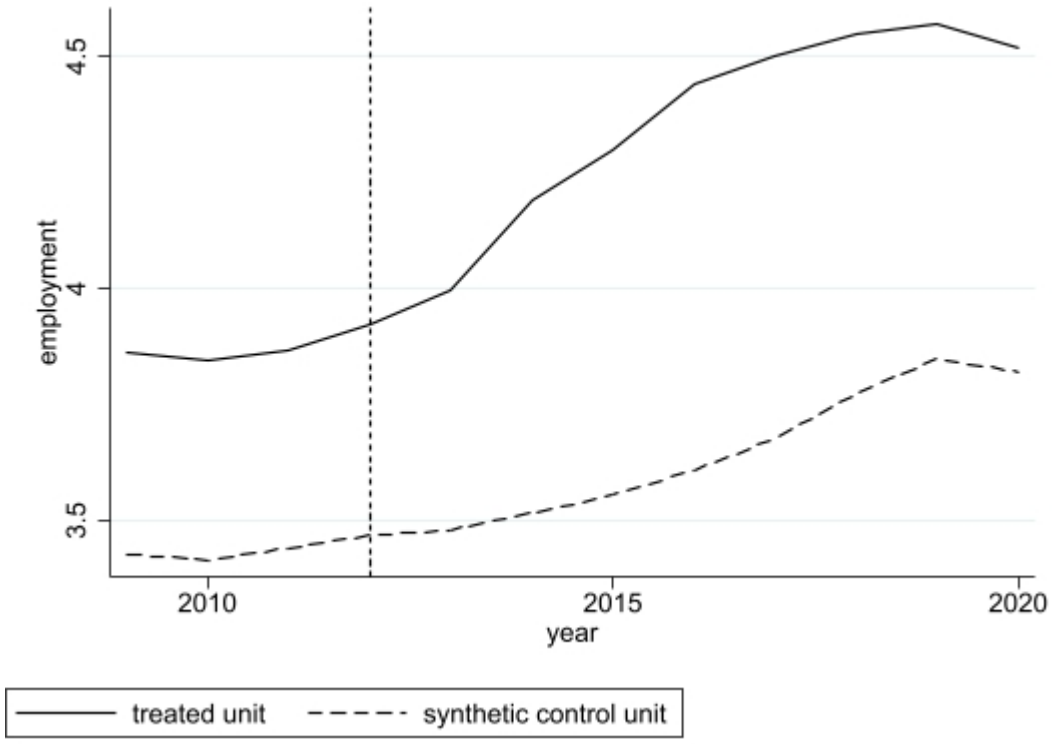

Figure 5: 2012 placebo employment

Table 13: Weights placebo treatment year 2012

Country	Business creation	Employment
Belgium	0.008	0.006
Bulgaria	0.003	0.004
Czechia	0.004	0.001
Denmark	0.012	-
Estonia	0.424	0.233
Finland	0.013	0.002
France	0.001	0.002
Germany	0.002	0.001
Hungary	0.005	0.001
Italy	0.001	0.001
Lithuania	0.101	0.001
Malta	0.332	0.024
Poland	0.002	0.002
Portugal	0.002	-
Romania	0.062	0.018
Slovakia	0.004	0.175
Slovenia	0.016	0.004
Spain	0.002	0.001
Sweden	0.006	0.525

Table 14: Full post/pre RMSPE both variables

Country	Post/ pre RMSPE business creation	Post/pre Employment
Belgium	8.91394633	5.319474739
Bulgaria	0.962096048	1.088445465
Czechia	3.941240742	9.183459753
Denmark	8.236863294	0.607184252
Estonia	2.82794944	0.544910497
Finland	3.233413854	0.987879528
France	2.428970635	10.12914911
Germany	3.149001454	16.53844004
Hungary	15.10597057	1.290106248
Italy	3.048858659	4.486357949
Latvia	12.51789147	1.61727638
Lithuania	0.562138775	7.396754758
Malta	0.873899281	1.548592059
Poland	9.107665374	1.722039194
Portugal	12.08667087	0.964374902
Romania	0.313541248	2.258797587
Slovakia	0.70807576	5.793861073
Slovenia	3.559105451	0.80020017
Spain	1.679264208	24.14624365
Sweden	10.06716874	2.743872799

6.2 B

As mentioned in the results section the results prompted me to conduct a separate investigation while dropping many observations and countries from the data set, which will be explored in the appendix. It was hypothesized that a smaller data set could offer better results.

Starting with a smaller data set. The original data set was modified to include only countries that are similar to Latvia both socioeconomically and or geographically close. The following countries were left in the data set: Bulgaria, Czechia, Denmark, Estonia, Finland, Lithuania, Poland, Romania, Slovakia, and Sweden (Total of 10+1).

Table 15: Weights

Country	Business creation	Employment
Estonia	0.625	0.502
Lithuania	0.059	0.01
Romania	0.015	0.487
Denmark	0.298	-
Slovakia	0.003	-

The new synthetic control group weights for both variables can be seen in Table 15. As can be gathered, those are the exact same weights that were obtained within the original investigation. Reporting the corresponding graphs of the synth control group and the treated unit is redundant as it is exactly the same as previously reported model graphs. Additionally, it is redundant to report the regression results as those naturally were exactly the same as well.

One placebo study was done to possibly determine if this was a superior model. The results are visible in Figure 6. It seems that the actual post/pre RMSPE value has not changed, but rather the countries with a high value of this coefficient have been eliminated. Suggesting that there are no differences between the results due to the smaller control group.

The results of the following DiD regressions are unnecessary to report as those provided exactly the same results. Thus, changing the control group to smaller close in the proximity data set, does not change the outcome.

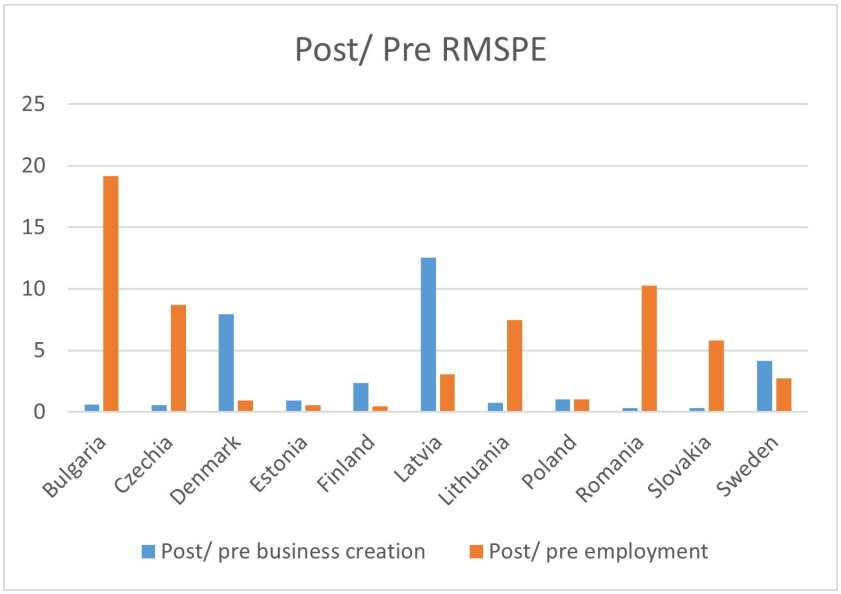

Figure 6: Both variables post/pre RMSPE coefficient smaller data set

6.3 C

This subsection is dedicated to the exploration of a randomized control donor group. The donor group contains 9 countries, that were randomized using software. The new data set includes Denmark, France, Slovenia, Czechia, Lithuania, Bulgaria, Germany, Belgium, and Finland.

The weights for both of the variables are as follows.

Table 16: Weights

Country	Business creation	Employment
Finland	0.12	-
Slovenia	0.88	0.676
Belgium	-	0.324

There is severe reliance on just 1 country for both models - Slovenia. It is incredibly high, especially for business creation. The pre-RMSPE for model 1 is 1952.317 a significantly high number and for model 2 0.0943. The smaller control group lowered the ability to create a good-fitting synthetic control group. This is illustrated by the figures below.

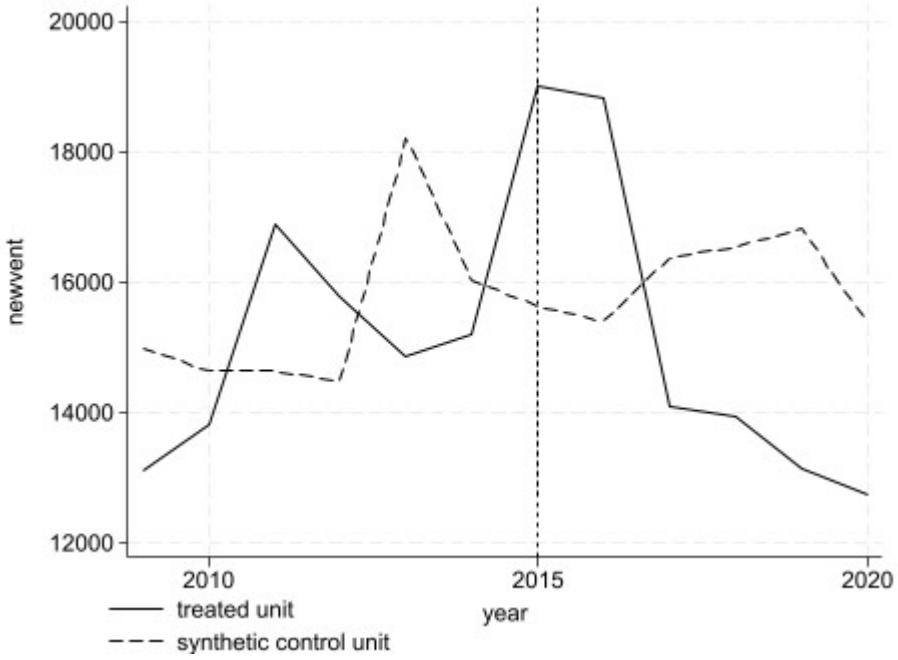

Figure 7: Business creation pre-post treatment

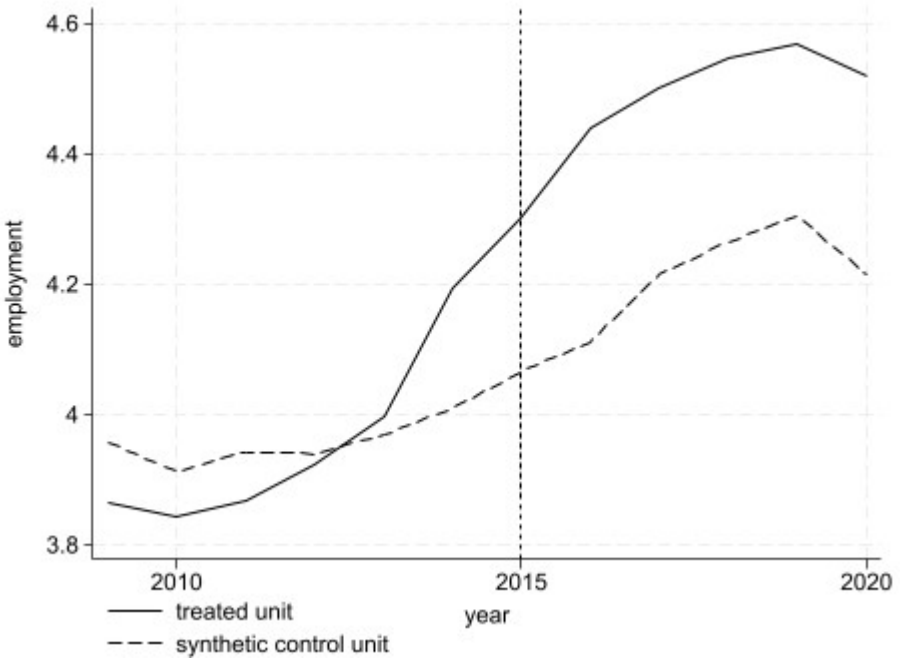

Figure 8: Business creation pre-post treatment

Table 17: DiD regression output business creation (random control group)

Variables	Business creation	Employment
treatment group	-563.0	-0.00706
	(836.0)	(0.0421)
treated	-173.1	0.290***
	(1,563)	(0.0441)
Constant	14,320***	3.914***
	(838.5)	(0.0519)
Observations	24	24
R-squared	0.444	0.978

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

It seems like the smaller random data set made for a worse fit for the control group to be made. It could be argued that the parallel trends assumption is broken.

The results of this randomized data set point to similar results as did the original investigation.

6.4 D

Moving on to shifting the treatment year to 2014. The motivation is to question the results and look at what the model outputs with different treatment years.

Using the original sample of 19 county donor pool, the new weights for both variables can be seen below.

Table 18: Weights

Country	Business creation	Employment
Estonia	0.681	0.457
Lithuania	0.04	0.01
Romania	0.008	0.003
Denmark	0.227	-
Slovakia	0.044	0.002
Belgium	-	0.001
Bulgaria	-	0.001
Italy	-	0.001
Malta	-	0.359
Poland	-	0.001
Sweden	-	0.168
Slovenia	-	0.001

Business creation weight distribution seems similar, but there are major changes in employment variables. It seems that the model is overfitted, with weights being attributed to many countries. It could indicate a lack of treatment that year.

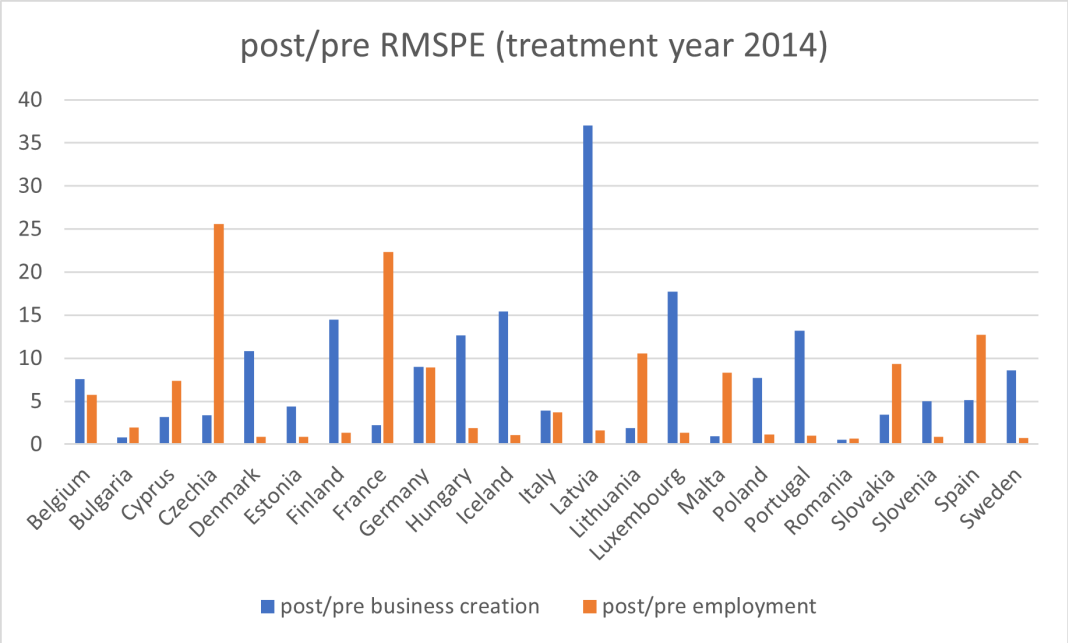

Figure 9: Both variables post/pre RMSPE coefficient (the treatment year 2014)

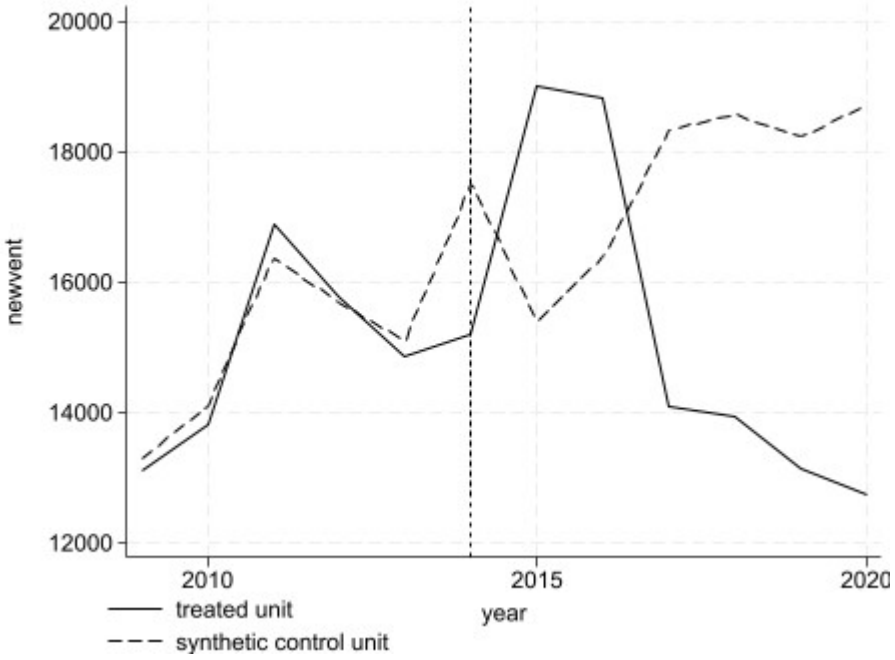

Figure 10: Business creation pre-post treatment (treatment year 2014)

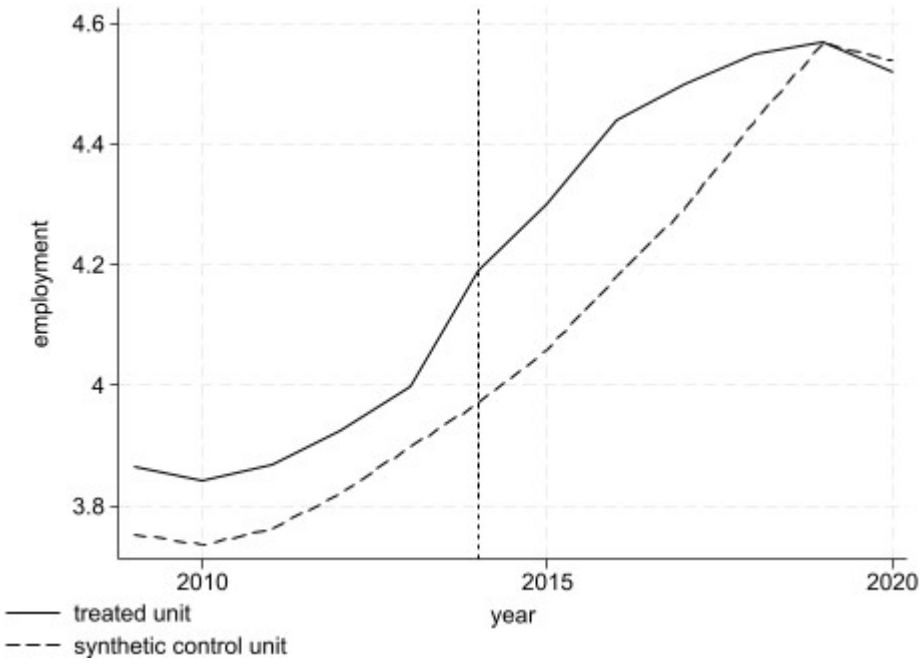

Figure 11: Employment pre-post treatment (treatment year 2014)

Above can be seen all of the corresponding investigation tables, figures, and graphs. In addition to results and graphs in space placebo tests were done in which it seemed that his model had an even higher post/pre-RMSPE than the original. But this is likely to be a coincidence. The overall conclusion from this addition of this study follows similarly to those within the main investigation. Namely, results for the employment variable should be regarded with caution with the conclusion that the model and or possible database was ill-equipped to handle this variable. But for business creation, the model seems to respond well, but it could be the case that the intervention simply was not enough. Overall this tangent further tested the models' capabilities to predict and create the synthetic control groups. Possibly offering more evidence for the lack of effect of the policy on at least one of the variables.