Firms' Location Decisions and the Catalan Secessionist Conflict

Abstract

Since the restoration of democracy in Spain in 1977, Catalan politicians have been in constant conflict with the central government—sometimes subtle, and more recently, direct and public. At an early stage, Catalan politicians' claims were mainly related to demands for greater funding from the central government. More recently, however, these claims have evolved into calls for outright secession from the rest of the country, in what is commonly referred to as the independence 'procés.'

The contemporary phase of the independence movement accelerated after the 2006 reform of the Catalan Statute of Autonomy. Although approved by both the Catalan and Spanish parliaments and ratified by referendum, key provisions were subsequently struck down or reinterpreted by the Spanish Constitutional Court in 2010, generating widespread discontent. From 2012 onward, massive demonstrations organized by pro-independence civil society groups such as the *Assemblea Nacional Catalana* and *Òmnium Cultural* highlighted growing demands for self-determination.

In 2014, the Catalan government attempted to hold a non-binding consultation on independence, which was declared unconstitutional by the Spanish courts. The movement culminated in the unilateral referendum of October 1, 2017, organized by the Catalan government despite being suspended by the Constitutional Court. Unlike the Brexit vote (Born et al., 2019), the referendum held in Catalonia was, under Spanish legislation, illegal.

On October 27, 2017, the Catalan Parliament declared independence, but only seconds later the Catalan President suspended the declaration *sine die*. As a result, the Spanish government invoked Article 155 of the Constitution, suspended Catalonia's autonomy, and assumed direct control of its institutions. Several Catalan leaders were

prosecuted and imprisoned for rebellion, sedition, or misuse of public funds, while others escaped to other countries.

These political events generated strong social tensions in 2017 but, more importantly, created considerable uncertainty. Despite the legal impossibility of secession, Catalan politicians and public media repeatedly suggested that independence was indeed possible, with all its potential consequences. As a result, expectations and individual decisions—by both firms and households—were significantly affected. For example, following the events of October 2017, a large outflow of short- and long-term bank deposits was recorded: €36 million during the first quarter immediately after the referendum, of which €33 million were short-term deposits (Esteller-Moré and Rizzo, 2022). Many savers simply transferred their deposits from Catalan branches to offices of the same banks in neighboring regions, fearing exclusion from the Eurozone. Firms behaved similarly. After the referendum, several major Catalan companies—including the two largest banks, CaixaBank and Banco Sabadell—relocated their registered headquarters to other regions, and many have not returned. According to data collected by the Spanish Registrars, updated as of January 21, 2025, more than 10,000 companies have changed their tax domicile from Catalonia to other parts of Spain. The worst figures were recorded in the immediate aftermath: more than 2,000 and 2,800 companies left Catalonia in 2017 and 2018, respectively.

Previous research (Esteller-Moré and Rizzo, 2022) analyzed the economic impacts of the Catalan secessionist conflict on several outcome variables. Using a synthetic control method, they found strong evidence of an outflow of short-term bank deposits after the referendum. On the real side, they also documented responses in aggregate supply, such as the number of capital increases and new firms registered.

In this paper, we build on the latter finding. Using annual datasets from 2012 to 2024 at the municipal level, we estimate difference-in-differences models to assess the impact of the independence declaration on changes in the number of firms registered in Catalonia. Data on firm locations are obtained from the DIRCE database compiled by the Spanish National Institute of Statistics. Our sample includes the locations of registered headquarters.

It is important to note, however, that the literature on the spatial distribution of industry usually focuses on the location of establishments (i.e., workplaces), which is not the same as headquarters. In some cases, the location of a headquarters may be merely instrumental, while the actual center of activity is situated elsewhere, possibly in another Spanish region, for reasons such as tax incentives. Nevertheless, we are confident that, given that the vast majority of firms in Spain are SMEs (approximately 95.4% are micro-companies with fewer than 10 employees), both concepts—registered headquarters and production establishments—will coincide in most cases.

In our difference-in-differences setup, the 942 Catalan municipalities constitute the treatment group from 2017 onward, while the 6,241 municipalities in the rest of the country serve as the control group. The dependent variable is the change (in logarithmic terms) in the number of firms at the municipal level. This change may result either from firms' relocation decisions or from firm closures, which we are unable to distinguish between. The panel data model also includes municipal population density as a control, municipality and year fixed effects, as well as linear and quadratic region-specific time trends at the provincial level (NUTS-3 regions).

We find a significant negative effect on the change in the number of firms: following the independence declaration, Catalan municipalities experienced 0.7% lower growth in the number of firms, holding other variables constant. However, when we re-

estimate the models using employment growth as the dependent variable, no significant effect emerges. This suggests that the reduction in firm growth did not translate into real effects on employment. The results are robust when restricting the control group to municipalities in regions neighboring Catalonia, and placebo regressions and dynamic difference-in-differences models (event study) further validate our findings.

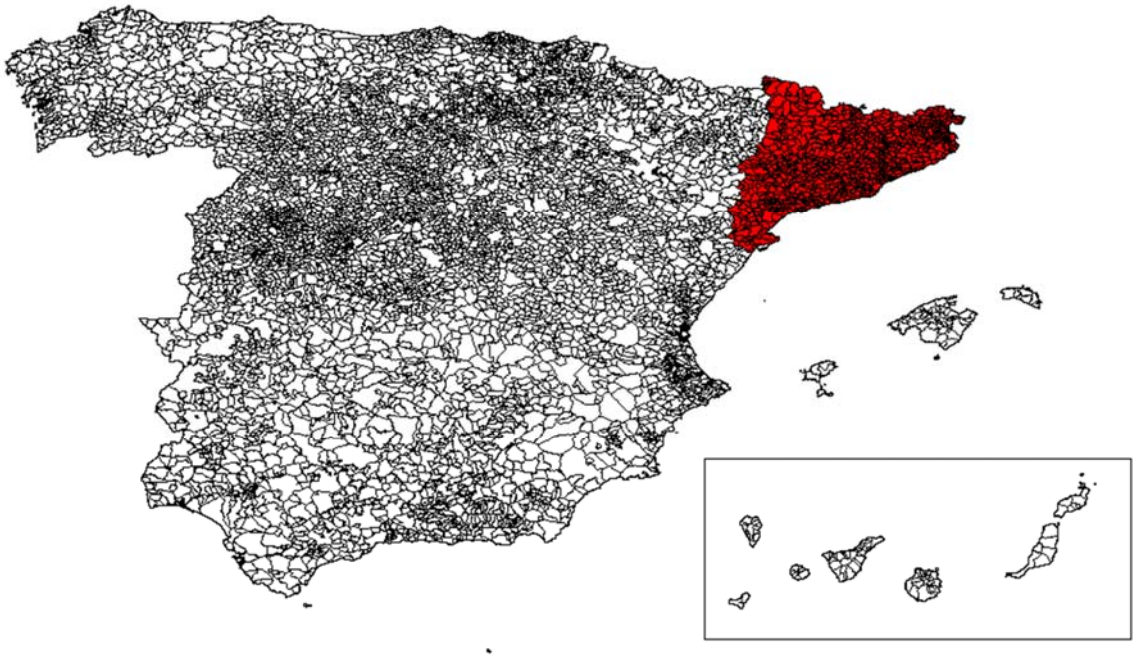
Finally, we examine the effect on firm dynamics by productive sector. When disaggregating by activity, the negative impact after the independence declaration is observed only in the sectors of 'trade, transportation, accommodation, and food service activities', 'financial and insurance activities', and 'information and communication'. Together, these three sectors accounted for almost 40% of the total number of firms during the analyzed period (34% in trade and related activities, 2% in financial and insurance activities, and 2% in information and communication), but only about 34% of total employment (on average 28% in trade and related activities, 2% in financial and insurance activities, and 4% in information and communication). This helps explain why the negative and significant effect on the number of firms did not translate into a negative effect on employment. An alternative explanation is that, although many firms relocated their registered headquarters to other regions for legal certainty, they continued to operate in Catalonia much as they had prior to the independence declaration.

References

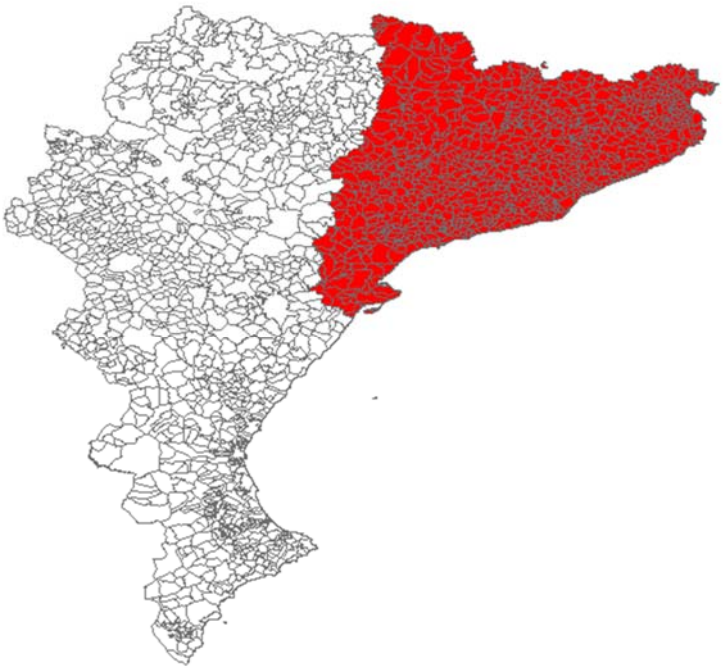
Born, B., G. J. Müller, M. Schularick, and P. Sedláček, (2019). The Costs of Economic Nationalism: Evidence from the Brexit Experiment. Economic Journal, 129(623): 2722–2744.

Esteller-Moré, A., and L. Rizzo, (2022). The Economic Costs of a Secessionist Conflict: The Case of Catalonia. Defence and Peace Economics, 33(6): 655–688.

Figure 1. Treatment and control groups



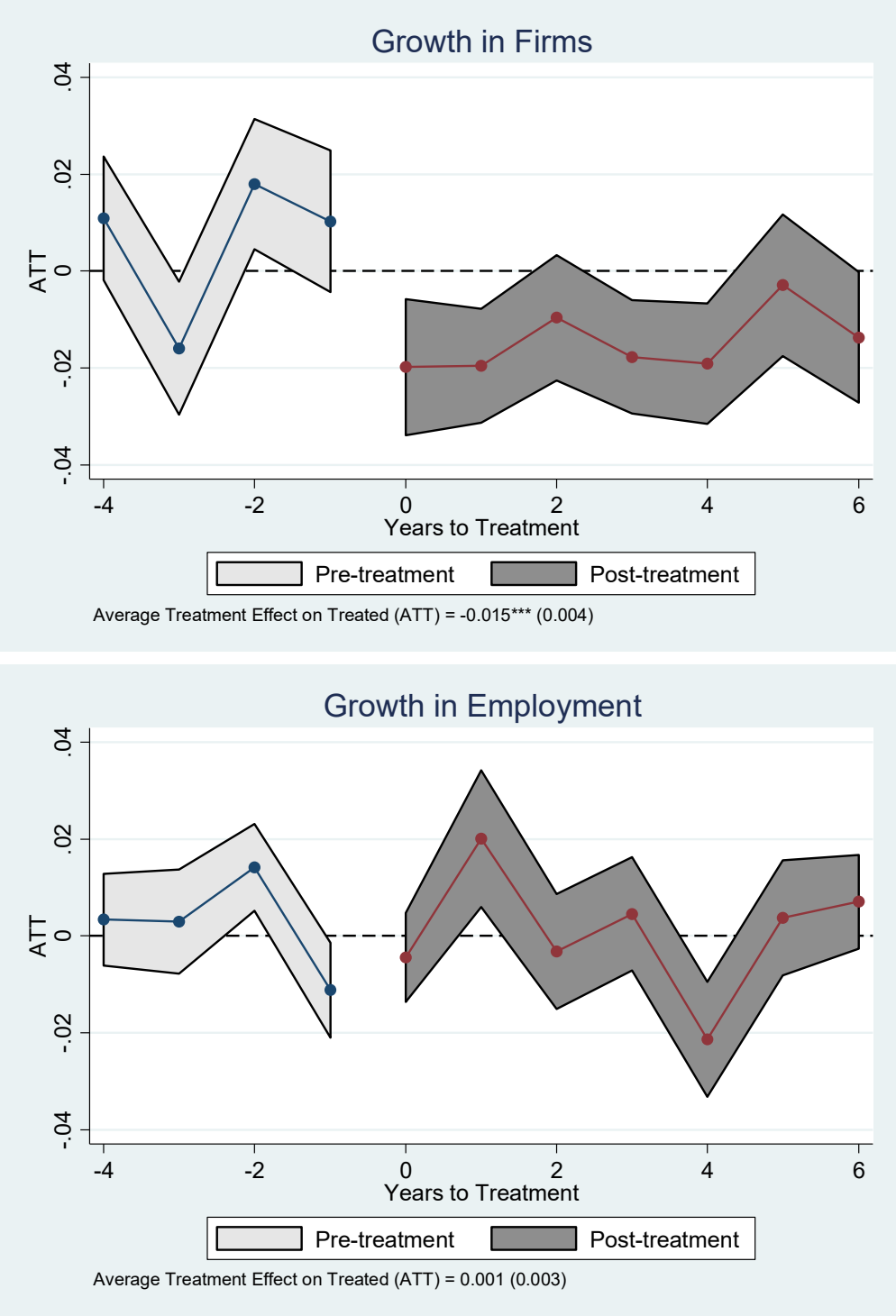
(a) All municipalities



(b) Catalonia and its two neighbouring NUTS2 regions (Aragón and Comunidad Valenciana)

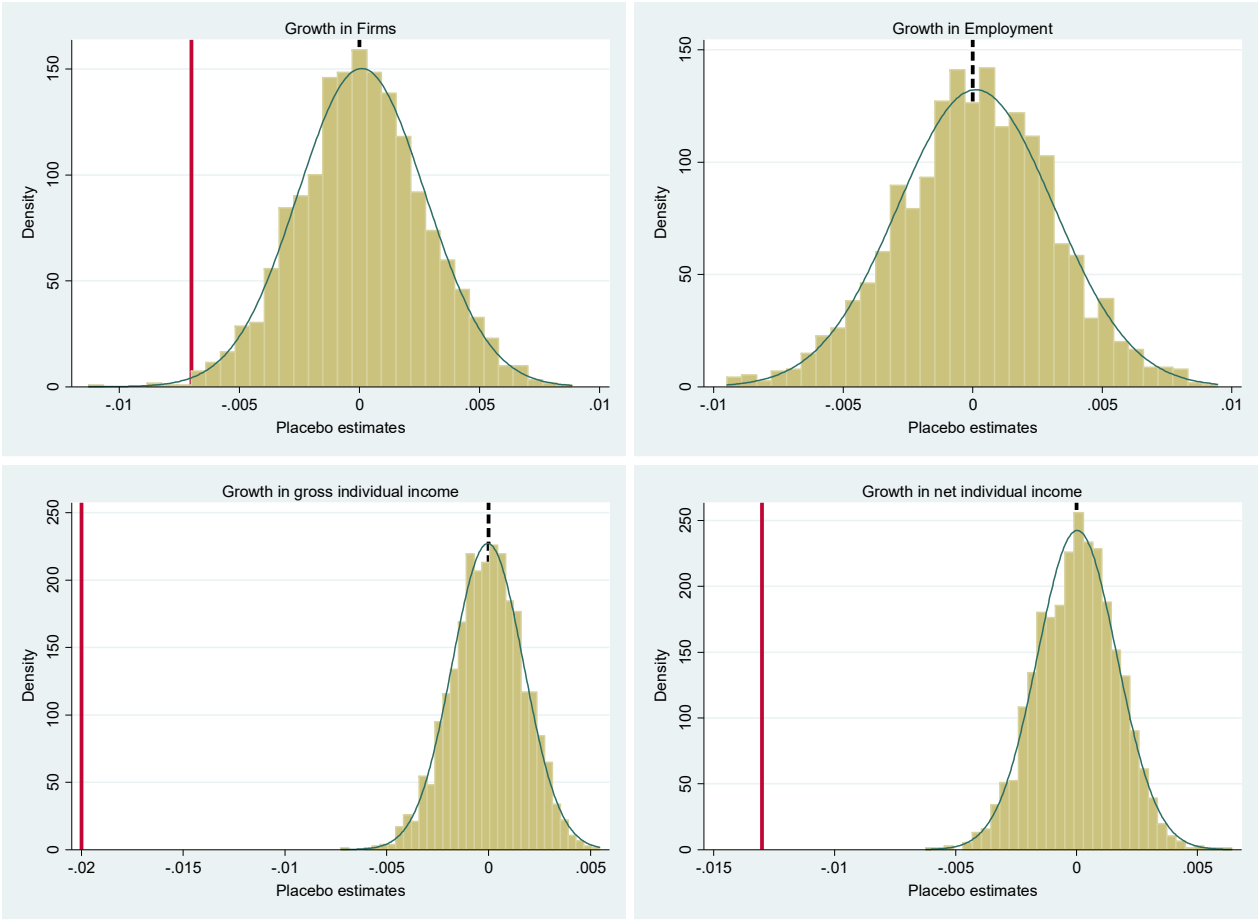
Notes: Treated Catalan municipalities in red. Municipalities in the control group in white.

Figure 2. Event study



Notes: The event study was estimated using the doubly robust DiD estimator based on stabilised inverse probability weighting and ordinary least squares by Sant'Anna and Zhao (2020). Control group: Never treated observations. Sample period: 2012–2024. Estimations include municipality and year fixed-effects, and the municipality population density. Province-specific time trends are not allowed.

Figure 3. The effect of the 2017 unilateral declaration of independence. A placebo test



Notes: Distribution of the estimated coefficients from 2,000 placebo regressions using random samples of treated municipalities. Vertical red lines represent estimated coefficients, when significant, using the actual Catalan municipalities obtained from Table 2. Dashed vertical lines are also added at the zero value of the mass of density of the placebo estimated coefficients.

Table 1. Average values by year

Year	Catalan Municipalities (12%)					Non-catalan Municipalities (88%)				
	Population density	Firms	Employment	Individual gross income	Individual net income	Population density	Firms	Employment	Individual gross income	Individual net income
2012	443.52	634.39	3,079.77			140.57	433.81	1,891.16		
2013	443.16	623.15	3,017.54			140.30	428.09	1,842.19		
2014	442.06	619.26	3,069.86			139.52	425.80	1,871.69		
2015	441.53	627.65	3,176.99	15,225.83	12,697.90	139.34	435.59	1,930.29	12,365.87	11,047.80
2016	442.68	638.98	3,294.18	15,684.47	13,069.87	138.78	440.95	1,981.10	12,718.35	10,836.37
2017	444.64	653.38	3,417.27	15,943.79	13,190.85	138.82	444.81	2,048.67	12,950.36	10,896.33
2018	447.73	664.16	3,520.71	16,425.65	13,550.76	139.14	454.37	2,113.49	13,473.15	11,309.66
2019	451.93	665.24	3,603.53	16,900.90	13,917.76	140.20	458.28	2,168.34	13,989.33	11,699.59
2020	457.96	672.92	3,513.20	17,359.62	14,274.66	141.40	462.23	2,118.73	14,267.37	12,405.61
2021	457.33	664.84	3,597.42	17,773.65	14,424.11	141.51	459.32	2,170.39	14,841.79	12,690.49
2022	457.19	677.57	3,741.82	17,287.60	13,949.60	141.81	467.06	2,257.27	14,297.53	12,170.23
2023	457.04	632.85	3,845.67			142.12	438.91	2,316.82		
2024	456.90	645.27	3,937.55			142.38	443.91	2,374.94		

Notes: Sources: Spanish National Institute of Statistics (INE) and social security records.

Table 2. Economic effect of the 2017 unilateral declaration of independence

Dependent variable: Growth in…	Firms	Employment	Individual gross income	Individual net income
Period:	2012-2024	2012-2024	2015-2022	2015-2022
	(1)	(2)	(3)	(4)
Post declaration of independence	-0.007***	0.014*	-0.020**	-0.013**
× Catalan municipalities	(0.002)	(0.007)	(0.008)	(0.005)
Y_{it-1}	-0.410***	-0.306***	-0.793***	-0.876***
	(0.008)	(0.011)	(0.042)	(0.051)
ln(population density)	0.155***	0.088***	-0.062***	-0.067***
	(0.012)	(0.013)	(0.010)	(0.010)
Municipality fixed effects	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y
Province × Time	Y	Y	Y	Y
R^2	0.217	0.189	0.501	0.703
Municipalities	7,183	8,107	8,096	8,095
Observations	81,664	97,142	48,137	49,120

Notes: Panel fixed effects models. Period: 2012–2024 (Columns 1 and 2), and 2015-2022 (Columns 3 and 4). Dependent variable: Logarithmic growth in firms (Column 1), employment (Column 2), individual gross income (Column 3), and individual net income (Column 4). Y_{it-1} is the past value of the outcome variable in logs (Y= firms, workers, individual gross income and individual net income). All models include a constant. Robust standard errors are clustered at the provincial level (NUTS3 regions) and reported in parentheses. Significant at the *10%, **5%, and ***1% levels.

Table 3. Economic effect of the 2017 unilateral declaration of independence, Catalonia versus neighboring regions

Dependent variable: Growth in…	Firms	Employment	Individual gross income	Individual net income
Period:	2012-2024	2012-2024	2015-2022	2015-2022
	(1)	(2)	(3)	(4)
Post declaration of independence	-0.012***	0.004	-0.021**	-0.020**
× Catalan municipalities	(0.003)	(0.018)	(0.006)	(0.006)
Y_{it-1}	-0.404***	-0.295***	-0.731***	-0.824***
	(0.021)	(0.025)	(0.031)	(0.041)
ln(population density)	0.150***	0.097***	-0.040**	-0.042**
	(0.023)	(0.015)	(0.016)	(0.017)
Municipality fixed effects	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y
Province × Time	Y	Y	Y	Y
R^2	0.213	0.174	0.465	0.519
Municipalities	1,944	2,097	2,088	2,088
Observations	22,498	25,136	13,418	13,418

Notes: Panel fixed effects models. Period: 2012–2024 (Columns 1 and 2), and 2015-2022 (Columns 3 and 4). Dependent variable: Logarithmic growth in firms (Column 1), employment (Column 2), individual gross income (Column 3), and individual net income (Column 4). Y_{it-1} is the past value of the outcome variable in logs (Y= firms, workers, individual gross income and individual net income). All models include a constant. Robust standard errors are clustered at the provincial level (NUTS3 regions) and reported in parentheses. Significant at the *10%, **5%, and ***1% levels.

Table 4. Effect of the 2017 unilateral declaration of independence on firms by sector

Sector:	Industry	Services	Construction	Trade	Finance	Real estate	Communications	Professional services	Social services
Dependent variable: Growth in Firms	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Post declaration of independence	-0.014*	-0.002	-0.012*	-0.015***	-0.018**	0.006	-0.026**	-0.001	-0.001
× Catalan municipalities	(0.007)	(0.003)	(0.006)	(0.003)	(0.008)	(0.009)	(0.010)	(0.003)	(0.005)
Y_{it-1}	-0.385***	-0.391***	-0.398***	-0.383***	-0.457***	-0.401***	-0.479***	-0.373***	-0.409***
	(0.011)	(0.012)	(0.010)	(0.009)	(0.013)	(0.014)	(0.012)	(0.015)	(0.014)
ln(population density)	0.154***	0.162***	0.151***	0.176***	0.354***	0.124**	0.353***	0.222***	0.285***
	(0.031)	(0.027)	(0.031)	(0.022)	(0.075)	(0.051)	(0.083)	(0.048)	(0.045)
Municipality fixed effects	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y	Y
Province × Time	Y	Y	Y	Y	Y	Y	Y	Y	Y
R^2	0.223	0.230	0.286	0.244	0.260	0.312	0.256	0.265	0.270
Municipalities	3,156	3,239	3,203	3,264	1,272	1,274	1,148	1,346	1,344
Observations	35,466	37,044	35,921	37,690	12,950	13,434	11,393	15,570	15,485

Notes: Panel fixed effects models. Period: 2012–2024. Dependent variable: Logarithmic growth in firms by sector. Y_{it-1} is the past value of the outcome variable in logs. All models include a constant. Robust standard errors are clustered at the provincial level (NUTS3 regions) and reported in parentheses. Significant at the *10%, **5%, and ***1% levels.