

Moving Away for Growth or from Uncertainty?*

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Abstract

We analyze the antecedents and effects on corporate outcomes and regional business dynamics of corporate headquarters' relocation due to political uncertainty. We exploit the October 2017 referendum for Catalan independence which, unlike other referendums, stemmed from a regional initiative lacking legal support from the state. Using Bank of Spain data, we show that movers accounted for a quarter of the total assets of Catalan firms and were larger, younger, less capital intensive, and more leveraged. These firms displayed more variation in total assets and performance prior to the event, and were more likely to have international ownership and less likely to be family firms. Catalan movers displayed a market-like adaptation during the COVID-19 crisis. They had lower probabilities of relying on public funding and of being insolvent, and exhibited lower decreases in employment, sales, and sales to assets. We reveal that the referendum and headquarters' relocations had real effects on regional business dynamics. Incorporation rates decrease in the region and new firms feature lower growth in assets and sales. In the areas from which large firms relocate, we find lower decreases in incorporation rates potentially revealing fewer labor opportunities; these new businesses grow even less than their counterparts.

Keywords: corporate headquarters, political uncertainty, regional growth, performance, entrepreneurship

JEL codes: G32, G34, M1, M13

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1 Introduction

The location of corporate headquarters is a key attribute for organizational decision making (Bloom *et al.*, 2012) and firm value (Pirinski and Wang, 2006). Most existing literature has focused on international relocations driven by global financial markets and external stakeholders’ demands (Birkinshaw *et al.*, 2006), or the pursuit of international strategic resources (Baaij *et al.*, 2015) and fiscal advantages (Voget, 2011; Barrios *et al.*, 2012). Fewer studies have examined headquarters’ relocations in response to political uncertainty triggered by independence referendums. For example, Tirtiroglu *et al.* (2004) document positive market reactions for firm relocations from Quebec to Toronto due to political risk.

In this paper, we examine the antecedents and effects on corporate outcomes and regional business dynamics of headquarters’ relocations triggered by the political uncertainty due to the Catalan referendum for independence. The event occurred on October 1, 2017 and provides us with a unique “laboratory” for the analysis of political uncertainty stemming from a regional independence movement lacking state legal recognition. A salient phenomenon is that in the wake of the uncertainty episode more than 3,500 firms totalling sales of €45 billion relocated headquarters to other Spanish regions. Most relocations attributable to the event occurred between September 2017 and February 2018, and were undertaken by firms holding over 25% of the total assets of Catalan firms. About 20% of the large firms relocated, representing more than 38% of the total assets of the large firms in the region. Galasso (2022) documents a negative market reaction around the referendum. However, there is no systematic evidence on the effects of corporate headquarters’ relocations. We fill this gap by pursuing two objectives. First, we characterize the antecedents and subsequent behavior and performance of firms that relocated headquarters. Second, we explore the relocations’ effects on regional business dynamics. Both objectives relate to long lasting political debates, as recent proposals aim at sanctioning firms that relocated headquarters.¹

¹See “Junts defiende multas para las empresas que dejaron Cataluña durante el ‘procés’ y no han vuelto,” *El País*, January 9, 2024 (accessed May 21, 2024).

We start by exploring the characteristics of firms relocating their headquarters and whether such firms maintained a distinct behavior and performance following the peak in political uncertainty. Whereas the political uncertainty episode allows us to identify the antecedents of movers, their subsequent behavior and performance in “normal” economic times may reflect the same features. To gauge the effects of otherwise unobservable strategic attributes of movers with respect to non-moving firms, we track them over time and exploit the COVID-19 crisis. This unexpected shock allows us to uncover whether firms that relocated their headquarters were only responding to political risk or they are fundamentally different firms, better able to adapt to market conditions also in a systemic crisis affecting all regions.

For corporate outcomes, our strategy is similar to [Ding *et al.* \(2021\)](#) who show that pre-crisis strategic choices, exogenous to the shock, serve to explain differential outcomes in a crisis. We conjecture that movers were distinct *ex ante* the pandemic from other firms because of their strategic behavior, which could have included both market and non-market components (e.g. [Birkinshaw *et al.*, 2006](#); [Jia *et al.*, 2022](#)). Our context allows for attempting to disentangle the two components given that the COVID-19 crisis hit Southern Europe especially hard, and governments responded quickly with generous public funding to curtail firm losses ([Kalemli-Ozcan *et al.*, 2020](#)). If firms that relocated their headquarters in response to political uncertainty feature strategic attributes that facilitate adapting to changing market conditions, we would expect them to be less likely to resort to public (non-market) funding. Accordingly, we would also expect movers to have a lower probability of being insolvent and to perform better than non-moving firms.

Next, we study whether the referendum and headquarters’ relocations generated real economic changes in local business dynamics in terms of firm creation and growth. In line with our arguments and the descriptive evidence above, we expect to observe a substantial number of relocations of large firms. A literature exists on the agglomeration benefits and costs for entrepreneurial and labor markets around larger firms (e.g. [Sorenson, 2017](#)). To the

extent to which relocations are not simply symbolic, they will generate external effects in the local geography. There are two economic mechanisms at play. On the one hand, political uncertainty may slow down entrepreneurial activity, and relocations may hinder spin-offs from existing businesses. On the other hand, fewer employment opportunities due to large incumbents' relocations may spur start-ups (see, e.g., [Burton *et al.* 2016](#); [Kacperczyk and Marx 2016](#)). Therefore, the political uncertainty may slow down new firm creation, but less so in the areas from which large firms relocated their headquarters. However, these new businesses created due to potentially fewer labor opportunities rather than entrepreneurial prospects may exhibit even lower growth ([Conti and Roche, 2021](#)).

We conduct our empirical analysis on granular data from Bank of Spain's Central Balance Sheet Data Office Microdata (CBI), which covers the entire population of non-financial firms. In contrast to most commercial databases, the CBI provides time-varying (as opposed to static) information on firm headquarter location, industry, and employees, among other. For the Catalan uncertainty episode, we use monthly data on movers obtained from Informa (the Spanish data manager for Bureau van Dijk, now Moody's). Last, we add information on public funding to firms both before and during the COVID-19 crisis from *Sistema de Análisis de Balances Ibéricos* (SABI).

Our results show that Catalan firms that relocated their headquarters were larger and younger, with higher leverage, but lower capital intensity. These firms also exhibited higher variations in total assets and performance in the years previous to the referendum, and were more likely internationally owned and less likely family owned. Our market adaptation hypothesis is supported by these firms' behavior and outcomes during the pandemic. Catalan firms relocating their headquarters due to political uncertainty had a lower probability to rely on public funding by as much as 4.4 percentage points, compared to a baseline of 33.2% higher probability to access public funding for all Catalan firms during the pandemic. When excluding micro firms, these estimates become as high as 12.1 percentage points lower probability of movers to rely on public funding, from a higher baseline probability of 41.6%

for all firms during the crisis. Catalan movers also displayed lower insolvency rates, and lower decreases in employment and sales. These corporations were better able to adapt their sales to assets ratios. While Catalan non-movers experienced a decrease of about 35.6 percentage points in their sales to assets during the crisis, the decrease for Catalan movers was lower by 10.8 percentage points. Collectively, these results suggest that relocating headquarters can serve as a strategy to mitigate political uncertainty, and was undertaken by firms that were systematically better able to adapt to changing market conditions.

Finally, we are able to document that the political uncertainty event had real economic effects. Incorporation rates decrease in Catalonia after the referendum, and new firms exhibit lower growth in total assets, sales, and employment compared to their counterparts in the rest of Spain. Interestingly, while incorporation rates decrease by 2.7 percentage points post-referendum, this decrease is lower by 2 percentage points in the areas from which large firms relocate their headquarters. This may reveal fewer employment opportunities and entrepreneurship as an alternative (“necessity”) choice. Along these lines, we find that new firms in the geographies from where large firms relocate have even lower growth rates in sales (6.3 percentage points lower from a baseline decrease of 11.8 percentage points for all new firms in Catalonia) and employment (3.8 percentage points lower from a baseline decrease of 6.2 percentage points). These findings speak to an indirect yet consequential channel of large firms’ impact on regional economies in terms of entrepreneurial activity and growth.

Contributions to the Literature Our paper contributes to three streams of literature. First, it contributes to the literature on corporate headquarters’ (re)location. This literature has mostly focused on multinational firms choosing their location considering geographical distance, shareholder and stakeholder demands (Birkinshaw *et al.*, 2006; Benito *et al.*, 2011; Belderbos *et al.*, 2017), and resource availability (Baaij *et al.*, 2015). Tax advantages can drive international relocations (Voget, 2011; Barrios *et al.*, 2012), but in our context they arguably play a more muted role. Within-country evidence on relocations exists mostly on

the role of to political connections ([Jia et al., 2022](#)). Those more related to ours show results confined to listed firms and legal referendums ([Tirtiroglu et al., 2004](#)) or do not distinguish between firms that relocate or not ([Galasso, 2022](#)).² We contribute to this literature through a comprehensive analysis of movers’ characteristics, and by highlighting that relevant firms in the economy relocate their headquarters due to political uncertainty. These firms maintain a distinct behavior during an economic downturn.

Second, we add an element of strategic decision making to a literature that has studied how pre-crisis firm characteristics help to explain how firms fared during times of distress (e.g. [Ding et al., 2021](#)). We show that the intrinsic characteristics revealed by the decision to relocate headquarters incrementally help to explain how firms behave and perform during a crisis. This also enables us to connect to a literature focusing on market performance of movers (e.g. [Chen et al., 2020](#); [Pirinski and Wang, 2006](#)), and their capital structure (e.g. [Gao et al., 2011](#)). Our most important result here is that movers due to political uncertainty have a more market-type behavior during the crisis, relying less on public funding and performing better than their counterparts.

Third, and perhaps most importantly, we contribute to the study of the economic effects of independence movements, which have emerged in various European territories. Our study’s context relates to the analysis of the quality of governance in countries that feature cultural segregation ([Alesina and Zhuravskaya, 2011](#); [Casas et al., 2024](#)). Such territories can exhibit increasing threats of polarization ([Haimanko et al., 2005](#)), and the optimal balance of centralization of political decisions and accountability may be hard to find ([Boffa et al., 2016](#)). Our results bring a corporate dimension and its economic effects to this literature. Post-referendum, new firms’ incorporation rates decrease and new firms grow less. By showing that such decreases are lower in the areas from which large firms relocate, we document regional business effects of headquarters’ relocations and connect to a literature

²A literature exists on firm divestment, rather than relocation, in the wake of policy risk in the firm’s environment (e.g. [Blake and Moschieri, 2017](#)). Recent work has also highlighted the importance of adapting multinational enterprises’ governance to navigate contexts featuring nationalist sentiments ([Edman et al., 2024](#)).

on occupational choices and entrepreneurship (Burton *et al.*, 2016; Kacperczyk and Marx, 2016).³ When uncertainty rises and employment opportunities may worsen in areas of large firms’ relocations, incorporation rates decrease less but new firms exhibit lower growth rates (cf. Conti and Roche, 2021). Taken together, our findings suggest that the political uncertainty and headquarters’ relocations due to the Catalan referendum for independence had real (substantially beyond symbolic) economic effects.

2 Institutional Context and Predictions

The Catalan Referendum for Independence We exploit the political uncertainty generated by the referendum for independence held in the Spanish autonomous community of Catalonia on October 1, 2017. The differentiating aspect of this uncertainty episode is that the referendum lacked legality at the state level (in contrast to the ones in Quebec or Scotland), and was entirely and unilaterally organized by the regional government. This prompts an analysis of its symbolic versus real effects. Figure 1 illustrates the pre- and post-referendum political events. The referendum was called by the Government of Catalonia after the region’s parliament passed the Law on the Referendum on Self-determination of Catalonia on September 6, 2017. While pre-referendum discussions occurred over a substantial period before its date, the actual realization of the event was largely unanticipated by firms until the law’s passing date (with related relocations being officially registered no earlier than September 2017). This is corroborated by an analysis of Google Trends using the terms “*Independencia Catalunya*” and “*Referendum Catalunya*”. In Figure A1, the spikes in interest correspond to the political episodes illustrated in Figure 1, with the referendum event showing a substantially higher interest and no growing interest trend for a substantial period before the political uncertainty trigger. Furthermore, after uncertainty peaks, a new “equilibrium” period (with no uncertainty spikes) emerges in the region. The ballot question

³Seminal papers have focused on the role of large firms on incumbents in the region (see, e.g., Greenstone *et al.*, 2010). Our work adds an entrepreneurship channel to such analyses or local spillover effects.

of the referendum, which voters answered with “Yes” or “No,” was “Do you want Catalonia to become an independent state in the form of a republic?”. According to the Government of Catalonia, the referendum had a registered turnout rate of 43%, with 90.2% of the voters in favor of independence.⁴ The referendum was non-binding by design and considered illegal by the Spanish state. Given the controversies around electoral warranties and police intervention during ensuing civil unrest, the referendum had important political and business context implications.

One significant consequence was that Catalan firms started to relocate their headquarters outside of Catalonia. According to Informa (the data manager for Bureau van Dijk, now Moody’s, in Spain), over 3,500 firms left Catalonia for other regions in 2017 and 2018, most during September 2017 - February 2018. Figure 2 plots the sharp increase in headquarters’ relocations due to the Catalan referendum, and Figure A2 provides more details for the entire Spanish territory.⁵ Overall, after the peak of the moving episode, the region of Madrid showed positive rates receiving most of the Catalan exits, the rest being divided among regions such as Valencia and Aragon. The total sales of the companies that left Catalonia during 2017-2018 amounted to about €45 billion. Notably, the peak of relocations included companies with a substantial impact on the Catalan economy, holding over 25% of the total assets of the firms in the region (a figure surpassing 38% when looking at large firms only). Section 3 provides more details on these firms that relocated in proportions of over 80% to the region of Madrid and of about 5% Valencia.

Corporate Antecedents and Effects Our predictions at the corporate level are twofold.

First, we posit that the firms choosing to move are not only larger, but also exhibit traits that

⁴See the Catalan referendum results at “[El Govern trasllada els resultats definitius del referèndum de l’1 d’octubre al Parlament de Catalunya](#)” published by the Government of Catalonia on October 2, 2017 (accessed May 10, 2024).

⁵The relocations were administratively facilitated by a Royal Decree signed by the *Partido Popular* on October 6, 2017, allowing firms to approve headquarters’ relocation through the board of directors, rather than requiring a shareholders’ meeting. Note that the figures present unconditional levels of the number of movers, which if scaled by the total population of firms in Catalonia or in the rest of Spain would result in even more stringent differences. See more details on headquarters’ relocations between all Spanish regions in “[Cambios de domicilio](#)” published by Informa in March 2018 (accessed May 19, 2024).

are indicative of willingness and ability to quickly adapt to new market conditions. Second, we expect movers to maintain a distinct market-type behavior and performance subsequent to the headquarters’ relocation with respect to their counterparts. To test this conjecture, we rely on the unexpected COVID-19 crisis which can help to uncover characteristics otherwise confounded with moving antecedents. Whereas we expect all firms to be affected by the crisis, we expect the decision to move or not (exogenous to the unexpected crisis) to help identifying differential outcomes during times of distress (see [Ding *et al.* \(2021\)](#) for a similar empirical strategy).

The COVID-19 crisis is particularly suitable to disentangle the potential market and non-market behavioral characteristics of movers (e.g. [Birkinshaw *et al.*, 2006](#); [Jia *et al.*, 2022](#)). Since the pandemic was exogenous to macro and firm fundamentals, and was not driven by financial misbehavior or lack of regulatory effectiveness, governments reacted quickly with non-market support to firms. Spain was one of the first EU countries to provide extensive liquidity to firms; it announced pandemic-related measures on March 13, 2020, and before month-end provided abundant non-market funding to firms. The main purpose of such funding was to safeguard bankruptcy rates which in Spain were estimated to grow from a baseline of 9% to more than 15% ([Kalemli-Ozcan *et al.*, 2020](#)). The most salient type of relief package was access to guaranteed funding at lower interest rates, easily accessible to most firms.⁶ Our prediction is that since Catalan firms’ relocation was in essence a response to an episode of political uncertainty, these firms will exhibit a market-like adaptation to the crisis. Specifically, we expect them to have lower probabilities of accessing public funding or being insolvent, and to perform better during the crisis.

Business Dynamics Finally, taking all the elements above together, we expect the Catalan referendum and headquarters’ relocations to have an economic impact beyond symbolic,

⁶The initial package amounted to €100 billion and the funding could cover up to 80% of lending to micro, small and medium enterprises, and 70% for the large firms. Access was based on a self-declaration by the firm including few accounting items such as assets, sales, and employees. See [Blanco *et al.* \(2021\)](#) for more details on Spanish firms’ vulnerability and relief mechanisms during COVID-19.

with external effects on regional business dynamics. Common to a literature on the effects of policy risk and institutional uncertainty (e.g. [Bylund and McCaffrey, 2017](#)), we predict negative changes in terms of new firms’ incorporation rates and new venture growth after the referendum. Furthermore, we expect these effects to exhibit heterogeneity in the areas from which large firms relocate headquarters. If moves were beyond symbolic, relocations of large firms would lower employment opportunities in the local geography, shifting occupational choices from employment towards entrepreneurship ([Burton *et al.*, 2016](#); [Kacperczyk and Marx, 2016](#)). Accordingly, the slowdown in new firms’ incorporation rates post-referendum may be lower around large incumbents that have relocated. Yet, if such new businesses were created due to fewer employment rather than more entrepreneurial opportunities, they may exhibit even lower growth rates ([Conti and Roche, 2021](#)).

3 Data

Sources and Sample We build a panel by merging three datasets at the firm level. First, we use information on the universe of Spanish non-financial companies from the Central Balance Sheet Data Office Microdata (CBI), maintained by the Bank of Spain.⁷ The CBI includes detailed information on balance sheets and income statements, as well as non-financial information such as annual headquarters’ locations, industry classifications, and number of employees, among other data. Second, we retrieve public funding to all firms before and during the COVID-19 crisis from *Sistema de Análisis de Balances Ibéricos* (SABI).⁸ This includes the universe of public sources of funding from national and regional governments, by industry and firm types, and it is especially detailed for the COVID-19 period. We aggregate funding information at firm-level as a total amount or across different funding types. Third, we obtain granular data on headquarters’ relocations from Informa, the data manager for

⁷For a detailed description of the dataset and its sources see: “BELab. Banco de España/CORPME, Colegio de Registradores de la Propiedad y Mercantiles de España. CBI. DOI: [10.48719/BELab.CBI9521.01](#),” accessed May 25, 2024.

⁸This information is similar to the one contained in the “[Sistema Nacional de Publicidad de Subvenciones y Ayudas Públicas](#),” accessed May 10, 2024.

Bureau van Dijk (now Moody’s) in Spain. We focus on monthly headquarters’ relocations of Catalan firms between September 2017 and February 2018. The monthly relocation data are the key for a cleaner identification of the referendum shock and complement the annual headquarters locations in the CBI. The latter enables us to observe whether firms return to Catalonia, as well as all other headquarters’ relocations between Spanish regions. For all firms we create indicator variables capturing whether a firm relocates during a certain period.

We rely on information from years 2014 to 2016 to characterize antecedents of firms and business dynamics in Catalonia previous to the referendum shock, and from 2017 to 2021 for the main analysis of outcomes. We merge all the datasets by year and the unique firm tax ID number (“*Certificado de Identificación Fiscal*,” CIF). We restrict our analysis to private firms, excluding partnerships, public institutions and other non-corporation type entities. We keep firms with non-missing information for total assets, employment and headquarters’ location. All continuous variables are winsorized at 1% and 99% levels, and we restrict variables such as leverage to range between zero and one, as per accounting rules.

Descriptive Statistics Figure 3 illustrates the weight of the firms relocating their headquarters’ between September 2017 and February 2018 among all Catalan firms. The sample includes 1,916 Catalan firms whose relocation can be more directly attributed to the referendum shock. This represented less than 2% of all active Catalan firms in 2017; however, when looking by firm size figures increase to almost 9% of medium and 20% of large firms. The firms relocating close to the peak in uncertainty held disproportionately higher shares of sales (13.3%), total assets (25.5%), and employees (9.1%) in the total of Catalan firms. Interestingly the same figures are substantially higher when looking within the population of large firms, amounting to 20.7% (for sales), 38.5% (for total assets), and 29.8% (for employees).⁹ These differences are key for our analysis on the potential regional effects of headquarters’

⁹We employ the statistic size classification of the Bank of Spain following the quantitative EU commission recommendations for the definition of enterprises.

relocation on new business dynamics.

Table 1 provides descriptive statistics for Catalan firms during 2017-2021, and Table A2 summarizes for comparison the characteristics of all firms in Spain. Table A1 provides definitions of the variables used in the different analyses.

4 Empirical Analysis

4.1 Antecedents of Headquarters' Relocations

We start by exploring the characteristics of the firms that relocated headquarters. In particular, we ask whether movers and non-movers are different in terms of their observable characteristics. Candidate motives for headquarters' relocations may relate to the firms' embeddedness in a region and its potential dynamism, which can be captured by a younger firm age and holding a lower share of tangible (fixed) rather than intangible assets. Firms may also move due to having more at stake (e.g. in terms of total assets), liquidity constraints or fear of performance volatility. We estimate the following linear probability model:¹⁰

$$HQMover_{i,t} = \beta \mathbf{X}_{i,t-1} + \gamma + \eta + \epsilon_{i,t}, \quad (1)$$

where $HQMover_{i,t}$ is a dummy variable indicating whether firm i relocates its headquarters to a different region in period t . For firms relocating their headquarters due to the Catalan referendum we focus on moves between September 2017 and February 2018. For comparison, we also estimate the same model for firms relocating between other Spanish regions during 2017-2019, for which we use yearly data. We lag the explanatory variables by one year, and compare the results to using averages over the previous three years. We include the following firm financial characteristics: log of firm age, log of total assets, return on assets (ROA), liquidity, leverage, and capital intensity. We also include the standard deviations over the

¹⁰We are reporting OLS results for ease of interpretation, while our results are robust to estimating probit models.

previous three years in ROA, log of total assets, and liquidity, and indicator variables for foreign ultimate ownership or being a family owned/micro firm. For the latter our data allows identifying family ownership for the larger firms, while we assume that micro firms are most often in hands of individuals/families. We include industry and region (or province) fixed effects to control for unobservable time-invariant characteristics or shocks, and cluster standard errors at the firm level.¹¹

Catalan Movers’ Characteristics Table 2 reports the estimation results. Columns (1)-(2) and (5)-(6) lag the explanatory variables by one year, while columns (3)-(4) introduce time-varying firm characteristics as averages over the previous three years. We find that Catalan firms that relocated their headquarters due to the referendum were younger and larger, with higher leverage and lower capital intensity ratios. Less robust results across specifications suggest that these firms may have held higher liquidity and had lower recent performance. Salient findings indicate that movers exhibited higher variation in total assets and performance over the previous three years. As expected, relocating firms were less likely to be owned by families or individuals, and more likely to have foreign ownership.¹²

Taking these results together with the descriptive evidence in Figures 2 and A2, one could interpret that larger and more leveraged firms are more likely to move, with political uncertainty substantially increasing the probability of headquarters’ relocations especially for firms that are younger and experience more recent fluctuations in size and performance. These results can be either a signal of dynamism or of downside risk, which we will explore in the analysis of corporate outcomes.

Other Movers’ Characteristics For comparison, in Table A3 we explore whether non-Catalan firms relocating their headquarters during 2017-2019. The robust similarities are that moving firms were usually larger, less capital intensive, displaying more variation in

¹¹For robustness, we cluster standard errors at the region (or province) and firm-industry level.

¹²Fewer than 3% of firms have a foreign ultimate owner.

total assets and performance, and more likely to be foreign owned. Given this category of movers’ heterogeneous nature (moving between all other Spanish regions at different times for different reasons), the overall results are harder to interpret. We thus take this set of findings with a pinch of salt due to the endogenous nature of the moving strategy compared to the relocations due to the Catalan referendum.

Robustness and destination heterogeneity We start by ensuring that our results are robust to dropping micro firms from the sample. We then check the robustness of our results when changing from to 2-digit (as reported) to 3-digit industry codes as per *Clasificación Nacional de Actividades Económicas* (CNAE) in Spain, and when clustering standard errors at province and firm-industry level (untabulated). When analyzing non-Catalan movers, we also include year or industry×year and region×year fixed effects. Our results are confirmed by each one of these checks.¹³

We also examine whether Catalan movers differ by destination region. In Table A4 we estimate a multinomial logit using as an dependent variable a categorical outcome that takes the values: Madrid, Valencia or other regions; the baseline outcome is Catalan non-movers during the referendum. Our rationale is that relocating to Madrid may be a stronger market signal of breaking familiarity with stakeholders, compared to moving to Valencia (a region sharing linguistic traits and thus of more cultural proximity). However, the statistical power of these results is diluted by the fact that over 80% of the firms relocate to Madrid, and roughly 5% to Valencia. A qualitative interpretation suggests that the results above are mostly driven by the firms selecting the more market-oriented destination.

4.2 Firm Outcomes during COVID-19

Next, we analyze the differential firm outcomes during the COVID-19 crisis of movers vs. non-movers. The main assumption is that the strategic decision to move is exogenous to

¹³Our results are also robust to excluding publicly listed firms that relocated headquarters. These were a total of 14 firms, seven of which were large firms.

the crisis, which provides meaningful variation to uncover firm fundamentals. Our general specification is:

$$Y_{i,t} = \beta_1 C19 + \beta_2 HQMover_i \times C19 + \beta_3 \mathbf{X}_{i,t-1} + \eta + \epsilon_{i,t}, \quad (2)$$

where $Y_{i,t}$ is a firm-level measure of behavior and performance during the crisis. We include indicators for public funding, firm exit, and insolvency; the log values of sales and employees; ratios of return on assets (ROA) and sales to assets; and the interest on borrowed funds.

$HQMover_i$ is an indicator variable capturing whether firm i relocates its headquarters. As in the previous case, for Catalan referendum movers we use a granular identification of relocations between the months of September 2017 and February 2018. When estimating for comparison relocations of other Spanish firms, we identify yearly moves between 2017 and 2019. $C19$ is a dummy variable equal to one for the period 2020-21, and zero otherwise. In all regressions we include firm fixed effects to control for unobserved firm-level time-constant heterogeneity; for robustness we use region and industry fixed effects. Given the endogenous nature of time-varying firm-level controls we first estimate our models in their absence, and then corroborate our results by controlling for firm age (log), total assets (log), liquidity, and leverage. We cluster standard errors at the firm level.¹⁴

Catalan Movers and Non-movers Table 3 reports the estimation results for all firm outcomes. The baseline crisis estimate confirms the general prior that during the economic downturn compared to the pre-crisis period, all firms were more likely to rely on public funding, had a higher probability to exit or of being insolvent, and exhibited substantial decreases in sales, employees, ROA, and sales to total assets. Firms also paid a lower interest on borrowed funds, a result driven by the fact that the Spanish government provided public guaranteed funding at lower rates.

Interestingly, Catalan referendum movers, compared to non-movers, were less likely by

¹⁴For robustness, we cluster standard errors at the province and firm-industry level.

4.4 percentage points to rely on public funding, from a higher baseline probability by 33.2% for all firms during the COVID-19 crisis (Table 3, column 1).¹⁵ This suggests an ability of firms that relocated their headquarters to withstand market distress, which is confirmed by their lower probability of being insolvent. Taking the baseline and interaction terms in column 3 together, movers did not have a higher probability of being insolvent during the pandemic, compared to the pre-crisis period. With respect to growth measures, Catalan movers display significantly lower decreases compared to non-movers in sales (column 4) and employment (column 5). We do not find differential effects on ROA (column 6). However, we find strong results showing that Catalan firms relocating their headquarters due to political uncertainty were more able to adapt their sales to assets ratios during the crisis. Whereas Catalan non-movers experienced a decrease of about 35.6 percentage points in their sales to assets during the COVID-19 shock, the decrease for Catalan movers was lower by 10.8 percentage points (column 7). On average, moving firms did not pay a different interest rate on borrowed funds with respect to non-moving firms (column 8). Taken together, these results indicate that Catalan firms not only relocated headquarters due to arguably market-driven reasons, but also that these firms exhibited a more dynamic market adaptation to crisis conditions.

Catalan movers vs. Catalan non-movers and Spanish Firms Table 4 replicates the analysis including all firms in Spain and identifying the differential effects of Catalan movers and non-movers with respect to all other firms in Spain (the baseline). Whereas we contend that the suitable control group for Catalan firms that decided to relocate their headquarters is given by Catalan firms that did not relocate, this analysis can be useful to illustrate how Catalan firms differ from the rest of Spanish firms. Overall, the baseline crisis estimates are similar to those for the Catalan sample. One salient result is that Catalan non-movers struggled more to adapt to crisis conditions with respect to firms in the rest of

¹⁵During COVID-19, about 27% of micro, 65% of small, 43% of medium, and 38% of large Catalan firms received public funding. These figures are very similar between Catalonia and the rest of Spain.

Spain. They had a higher probability to rely on public funding (column 1), and had higher decreases in sales, employees, and sales to assets (columns 4, 5, and 6, respectively). In contrast, Catalan non-movers exited less than firms in other Spanish regions (column 2); this can be related to the higher probability of using public funding safeguards (column 1), for which firms pay a lower interest rate (column 8). When compared to Spanish firms from other regions, the Catalan firms that relocated their headquarters had lower probabilities of exiting or being insolvent, and exhibited lower decreases in employees and sales to assets. We interpret these results with caution, given the increased heterogeneity in the control group of all other Spanish firms.

Other Movers In Table A5 we run the same analysis for all non-Catalan firms that moved among Spanish regions during 2017-2019. We observe both similarities and differences with respect to Catalan referendum movers. In a similar vein, these movers also have a lower likelihood to rely on public funding (column 1), and are better at adapting their sales to assets ratios (column 7). Differently, non-Catalan movers have a higher exit probability (column 2) and exhibit higher decreases in sales (column 4). As we have discussed when documenting moving antecedents, we attribute these mixed results to combined market and non-market reasons for “general” movers to relocate, while the Catalan relocations had a common trigger event.

Robustness There are two sample-related concerns to address. First, many firm-level observations pertain to so-called micro firms. In columns 1 to 4 of Table 5, we rerun our analysis comparing Catalan movers to non-movers excluding micro firms and considering four key outcome variables. We obtain similar results to the estimations on the full sample. One difference to highlight is that larger-than-micro Catalan movers were less likely to access public funding during the crisis by 12.1 percentage points, compared to a 41.6% higher probability to rely on public funding for all firms. Second, after the referendum and until 2021, 515 firms from our sample relocate back to Catalonia. These are on average substantially

smaller firms within the population of movers. In columns 5 to 8 of Table 5, we show that our results remain unchanged when removing these firms from the sample.¹⁶

Our results are also robust to using different sets of fixed effects such as industry and region (instead of firm fixed effects), and by clustering at province and firm-industry level (untabulated). In Table A6 we corroborate our key results when controlling for firm age (log), total assets (log), and liquidity and leverage ratios.

4.3 Regional Business Dynamics

Finally, we analyze the real economic effects of political uncertainty. An economic prior is that the Catalan region has historically featured higher participation in entrepreneurial activity with respect to most of the rest of Spain. For example, in the year before the referendum, 7% of the adult population (18 to 64 years) had equity stakes in early-stage entrepreneurial activity within Catalonia, the highest figure among Spanish regions for which the average was 5.2%.¹⁷ To the extent to which the referendum effects were more than symbolic, we would expect these dynamics to change. Moreover, if headquarters' relocations, especially of large firms, were followed by slowdown in local activity by moving firms, new firm dynamics would differentially change in the areas in which these firms were previously located.

Catalan vs. Non-Catalan New Firms To test our first conjecture that the referendum-generated uncertainty shifted business dynamics, we focus on new incorporations and their growth rates in Catalonia versus the rest of Spain. First, in Figure 4 we plot yearly incorporation rates of new firms defined as new firms in period t divided by total number of firms in year $t-1$ (displayed as percentages). Incorporation rates of new firms were similar

¹⁶The results are also robust to removing from the sample the 14 publicly listed firms that relocated headquarters.

¹⁷See the national “Global Entrepreneurship Monitor” reports for more details at <https://www.gem-spain.com/informes-nacionales-todos-gem>, accessed May 17, 2024. Note that such early-stage activity is a precursor of new firm incorporation, but does not necessarily end in incorporated business activity. Our final interest is in the latter which allows us to assess future firm growth.

between Catalonia and the rest of regions before the referendum year, but trends diverge after uncertainty spikes. The substantial changes occur at the time of political uncertainty and in the subsequent year, with Catalonia maintaining lower rates of new firm incorporation until the COVID-19 period. After 2020, during the economic downturn, higher rates of new business incorporation may actually reflect lower employment opportunities [Conti and Roche \(2021\)](#).¹⁸ Therefore, we attribute to the political uncertainty episode the lower new firms’ incorporation rates during 2017-2019.

Second, and more importantly, in Figure 5 we focus on these new firms’ growth. For yearly incorporations of new firms, we compute firm-level growth rates in total assets, sales, and employment defined as log difference between $t+1$ and t . We plot the coefficients alongside 95% confidence intervals from t-tests between growth rates of new incorporated firms in Catalonia and other Spanish regions. Especially in terms of total assets (Panel A) and sales growth (Panel B), but also in employment growth (Panel C), new Catalan firms displayed higher growth rates pre-referendum compared to their counterparts in the rest of Spain. However, after the Catalan referendum these rates dropped significantly and became similar to those in the rest of Spain, or even lower for growth in total assets. We attribute the decline in new firms’ growth during 2017-2019 to the political uncertainty event.

Dynamics Around Headquarters’ Relocations Next, we estimate whether new business dynamics differentially change in areas from which large firms relocate their headquarters. Our economic rationale is that if the relocation of a large firm is followed by a reduction in that firms’ local prospects, then occupational choices may shift in its geography from employment to entry into entrepreneurship. This may result in new firms’ incorporation rates decreasing less, compared to the rest of Catalonia, around the area from which a large firm relocates. However, to the extent to which these new firms are a form of “necessity” entrepreneurship (due to fewer occupational alternatives), we expect their growth rates to

¹⁸Incorporation rates from the second part of 2020 and during 2021 may also capture the effect Spain’s “Recovery and Resilience Plan,” which among other included support for start-ups.

decrease more compared to new firms in the rest of the region. To test our predictions, we estimate:

$$Y_{i,t} = \beta_1 Post + \beta_2 LargeMoverArea_i + \beta_3 LargeMoverArea_i \times Post + \gamma + \eta + \epsilon_{i,t}, \quad (3)$$

where $Y_{i,t}$ is a measure of new business dynamics. We estimate new firms' incorporation rates at the 4-digit zipcode level, and at the level of the newly created firms we estimate growth in total assets, sales and employment. We present the summary statistics of these variables in Table A7.

LargeMoverArea is the 4-digit zipcode from which a large Catalan firm relocates its headquarters between September 2017 and February 2018. *Post* is an indicator variable that takes the value of 1 for the periods 2017-2019 or 2017-2021, and zero for 2015-2016. We design our empirical strategy within Catalonia, using fixed effects to identify variation within municipality (3-digit zipcode). In specifications at the firm-level, we also control for heterogeneity at the 3-digit industry level. We cluster standard errors at the 4-digit zipcode level.¹⁹

Panel A in Table 6 focuses on the period 2015-2019, with the post indicator capturing the period 2017-2019. It first shows, as anticipated by the previous analysis, that new firms' incorporation and growth rates decrease significantly in the wake of political uncertainty. These decreases are substantially lower in the areas from which large firms relocate. Whereas new firms' incorporation rates decrease by 2.7 percentage points post-referendum, this decrease is lower by 2 percentage points in the areas of large firms' relocations (column 1). Nevertheless, in these areas new firms grow even less than in the rest of Catalonia. The sales growth of newly created firms in large movers' areas is 6.3 percentage points lower, from the baseline decrease of 11.8 percentage points for all new Catalan firms after the referendum (column 3). In addition, new firms have an employment growth lower by 3.8 percentage points more

¹⁹We check the robustness of our results to using no fixed effects, or 2-digit zipcode (province) and 2-digit industry fixed effects.

from a baseline lower growth of 6.2 percentage points after the referendum (column 4). We do not find a significant differential effect for growth in total assets.

Panel B in Table 6 corroborates these results by extending the post indicator to cover the period 2017-2021. The estimates on new firm growth measures results become somewhat weaker. This supports the crisis-related arguments we have discussed above. To empirically confirm our rationales, in Table A8 we decompose the post indicator into post-ref (2017-2019) and C19 (2020-2021) categories. The estimations show that while new incorporations continue being differentially higher in the area of large headquarters' relocations, the results on the lower growth rates of new firms are mostly driven by the 2017-2019 period.

Overall, the findings in this section support the hypothesis of real rather than symbolic effects on regional business dynamics of political uncertainty in general, and of headquarters' relocations in particular. Our findings are indicative of potential changes in occupational choices, with entrepreneurship emerging more in the areas of large firms' relocations (Burton *et al.*, 2016; Kacperczyk and Marx, 2016), but with new firms' growth rates lingering after the spike in political uncertainty.

5 Conclusions

Headquarters' relocations due to political uncertainty remain sticky in time even if uncertainty diminishes, and political proposals may aim at sanctioning moving (and non-returning firms).²⁰ Yet, there is little empirical evidence on the corporate and real economic effects of political uncertainty and headquarters' relocations in the wake of regional independence referendums. Our contribution is to document firm-level effects and changes in regional business dynamics following the Catalan independence referendum which occurred on October 1, 2017. This represents a unique context for investigating political uncertainty effects that could have been either symbolic or real since, as opposed to other cases, the Catalan

²⁰See *La Vanguardia*, May 5, 2024, for an example from the Catalan election campaign, and *El Correo*, May 8, 2024, for an example from the Basque region (accessed May 13, 2024).

referendum was unilaterally organized by the region in the absence of legal support from the Spanish state.

The firms relocating their headquarters around the political uncertainty episode held substantial shares within the Catalan economy in terms of sales (13.3% within the total of active Catalan firms in 2017) and total assets (25.5%). These figures are as high as 20.7% for sales and 38.5% for total assets when considering only large firms. Our corporate-level analysis revealed that Catalan movers compared to non-movers were not only larger, but also younger, less capital intensive, and more leveraged. Before the referendum, they exhibited higher variation in total assets and performance, and were more likely to have international ownership and less likely to be family firms. In line with our predictions of a market behavior of firms that relocated headquarters, we find that during the COVID-19 crisis these firms had lower probabilities to rely on public funding and to be insolvent. Overall, the firms that relocated their headquarters fared better in distress times, exhibiting lower decreases in employment, sales, and sales to assets.

In key results, we uncover the real effects of political uncertainty on business dynamics. In the wake of the referendum, incorporation rates decrease and new firms in the region exhibit lower growth in total assets, sales, and employment compared to their counterparts in the rest of Spain. An important heterogeneity emerges within Catalonia when comparing the geographies from which large firms relocated headquarters to the rest of the region. Arguably due to reduced employment opportunities, new firms' incorporation rates decrease less in the areas of relocated headquarters by large firms. However, these new firms potentially created due to fewer occupational alternatives grow even less in sales and employment.

Our results can have important implications for policymakers during uncertainty times, yet our estimations should be interpreted with the caution required by a reduced-form empirical approach. Our positive (rather than normative) analysis can serve as a stepping stone for studying the direct and spillover effects of the potential emergence of borders (e.g. [Santamaría *et al.*, 2020](#)) and corporate headquarters' relocations during political uncertainty.

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FIGURES AND TABLES

Figure 1: Timeline of Political Uncertainty

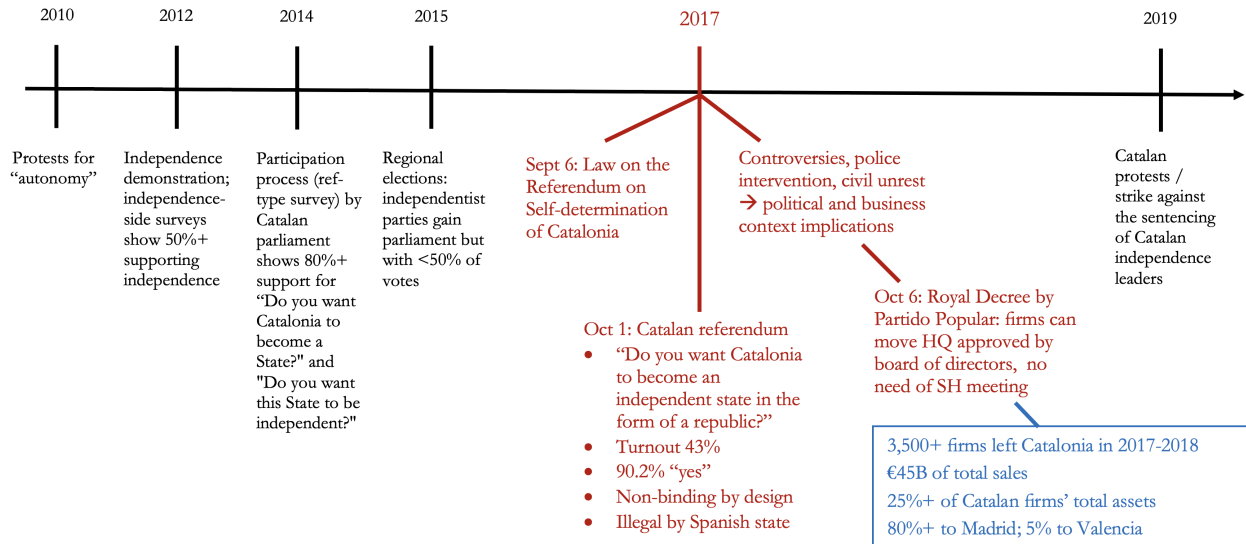
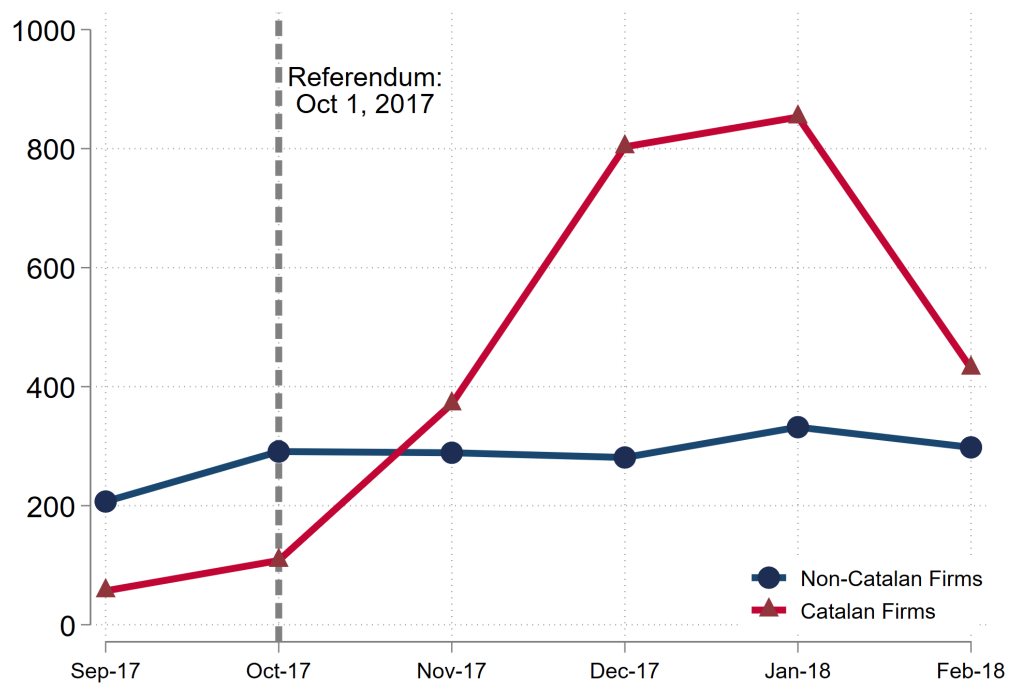
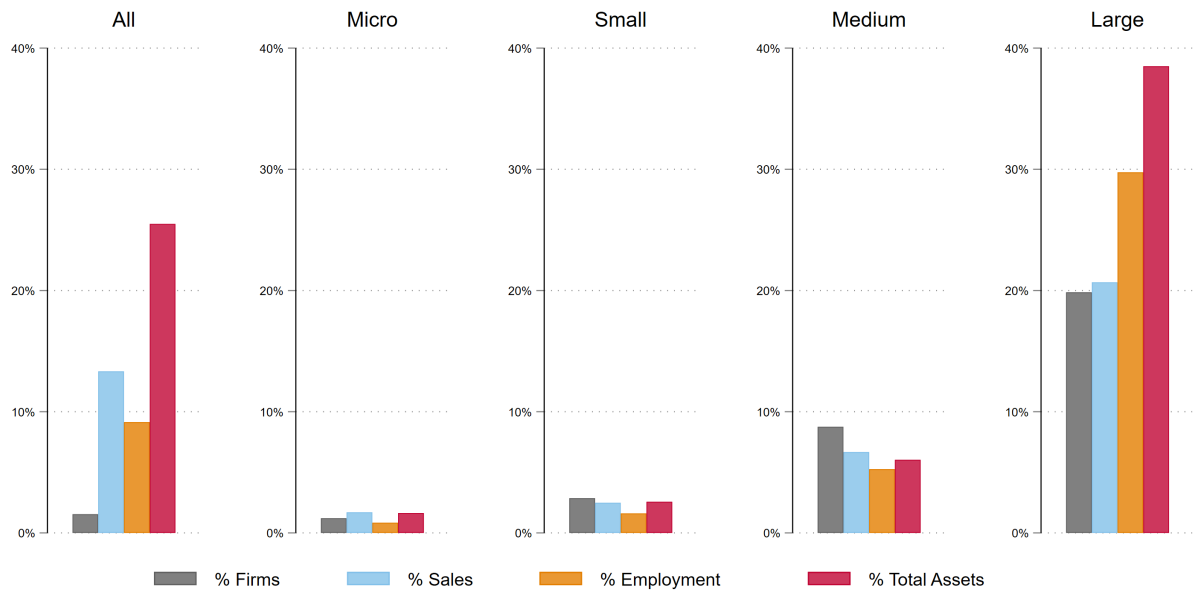


Figure 2: Trends in Headquarters' Relocations Around the Catalan Referendum



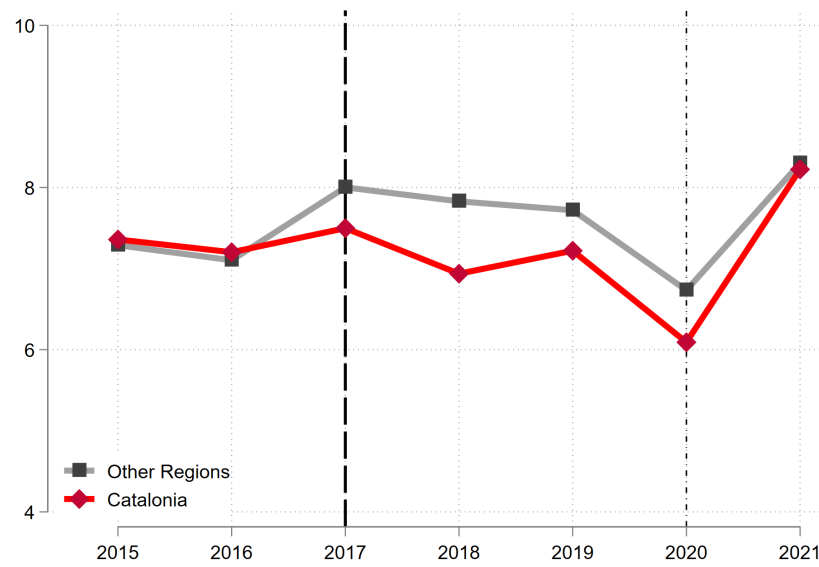
Notes: This figure plots the number of Catalan and non-Catalan firms relocating their headquarters around the 2017 Catalan referendum.

Figure 3: Relocating Firms' Shares in the Catalan Economy



Notes: This figure illustrates the shares of the firms that relocated headquarters between September 2017 and February 2018, with respect to all Catalan firms in 2017. Shares are presented in terms of number of firms, sales, employees, and total assets. We employ the statistic size classification of the Bank of Spain. The observations correspond to firms with non-missing information for total assets, employees and headquarters' location.

Figure 4: New Firm Incorporation Rates



Notes: This figure plots new incorporation rates in Catalonia and other Spanish regions during 2015-2019. New incorporation rates are defined as new firms in period t divided by total number of firms in year $t-1$, and displayed as percentages.

Figure 5: New Business Growth: Catalan vs. Non-Catalan Firms



Notes: This figure plots coefficients and depicts 95% confidence intervals from t-tests between growth rates of new incorporated firms in Catalonia and other Spanish regions. New incorporated firms are defined as new firms in period t . The growth rates are computed as log difference between $t+1$ and t of new incorporated firms in period t , and displayed as percentages.

Table 1: Summary Statistics

	All				Movers				Non-Movers			
	Obs	Mean	SD	Median	Obs	Mean	SD	Median	Obs	Mean	SD	Median
Log (1 +Firm Age)	541,893	2.577	0.769	2.773	6,998	2.680	0.773	2.833	534,895	2.576	0.769	2.773
Log (Total Assets)	541,894	5.990	1.734	5.865	6,998	7.837	1.827	7.904	534,896	5.966	1.720	5.846
Liquidity	537,227	0.255	0.375	0.122	6,941	0.210	0.355	0.081	530,286	0.255	0.375	0.122
Leverage	541,894	0.535	0.315	0.540	6,998	0.503	0.303	0.507	534,896	0.536	0.315	0.541
Public Funding (Dummy)	541,894	0.179	0.383	0.000	6,998	0.203	0.402	0.000	534,896	0.179	0.383	0.000
Capital Intensity	541,894	0.231	0.263	0.121	6,998	0.170	0.231	0.063	534,896	0.232	0.263	0.122
Log (Sale)	521,664	5.897	1.610	5.808	6,583	7.345	2.022	7.443	515,081	5.879	1.596	5.796
Log (Employment)	541,894	1.213	1.303	1.099	6,998	2.102	1.668	2.069	534,896	1.201	1.294	1.099
Sale/Assets	541,894	1.697	1.871	1.245	6,998	1.292	1.384	1.034	534,896	1.702	1.876	1.248
ROA	537,227	0.079	0.332	0.057	6,941	0.085	0.302	0.060	530,286	0.079	0.332	0.057

Notes: This table provides summary statistics of the main variables used in the empirical analysis for Catalan firms during 2017-2021. We keep firm-year observations with non-missing total assets, employees and locations. Sales and total assets are logs of values in thousands of euros. All continuous variables are winsorized at 1% and 99% levels. See Table A1 for variable definitions.

Table 2: Antecedents of Headquarters' Relocation

DV: Cat Ref HQ Mover						
Antecedents in:	<i>t</i> -1		avg(<i>t</i> -3, <i>t</i> -2, <i>t</i> -1)		<i>t</i> -1	
	(1)	(2)	(3)	(4)	(5)	(6)
Log (1 + Firm Age)	-0.223*** (0.032)	-0.216*** (0.032)	-0.095** (0.038)	-0.089** (0.038)	-0.101*** (0.033)	-0.088*** (0.033)
Log (Total Assets)	0.330*** (0.022)	0.327*** (0.022)	0.328*** (0.025)	0.325*** (0.025)	0.355*** (0.025)	0.294*** (0.024)
ROA	-0.152** (0.060)	-0.151** (0.060)	0.021 (0.107)	0.024 (0.107)	-0.204** (0.080)	-0.217*** (0.080)
Liquidity	0.089 (0.057)	0.085 (0.057)	0.180** (0.077)	0.171** (0.077)	0.043 (0.078)	0.044 (0.078)
Leverage	0.343*** (0.064)	0.338*** (0.064)	0.451*** (0.074)	0.443*** (0.073)	0.282*** (0.066)	0.227*** (0.065)
Capital Intensity	-0.351*** (0.062)	-0.319*** (0.062)	-0.352*** (0.067)	-0.326*** (0.067)	-0.242*** (0.061)	-0.175*** (0.060)
SD - ROA					0.472*** (0.123)	0.360* (0.124)
SD - Log (Total Assets)					0.319*** (0.102)	0.273** (0.102)
SD - Liquidity					0.247 (0.152)	0.234 (0.152)
Family Firm						-0.193*** (0.065)
Foreign Ownership						1.251*** (0.283)
R-squared	0.738	0.737	0.758	0.757	0.757	0.756
Obs	106,536	106,532	87,509	87,504	96,550	96,545
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE		Yes		Yes	Yes	Yes

Notes: This table reports the estimated coefficients and standard errors from the OLS regression of Equation 1 on antecedents of headquarter movers. The dependent variable is a dummy equal to one if a firm relocates its headquarters. Standard errors are clustered at the firm level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Table 1 for summary statistics and Table A1 for variable definitions.

Table 3: Outcomes during COVID-19: Cat Movers vs. Cat Non-Movers

DV:	Public Funding	Firm Exit	Insolvency	Log (Sales)	Log (Empl)	ROA	Sales/Assets	Interest
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
C19	0.332*** (0.001)	0.097*** (0.001)	0.026*** (0.005)	-0.098*** (0.002)	-0.047*** (0.002)	-0.037*** (0.001)	-0.356*** (0.004)	-1.433*** (0.075)
Cat Ref Mover $\times$ C19	-0.044*** (0.011)	-0.006 (0.006)	-0.026*** (0.005)	0.053** (0.019)	0.063*** (0.016)	-0.003 (0.007)	0.108*** (0.023)	0.043 (0.666)
R-squared	0.528	0.333	0.308	0.924	0.914	0.467	0.800	0.491
Obs	548,561	574,947	548,561	526,387	548,561	543,193	548,561	401,494
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the estimated coefficients and standard errors from an OLS regression in the main specification of Equation 2. The dependent variable is indicated in the top row. Public funding and firm exit are indicator variables, insolvency takes values of 0 or 100, sales in the log of the value in thousands of euros, log of employees considers the average annual number of employees, ROA is the ratio of gross profits in the current year divided by the total assets at the end of the previous year, sales to total assets is the ratio of total sales tot total assets, interest is the interest paid on borrowed funds and similar costs to interest-bearing borrowing. Standard errors are clustered at the firm level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Table 1 for summary statistics and Table A1 for variable definitions.

Table 4: Outcomes during COVID-19: Cat Movers vs. Cat Non-Movers and All Other Firms

DV:	Public Funding (1)	Firm Exit (2)	Insolvency (3)	Log (Sales) (4)	Log (Empl) (5)	ROA (6)	Sales/Assets (7)	Interest (8)
C19	0.296*** (0.001)	0.108*** 0.000	0.025** (3.000)	-0.057*** (0.001)	-0.026*** (0.001)	-0.036** 0.000	-0.330** (0.002)	-1.229*** (0.034)
CAT Non-Movers $\times$ C19	0.037*** (0.001)	-0.011*** (0.001)	0.002 (0.005)	-0.037*** (0.002)	-0.019*** (0.002)	-0.001 (0.001)	-0.026*** (4.000)	-0.176** (0.075)
CAT Ref Movers $\times$ C19	-0.008 (0.011)	-0.016*** (0.006)	-0.025*** (3.000)	-0.003 (0.019)	0.039*** (0.014)	-0.005 (0.007)	0.081*** (0.023)	-0.190 (587.000)
R-squared	0.52	0.335	0.309	0.926	0.908	0.478	0.803	0.508
Obs	2,878,115	2,984,488	2,878,115	2,770,417	2,878,115	2,825,346	2,878,115	2,039,385
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the estimated coefficients and standard errors from an OLS regression in the main specification of Equation 2. The dependent variable is indicated in the top row. Public funding and firm exit are indicator variables, insolvency takes values of 0 or 100, sales in the log of the value in thousands of euros, log of employees considers the average annual number of employees, ROA is the ratio of gross profits in the current year divided by the total assets at the end of the previous year, sales to total assets is the ratio of total sales tot total assets, interest is the interest paid on borrowed funds and similar costs to interest-bearing borrowing. Standard errors are clustered at the firm level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Tables 1 and A2 for summary statistics and Table A1 for variable definitions.

Table 5: Outcomes during COVID-19: Cat Movers vs. Cat Non-Movers Excluding Micro and Returning Firms

Sample:	Without micro firms				Without returning firms			
DV:	Public Funding	Insolvency	Log (Empl)	Sales/Assets	Public Funding	Insolvency	Log (Empl)	Sales/Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
C19	0.416*** (0.003)	0.034** (0.015)	-0.077*** (0.003)	-0.355*** (0.006)	0.332*** (0.001)	0.026*** (0.005)	-0.047*** (0.002)	-0.352*** (0.004)
Cat Mover $\times$ C19	-0.121*** (0.016)	-0.034** (0.015)	0.046** (0.019)	0.110*** (0.028)	-0.044*** (0.014)	-0.026*** (0.005)	0.049*** (0.018)	0.106*** (0.028)
R-squared	0.560	0.302	0.933	0.857	0.528	0.308	0.913	0.800
Obs	126,883	126,883	126,883	126,883	546,350	546,350	546,350	546,350
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the estimated coefficients and standard errors from an OLS regression in the main specification of Equation 2. The dependent variable is indicated in the top row. Public funding and firm exit are indicator variables, insolvency takes values of 0 or 100, sales in the log of the value in thousands of euros, log of employees considers the average annual number of employees, ROA is the ratio of gross profits in the current year divided by the total assets at the end of the previous year, sales to total assets is the ratio of total sales tot total assets, interest is the interest paid on borrowed funds and similar costs to interest-bearing borrowing. Standard errors are clustered at the firm level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Table 1 for summary statistics and Table A1 for variable definitions.

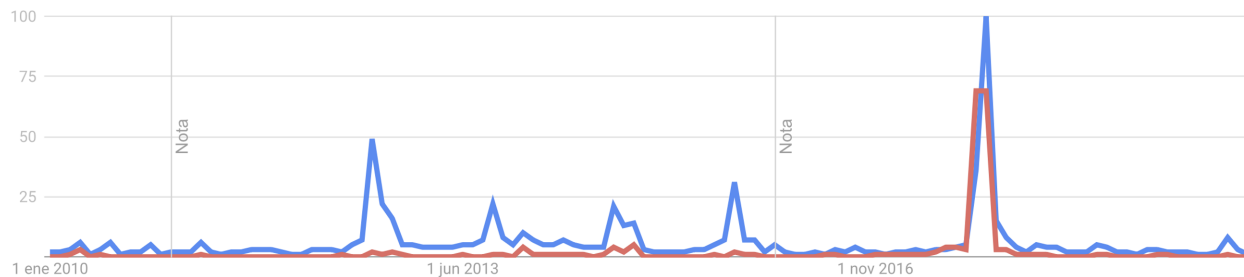
Table 6: New Business Dynamics Around Headquarters' Relocations

DV:	New Incorp. Rates	Total Assets Growth	Sales Growth	Empl. Growth
	(1)	(2)	(3)	(4)
Panel A: 2015 - 2019				
Post	-0.027*** (0.009)	-0.045*** (0.012)	-0.118*** (0.013)	-0.062*** (0.015)
Large mover area	-0.029*** (0.011)	-0.004 (0.015)	0.043** (0.020)	0.039* (0.022)
Large mover area $\times$ Post	0.020** (0.009)	0.008 (0.016)	-0.063*** (0.021)	-0.038* (0.022)
R-squared	0.033	0.030	0.035	0.022
Obs	1,506	26,426	24,699	25,611
Panel B: 2015 - 2021				
Post	-0.029*** (0.009)	-0.040*** (0.011)	-0.091*** (0.012)	-0.054*** (0.014)
Large mover area	-0.032*** (0.010)	-0.004 (0.014)	0.049** (0.020)	0.045** (0.021)
Large mover area $\times$ Post	0.020** (0.009)	0.013 (0.015)	-0.054** (0.021)	-0.035 (0.022)
R-squared	0.047	0.028	0.030	0.020
Obs	2,128	29,993	28,019	29,010
Municipality FE	Yes	Yes	Yes	Yes
Industry FE		Yes	Yes	Yes

Notes: This table reports the estimated coefficients and standard errors from an OLS regression in the main specification of Equation 3. The dependent variable is indicated in the top row. New incorporation rate is defined as new firms in period t divided by total number of firms in year $t-1$. Total assets growth is the log difference of total assets between $t+1$ and t of new incorporated firms in period t . Sales growth is the log difference of sales between $t+1$ and t of new incorporated firms in period t . Employment growth is the log difference of employees between $t+1$ and t of new incorporated firms in period t . Standard errors are clustered at the 4-digit zipcode level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Table A7 for summary statistics and Table A1 for variable definitions.

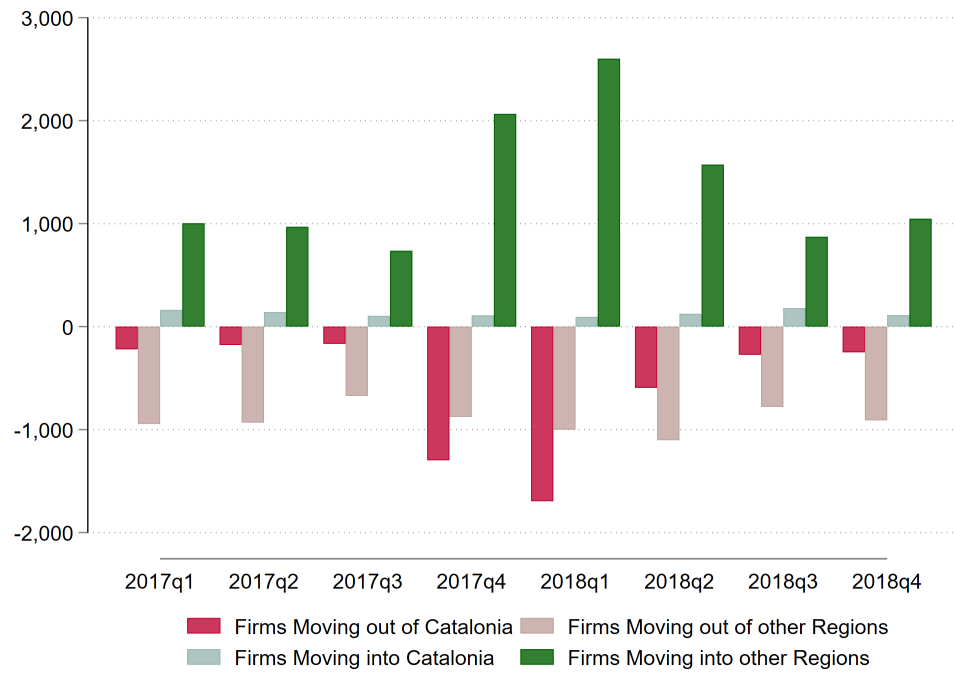
APPENDIX FIGURES AND TABLES

Figure A1: Catalan Independence Google Trends



Notes: Interest over time in “*Independencia Catalunya*” (blue line) and “*Referendum Catalunya*” (red line). Period: January 1, 2010 – December 31, 2019. Numbers represent search interest relative to the highest point on the chart for Spain - time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term.

Figure A2: Headquarters' Relocations Around the Catalan Referendum



Notes: This figure plots the number of firms relocating their headquarters around the 2017 Catalan referendum. We count the number of firms relocating from Catalonia, into Catalonia, out of other regions, and into other regions, respectively.

Table A1: Variable Definitions

Variable	Definition	Source
Headquarters		
Mover	Indicator taking the value of one if a firm moves its headquarter location to a different region in Spain, and zero otherwise. Based on monthly data (between September 2017 and February 2018) for Catalan referendum movers, and on yearly data other movers.	CBI/Informa
Corporate-level Variables		
Firm Age	Current fiscal year - Year of incorporation	CBI
Total Assets	The book value of total assets	CBI
Liquidity	Cash and cash equivalents _t /Total assets _{t-1}	
Leverage	(Non-current liabilities + current liabilities)/Total assets	CBI
Public Funding	A dummy variable equal to one if a firm receives grants from the government in the corresponding year, and zero otherwise	SABI
Capital Intensity	Tangible fixed assets/Total assets	CBI
Sales	Firm total sales during the year	CBI
Employees	Number of employees during the year	CBI
Sales/Total Assets	Sales _t /Total assets _t	CBI
ROA (Return to Assets)	Operating profit _t /Total assets _{t-1}	CBI
Firm Exit	Dummy variable equal to one if firm exists in the previous year but is not included in the CBI in the current year, and zero otherwise. Due to this definition, a higher number of observations may appear in the regression models using this variable	CBI
Insolvency	Dummy variable if the firm has filed for insolvency in the current year, and zero otherwise	CBI
Interest	Interest on borrowed funds and similar costs to interest-bearing borrowing	CBI
New Business Dynamics		
New incorporation rate	New firms in period t divided by total number of firms in year $t-1$	CBI
Total assets growth	Log difference of total assets between $t+1$ and t of new incorporated firms in period t	CBI
Sales growth	Log difference of sales between $t+1$ and t of new incorporated firms in period t	CBI
Employment growth	Log difference of employees between $t+1$ and t of new incorporated firms in period t	CBI

Notes: This table provides definitions of the main variables used in the empirical analysis. CBI: Central Balance Sheet Data Office Microdata from the Bank of Spain. SABI: *Sistema de Análisis de Balances Ibéricos*. See Table 1 for summary statistics.

Table A2: Summary Statistics: Spain

	All				Movers				Non-Movers			
	Obs	Mean	SD	Median	Obs	Mean	SD	Median	Obs	Mean	SD	Median
Log (1+Firm Age)	2,878,065	2.504	0.823	2.708	43,953	2.738	0.559	2.773	2,909,526	2.493	0.829	2.708
Log (Total Assets)	2,878,115	5.859	1.742	5.745	43,955	6.755	1.832	6.728	2,909,580	5.827	1.746	5.716
Liquidity	2,831,980	0.261	0.393	0.122	43,856	0.205	0.347	0.077	2,862,076	0.263	0.399	0.121
Leverage	2,878,115	0.569	0.321	0.591	43,955	0.538	0.327	0.558	2,909,580	0.571	0.322	0.594
Public Funding (Dummy)	2,878,115	0.187	0.390	0.000	43,955	0.189	0.391	0.000	2,909,580	0.184	0.388	0.000
Capital Intensity	2,878,115	0.255	0.271	0.151	43,955	0.244	0.283	0.115	2,909,580	0.254	0.271	0.151
Log (Sale)	2,778,876	5.762	1.620	5.673	41,442	6.175	1.890	6.104	2,806,664	5.734	1.625	5.649
Log (Employment)	2,878,115	1.211	1.297	1.099	43,955	1.329	1.486	1.112	2,909,580	1.189	1.304	1.099
Sale/Assets	2,878,115	1.680	1.919	1.173	43,955	1.277	1.618	0.841	2,909,580	1.689	1.943	1.172
ROA	2,831,980	0.077	0.353	0.055	43,856	0.076	0.316	0.048	2,862,076	0.075	0.362	0.054

Notes: This table provides summary statistics of the main variables used in the empirical analysis for all Spanish firms during 2017-2021. We keep firm-year observations with non-missing total assets, employment and location. Sales and total assets are logs of values in thousands of euros. See Table A1 for variable definitions.

Table A3: Antecedents of Headquarters' Relocation: Non-Cat Movers

DV: Non-Cat HQ Mover						
Antecedents in:	$t-1$		$\text{avg}(t-3, t-2, t-1)$		$t-1$	
	(1)	(2)	(3)	(4)	(5)	(6)
Log (1+Firm Age)	0.095*** (0.020)	0.095*** (0.020)	-0.392*** (0.034)	-0.391*** (0.034)	-0.007 (0.027)	0.001 (0.027)
Log (Total Assets)	0.328*** (0.013)	0.328*** (0.013)	0.370*** (0.016)	0.370*** (0.016)	0.416*** (0.015)	0.398*** (0.017)
ROA	0.057 (0.036)	0.058 (0.036)	0.151* (0.089)	0.153* (0.089)	0.006 (0.054)	0.007 (0.054)
Liquidity	-0.160*** (0.035)	-0.160*** (0.035)	(0.101) (0.076)	(0.100) (0.076)	-0.522*** (0.054)	-0.515*** (0.054)
Leverage	0.288*** (0.059)	0.289*** (0.059)	0.234*** (0.073)	0.235*** (0.073)	-0.032 (0.064)	-0.051 (0.064)
Capital Intensity	-0.447*** (0.070)	-0.447*** (0.070)	-0.472*** (0.084)	-0.472*** (0.084)	-0.246*** (0.076)	-0.217*** (0.076)
SD - ROA					0.685*** (0.117)	0.648*** (0.118)
SD - Log (Total Assets)					2.165*** (0.121)	2.149*** (0.121)
SD - Liquidity					-0.131 (0.165)	-0.124 (0.165)
Family Firm						0.086 (0.060)
Foreign Ownership						1.602*** (0.243)
R-squared	0.042	0.042	0.041	0.041	0.043	0.043
Obs	1,303,114	1,303,114	1,053,405	1,053,405	1,171,428	1,171,428
Industry FEs	Yes		Yes		Yes	Yes
Region FEs	Yes		Yes		Yes	Yes
Year FEs	Yes		Yes		Yes	Yes
Industry $\times$ Year FEs		Yes		Yes		
Region $\times$ Year FEs		Yes		Yes		

Notes: This table reports the estimated coefficients and standard errors from the OLS regression of Equation 1 on antecedents of headquarter movers. The dependent variable is a dummy equal to one if a firm relocates its headquarters. Standard errors are clustered at the firm level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Table A2 for summary statistics and Table A1 for variable definitions.

Table A4: Antecedents of Headquarters Relocation to Different Regions

DV: Destination Region:	Other	Valencia	Madrid	Other	Valencia	Madrid
	(1)	(2)	(3)	(4)	(5)	(6)
Log (1+Firm Age)	-0.271*** (0.070)	-0.123 (0.147)	-0.399*** (0.125)	-0.247** (0.106)	0.037 (0.190)	-0.386*** (0.035)
Log (Total Assets)	0.537*** (0.045)	0.485*** (0.075)	0.677*** (0.074)	0.564*** (0.053)	0.537*** (0.082)	0.713*** (0.066)
ROA	0.006 (0.187)	0.074 (0.157)	-0.019 (0.229)	-0.019 (0.159)	-0.042 (0.258)	-0.072 (0.162)
Liquidity	0.185 (0.152)	-0.018 (0.166)	0.265*** (0.025)	-0.022 (0.214)	-0.021 (0.198)	0.182* (0.016)
Leverage	-0.205 (0.206)	0.192 (0.402)	0.595*** (0.165)	-0.362* (0.207)	0.047 (0.358)	0.462* (0.203)
Capital Intensity	-0.037 (0.265)	-1.091*** (0.191)	-1.463*** (0.245)	0.044 (0.269)	-0.894*** (0.169)	-1.308*** (0.190)
SD - ROA				0.079 (0.305)	0.284 (0.389)	0.423*** (0.034)
SD - Log (Total Assets)				1.053*** (0.145)	1.054*** (0.201)	0.815*** (0.116)
SD - Liquidity				0.445 (0.422)	0.742* (0.429)	0.725*** (0.189)
Pseudo R-squared		0.093			0.099	
Obs		106,538			96,552	

Notes: This table reports the estimated coefficients and standard errors from the multinomial logit regression on antecedents of headquarter movers by their destinations. The dependent variable is the destination of headquarter relocation: Madrid, Valencia or other regions, and the base outcome is Catalan non-movers during the referendum. Standard errors are clustered at the province level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Table 1 for summary statistics and Table A1 for variable definitions.

Table A5: Outcomes during COVID-19: Non-Cat Movers

DV:	Public Funding	Firm Exit	Insolvency	Log (Sales)	Log (Empl)	ROA	Sales/Assets	Interest
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
C19	0.303*** (0.001)	0.105*** (0.000)	0.025*** (0.002)	-0.068*** (0.001)	-0.033*** (0.001)	-0.035*** (0.000)	-0.337*** (0.002)	-1.292*** (0.034)
Non-Cat Mover $\times$ C19	-0.028*** (0.005)	0.017*** (0.003)	-0.010 (0.019)	-0.026*** (0.010)	-0.001 (0.007)	0.002 (0.003)	0.089*** (0.011)	-0.198 (0.301)
R-squared	0.519	0.335	0.309	0.921	0.904	0.479	0.801	0.503
Obs	2,871,760	2,975,268	2,871,760	2,764,496	2,871,760	2,820,316	2,871,760	2,034,972
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the estimated coefficients and standard errors from an OLS regression in the main specification of Equation 2. The dependent variable is indicated in the top row. Public funding and firm exit are indicator variables, insolvency takes values of 0 or 100, sales in the log of the value in thousands of euros, log of employees considers the average annual number of employees, ROA is the ratio of gross profits in the current year divided by the total assets at the end of the previous year, sales to total assets is the ratio of total sales tot total assets, interest is the interest paid on borrowed funds and similar costs to interest-bearing borrowing. Standard errors are clustered at the firm level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Table A2 for summary statistics and Table A1 for variable definitions.

Table A6: Outcomes during COVID-19: Robustness to Controls

DV:	Public Funding (1)	Firm Exit (2)	Insolvency (3)	Log (Sales) (4)	Log (Empl) (5)	ROA (6)	Sales/Assets (7)	Interest (8)
C19	0.324*** (0.002)	0.034*** (0.001)	0.015** (0.007)	-0.181 *** (0.002)	-0.107*** (0.002)	-0.022*** (0.001)	-0.226*** (0.004)	-1.526*** (0.100)
Cat Ref Mover $\times$ C19	-0.044*** (0.012)	0.006 (0.006)	-0.023*** (0.005)	0.014 (0.020)	0.035** (0.015)	0.001 (0.006)	0.080*** (0.023)	-0.026 (0.719)
R-squared	0.538	0.365	0.311	0.936	0.932	0.518	0.825	0.498
Obs	495,375	562,668	495,375	476,229	495,375	494,987	495,375	367,134
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the estimated coefficients and standard errors from an OLS regression in the main specification of Equation 2. The dependent variable is indicated in the top row. Public funding is an indicator variable, insolvency takes values of 0 or 100, log of employees considers the average annual number of employees, sales to total assets is the ratio of total sales tot total assets. Firm controls firm age (log), total assets (log), liquidity and leverage. Standard errors are clustered at the firm level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Table 1 for summary statistics and Table A1 for variable definitions.

Table A7: New Business Dynamics: Summary Statistics

	Obs	Mean	SD	Median
4-digit Zipcode Level				
New Incorporation Rates	2,128	0.051	0.111	0.039
Firm Level				
Total Assets Growth	29,993	0.296	0.608	0.197
Sales Growth	28,109	0.652	0.839	0.538
Employment Growth	29,010	0.529	0.812	0.331

Notes: This table reports summary statistics for the analysis of new business dynamics, see Equation 3. New incorporation rates are defined as new firms in period t divided by total number of firms in year $t-1$. Total assets growth is the log difference of total assets between $t+1$ and t of new incorporated firms in period t . Sales growth is the log difference of sales between $t+1$ and t of new incorporated firms in period t . Employment growth is the log difference of employees between $t+1$ and t of new incorporated firms in period t . See Table A1 for variable definitions.

Table A8: New Business Dynamics: Alternative Specification

DV:	New Incorpor. Rates	Total Assets Growth	Sales Growth	Empl. Growth
	(1)	(2)	(3)	(4)
Post-Ref	-0.027*** (0.009)	-0.045*** (0.012)	-0.118*** (0.013)	-0.062*** (0.015)
C19	-0.032*** (0.009)	-0.020 (0.018)	0.017 (0.025)	-0.019 (0.023)
Large mover area	-0.032*** (0.010)	-0.004 (0.014)	0.049** (0.020)	-0.045** (0.021)
Large mover area $\times$ Post-Ref	0.020** (0.009)	0.007 (0.016)	-0.064*** (0.021)	-0.038* (0.022)
Large mover area $\times$ C19	0.019** (0.010)	0.036 (0.025)	-0.013 (0.041)	-0.025 (0.032)
R-squared	0.047	0.028	0.033	0.021
Obs	2,128	29,993	28,019	29,010
Municipality FE	Yes	Yes	Yes	Yes
Industry FE		Yes	Yes	Yes

Notes: This table reports the estimated coefficients and standard errors from an OLS regression in the main specification of Equation 3. The dependent variable is indicated in the top row. New incorporation rate is defined as new firms in period t divided by total number of firms in year $t-1$. Total assets growth is the log difference of total assets between $t+1$ and t of new incorporated firms in period t . Sales growth is the log difference of sales between $t+1$ and t of new incorporated firms in period t . Employment growth is the log difference of employees between $t+1$ and t of new incorporated firms in period t . Standard errors are clustered at the 4-digit zipcode level. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. See Table A7 for summary statistics and Table A1 for variable definitions.