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Keywords: Fiscal Transfers, Local government spending, entrepreneurship, “Fuzzy” Regression Disconti-nuity Design

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Abstract

Can local government spending spur entrepreneurial activity? To answer this question we study Poland where municipalities with lower tax revenues receive direct monetary grants from the national budget that vary at multiple pre-determined and non-manipulable thresholds. Employing a fuzzy regression discontinuity design, we find a positive impact of fiscal transfers on the number of firms, especially sole proprietorships and small firms. The impact is stronger in municipalities where the opposition is more involved in the legislative process or more parties are represented in the municipal council, and in regions where historical legacies shaped a more positive attitude towards entrepreneurship.

(99 words)

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I. INTRODUCTION

Firm creation is central to the process of economic growth. Entrepreneurial activities create employment, generate technological progress and when successful spur capital formation. However, most often entrepreneurs need financial (and other) resources that they do not have when they intend to start their business (e.g., Hombert et al. (2020)). In theory, capital markets could provide the means to finance profitable business projects. However, an important area of research has shown that in many occasions entrepreneurs face financial constraints, that is, financiers are unwilling or unable to provide funding to positive net present value projects (see Kerr and Nanda (2009) for a review). Various studies have identified among the possible causes of entrepreneurs' inability to raise finance: weak national and/or local institutions (Acemoglu and Robinson, 2012), corresponding wealth inequality (Braggion et al., 2020), poor legislation, and/or adverse culture.

In this paper, we examine the role of a possible mechanism to alleviate entrepreneurial financial and resource constraints: local governmental spending. But this mechanism *per se* may suffer from limitations such as weak local institutions and/or an adverse local culture, so that it can only provide partial relief. These limitations we also investigate.

Establishing a causal link between local government funding and entrepreneurial activity is difficult since the level of funding and firm creation can be jointly determined. Entrepreneurship may also correlate with unobservable factors biasing any estimates. To alleviate these concerns, we exploit a fiscal transfer program in Poland, which allows us to test the entrepreneurial effects of local government funding using a *fuzzy* regression discontinuity design. Under this program, municipalities with lower tax revenues receive direct monetary grants from the national budget which we henceforth refer to as "the subsidy". The eligibility and level of funding received by municipality vary at multiple pre-determined thresholds, based on the ratio of individual municipality per capita tax revenue to the average per capita tax revenue of all municipalities in the country. This rule makes it difficult for local politicians to precisely manipulate the threshold, and therefore the differences in tax revenues of municipalities located closely around thresholds provide us with an exogenous variation in the level of funding available to local governments.

Our analysis documents a positive effect of fiscal transfers on the number of firms. Overall, a 1% higher level of the subsidy results in a 3.2 to 5.1% increase in per capita total establishments. This effect is mainly driven by the rise in sole proprietorships and by the number of establishments with up to 9 employees. Higher transfers positively boost entrepreneurial activity in the construction, financial, manufacturing, retail, and services industry. Conversely, the number of farming, IT, and real estate industry establishments respond negatively to a higher reliance of local government on the subsidy.

We also uncover a significant heterogeneity in our baseline results stemming from municipal councils' characteristics and historical legacies. Specifically, positive entrepreneurial effects of fiscal transfers are much stronger in municipalities where the share of the opposition parties' councilmembers involved in the legislative process is higher and where more parties are being represented in the council. This is likely due to the fact that in these municipalities, local government decisions may be under more intense scrutiny from opposition councillors and hence indirectly electorate. We also find that fiscal transfers boost entrepreneurship much more in regions where historical legacies shaped a more positive attitude towards entrepreneurship among residents, including councilmembers.

As such, our findings inform a recent political debate in Europe, where efforts are made to reduce the size of legislatures or alter the representation of political parties in the legislative process.[1] To this extent, our analysis suggests that any such policies should be carefully crafted to maintain or improve the diversity of governments and councils in terms of representation of political factions and opposition members.

We contribute to the literature that assesses the impact of supranational and/or national transfers to fund local government spending to stimulate local economic activity, e.g., per capita income growth and per capita investment. While the literature (employing similar methodological settings) overall finds a positive impact, observed is also a wide dispersion in how effectively funds are used (e.g., Becker et al. (2013)). Corbi et al. (2019), for example, study how federal transfers to municipal governments affect the local labour markets in Brazil (see also, e.g., Gadenne (2017)). They find an increase in local employment at a cost per job of about 8,000 US dollars, with the impact mainly situated in services and in less financially developed municipalities. Complementing this line of work, we focus on the impact of national-subsidy-based local government spending on local entrepreneurship in a high-income country,[2] along the strength of local political accountability and culture.

The rest of the paper is organized as follows. In Section II, we discuss the institutional framework. In Section III, we describe our identification strategy and data. In Section IV, we provide the results of diagnostic tests and identifying assumptions. We present our baseline results, linking the number of establishments to fiscal transfers in Section V. In Section VI, we analyze heterogeneity in baseline

1. Such debates are currently taking place in France (https://www.ft.com/content/de0e14a8-381b-11e8-8b98-2f31af407cc8), Greece (https://apnews.com/article/bda19a01212f4355c385c1439677683a), and the United Kingdom (https://www.bbc.co.uk/news/uk-politics-43111790; https://www.electoral-reform.org.uk/campaigns/local-democracy/). The results of a recent referendum in Italy show that 70% of the voters support the reduction of the government members by a third (https://www.wsj.com/articles/italians-vote-to-reduce-number-of-lawmakers-by-a-third-11600703306).
2. Brazil is classified by the World Bank as a middle-income country with about half the GDP (PPP) per capita than Poland (in 2017, $15,553 versus $29,924).

results stemming from the local government characteristics and historical legacies. In Section VII, we verify the robustness of our estimates with several sensitivity tests, and Section VIII concludes.

II. INSTITUTIONAL FRAMEWORK: FISCAL TRANSFERS IN POLAND

Since 1999 local governance in Poland is executed at three levels of administrative subdivisions, which include 16 provinces (*wojewodztwa*) divided into 380 counties (*powiats*) and further split into 2,478 municipalities (*gminas*). Each subdivision generates fiscal revenues via taxes and fees paid by individuals and firms, which partly support the national budget. With the remaining part of revenues, local governments, including municipal councils, are responsible for providing services and goods to residents and businesses.[3] An important part of municipal responsibilities involves stimulating employment. To do so, local councils may, for example, finance training programs and workshops to increase residents' employability or help them set up businesses. Alternatively, municipalities may also promote firm formation or relocation of businesses through increased investments. The central government set up several fiscal transfer schemes to financially support municipalities in completing their tasks. On November 13, 2003, the Polish government passed legislation (effective from January 1, 2004), allowing local governments to receive each year direct regional monetary transfers from the national budget in the form of subsidies. Local governments have complete autonomy with respect to the allocation of these funds. They are neither required to provide plans describing the intended use of subsidy transfers, nor are they required to report the use of these funds to the state.

Each year, the Ministry of Finance announces the total amount of funds distributed among regional governments as part of these fiscal transfers. The so-called *base subsidy* constitutes one of the most significant parts of these fiscal transfers, on average accounting for a 10% share of the municipalities' overall revenue and in some regions even reaching as high as 30% share of the overall revenue.

A municipality automatically becomes a recipient of this subsidy if its per capita tax revenue (X_m) is lower than 92% of the per capita tax revenue of all municipalities (X). In general the amount received by each municipality in a given year ($T_{m,t}$) is calculated according to the following formula:

$$T_{m,t} = p_{m,t-2}\left[\alpha\left(\beta X_{t-2} - X_{m,t-2}\right) + \gamma X_{t-2}\right], \qquad (1)$$

where $p_{m,t-2}$ represents the number of residents in municipality m (on December 31st, of the year preceding the subsidy announcement year), $X_{m,t-2}$ is per capita tax revenue of municipality m, and X_{t-2} is per capita tax revenue of all municipalities in the country at the end of year $t-2$. The values of coefficients α, β, and γ depend on the level of per capita tax revenue (X_m) and significantly change at three pre-

3. Examples of municipalities' tasks include maintenance and development of infrastructure (i.e., transportation systems, communication networks, sewage, water, and electric systems); nature conservation; provision of social services (i.e., social housing, welfare support, care homes), supporting health care and public schools.

determined thresholds, illustrated in Figure 1. These thresholds will play a key role in our identification strategy.

The timing of this subsidy policy is illustrated in Figure 2. Funds under this fiscal transfer program are distributed throughout year t (pay-out year), in 12 equal monthly instalments. Regions` eligibility for receivership of these transfers and the amount of the transfer is announced around October 15th of a preceding pay-out year $(t-1)$. The eligibility criteria and the size of this subsidy are based on municipalities' revenues in the year preceding the announcement year and two years prior to the pay-out year $(t-2)$.[4] The revenue information is reported to the Ministry of Finance by the 30 June of the announcement year $(t-1)$.

III. IDENTIFICATION STRATEGY AND DATA

3.1 Identification strategy and empirical specifications

In addition to the base subsidy, municipalities receive a *supplementary subsidy* and a *countervailing subsidy*. The base and the supplementary subsidies combined are called the *compensatory subsidy* (henceforth, indicated with its variable name the *Subsidy*).[5] Although municipalities in Poland may receive funding in the form of other fiscal transfers, the allocation mechanism of the base subsidy makes it very appealing to study the entrepreneurial effects of fiscal transfers.

First, the level of these transfers depends on multiple thresholds. This fact mitigates the concern that the estimates may significantly differ with increasing distance from the threshold. Second, the existence of multiple thresholds also provides significant variation in the level of subsidy funding. During the sample period, 2,031 municipalities received subsidy funding for at least one year, and 993 municipalities changed their eligibility status. In 274 cases, municipalities started to receive this type of funding

4. The revenue obtained through fiscal transfers is not considered in this calculation.
5. The supplementary subsidy is based on the municipalities` population density. However, the allocation mechanism of this subsidy is very simple. Municipalities, where the population density is lower than the mean density of all municipalities in the country, receive this part of subsidy. The countervailing subsidy mainly depends on municipal social security expenses, including housing allowances, child support. The allocation mechanism of this subsidy does not provide us with any clearly defined thresholds as in case of the base subsidy. Municipalities may also obtain direct grants from the central government and since 2006 may also seek funding from the European Union. However, these funds are allocated for specific investment projects and local governments cannot divert these funds to projects other than pre-specified ones. The allocation mechanism of these grants also does not depend on any pre-defined thresholds. Due to data limitations we are not able to distinguish between the actual base and supplementary subsidies. Therefore, our analysis associates municipalities' revenues, expenses and entrepreneurial outcomes to the compensatory subsidy. However, the allocation mechanism of the base subsidy explains variation in more than 85% of the law-implied compensatory subsidy. Further, the level of the supplementary subsidy is not expected to vary at the base subsidy thresholds as it (as described above) depends purely on municipalities' population density. Once we have explained our methodology and provided the first results for the impact of the compensatory subsidy, we will provide some estimates for the law-implied supplementary subsidy that confirm a total absence of discontinuities mitigating any concerns that differences in the level of these transfers alone may be driving changes in entrepreneurial outcomes.

previously not having access to it, and in 350 cases, municipalities completely lost their access to these fiscal transfers. In 723 instances, municipalities crossed a lower threshold and began receiving a higher volume of the subsidy, while on 1,106 occasions, municipalities crossed a higher threshold, and their transfers decreased.[6]

Third, and most importantly, the specific allocation mechanism of the subsidy makes it very difficult for municipal authorities to systematically manipulate access to or the level of received funds. Municipalities' revenue depends on a myriad of factors, and as such, it is difficult for local governments to precisely manipulate its level. However, to the extent that local governments can adjust their revenues, municipalities' eligibility to receive the subsidy partly also depends on tax revenues of all other, more than 2,400 municipalities in the country. Therefore, while reducing revenue could be a beneficial strategy for some municipalities, it is difficult to precisely estimate what reduction will be needed to grant them a level of fiscal transfer high enough to compensate the foregone own funds. As such, strategic manipulation is unlikely to exist. For this reason, differences in municipalities' revenues around thresholds are likely to provide us with exogenous variation in the level of fiscal transfers, which can be considered as good as random (Lee and Lemieux, 2010).

However, the subsidy allocation mechanism is prone to error. The actual level of funding received by municipality may differ from the law-implied level. This is likely to occur due to misreporting of revenues or population, or miscalculation. Therefore, following Corbi et al. (2019), our identification strategy relies on a fuzzy regression discontinuity design (abbreviated as fuzzy-RDD). We first provide reduced-form results estimating:

$$Y_{it} = \beta \tilde{T}_{it} + \gamma f(X_{it-2}) + \delta_i + \delta_{ct} + \delta_{rt} + \varepsilon_{it}, \qquad (2)$$

where per capita revenues, expenses and the number of establishments in municipality i in year t (Y_{it}) are associated to the per capita law-implied level of the *Subsidy* transfers ($\tilde{T}_{it}$). $\delta_i, \delta_{ct}, \delta_{rt}$ represent municipality, cutoff-year, and county-year fixed effects. Municipality fixed effects control for time-invariant factors affecting the level of fiscal transfers, revenues, expenses, and entrepreneurial outcomes, for instance, geographic location or availability of natural resources. Cutoff-year fixed effects control for differences between municipalities in different cutoff brackets, defined below. County-year fixed effects account for investment and social projects undertaken by county, province or national

6. Finally, county and province governments are also eligible to receive fiscal transfers which they may invest in municipalities. However, the allocation mechanism significantly differs from municipalities' allocation with only one threshold determining counties and provinces eligibility to receive funding. This significantly reduces variability in the level of transfers. In addition, within-municipality analysis exploiting changes in the municipalities' subsidy allows us to control for differences in the level of fiscal transfers at higher administrative subdivisions, as well as many other, difficult to observe factors affecting municipal revenues and entrepreneurship.

agencies in municipalities. We also saturate specification 3 with $f(X_{it-2})$, first-order polynomial expressions of normalized per capita tax revenue (the assignment variable), which account for municipalities distance from the nearest cutoff in year *t-2*.

The fuzzy-RDD estimations, in the first-stage, link the actual *Subsidy* to law-implied transfers:

$$T_{it} = \beta \tilde{T}_{it} + \gamma f(X_{it-2}) + \delta_i + \delta_{ct} + \delta_{rt} + \varepsilon_{it}, \qquad (3)$$

T_{it} denotes actual per capita level of funds transferred to municipality *i* in year *t.* In the second-stage, the number of establishments is associated to $\hat{T}_{it}$, the component of the *Subsidy* implied by its non-linear allocation mechanism, estimated in the first-stage. The second-stage model reads:

$$Y_{it} = \beta \hat{T}_{it} + \gamma f(X_{it-2}) + \delta_i + \delta_{ct} + \delta_{rt} + \varepsilon_{it}. \qquad (4)$$

In all specifications, we cluster heteroscedasticity-adjusted standard errors at the municipality level to account for serial correlation. We provide estimates in levels and first-differences. In the latter case, we restrict our sample to municipalities, which in year *t* and *t-1* are located in the same cutoff and bandwidth. Specifications include cutoff-year and county-year fixed effects, first-order polynomials for both periods but exclude municipality fixed effects.

To estimate our results, we construct three equal cutoffs brackets centered around each threshold. We assign each municipality-year observation to the nearest threshold. Next, we normalize the per capita revenue of each municipality by subtracting the ratio of municipality's per capita tax revenue to the per capita tax revenue of all municipalities from the threshold value in each cutoff bracket. We estimate specifications 3-5 using three bandwidths restricting our sample to observations located within 6%, 5%, and 4% of the normalized per capita revenue on each side of the threshold. Figure 3 illustrates our sample selection process.

3.2 Data

Our data set contains municipality-year level information drawn from three sources: Statistics Poland (Central Statistical Office of Poland), the Polish Ministry of Finance, and the National Electoral Commission of Poland.

Statistics Poland provides us with the number of establishments operating in each municipality, municipal demographics, and municipal public finances. We can differentiate between sole proprietorships/personal businesses, incorporated, and public sector firms. We can also distinguish between establishments of different sizes and industries. In terms of demographics, we obtain information on municipalities' population and a population density, which allow us to calculate per capita numbers of establishments. Public finances data coverage includes municipalities revenues and expenditure. The former agency provides us with the level of actual fiscal transfers, direct grants, and funding received

from the European Union. Expenditures allows us distinguishing between municipalities' expenses on public administration, public debt repayment and all other expenses.

The Ministry of Finance publishes final indicators determining the eligibility for and the level of the *Subsidy*. These include per capita tax revenue of each municipality (X_m) and per capita tax revenue of all municipalities in the country (X) since 2012.[7] Together with population data, we use these indicators to estimate the law-implied level of fiscal transfers.

The National Electoral Commission maintains a record of all election results taking place in Poland, including elections to municipal councils. We can identify the party affiliation of each council member, and we use this information to determine how many of these members belong to the political party with the highest support and how many political parties are represented in the council. This information allows us to test whether the composition of local governments results in heterogeneity in the effect of fiscal transfers on entrepreneurial activity.

Overall, our sample covers 17,276 municipality-year observations for more than 2,400 municipalities and for years 2011 to 2018. Restricting the sample to municipalities within 6%, 5% and 4% bandwidths lowers the number of observations to 3,202, 2,294, and 1,475, respectively. In Table 1, we report summary statistics on fiscal transfers and establishments for the whole sample and observations within the three bandwidths. An average municipality receives nearly PLN 2.9 million in *Subsidy* funding. However, the amount of these transfers can range up to PLN 40 million.[8] On average, 1,585 establishments operate in a municipality, of which 73% are sole proprietorships/personal businesses and 23% private sector establishments. Public sector firms account for the remaining 4% of total establishments. Additional descriptive statistics presented in an Online Appendix, Table A.1, reveal that establishments with up to 10 employees and operating in the construction, manufacturing, and retail industries dominate our sample.

IV. PRELIMINARY TESTS

4.1 Diagnostic tests

The validity of our identification strategy relies on the assumption that municipalities cannot systematically manipulate their treatment status (Lee and Lemieux, 2010). In Section 3.1, we outline reasons which suggest that such manipulation is unlikely to be present in our setting. To provide formal evi-

7. The Ministry of Finance website publishes indicators used to determine *Subsidy* eligibility and level for the past three years. We retrieve information for earlier years (since 2011) from the Ministry's archives.
8. PLN 2.9 million (PLN 40 million) translates to approximately EUR 675,000 (EUR 9.3 million) or USD 770,000 (USD 10.7 million) in 2018 prices.

dence for the lack of threshold manipulation, we perform McCrary (2008) density test. Figure 4 illustrates the results of this analysis for the full sample. The density of municipalities does not exhibit any significant discontinuity at the *Subsidy* thresholds, suggesting that, as predicted, municipalities do not systematically manipulate their access to or level of received transfers.[9]

Another assumption requires that factors other than *Subsidy* funding, potentially affecting entrepreneurial activity in municipalities, are continuous functions of the *Subsidy* thresholds (Imbens and Lemieux, 2008). Such potential factors are likely to include other sources of municipal revenue: direct grants from the central budget, funding from the European Union received by local governments for specific investment projects, or *Countervailing subsidy*, awarded to support local governments' social security expenses. Other sources of funding investment projects may include bank loans and an increase in own revenue, which municipalities may achieve by raising taxes and fees.[10]

Given the level of these funds is not determined by the *Subsidy* mechanism, we do not expect it to significantly differ at *Subsidy* thresholds. The results presented in Table 2 confirm this prediction. We do not find statistically significant discontinuities in the level of direct grants (Panel A), E.U. funding (Panel B), and other subsidies (Panel C). Municipal public debt expenses do not significantly differ at the threshold (Panel D), which suggests that local governments do not increase the level of public debt. Finally, we do not find evidence that municipalities increase taxes or fees since their own revenue does not exhibit discontinuity at *Subsidy* thresholds (Panel E).

4.2 Subsidy transfers and municipal expenditure around thresholds

In this section, we first document discontinuity in the level of *Subsidy*. We begin with visual evidence in Figure 5.[11] We observe a sharp discontinuity in both the actual (Panel A) and law-implied (Panel B) transfers. Patterns in both panels are very similar. To verify if the allocation mechanism is perfect or if errors do exist, we associate the actual per capita level of *Subsidy* to the law-implied per capita level using specification 4. Under the perfect transfer assignment mechanism, we would expect both the goodness of fit of the model and the estimate on the law-implied *Subsidy* to be equal to one.

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9. Figure A.1 in an Online Appendix reports McCrary (2008) tests for each individual year. We do not find statistically significant discontinuities in any particular year.
10. Issuing municipal bonds is not common in Poland and infrequently only the largest Polish cities supplement their budgets using municipal bonds.
11. We construct the Figure 5 plots by first regressing actual and law-implied base subsidy transfers on a set of municipality, state-year and cutoff-year dummies to net out fixed effects. We plot the residuals from these regressions, averaged over 0.1 unit of the normalized revenue. In Figure A.2 in an online appendix, we present graphs documenting the discontinuity in each individual threshold. The strongest discontinuity is observed at the 92% cutoff (Panel A). This is not surprising given that municipalities on the right side of that threshold do not receive any base subsidy. At the other two thresholds municipalities on both sides of the threshold receive *Subsidy* funding. However, even at the 75% (Panel B) and 40% (Panel C) thresholds discontinuities are evident.

The results are presented in Table 3. Coefficients in columns 1-6 for local estimates in levels show very high correlations ranging between 0.86 and 0.99, and the within R^2 ranges between 0.83 and 0.99. Regressions with variables expressed in first-differences presented in columns 7-9 report slightly lower estimates, ranging between 0.72 and 0.92 (within R^2 between 0.90 and 0.96). Overall, the results in Table 3 confirm that the subsidy assignment mechanism is not always accurate. However, they also document a high relevance of the instrument in the first stage, a necessary condition for fuzzy-RDD estimations.[12]

Another important question relates to how municipalities utilize funds received under *Subsidy* scheme. Given that local governments enjoy an absolute autonomy in allocating this funding, a concern arises that they may not be put to productive use. For instance, local governments may increase expenses on public administration, raising employees' salaries, distributing bonuses or monetary awards among civil servants. Alternatively, councils may also decide to save additional funds. In both cases, fiscal transfers are unlikely to result in a higher rate of entrepreneurship. Therefore, in the next set of tests, we link the law-implied *Subsidy* to measures of municipal expenses and budget balance.

In Panel A of Table 4, the dependent variable is a ratio of the per capita municipal expenses on public administration to total per capita expenses. In Panel B, the dependent variable is a ratio of all other per capita expenses to per capita total expenses. Coefficients in both panels document that *Subsidy* funding results in municipalities devoting less of their expenses to public administration. In Panel C, we relate municipalities' budget balance to the law-implied level of *Subsidy*. Lack of statistical significance on all coefficients, in both level and first-difference specifications, suggests that, at thresholds, municipalities run balanced budgets.[13]

V. BASELINE RESULTS

In this section, we discuss the effect of the *Subsidy* transfers on entrepreneurial activity. We first focus on the number of establishments, differentiating by the establishments' ownership sector. Next, we present results differentiating by business size and industry.

5.1 Fiscal transfers and entrepreneurship

Figure 6 illustrates the impact of the drop in subsidy around the zero normalized revenue cutoff on the total (raw) number of establishments, sole proprietorships, (other) private sector establishments and

12. In Figure A.3 and Table A.2 in the Online Appendix we confirm a total absence of discontinuities in the estimated law-implied supplementary subsidy mitigating concerns that differences in the level of these transfers alone may be driving changes in entrepreneurial outcomes.
13. The lack of discontinuity in municipal budget balance at the threshold is consistent with the lack of discontinuity in the municipal public debt expenses presented in Panel D of Table 2.

public sector establishments. Recall from Figure 5 that municipalities with normalized revenues above the zero cutoff face a drop in subsidy. Hence, Figure 6 shows that this drop in subsidy results in a decline in the total number of establishments, in particular in sole proprietorships, but not so in private and public sector establishments. Hence the granting of subsidies to municipal governments spurs the creation of new sole proprietorships, but not of new private sector establishments (other than sole proprietorships) and public sector establishments. The latter two types are presumably too large for swift creation spurred by increases in local subsidies.

Next we turn the estimates of this impact of Subsidy transfers on entrepreneurship in Table 5. The table reports the coefficient estimates from both ordinary least squares (OLS) and and as explained before the instrumented fuzzy regression discontinuity design (fuzzy-RDD (IV)) estimations. Heteroscedasticity-adjusted standard errors clustered at the municipality level are reported below the coefficient estimates (in parentheses). As dependent variables the table features the per capita total number of establishments in the municipality (Panel A), the per capita number of sole proprietorships (Panel B), the per capita number of incorporated private sector establishments (Panel C), and the per capita number of public sector establishments (Panel D). In columns 1-3, specifications include dependent and independent variables (law-implied Subsidy transfers) that are expressed in levels. In columns 4-6, variables are expressed in first differences. The specifications include Municipality, County-year, and Cutoff-year fixed effects and a first-order polynomial, as indicated, and is run for various bandwidths (i.e., 6, 5 and 4%, respectively)

The estimates are in line with prior visual inspections: both the number of total and sole proprietorships are found to increase (around the subsidy thresholds), with all coefficients estimated to be positive and statistical significant, while the number of private and public establishments seem mostly unaffected. The former set of estimated coefficients is also economically relevant. For the first row in Table 5, Panel A, columns 1-3 for example, with coefficients ranging from 0.251 to 0.400, which compared to the mean of the dependent variable (0.079) implies that a 1% increase in the *Subsidy* level results in a 3.17 to 5.06% increase in total establishments.

5.2 Fiscal transfers effect by the size of establishments

In Table 6, we re-estimate the results in Table 5, differentiating by establishments' size.14 We find that the positive effects presented in Table 5 are driven solely by increases in total establishments (Panel A)

14. To preserve space, we report only the results for 5% bandwidth. The results for 4% and 6% bandwidth samples in Panel A and Panel B are similar to the reported.

and sole proprietorships (Panel B) with up to 9 employees (columns 1 and 4).15 The remaining coefficients in Panel A and B are statistically indistinguishable from zero. This is not surprising given that sole proprietorships in this size bracket constitute the majority of establishments in our sample. We do also find a negative effect on incorporated private sector firms with up to 9 employees and public sector establishments with 10 to 49 employees. However, these estimates are much smaller and not consistently negative, with coefficients changing signs and losing statistical significance depending on whether local estimates are in levels or first differences and at different bandwidths.

5.3 Fiscal transfers effect by the industry of establishments

Table 7 examines the effect of local government funding on the number of firms in different sectors.[16] We find a significant increase in the number of total establishments (columns 1-3) and sole proprietorships (columns 4-6) in the construction (Panel A), financial (Panel C), manufacturing (Panel F), and retail industry (Panel H). Our estimates also suggest that these positive effects come at the expense of a reduced number of establishments in the farming (Panel B) and somewhat surprisingly IT (Panel D) industries. We find statistically significant estimates in the remaining panels only when incorporated private sector and public sector firms are considered. These results suggest a positive effect of local government funding on services industry establishments (Panel E) and a negative impact on IT firms (Panel D). Finally, in unreported tests, we do not find any significant differences in the number of firms from the following industries: culture, education, electricity, healthcare, hospitality, mining, plumbing, science, transportation. So overall, these estimates suggest short-term local government funding may spur entrepreneurship in certain easy-to-build sectors but may not assist much in expanding the local high-tech sector.

VI. ENTREPRENEURIAL EFFECTS OF FISCAL TRANSFERS AND LOCAL GOVERNMENT CHARACTERISTICS

Whether and to what extent *Subsidy* transfers stimulate entrepreneurship ultimately depends on how local governments allocate funds across the real sector. As such, the characteristics of municipal councils may be a source of heterogeneity in our baseline results. The next set of tests investigates whether this heterogeneity arises from differences in municipal council accountability and council members' attitudes towards supporting entrepreneurial activities.

15. Notice in Poland a firm held by a sole proprietor can employ multiple employees. Private companies are most often held by multiple proprietors and also can employ multiple employees.
16. For brevity, in Table 7, we report only the results for local estimates in levels. In the majority of cases, estimates in differences are consistent with the ones reported.

6.1 Local government composition

The political economy literature suggests that better informed electorate and residents' ability to hold politicians accountable for their decisions significantly improves governments' responsiveness to society's needs (Besley and Case, 1995, Besley and Burgess, 2002, Strömberg, 2004). A higher degree of political competition, through increased availability of information and a greater choice of candidates, is assumed to improve political accountability and subsequently improve politicians performance (Gagliarducci et al., 2011, Galasso and Nannicini, 2011), governments efficiency (Wittman, 1989) and economic growth (Besley et al., 2010). We hypothesize that increased political competition and accountability at the local government level are important factors improving the efficient allocation of funding and result in a higher rate of entrepreneurship.

Alternatively, a low degree of political competition may reflect the high competences of candidates representing one political party. Candidates enter elections strategically and faced with a low probability of winning the election (perhaps because competing candidates are highly competent) may refrain from running for office (Osborne and Slivinski, 1996, Besley and Coate, 1997). It is possible that particularly high-quality candidates may do so (Jacobson, 1989, Gordon et al., 2007, Maestas and Rugeley, 2008). If low political competition is a representation of council members' quality, then we could observe a stronger entrepreneurial effect of *Subsidy* funding in less politically contestable municipalities.

To test which of these two alternative hypotheses finds support in our data, we employ two measures, the share of the winning party members on municipal council and the median number of political parties represented on the council. The higher representation of political opposition (lower percentage of winning party members or higher number of political parties) indicates the availability of politicians or parties to choose from (political competition), and therefore the degree of local government accountability. In addition, a lower number of winning party members gauges stronger accountability by opposition councilmembers, who are better informed about local government decisions and may provide more accurate information to the general public. An additional benefit of using higher party representation as a measure of government accountability is that it allows mitigating concern related to interest alignment among politicians in councils with a low number of political parties.[17]

Table 8 presents the results for the sample split at the median share of winning party councilmembers. We find a considerably stronger effect of the *Subsidy* on the total number of firms (columns 1-3) and sole proprietorships (columns 4-6) in municipalities where political competition and accountability are

17. This interest alignment can result in lower accountability and could exist despite the low share of winning party representatives in the council.

stronger.[18] Panel A presents the results for the full sample. Rows 1 and 3 report OLS and fuzzy-RDD estimates for a sample of municipalities where the share of winning party councilmembers is below the median. Across all specifications, estimated coefficients range between 0.435 and 0.552 for the total number of establishments. Estimates for sole proprietorships range between 0.453 and 0.545. Corresponding economic magnitudes, calculated by comparing local estimates to the mean number of establishments of the sample, suggest that a one percentage point increase in per capita *Subsidy* funding is associated with a 5.40 to 7.03 percent increase in total establishments and 7.40 to 8.92 percent increase in sole proprietorships.

Rows 2 and 4 provide estimates for a sample of municipalities where the share of winning party representatives is above the median value. In each specification, coefficients and corresponding economic magnitudes are substantially lower compared to specifications in row 1 and 3. Coefficients for all establishments and sole proprietorships only range from 0.204 to 0.336 and from 0.193 to 0.317. Economically, this implies an increase of 2.54-4.19 percent increase for total businesses and 3.22-7.66 percent for sole proprietorships in response to one percentage point increase in per capita *Subsidy* transfer.

In Panel B, we present the results for a matched sample. We match municipalities on their geographical location, assigning to each municipality on the left side of the threshold at least one municipality from the same county located on the right side of the threshold.[19] This procedure mitigates the concern that entrepreneurial opportunities may significantly differ between municipalities in each subsample. Although matching increases estimates for the sample of municipalities with above-median share of winning party councilmembers (rows 2 and 4), coefficients for the sample where political competition and accountability is more intense (rows 1 and 3) are still considerably higher in most specifications.

In Table 9, we compare the effect of *Subsidy* funding on entrepreneurship across municipalities below and above the median number of political parties represented in the local government. Again, we report results for full (Panel A) and matched (Panel B) samples. The magnitude of estimates suggests that fiscal transfers provide a stronger stimulus for entrepreneurial activity in municipalities with the number of parties above the median. Coefficients for OLS and fuzzy-RDD in rows 1 and 3 are in the range of 0.354-0.521 for total establishments and 0.385-0.590 for sole proprietorships. In rows 2 and 4, coefficients vary between 0.233 and 0.322, and 0.276 and 0.380.

18. We only report results for local estimates in levels because the number of observations for estimates in first-differences for some subsamples is insufficient to perform the analysis. This is particularly problematic for estimations using matched sample in Panel B. Estimates for specifications with incorporated private sector and public sector businesses as dependent variables for this reason lack statistical significance and therefore we choose not to present these results.

19. Municipalities on the left side of the threshold without a match on the right side exit the sample.

Matching less politically competitive municipalities based on geographical location (Panel B) leaves estimates throughout all specifications for this subsample statistically indistinguishable from zero (rows 2 and 4). Regressions for municipalities where local government accountability is likely to be higher (rows 1 and 3) remain to deliver statistically significant coefficients.

Overall, the results presented in Tables 8 and 9 are consistent with the notion that the ability to hold local government accountable can exert more substantial incentives for politicians to use any fiscal subsidies more effectively, which in turn boosts entrepreneurship.

6.2 Historical legacy and attitudes towards entrepreneurship

In this section, we discuss whether council members' attitudes towards fostering entrepreneurial activity shaped by historical legacies may be a source of heterogeneity in our baseline results. We consider one of the most significant events in the history of Poland, i.e., the partition of the country.

In 1795 the territory of the Polish-Lithuanian Commonwealth was divided into three areas (partitions) governed by the Kingdom of Prussia, the Russian Empire, and the Austrian Empire. The Congress of Vienna (1814-1815) established borders of these areas, which lasted for over a century, until the end of the First World War in 1918 when Poland regained its independence. The majority of Polish municipalities located in the north and west of the country were governed by the Kingdom of Prussia. Municipalities in the southern-east part were overseen by the Habsburgs (the Austrian Empire). Municipalities in the central-east region of modern-day Poland, which in 1815 were transformed into the Kingdom of Poland and later Duchy of Warsaw, were controlled by the Russian Empire. Panel A of Figure 7 illustrates this administrative division for present-day Polish municipalities.

Existing literature documents significant differences in the governance of each partition (Davies, 2001). Importantly, in our context, these differences also affected the rate of economic development (Wolf, 2007). For example, Prussian authorities significantly industrialized Polish territories, and Polish financial institutions operating in the largest cities of the Prussian partition supported entrepreneurs in the creation of new businesses (Morawski, 1998).[20] On the contrary, the economy in the Russian part relied primarily on major cities, Warsaw, Lodz, or Kalisz, while in rural areas, serfdom was maintained until the 1860s. Although the number of financial institutions in the Russian partition was significantly higher compared to the Prussian and Austrian parts, banking activities were heavily regulated, severely restricting banks' funding and lending activities. The Habsburgs gave its Polish territories the greatest administrative and cultural authority. Polish citizens were able to actively participate in local govern-

20. Example includes Bank Związku Spółek Zarobkowych SA with headquarter in Poznan, and branches in Gdansk and Torun (Morawski, 1998).

ance and were encouraged to open businesses (particularly sole proprietorships). Serfdom was abolished in rural areas from the 1840s. However, despite these efforts, the Austrian partition was the least economically developed of the three partitions (Davies, 2005).

Grosfeld and Zhuravskaya (2015) document significant cultural differences observed in different regions of the present-day Poland resulting from these historical events. The population in the areas governed by the Russian Empire has a more negative attitude towards democracy and religiosity compared to the people in the Prussian and Austrian regions. On the contrary, differences in wages, household incomes, unemployment, industrial production, or education did not persist until the recent years. Becker et al. (2016) show that the Habsburg Empire rule in regions of Eastern Europe, including Poland, resulted in increased modern-day trust in local public services.

We hypothesize that although differences in certain economic indicators between the three partitions fade away with time, the rate of industrialization left a more permanent imprint on individuals' attitudes towards entrepreneurship. In line with this prediction, Figure 7, Panel B illustrates that the average per capita number of firms between the years 2012-2018 is significantly higher in municipalities that belonged to the Kingdom of Prussia. Simultaneously, we observe that municipalities of the former Austrian and Russian partitions receive, on average, substantially higher *Subsidy* transfers in years 2012-2018 (Figure 7 Panel C). This preliminary graphical inspection suggests that the effect of fiscal transfers on entrepreneurial activity may significantly differ depending on which partition municipality historically belonged to.

To formally test if historical legacy could be a source of heterogeneity in the effect of fiscal transfers on entrepreneurship, we associate the number of all establishments and sole proprietorships to the *Subsidy* transfers separately for municipalities historically located in each partition. The results reported in Table 10 support our hypothesis and preliminary inspection. The entrepreneurial effect of *Subsidy* is most potent in municipalities of the former Prussian partition (rows 1 and 4). Although transfers elicit a positive impact on the total number of establishments and sole proprietorships in the remaining municipalities, estimated coefficients and corresponding economic magnitudes are significantly lower.

VII. ADDITIONAL TESTS

Our analysis thus far documents a positive effect of fiscal transfers on entrepreneurship. We also uncover a significant heterogeneity in the magnitude of this effect, resulting from differences in political competition and local government accountability and historical legacies shape individuals' attitudes towards entrepreneurship. In this section, conduct several sensitivity tests to verify the robustness of our baseline estimates in Table 5.

The results are presented in Table 11. First, we remove from our sample local government election years, 2014 and 2018. During the election year, politicians have stronger incentives to increase investment expenditure to gain the electorate (Nordhaus, 1975). As such, the entrepreneurial effects of fiscal transfers may be limited to these years. The results in Panel A refute this idea. Obtained estimates for both establishments and sole proprietorships for non-election years are very similar to the baseline results.

Next, we revisit the regression discontinuity design assumption, requiring a lack of systematic manipulation of the threshold. Although, as explained in Section 4.1, such manipulation is unlikely to exist since it is difficult for municipalities to accurately estimate the reduction in revenue, which will be more than compensated by the *Subsidy* transfer, we provide a test examining whether baseline results are driven by municipalities which are more likely to manipulate the threshold. This test presented in Panel B constrains the sample to municipalities which either do not change their *Subsidy* transfer status or move to a higher cutoff. Again, we do not find support for this hypothesis.

In Panel C, we saturate specifications 2-4 with other sources of municipal revenue, which discontinuities we examine in Table 2. In Panel D, we include a lag of the dependent variable to control for inertia. Specifications which results are presented in Panel E cluster standard errors at the county level. Finally, in Panel F, we modify our specifications by including higher-order polynomials. In all cases, the magnitude of the estimates is very close to the ones presented in Table 5.

VIII. CONCLUSION

Entrepreneurship has wide-ranging benefits for innovation, job creation, and development of the economy as a whole. In this paper, we investigate whether local government spending helps to stimulate entrepreneurial activity. To do so, we study Poland, where municipalities with lower tax revenues receive direct monetary grants from the national budget that vary at multiple pre-determined and non-manipulable thresholds. This institutional setting allows us to employ a *fuzzy* regression discontinuity design.

We document the following key results. First, we find a positive impact of fiscal transfers on the number of firms. This effect is primarily driven by an increase in the number of sole proprietorships and small firms. Secondly, we show that this impact is stronger in municipalities where the opposition is more involved in the legislative process or more parties are represented in the municipal council, and in regions where historical legacies shaped a more positive attitude towards entrepreneurship.

These results highlight the beneficial role of government funding as a mechanism to alleviate entrepreneurial constraints. Our findings also offer important policy implications, cautioning against reforms

which may weaken government accountability. One extension of our work is to explore how local education, social, and inequality conditions shape municipal spending and entrepreneurial dynamism. We leave this extension for future research.

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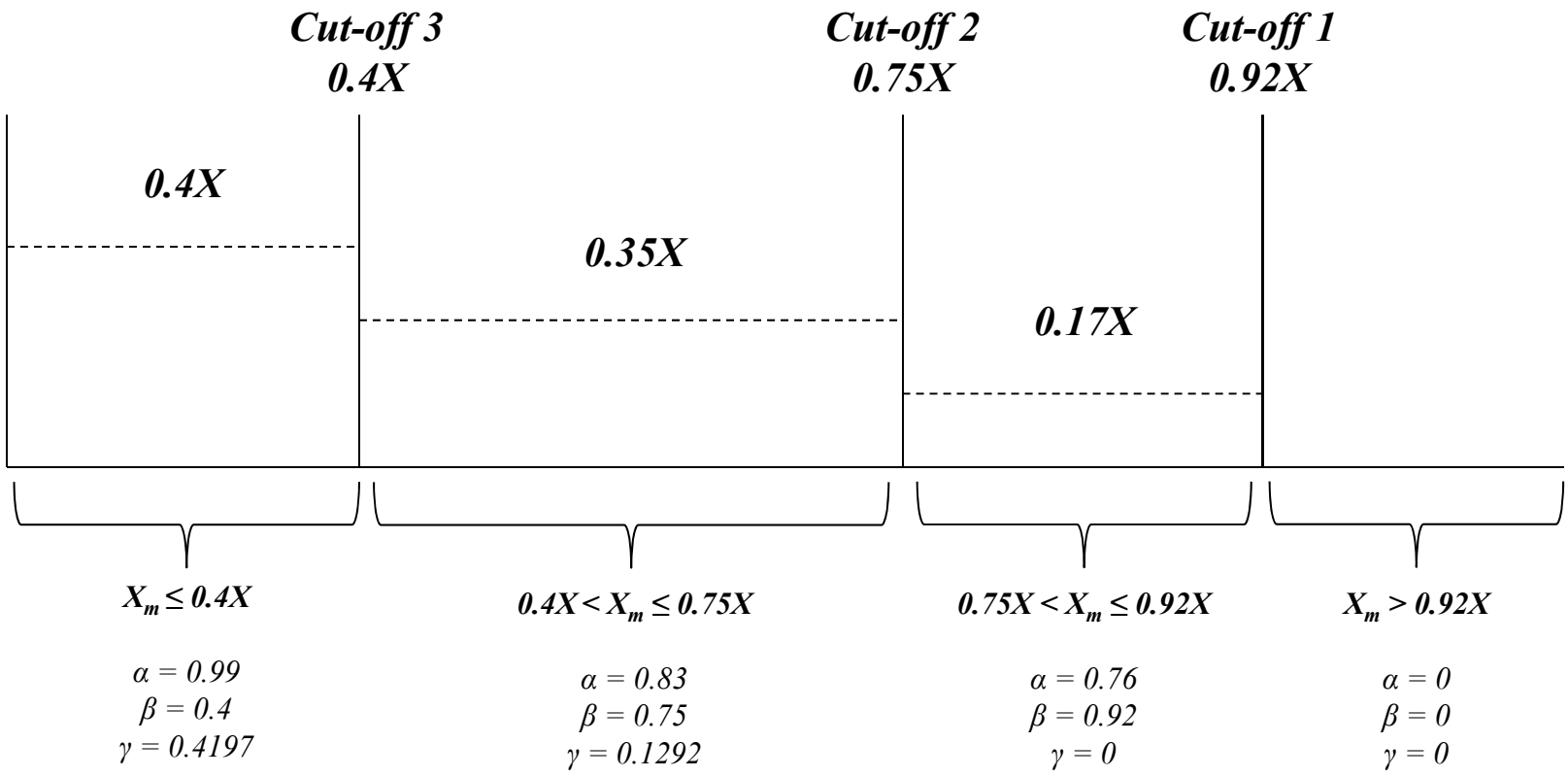
FIGURE 1
BASE SUBSIDY ELIGIBILITY CRITERIA AND CALCULATION



This figure illustrates the eligibility for and the calculation of the base subsidy.

FIGURE 2
FISCAL TRANSFERS TIMELINE

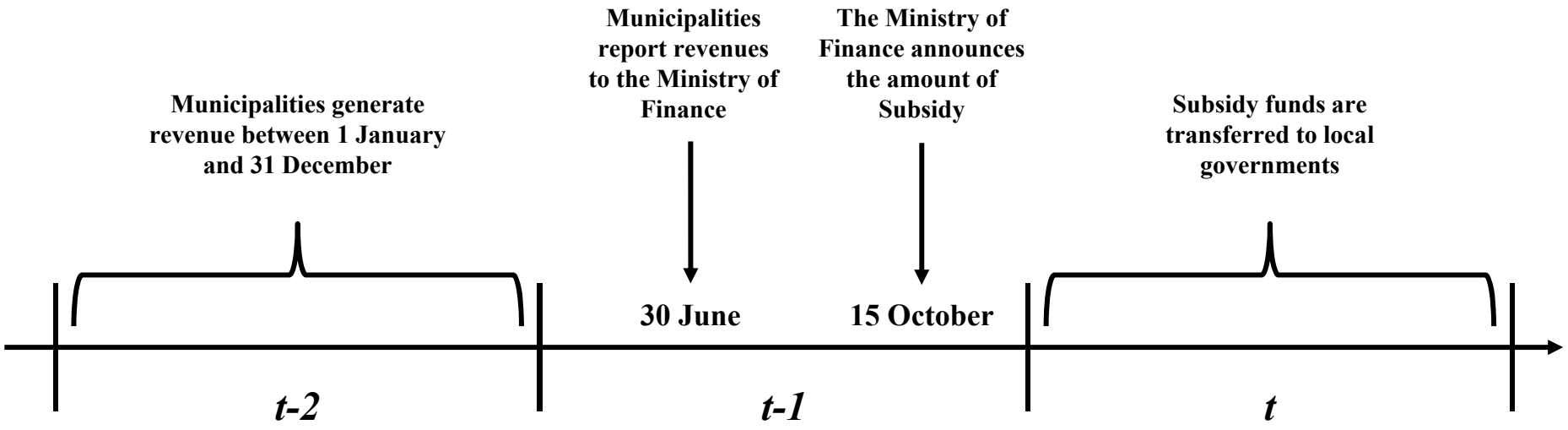
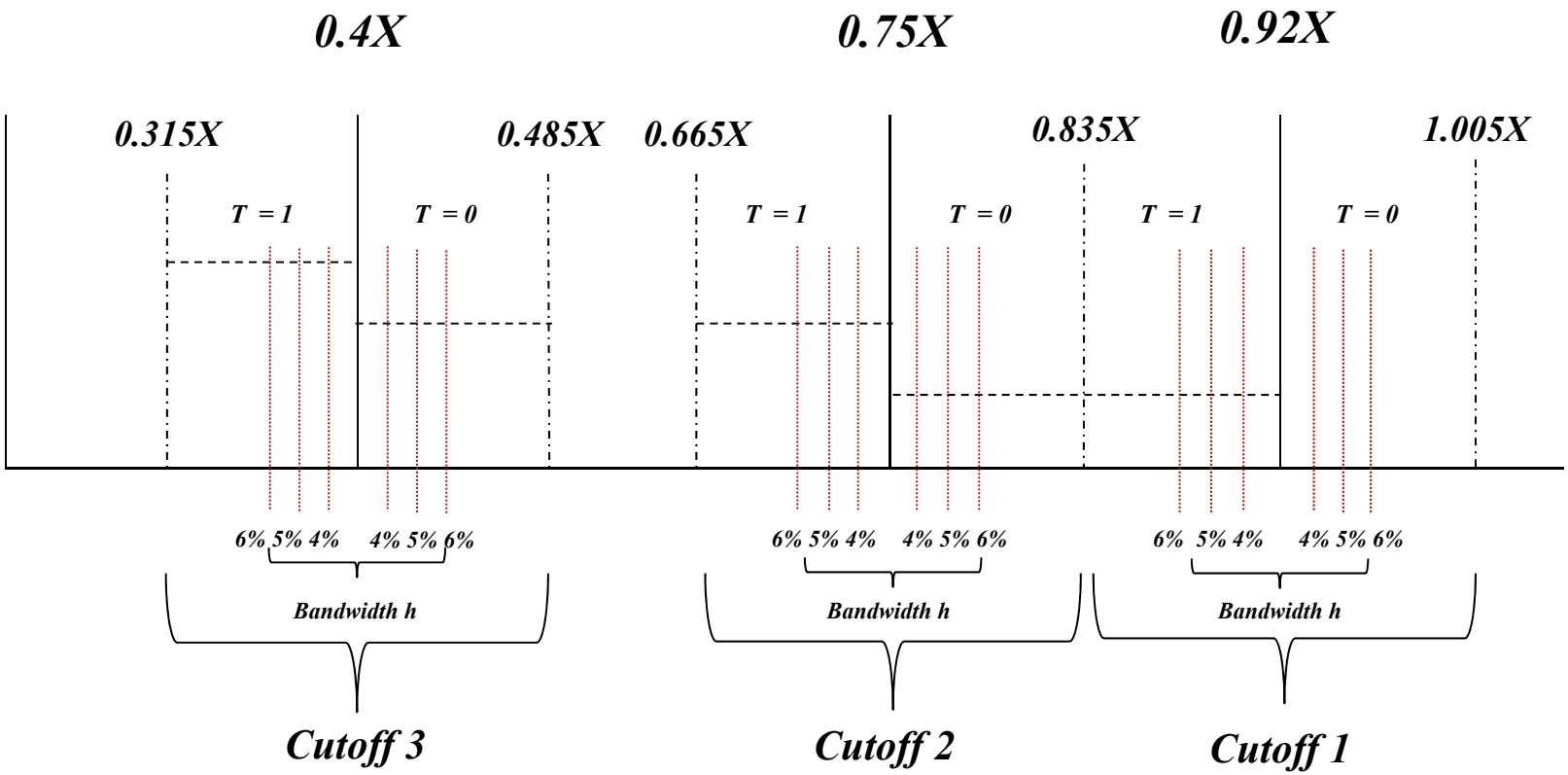
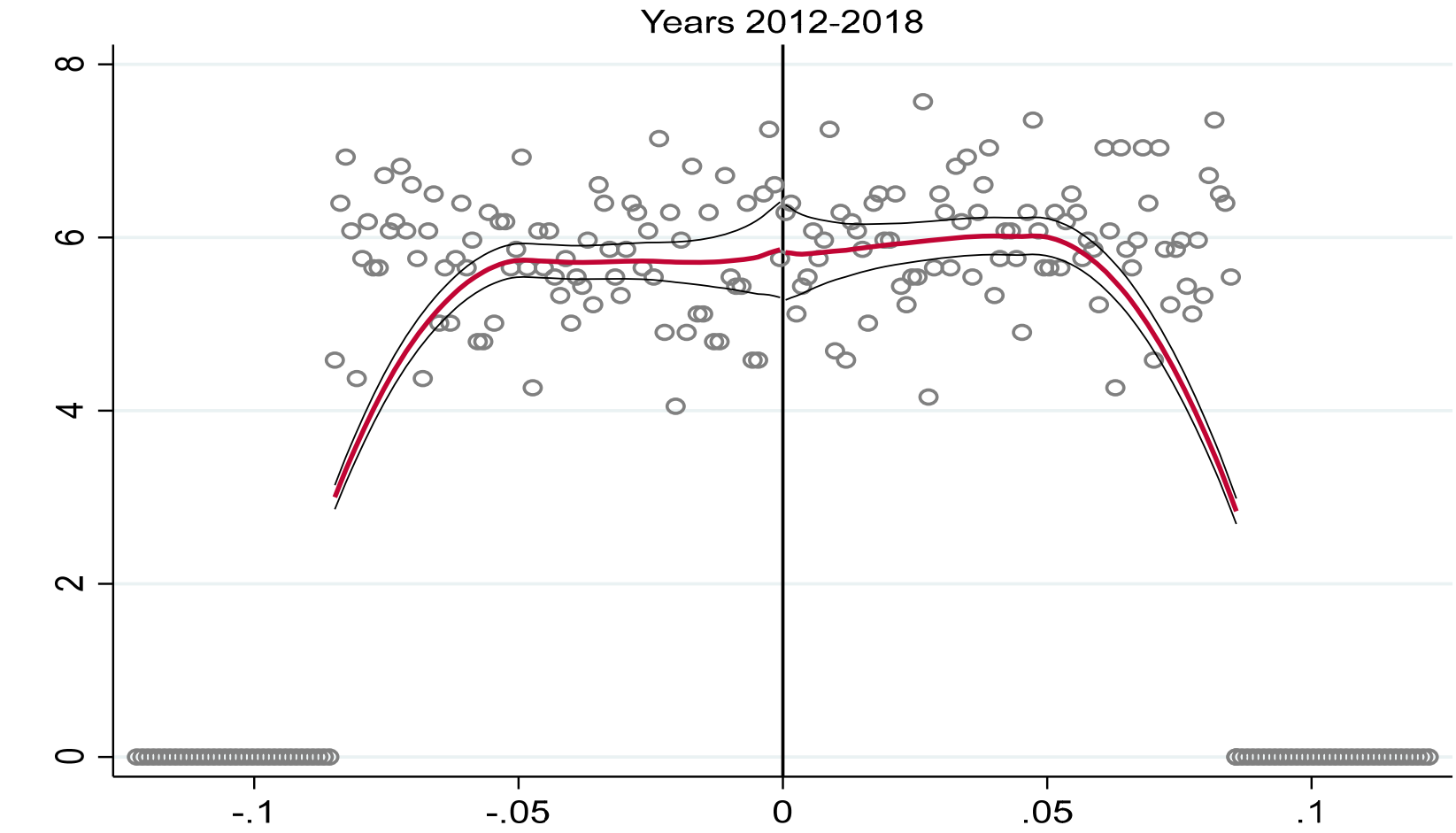


FIGURE 3
SAMPLE SELECTION



This figure illustrates the sample selection based on three bandwidths around the three cutoffs.

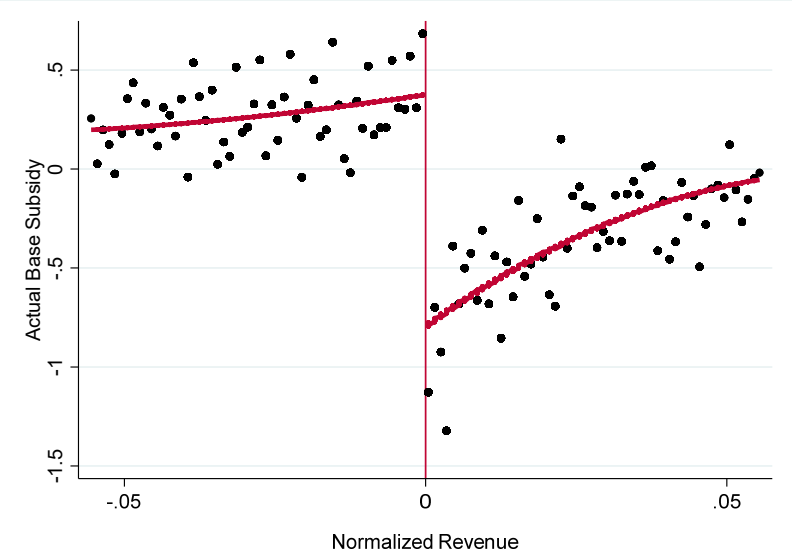
FIGURE 4
MANIPULATION TESTS - MCCRARY DENSITY TEST



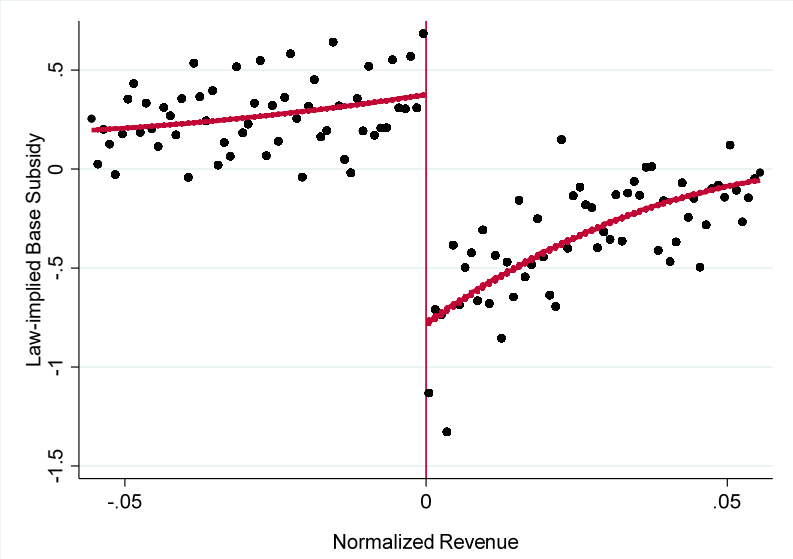
This figure illustrates the McCrary density test for the years 2012-2018.

FIGURE 5
ACTUAL AND LAW IMPLIED REGIONAL TRANSFERS AROUND THE CUTOFFS

PANEL A

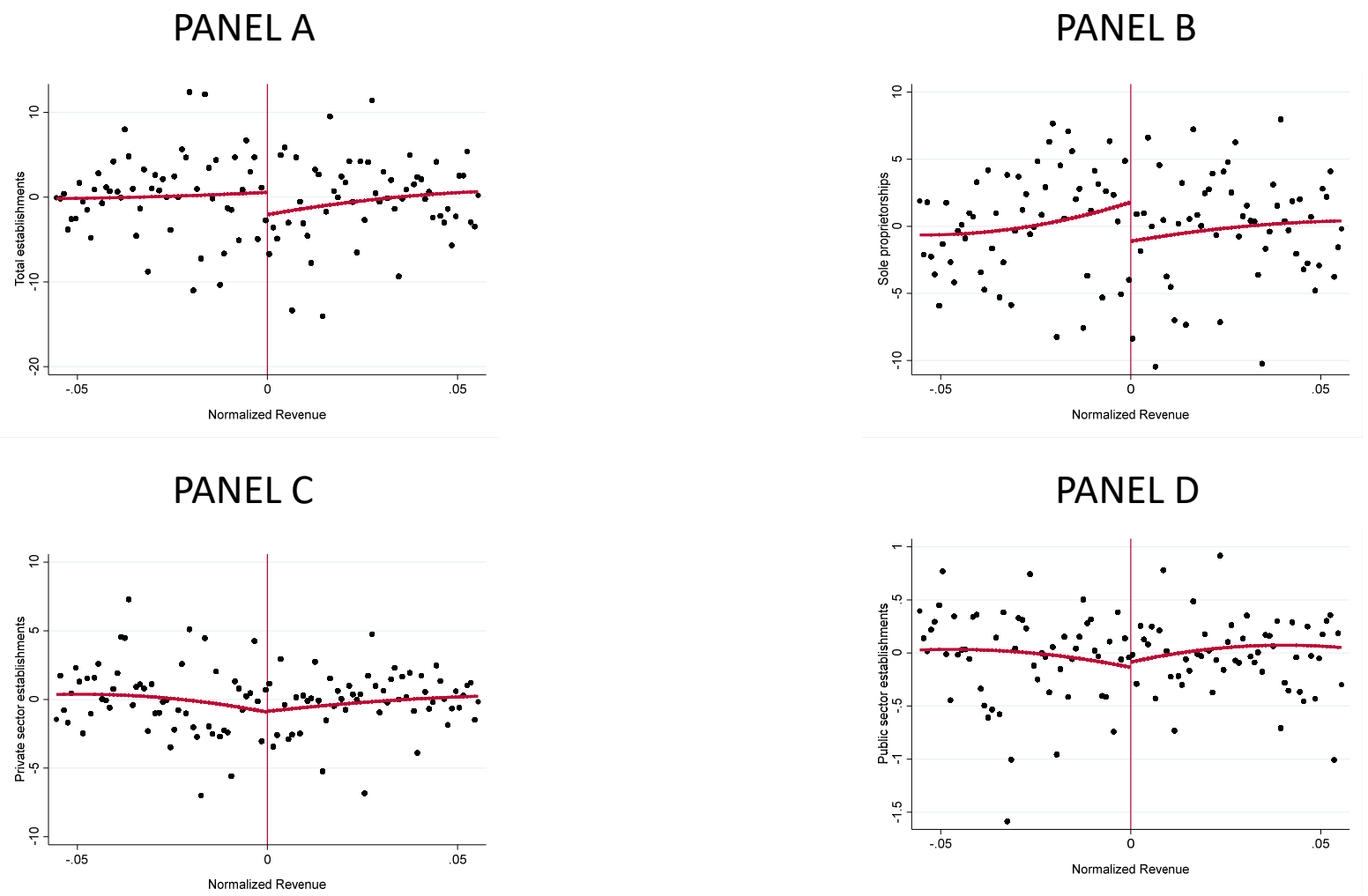


PANEL B



This figure illustrates the actual and law implied regional transfers around the around the normalized revenue cutoff brackets. Above zero normalized revenue the subsidy is observed to decrease.

FIGURE 6
NUMBER OF ESTABLISHMENTS AROUND THE CUTOFFS



This figure illustrates the impact of the drop in subsidy around the zero normalized revenue cutoff on the total number of establishments, sole proprietorships, and private and public sector establishments.

FIGURE 7
REGIONS, ENTREPRENEURSHIP AND COMPENSATORY SUBSIDIES IN POLAND

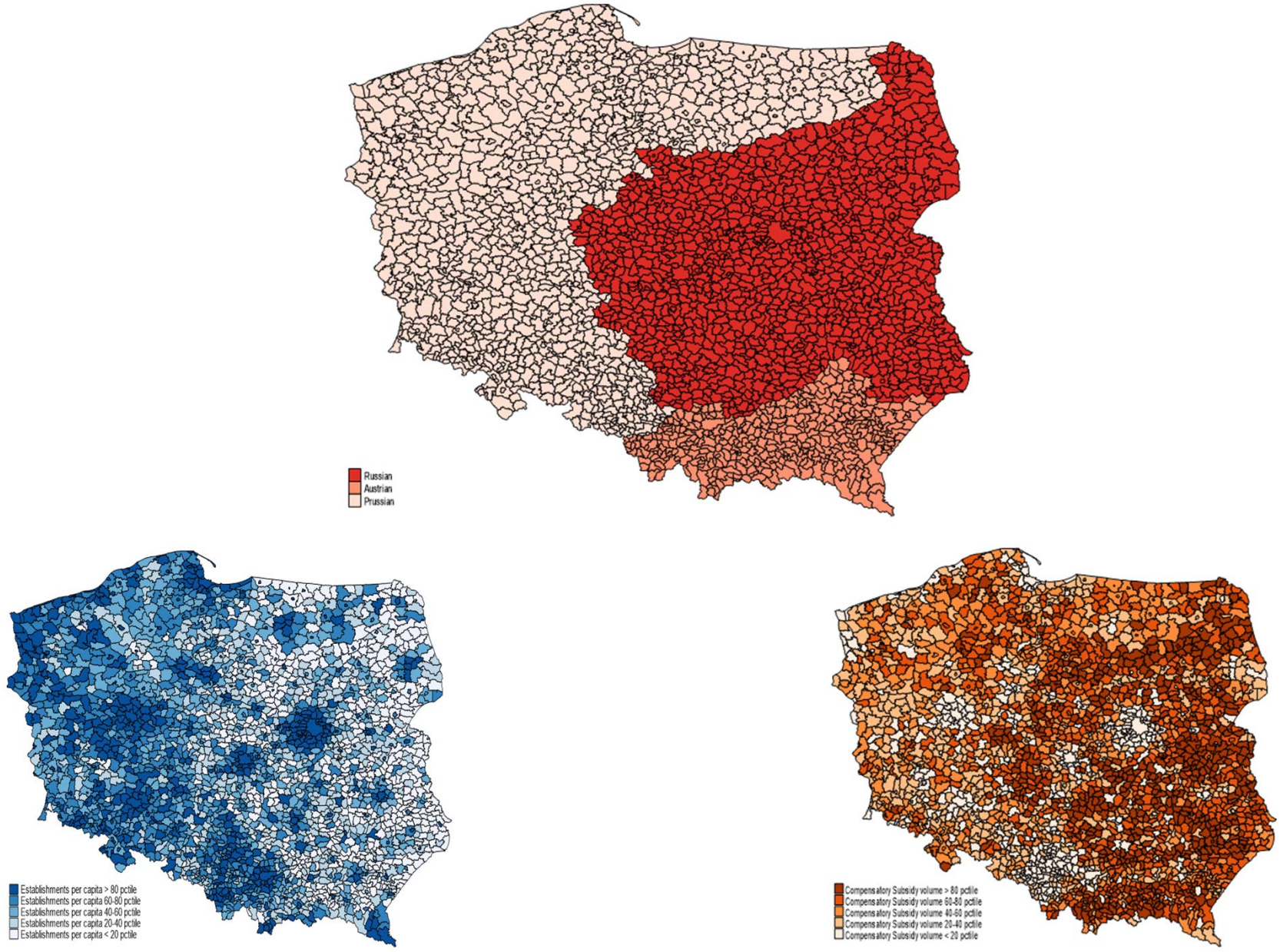


TABLE 1

Summary Statistics

	Observations	Mean	SD	Min	Median	Max
Variable			Panel A: Total sample			
Actual fiscal transfers	17,276	2,882,275	2,458,193	0	2,530,866	48,700,000
Actual fiscal transfers per capita	17,276	382.526	273.061	0	387.984	1,337.688
Total establishments	17,276	1,524.825	5,692.526	58	527	140,500
Total establishments per capita	17,276	0.079	0.035	0.027	0.072	0.819
Sole proprietorships	17,276	1,113.234	3,746.315	32	415.5	87,852
Sole proprietorships per capita	17,276	0.061	0.024	0.015	0.056	0.311
Private sector establishments	17,276	357.531	1,799.344	5	89	50,145
Private sector establishments per capita	17,276	0.015	0.014	0.002	0.012	0.638
Public sector establishments	17,276	46.563	131.379	1	18	3,082
Public sector establishments per capita	17,276	0.003	0.002	0.001	0.003	0.032
Variable			Panel B: Bandwidth <6%			
Actual fiscal transfers	3,202	2,454,137	2,025,937	0	1,997,289	14,900,000
Actual fiscal transfers per capita	3,202	306.375	243.649	0	261.492	1,083.340
Total establishments	3,202	1,065.059	1,213.094	74	621.5	8,944
Total establishments per capita	3,202	0.079	0.023	0.027	0.077	0.187
Sole proprietorships	3,202	809.933	905.114	42	479	6,977
Sole proprietorships per capita	3,202	0.061	0.018	0.015	0.060	0.124
Private sector establishments	3,202	213.295	278.286	13	107	1,990
Private sector establishments per capita	3,202	0.015	0.007	0.003	0.014	0.061
Public sector establishments	3,202	39.038	47.934	2	20	394
Public sector establishments per capita	3,202	0.003	0.002	0.001	0.003	0.022
Variable			Panel C: Bandwidth <5%			
Actual fiscal transfers	2,294	2,411,979	2,019,549	0	1,977,540	14,900,000
Actual fiscal transfers per capita	2,294	302.237	247.740	0	251.487	1,070.594
Total establishments	2,294	1,090.299	1,254.088	74	633.500	8,944
Total establishments per capita	2,294	0.079	0.024	0.027	0.078	0.187
Sole proprietorships	2,294	828.888	936.103	42	495.500	6,977
Sole proprietorships per capita	2,294	0.061	0.018	0.015	0.060	0.124
Private sector establishments	2,294	218.835	287.134	13	111.500	1,990
Private sector establishments per capita	2,294	0.015	0.007	0.003	0.014	0.060
Public sector establishments	2,294	39.707	48.786	2	20	366
Public sector establishments per capita	2,294	0.003	0.002	0.001	0.003	0.022

TABLE 1 *(Continued)*

Variable			Panel D: Bandwidth <4%			
Actual fiscal transfers	1,475	2,385,624	2,080,121	0	1,944,658	14,900,000
Actual fiscal transfers per capita	1,475	305.270	253.116	0	250.193	1,055.489
Total establishments	1,475	1,058.457	1,261.618	74	622	8,944
Total establishments per capita	1,475	0.079	0.024	0.027	0.076	0.187
Sole proprietorships	1,475	806.487	942.603	42	470	6,977
Sole proprietorships per capita	1,475	0.060	0.018	0.015	0.059	0.124
Private sector establishments	1,475	210.771	286.634	13	108	1,990
Private sector establishments per capita	1,475	0.015	0.007	0.003	0.014	0.060
Public sector establishments	1,475	38.469	48.895	2	20	366
Public sector establishments per capita	1,475	0.003	0.002	0	0.003	0.021
Population	1,475	11,847.040	10,949.450	2,119	8,102	75,938

Notes: The table provides the number of observations, mean, standard deviation, minimum, median, and maximum of our main explanatory and dependent variables used in the empirical analysis, for the full sample (Panel A), and observations within the 6% (Panel B), 5% (Panel C), and 4% (Panel D) bandwidth. We present descriptive statistics for variables expressed in level and per capita values.

TABLE 2
Other Sources of Municipal Revenue

Local estimates	in levels			in first differences		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)
			Panel A – Direct grants			
OLS	0.474	0.620	0.769	-0.564	-0.035	-0.293
	(0.481)	(0.671)	(0.755)	(0.689)	(0.950)	(1.116)
			Panel B – European Union funds			
OLS	-0.979**	-0.858	-0.836	-0.920	-0.476	-0.398
	(0.478)	(0.676)	(0.855)	(0.718)	(0.970)	(1.260)
			Panel C – Other subsidy			
OLS	-0.006	-0.017	-0.021	0.015	0.011	0.003
	(0.016)	(0.019)	(0.026)	(0.018)	(0.025)	(0.035)
			Panel D – Municipality debt expenses			
OLS	0.056*	0.014	-0.032	0.007	0.011	0.013
	(0.030)	(0.035)	(0.038)	(0.019)	(0.028)	(0.035)
			Panel E – Municipality own revenue			
OLS	-0.356	-0.085	-0.154	0.185	1.025	-0.054
	(0.401)	(0.529)	(0.619)	(0.760)	(1.044)	(1.030)
Observations	3,202	2,294	1,475	1,522	989	581
Municipality FE	YES	YES	YES	NO	NO	NO
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses) obtained using specification 2. Regressions associate per capita municipal revenue from sources other than *Subsidy* to per capita law-implied *Subsidy* transfers. Dependent variables include direct grants for specific investment projects (Panel A), funding received from the European Union (Panel B), other fiscal transfers (Panel C), expenses on financing municipal public debt, a proxy for municipal debt (Panel D), and funds raised through taxes and fees from individuals and businesses in the current year (Panel E). In columns 1-3, the dependent and the independent variable (law-implied *Subsidy* transfers) are expressed in levels. In columns, 4-6 variables are expressed in first differences. "Yes" indicates that the set of fixed effects or first-order polynomial is included. "No" indicates that the set of fixed effects is not included. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE 3

Actual and Law-implied Fiscal Transfers

Local estimates	in levels						in first differences		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Law-implied transfers per capita	0.993*** (0.003)	0.993*** (0.003)	0.992*** (0.004)	0.971*** (0.043)	0.939*** (0.066)	0.885*** (0.103)	0.921*** (0.082)	0.838*** (0.155)	0.712*** (0.223)
Number of Municipalities	1,311	1,193	1,011	928	734	512	804	600	393
Observations	3,665	2,873	2,082	3,202	2,294	1,475	1,522	989	581
Within (adjusted) R2	0.993	0.992	0.990	0.940	0.906	0.835	0.964	0.937	0.908
Municipality FE	NO	NO	NO	YES	YES	YES	NO	NO	NO
County-year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
First-order polynomial	NO	NO	NO	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses) obtained using specification 3. Regressions associate the actual level of per capita *Subsidy* transfers to law-implied per capita *Subsidy* transfers. In columns 1-6, variables are expressed in levels. In columns 7-9, variables are expressed in first differences. "Yes" indicates that the set of fixed effects or first-order polynomial is included. "No" indicates that the set of fixed effects or first-order polynomial is not included. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE 4

Municipal Expenditure and Budget Balance

Local estimates	in levels			in first differences		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A – Share of municipal expenses on public administration					
OLS	-0.020***	-0.015	-0.025**	-0.022*	-0.016	-0.018
	(0.007)	(0.009)	(0.011)	(0.012)	(0.015)	(0.019)
	Panel B – Share of other municipal expenses					
OLS	0.059***	0.067***	0.075***	0.040***	0.038**	0.045*
	(0.010)	(0.012)	(0.016)	(0.013)	(0.016)	(0.023)
	Panel C – Budget balance					
OLS	0.021	-0.141	-0.285	-0.248	-0.770	-0.871
	(0.665)	(0.820)	(1.040)	(1.046)	(1.453)	(1.541)
Observations	3,202	2,294	1,475	1,522	989	581
Municipality FE	YES	YES	YES	NO	NO	NO
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses) obtained using equation 2. Regressions associate per capita municipal expenses and budget balance to per capita law-implied *Subsidy* transfers. Dependent variables include the share of per capita municipal expenses on public administration (Panel A), the share of all other per capita municipal expenses (Panel B), municipal budget balance - the difference between municipal revenue and expenses (Panel C). In columns 1-3, the dependent and the independent variable (law-implied *Subsidy* transfers) are expressed in levels. In columns 4-6, variables are expressed in first differences. "Yes" indicates that the set of fixed effects or first-order polynomial is included. "No" indicates that the set of fixed effects is not included. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE 5

Number of Establishments and Fiscal Transfers

Local estimates	in levels			in first differences		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A - Total establishments per capita						
OLS	0.251***	0.292***	0.400***	0.099**	0.152**	0.183**
	(0.056)	(0.073)	(0.094)	(0.042)	(0.059)	(0.077)
Fuzzy RD (IV)	0.259***	0.311***	0.452***	0.108**	0.181**	0.257**
	(0.057)	(0.075)	(0.097)	(0.047)	(0.071)	(0.102)
Panel B - Sole proprietorships per capita						
OLS	0.304***	0.343***	0.417***	0.102***	0.158***	0.204***
	(0.052)	(0.066)	(0.091)	(0.038)	(0.054)	(0.076)
Fuzzy RD (IV)	0.313***	0.365***	0.471***	0.111***	0.188***	0.286***
	(0.052)	(0.067)	(0.091)	(0.042)	(0.065)	(0.095)
Panel C - Private sector establishments per capita						
OLS	-0.044**	-0.039*	-0.019	-0.007	-0.015	-0.032
	(0.019)	(0.020)	(0.024)	(0.015)	(0.020)	(0.025)
Fuzzy RD (IV)	-0.045**	-0.042*	-0.022	-0.007	-0.018	-0.045
	(0.020)	(0.021)	(0.026)	(0.016)	(0.024)	(0.033)
Panel D - Public sector establishments per capita						
OLS	-0.003	-0.007	0.003	0.007	0.012	0.014
	(0.006)	(0.009)	(0.012)	(0.006)	(0.009)	(0.012)
Fuzzy RD (IV)	-0.003	-0.008	0.004	0.008	0.015	0.020
	(0.007)	(0.010)	(0.013)	(0.007)	(0.011)	(0.017)
Observations	3,202	2,294	1,475	1,522	989	581
Municipality FE	YES	YES	YES	NO	NO	NO
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS and fuzzy-RD coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses). Regressions examine the entrepreneurial effects of *Subsidy* transfers. Dependent variables include per capita number of all establishments in the municipality (Panel A), per capita number of sole proprietorships (Panel B), per capita number of incorporated private sector establishments (Panel C), and per capita number of public sector establishments (Panel D). In columns 1-3, specifications include dependent and independent variables (law-implied *Subsidy* transfers) that are expressed in levels. In columns 4-6, variables are expressed in first differences. "Yes" indicates that the set of fixed effects and first-order polynomial is included. "No" indicates that the set of fixed effects is not included. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE 6
Number of Establishments and Fiscal Transfers by Size

Local estimates	in levels			in first differences		
Bandwidth	<5%	<5%	<5%	<5%	<5%	<5%
Establishment size	0-9	10-49	49+	0-9	10-49	49+
	(1)	(2)	(3)	(4)	(5)	(6)
			Panel A - Total establishments per capita			
OLS	0.300***	-0.007	-0.001	0.143**	0.008	0.001
	(0.073)	(0.007)	(0.002)	(0.059)	(0.008)	(0.002)
Fuzzy RD (IV)	0.319***	-0.007	-0.001	0.170**	0.010	0.001
	(0.074)	(0.008)	(0.002)	(0.070)	(0.010)	(0.003)
			Panel B - Sole proprietorships per capita			
OLS	0.342***	0.002	-0.000	0.156***	0.003	-0.001
	(0.067)	(0.004)	(0.001)	(0.053)	(0.004)	(0.001)
Fuzzy RD (IV)	0.364***	0.002	-0.000	0.186***	0.004	-0.001
	(0.067)	(0.004)	(0.001)	(0.064)	(0.005)	(0.001)
			Panel C - Private sector establishments per capita			
OLS	-0.041**	0.001	0.001	-0.019	0.001	0.001
	(0.020)	(0.004)	(0.001)	(0.019)	(0.004)	(0.002)
Fuzzy RD (IV)	-0.044**	0.003	0.001	-0.023	0.003	0.002
	(0.021)	(0.004)	(0.002)	(0.023)	(0.005)	(0.002)
			Panel D - Public sector establishments per capita			
OLS	0.004	-0.010**	-0.002	0.009	0.003	0.001
	(0.009)	(0.004)	(0.001)	(0.010)	(0.006)	(0.002)
Fuzzy RD (IV)	0.005	-0.010**	-0.002	0.011	0.003	0.001
	(0.010)	(0.004)	(0.001)	(0.011)	(0.007)	(0.002)
Observations	2,292	2,292	2,292	1,109	1,109	1,109
Municipality FE	YES	YES	YES	NO	NO	NO
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS and fuzzy-RD coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses). Regressions examine the effect of *Subsidy* transfers on the number of establishments by the size of businesses. Dependent variables include per capita number of all establishments in the municipality (Panel A), per capita number of sole proprietorships (Panel B), per capita number of incorporated private sector establishments (Panel C), and per capita number of public sector establishments (Panel D). In columns 1-3, specifications include dependent and independent variables (law-implied *Subsidy* transfers) that are expressed in levels. In columns 4-6, variables are expressed in first differences. In columns 1 and 4 dependent variable includes businesses with up to 9 employees. In columns 2 and 5 dependent variable includes businesses with 10 to 49 employees. In columns 3 and 6 dependent variable includes businesses with 50 or more employees. "Yes" indicates that the set of fixed effects and first-order polynomial is included. "No" indicates that the set of fixed effects is not included. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE 7

Total Number of Establishments and Fiscal Transfers by Industry

Dependent variable	Total establishments per capita			Sole proprietorships per capita		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)
			Panel A – Construction industry			
OLS	0.093***	0.118***	0.136***	0.097***	0.123***	0.145***
	(0.023)	(0.028)	(0.038)	(0.023)	(0.028)	(0.039)
Fuzzy RD (IV)	0.096***	0.125***	0.153***	0.100***	0.131***	0.163***
	(0.024)	(0.029)	(0.041)	(0.023)	(0.029)	(0.042)
			Panel B – Farming industry			
OLS	-0.043***	-0.052***	-0.035	-0.045***	-0.051***	-0.039*
	(0.011)	(0.017)	(0.023)	(0.011)	(0.016)	(0.023)
Fuzzy RD (IV)	-0.044***	-0.055***	-0.039	-0.047***	-0.055***	-0.044*
	(0.011)	(0.018)	(0.025)	(0.011)	(0.017)	(0.025)
			Panel C – Financial sector			
OLS	0.017***	0.017**	0.013	0.020***	0.020***	0.016
	(0.006)	(0.008)	(0.010)	(0.006)	(0.008)	(0.010)
Fuzzy RD (IV)	0.017***	0.018**	0.015	0.021***	0.021***	0.018
	(0.006)	(0.008)	(0.011)	(0.006)	(0.008)	(0.012)
			Panel D – IT			
OLS	-0.022***	-0.023***	-0.018*	-0.018***	-0.018***	-0.013
	(0.005)	(0.007)	(0.009)	(0.005)	(0.007)	(0.009)
Fuzzy RD (IV)	-0.023***	-0.024***	-0.020*	-0.018***	-0.019***	-0.015
	(0.005)	(0.008)	(0.011)	(0.005)	(0.007)	(0.010)
			Panel E – Services			
OLS	0.032***	0.041***	0.044***	0.011	0.008	0.014
	(0.010)	(0.013)	(0.017)	(0.008)	(0.011)	(0.014)
Fuzzy RD (IV)	0.033***	0.044***	0.050**	0.012	0.008	0.016
	(0.011)	(0.014)	(0.020)	(0.008)	(0.012)	(0.017)
			Panel F – Manufacturing			
OLS	0.076***	0.078***	0.070***	0.069***	0.071***	0.067***
	(0.015)	(0.019)	(0.024)	(0.013)	(0.017)	(0.022)
Fuzzy RD (IV)	0.078***	0.083***	0.080***	0.071***	0.075***	0.076***
	(0.014)	(0.018)	(0.024)	(0.013)	(0.016)	(0.022)
			Panel G – Real Estate			
OLS	-0.039***	-0.032**	-0.005	-0.002	0.002	0.006
	(0.012)	(0.013)	(0.016)	(0.003)	(0.004)	(0.005)
Fuzzy RD (IV)	-0.041***	-0.034**	-0.006	-0.002	0.002	0.006
	(0.012)	(0.014)	(0.018)	(0.003)	(0.004)	(0.005)
			Panel H – Retail industry			
OLS	0.137***	0.152***	0.174***	0.138***	0.150***	0.172***
	(0.024)	(0.032)	(0.042)	(0.023)	(0.031)	(0.041)
Fuzzy RD (IV)	0.141***	0.162***	0.197***	0.142***	0.160***	0.194***
	(0.024)	(0.033)	(0.043)	(0.022)	(0.031)	(0.040)
Observations	3,202	2,294	1,475	3,202	2,294	1,475
Municipality FE	YES	YES	YES	NO	NO	NO
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS and fuzzy-RD coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses). Regressions examine the effect of *Subsidy* transfers on the number of establishments by the industry of businesses. The dependent variable is the per capita number of all establishments (columns 1-3) and the number of per capita sole proprietorships (columns 4-6) in the following industries: Construction (Panel A), Farming (Panel B), Finance (Panel C), IT (Panel D), Services (Panel E), Manufacturing (Panel F), Real estate (Panel G), Retail industry (Panel H). "Yes" indicates that the set of fixed effects and first-order polynomial is included. "No" indicates that the set of fixed effects is not included. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE 8

Number of Establishments, Fiscal Transfers, and Winning Party Representation in the Municipal Council

Dependent variable	Total establishments per capita			Sole proprietorships per capita		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)
			Panel A – Full sample			
OLS: Winner members ≤ p50	0.442***	0.502***	0.563***	0.462***	0.471***	0.545***
	(0.078)	(0.115)	(0.152)	(0.081)	(0.122)	(0.156)
LATE (%)	5.486	6.277	7.027	7.510	7.709	8.924
OLS: Winner members > p50	0.204**	0.251*	0.217	0.199**	0.237**	0.193**
	(0.099)	(0.141)	(0.132)	(0.082)	(0.112)	(0.094)
LATE (%)	2.542	3.133	2.781	3.222	3.849	3.182
RD: Winner members ≤ p50	0.436***	0.483***	0.552***	0.455***	0.453***	0.535***
	(0.078)	(0.111)	(0.151)	(0.081)	(0.118)	(0.155)
LATE (%)	5.403	6.035	6.897	7.395	7.412	8.760
RD: Winner members > p50	0.233**	0.336**	0.328	0.227**	0.317**	0.291*
	(0.108)	(0.170)	(0.221)	(0.091)	(0.135)	(0.174)
LATE (%)	2.903	4.192	4.194	3.680	5.150	4.798
Observations: *Support ≤ p50*	1,082	709	463	1,082	709	463
Observations: *Support > p50*	871	542	333	871	542	333
Municipality FE	YES	YES	YES	YES	YES	YES
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES
			Panel B – Matched sample			
OLS: Winner members ≤ p50	0.494***	0.507***	0.616***	0.489***	0.437***	0.554***
	(0.100)	(0.128)	(0.175)	(0.094)	(0.105)	(0.159)
LATE (%)	6.070	6.231	7.675	7.851	7.033	9.072
OLS: Winner members > p50	0.312**	0.405**	0.584***	0.273***	0.333**	0.466***
	(0.126)	(0.187)	(0.186)	(0.105)	(0.159)	(0.145)
LATE (%)	3.913	5.085	7.420	4.448	5.433	7.621
RD: Winner members ≤ p50	0.487***	0.486***	0.590***	0.481***	0.419***	0.530***
	(0.096)	(0.121)	(0.169)	(0.091)	(0.100)	(0.153)
LATE (%)	5.976	5.968	7.351	7.729	6.736	8.689
RD: Winner members > p50	0.346**	0.522**	0.587***	0.304***	0.429**	0.468***
	(0.138)	(0.222)	(0.186)	(0.114)	(0.186)	(0.145)
LATE (%)	4.350	6.547	7.462	4.944	6.996	7.664
Observations: *Support ≤ p50*	767	559	406	767	559	406
Observations: *Support > p50*	598	435	325	598	435	325
Municipality FE	YES	YES	YES	YES	YES	YES
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS and fuzzy-RD coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses). Regressions examine heterogeneity in the effect of subsidy funding on entrepreneurship across municipalities below and above the median number of the winning party councillors sitting in the local government (*Winner member*). The dependent variable is the per capita number of all establishments (columns 1-3) and the number of per capita sole proprietorships (columns 4-6). Panel A presents the results for the full sample, and Panel B restricts the sample to municipalities on both sides of the threshold matched on geographical location (same county). "Yes" indicates that the set of fixed effects and first-order polynomial is included. "No" indicates that the set of fixed effects is not included. LATE (%) represents the economic magnitude calculated by comparing local estimates to the mean value of the dependent variable. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE 9

Number of Establishments, Fiscal Transfers, and Party Representation on the Municipal Council

Dependent variable	Total establishments per capita			Sole proprietorships per capita		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)
			Panel A – Full sample			
OLS: # of parties > p50	0.354***	0.488***	0.521***	0.385***	0.506***	0.590***
	(0.087)	(0.121)	(0.151)	(0.090)	(0.114)	(0.147)
LATE (%)	4.184	5.784	6.117	5.941	7.855	9.077
OLS: # of parties ≤ p50	0.223***	0.241**	0.251**	0.276***	0.314***	0.279***
	(0.083)	(0.117)	(0.098)	(0.086)	(0.113)	(0.096)
LATE (%)	2.905	3.114	3.311	4.658	5.246	4.751
RD: # of parties > p50	0.355***	0.481***	0.517***	0.387***	0.498***	0.585***
	(0.089)	(0.120)	(0.153)	(0.093)	(0.115)	(0.149)
LATE (%)	4.202	5.697	6.070	5.966	7.737	9.007
RD: # of parties ≤ p50	0.247***	0.291**	0.322**	0.305***	0.380***	0.358***
	(0.087)	(0.135)	(0.125)	(0.092)	(0.131)	(0.125)
LATE (%)	3.211	3.766	4.238	5.149	6.343	6.082
Observations *Parties > p50*	764	478	306	764	478	306
Observations *Parties ≤ p50*	1,216	827	508	1,216	827	508
Municipality FE	YES	YES	YES	YES	YES	YES
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES
			Panel B – Matched sample			
OLS: # of parties > p50	0.362***	0.698***	0.406***	0.377***	0.696***	0.448***
	(0.120)	(0.136)	(0.151)	(0.114)	(0.115)	(0.153)
LATE (%)	4.306	8.368	4.902	5.879	10.93	7.163
OLS: # of parties ≤ p50	0.270	-0.825	0.118	0.513	-0.648	1.125
	(0.431)	(0.898)	(2.072)	(0.493)	(1.037)	(2.348)
LATE (%)	3.603	-11.18	1.585	8.578	-11.02	18.93
RD: # of parties > p50	0.354***	0.660***	0.378***	0.368***	0.657***	0.418***
	(0.118)	(0.132)	(0.142)	(0.112)	(0.112)	(0.144)
LATE (%)	4.207	7.908	4.569	5.744	10.33	6.676
RD: # of parties ≤ p50	0.350	-0.916	0.152	0.664	-0.720	1.441
	(0.579)	(1.043)	(2.629)	(0.679)	(1.185)	(2.764)
LATE (%)	4.662	-12.41	2.031	11.10	-12.24	24.25
Observations *Parties > p50*	484	333	223	484	333	223
Observations *Parties ≤ p50*	156	128	96	156	128	96
Municipality FE	YES	YES	YES	YES	YES	YES
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS and fuzzy-RD coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses). Regressions examine heterogeneity in the effect of subsidy funding on entrepreneurship across municipalities below and above the median number of political parties represented in the local government *(# of parties*). The dependent variable is the per capita number of all establishments (columns 1-3) and the number of per capita sole proprietorships (columns 4-6). Panel A presents the results for the full sample, and Panel B restricts the sample to municipalities on both sides of the threshold matched on geographical location (same county). "Yes" indicates that the set of fixed effects and first-order polynomial is included. "No" indicates that the set of fixed effects is not included. LATE (%) represents the economic magnitude calculated by comparing local estimates to the mean value of the dependent variable. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE 10

Number of Establishments, Fiscal Transfers, and Cultural Legacy

Dependent variable		Total establishments per capita			Sole proprietorships per capita		
Bandwidth		<6%	<5%	<4%	<6%	<5%	<4%
		(1)	(2)	(3)	(4)	(5)	(6)
OLS: Prussian		0.289***	0.289***	0.599***	0.386***	0.396***	0.617***
		(0.080)	(0.108)	(0.135)	(0.075)	(0.097)	(0.129)
	LATE (%)	3.385	3.367	6.992	6.041	6.162	9.644
OLS: Austrian		0.211	0.449**	0.306*	0.187	0.343**	0.285*
		(0.157)	(0.171)	(0.175)	(0.117)	(0.138)	(0.147)
	LATE (%)	2.685	5.669	3.812	2.962	5.406	4.394
OLS: Russian		0.178**	0.220**	0.130	0.177***	0.228***	0.160*
		(0.079)	(0.090)	(0.090)	(0.068)	(0.080)	(0.087)
	LATE (%)	2.536	3.163	1.893	3.186	4.132	2.939
RD: Prussian		0.282***	0.281***	0.585***	0.377***	0.385***	0.602***
		(0.078)	(0.104)	(0.132)	(0.073)	(0.094)	(0.128)
	LATE (%)	3.306	3.278	6.822	5.899	5.999	9.409
RD: Austrian		0.218	0.454**	0.274*	0.193	0.347**	0.255*
		(0.163)	(0.183)	(0.161)	(0.122)	(0.145)	(0.133)
	LATE (%)	2.779	5.736	3.407	3.066	5.470	3.928
RD: Russian		0.205**	0.289***	0.194	0.204***	0.299***	0.237*
		(0.086)	(0.111)	(0.133)	(0.074)	(0.099)	(0.125)
	LATE (%)	2.930	4.153	2.815	3.680	5.424	4.370
Observations *Prussian*		1,645	1,189	728	1,645	1,189	728
Observations *Austrian*		394	300	188	394	300	188
Observations *Russian*		1,163	805	556	1,163	805	556
Municipality FE		YES	YES	YES	YES	YES	YES
County-year FE		YES	YES	YES	YES	YES	YES
Cutoff-year FE		YES	YES	YES	YES	YES	YES
First-order polynomial		YES	YES	YES	YES	YES	YES

Notes: The table reports OLS and fuzzy-RD coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses). Regressions examine heterogeneity in the effect of subsidy funding on entrepreneurship across municipalities resulting from historical legacies. Results are estimated separately for municipalities, which between years 1815-1918 belonged to the Kingdom of Prussia (row 1 and 4), the Austrian Empire (row 2 and 5), and Russian Empire (row 3 and 6). The dependent variable is the per capita number of all establishments (columns 1-3) and the number of per capita sole proprietorships (columns 4-6). "Yes" indicates that the set of fixed effects and first-order polynomial is included. "No" indicates that the set of fixed effects is not included. LATE (%) represents the economic magnitude calculated by comparing local estimates to the mean value of the dependent variable. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE 11

Sensitivity Tests: Number of Establishments and Fiscal Transfers

Local estimates	in levels			in first differences		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A – Excluding election years (2014 and 2018)					
	Total establishments per capita					
OLS	0.217***	0.206**	0.312***	0.069	0.136**	0.174**
	(0.073)	(0.085)	(0.098)	(0.051)	(0.059)	(0.079)
Fuzzy RD (IV)	0.228***	0.229**	0.376***	0.077	0.169**	0.259**
	(0.075)	(0.091)	(0.098)	(0.059)	(0.082)	(0.113)
	Sole proprietorships per capita					
OLS	0.316***	0.313***	0.363***	0.089*	0.147**	0.193**
	(0.071)	(0.083)	(0.106)	(0.047)	(0.057)	(0.079)
Fuzzy RD (IV)	0.331***	0.349***	0.437***	0.099*	0.183**	0.288***
	(0.072)	(0.084)	(0.099)	(0.055)	(0.081)	(0.106)
Observations	2,143	1,468	931	1,150	761	464
	Panel B – Excluding municipalities moving to lower transfer bracket					
	Total establishments per capita					
OLS	0.335***	0.401***	0.431***	0.257***	0.316**	0.305*
	(0.079)	(0.108)	(0.138)	(0.079)	(0.128)	(0.154)
Fuzzy RD (IV)	0.343***	0.419***	0.446***	0.256***	0.319**	0.311*
	(0.081)	(0.116)	(0.144)	(0.080)	(0.129)	(0.158)
	Sole proprietorships per capita					
OLS	0.365***	0.430***	0.417***	0.231***	0.275***	0.293**
	(0.068)	(0.088)	(0.116)	(0.067)	(0.105)	(0.141)
Fuzzy RD (IV)	0.374***	0.450***	0.431***	0.231***	0.277**	0.299**
	(0.069)	(0.096)	(0.122)	(0.067)	(0.106)	(0.145)
Observations	2,027	1,384	817	759	440	228
	Panel C – Controlling for other sources of municipal revenue					
	Total establishments per capita					
OLS	0.236***	0.276***	0.382***	0.079***	0.090**	0.119**
	(0.055)	(0.072)	(0.094)	(0.030)	(0.044)	(0.059)
Fuzzy RD (IV)	0.244***	0.295***	0.434***	0.105**	0.175**	0.258**
	(0.056)	(0.074)	(0.099)	(0.047)	(0.073)	(0.103)
	Sole proprietorships per capita					
OLS	0.288***	0.328***	0.401***	0.081***	0.096**	0.137**
	(0.051)	(0.065)	(0.090)	(0.027)	(0.041)	(0.054)
Fuzzy RD (IV)	0.297***	0.350***	0.456***	0.109***	0.183***	0.288***
	(0.052)	(0.067)	(0.093)	(0.042)	(0.067)	(0.096)
Observations	3,202	2,294	1,475	1,522	989	581
Municipality FE	YES	YES	YES	NO	NO	NO
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

TABLE 11 *(Continued)*

Local estimates	in levels			in first differences		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)
			Panel D – Including lagged dependent variable			
			Total establishments per capita			
OLS	0.254***	0.220***	0.282***	0.093**	0.146**	0.180**
	(0.058)	(0.054)	(0.062)	(0.043)	(0.057)	(0.072)
Fuzzy RD (IV)	0.261***	0.233***	0.318***	0.101**	0.174**	0.253**
	(0.059)	(0.057)	(0.067)	(0.049)	(0.076)	(0.099)
			Sole proprietorships per capita			
OLS	0.285***	0.214***	0.254***	0.094**	0.149***	0.200***
	(0.056)	(0.043)	(0.048)	(0.038)	(0.050)	(0.069)
Fuzzy RD (IV)	0.293***	0.227***	0.286***	0.102**	0.179**	0.281***
	(0.057)	(0.046)	(0.056)	(0.043)	(0.069)	(0.093)
Observations	3,188	2,285	1,472	1,521	988	580
			Panel E – Alternative clustering of standard errors			
			Total establishments per capita			
OLS	0.251***	0.292***	0.400***	0.099**	0.152***	0.183**
	(0.060)	(0.073)	(0.099)	(0.043)	(0.058)	(0.074)
Fuzzy RD (IV)	0.259***	0.311***	0.452***	0.108**	0.181**	0.257***
	(0.061)	(0.076)	(0.099)	(0.048)	(0.075)	(0.098)
			Sole proprietorships per capita			
OLS	0.304***	0.343***	0.417***	0.102***	0.158***	0.204***
	(0.057)	(0.067)	(0.097)	(0.038)	(0.051)	(0.073)
Fuzzy RD (IV)	0.313***	0.365***	0.471***	0.111**	0.188***	0.286***
	(0.057)	(0.069)	(0.096)	(0.043)	(0.069)	(0.092)
Observations	3,202	2,294	1,475	1,522	989	581
			Panel F – Including higher-order polynomials			
			Total establishments per capita			
OLS	0.257***	0.299***	0.429***	0.107**	0.167***	0.167**
	(0.062)	(0.076)	(0.108)	(0.046)	(0.059)	(0.072)
Fuzzy RD (IV)	0.266***	0.320***	0.488***	0.117**	0.202***	0.241**
	(0.063)	(0.078)	(0.108)	(0.053)	(0.077)	(0.105)
			Sole proprietorships per capita			
OLS	0.312***	0.352***	0.438***	0.113***	0.177***	0.191***
	(0.058)	(0.069)	(0.105)	(0.041)	(0.052)	(0.070)
Fuzzy RD (IV)	0.323***	0.376***	0.498***	0.124***	0.215***	0.276***
	(0.059)	(0.071)	(0.102)	(0.047)	(0.069)	(0.096)
Observations	3,202	2,294	1,475	1,522	989	581
Municipality FE	YES	YES	YES	NO	NO	NO
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS and fuzzy-RD coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses) for several sensitivity tests. Regressions replicate the results presented in Table 5 for the sample excluding election years (Panel A) and municipalities moving to lower transfer bracket (Panel B). In Panel C, specifications are saturated with control variables – sources of municipal revenue other than *Subsidy*. In Panel D, specifications control for the lagged dependent variable. Panel E shows the results with alternative clustering of standard errors (clustered at the county level). The estimates in Panel F are obtained with specifications, including higher-order polynomials. Dependent variables include the number of per capita all establishments and per capita sole proprietorships. In columns 1-3, specifications include dependent and independent variables (law-implied *Subsidy* transfers) expressed in levels. In columns 4-6, variables are expressed in first differences. "Yes" indicates that the set of fixed effects and first-order polynomial is included. "No" indicates that the set of fixed effects is not included. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

ONLINE APPENDIX

TABLE A.1

Additional Summary Statistics

Variable	Observations	Mean	SD	Min	Median	Max
Direct grants	17,276	16,200,000	42,200,000	558,114.800	8,394,486	1,130,000,000
Direct grants per capita	17,276	1,185.537	578.810	142.159	1,092.372	14,033.05
European Union funds	17,276	3,451,100	17,900,000	0	1,024,288	960,000,000
European Union funds per capita	17,276	211.701	309.192	0	119.423	13,559.42
Other subsidy	17,276	501,931.3	2,504,769	0	85,098.93	88,700,000
Other subsidy per capita	17,276	19.991	31.592	0	10.917	1,557.868
Debt expenses	17,276	744,834.9	3,549,991	0	244,985.9	117,000,000
Debt expenses per capita	17,276	38.163	39.959	0	31.42	2,580.229
Total establishments 0-9 employees	17,276	1,459.13	5,451.843	56	504.5	135,088
Total establishments 0-9 employees per capita	17,276	0.075	0.034	0.026	0.069	0.813
Total establishments 10-49 employees	17,276	53.562	196.081	1	20	4,929
Total establishments 10-49 employees per capita	17,276	0.003	0.001	<0.001	0.003	0.016
Total establishments 50+ employees	17,276	12.133	48.208	0	3	1,123
Total establishments 50+ employees per capita	17,276	<0.001	<0.001	0	<0.001	0.005
Sole proprietorships 0-9 employees	17,276	1,100.617	3,710.673	32	410	87,185
Sole proprietorships 0-9 employees per capita	17,276	0.060	0.024	0.015	0.056	0.309
Sole proprietorships 10-49 employees	17,276	12.102	35.361	0	5	783
Sole proprietorships 10-49 employees per capita	17,276	0.001	<0.001	0	0.001	0.005
Sole proprietorships 50+ employees	17,276	0.516	1.720	0	0	45
Sole proprietorships 50+ employees per capita	17,276	<0.001	<0.001	0	0	0.001
Private sector establishments 0-9 employees	17,276	321.147	1,627.042	5	79	45,431
Private sector establishments 0-9 employees per capita	17,276	0.014	0.014	0.002	0.011	0.634
Private sector establishments 10-49 employees	17,276	29.850	145.722	0	7	3,953
Private sector establishments 10-49 employees per capita	17,276	0.001	0.001	0	0.001	0.009
Private sector establishments 50+ employees	17,276	6.534	29.787	0	1	763
Private sector establishments 50+ employees per capita	17,276	<0.001	<0.001	0	<0.001	0.004
Public sector establishments 0-9 employees	17,276	29.881	101.760	0	9	2,557
Public sector establishments 0-9 employees per capita	17,276	0.002	0.002	0	0.001	0.026
Public sector establishments 10-49 employees	17,276	11.603	17.664	0	7	375
Public sector establishments 10-49 employees per capita	17,276	0.001	<0.001	0	0.001	0.004
Public sector establishments 50+ employees	17,276	5.079	17.602	0	1	335
Public sector establishments 50+ employees per capita	17,276	<0.001	<0.001	0	<0.001	0.003
Construction industry establishments	17,276	187.515	533.386	4	88	12,196
Construction industry establishments per capita	17,276	0.012	0.005	0.001	0.011	0.061
Farming industry establishments	17,276	31.393	34.272	0	23	539
Farming industry establishments per capita	17,276	0.004	0.003	0	0.003	0.065
Finance industry establishments	17,276	44.924	207.207	0	11	4,583
Finance industry establishments per capita	17,276	0.002	0.001	0	0.001	0.014
IT industry establishments	17,276	41.765	294.191	0	6	10,115
IT industry establishments per capita	17,276	0.001	0.001	0	0.001	0.017

TABLE A.1 *(Continued)*

Services industry establishments	17,276	98.873	351.760	1	36	8,763
Services industry establishments per capita	17,276	0.005	0.002	0	0.005	0.026
Manufacturing industry establishments	17,276	140.591	454.862	2	56	10,356
Manufacturing industry establishments per capita	17,276	0.008	0.004	0.001	0.007	0.061
Real estate industry establishments	17,276	84.359	417.585	0	9	11,019
Real estate industry establishments per capita	17,276	0.003	0.005	0	0.001	0.088
Retail industry establishments	17,276	387.451	1,332.526	6	133	29,438
Retail industry establishments per capita	17,276	0.020	0.013	0.003	0.018	0.563
Winning party council members/total members	17,276	0.538	0.161	0.174	0.533	1
Number of parties on municipality council	17,276	4.356	1.567	1	4	11

TABLE A.2

Law-implied Supplementary vs. Law-implied Base subsidy

Local estimates	In levels			In first differences		
Bandwidth	<6%	<5%	<4%	<6%	<5%	<4%
	(1)	(2)	(3)	(4)	(5)	(6)
Law-implied Base subsidy per capita	0.074**	0.071	0.070	0.019	-0.006	-0.005
	(0.029)	(0.046)	(0.054)	(0.014)	(0.027)	(0.047)
Observations	3,202	2,294	1,475	1,522	989	581
Within (adjusted) R2	0.009	0.009	0.013	0.019	-0.003	-0.001
Municipality FE	YES	YES	YES	NO	NO	NO
County-year FE	YES	YES	YES	YES	YES	YES
Cutoff-year FE	YES	YES	YES	YES	YES	YES
First-order polynomial	YES	YES	YES	YES	YES	YES

Notes: The table reports OLS coefficients and heteroscedasticity-adjusted standard errors clustered at the municipality level (in parentheses) obtained using specification 3. Regressions associate the law-implied level of per capita *Supplementary subsidy* transfers to law-implied per capita *Base subsidy* transfers. In columns 1-3, variables are expressed in levels. In columns 4-6, variables are expressed in first differences. "Yes" indicates that the set of fixed effects or first-order polynomial is included. "No" indicates that the set of fixed effects or first-order polynomial is not included. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

FIGURE A.1
MANIPULATION TESTS BY YEAR- MCCRARY DENSITY TEST

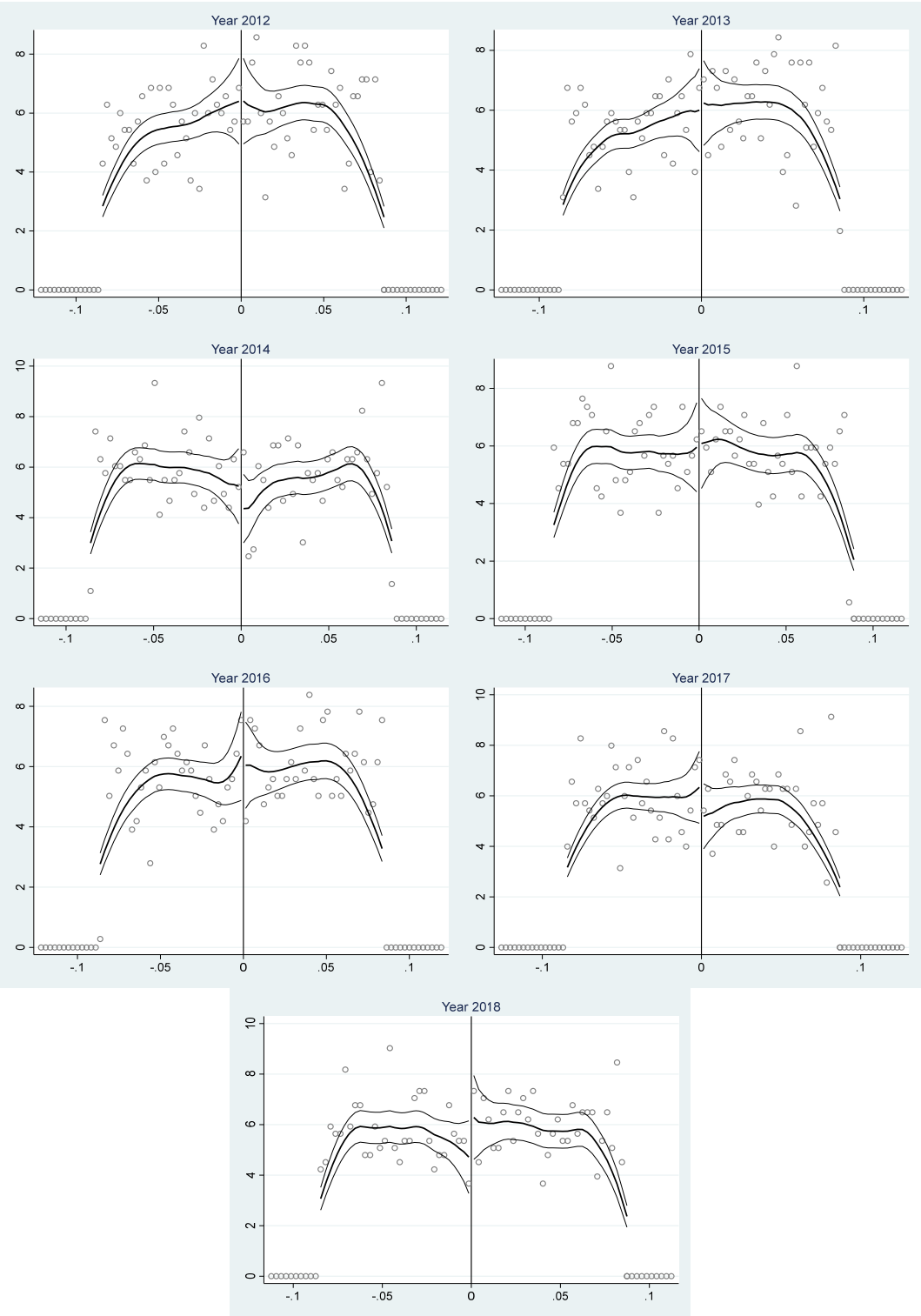


FIGURE A.2
ACTUAL AND LAW IMPLIED REGIONAL TRANSFERS AROUND EACH CUTOFF

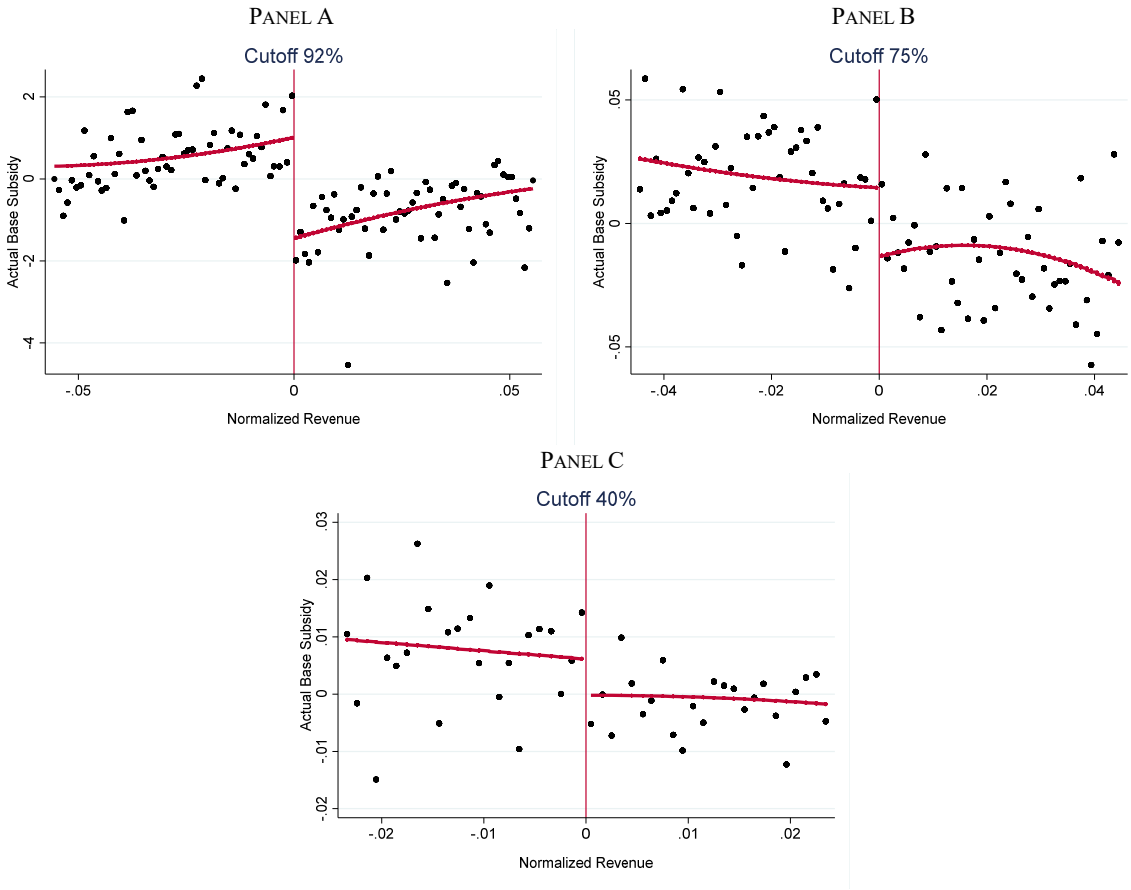


FIGURE A.3
LAW-IMPLIED SUPPLEMENTARY SUBSIDY TRANSFERS AROUND BASE SUBSIDY THRESHOLDS