

# Non-Profit vs. For-Profit Competition and Employment: Evidence from Home Care

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## Abstract

This paper provides novel evidence on the effect of competition between non-profit and for-profit organizations on employment. The analysis leverages a unique reform: the removal of entry barriers for for-profit organizations in the home care sector. Using a difference-in-differences empirical strategy, I find that the deregulation has no effect on total private employment in the most populated regions, and a negative effect in sparsely populated regions. For-profit organizations mainly expand in the most populated regions, substituting non-profit employment. Non-profit organizations negatively adjust employment in less populated regions, likely to balance profits. Investigating mechanisms, I find that for-profits do not exhibit better working conditions or higher product quality. Their success appears to stem from lower group-level cost advantages, driven by concentrated operations in the most profitable markets.

Keywords: Non-profit, Competition, Long-term services, Difference-in-differences

*JEL* Codes: L31, J14, I10, D22

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# 1 Introduction

Non-profits have been major providers of public services and a historical choice of outsourcing for governments (Hansmann, 2000; Salamon et al., 2000). However, the last three decades have marked a shift, with a surging number of governments favoring for-profit entry and implementing market-oriented policies, particularly in health-related services (Amirkhanyan, 2008).<sup>1</sup> For-profit organizations have significantly expanded since. The consequences on product quality have been predominantly investigated (Herrera et al., 2014; Petersen et al., 2018; Knutsson and Tyrefors, 2022). Yet, research on the effects on employment—and, consequently, on the provision of services—remains scarce.

For-profits and non-profits abide by very different ownership properties. Constrained by the non-distribution rule, non-profits tend to maximize quality and quantity (Newhouse, 1970). Even though these objectives align well with governmental social goals, non-profits are often criticized for having little incentive to lower costs (Bennett and Iossa, 2010). In contrast, for-profits have strong cost-reduction incentives, which could help governments decrease public expenditure (Hart and Moore, 1990). But profit maximization is not without drawbacks: for-profits may engage in cream-skimming behavior, serving the most profitable consumers, and may lower unobservable quality (Hart et al., 1997). However, competition between ownership structures may narrow their differences. Non-profits may be constrained to adjust quality, sort consumers, and limit cross-subsidization between profitable and unprofitable markets to avoid losses (Faulhaber, 1975; Sloan, 2000; Glaeser and Shleifer, 2001).

Despite the relevance of the impact of competition between ownership structures on the product market, there has so far been a dearth of theoretical and empirical studies on its consequences on the labor market side, even though the link between product market competition and labor market outcomes is widely recognized (Bertrand and Kramarz, 2002; Blanchard and Giavazzi, 2003). To provide insights into this question, this paper leverages a unique exogenous shock, the removal of a barrier of entry for for-profit organizations in the French home care sector. Prior to this reform, the sector was almost entirely dominated by non-profits.<sup>2</sup> In 2005, the Ministry of Employment announced a law (*Plan Borloo*) that aimed to increase the provision of services and create jobs. The main change concerned the

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<sup>1</sup>Competition between different types of organizations is common in public services. Examples include Epple and Romano (1998) and Hensvik (2012) for schools, Horwitz and Nichols (2009) and Cooper et al. (2018) for hospitals, Bergman et al. (2016) and Hjelm et al. (2018) for nursing homes, and Knutsson and Tyrefors (2022) for ambulances.

<sup>2</sup>The employment share of non-profits within employing establishments was 96% in 2005 (INSEE, 2005). This share does not include independent workers, *Particulier Employeur*, who are directly employed by households and are usually excluded from employment databases.

access of for-profits to a certification, allowing them to benefit from public financial schemes similarly to non-profits. This reform complements substantial existing governmental support. In 2020, 6.3 billion euros were spent solely on elderly allowances (DREES, 2020).

To study the effect of deregulation on employment, I use an exhaustive French employment database. The DADS (*Déclaration Annuelle de Données Sociales*) are matched employer–employee datasets provided by the French Statistical Office (INSEE) (INSEE, 2014).<sup>3</sup> The data include detailed job-level information, such as the legal form of the employing organization, location, worker age, working hours, and wages over the 1994–2014 period. The data also include detailed sectoral classifications, which enable the identification of home care establishments for dependent individuals. For regional characteristics, I use demographic data from INSEE, local revenue and subsidies from the Ministry of Finance, and allowances from the Ministry of Employment.

The empirical approach relies on a difference-in-difference research design, where the treatment is the removal of entry barriers for for-profit organizations. To evaluate the effect locally, I aggregate individual employment data at the living area level. As the law applied to all regions simultaneously, the entire French home care sector constitutes the treated group. To ensure similarity in behaviors, I use the residential care home sector as the baseline control group. This sector has a twofold advantage: comparable product demand with the treated group, and the presence of both non-profit and for-profit organizations. Still, these two groups do have distinct characteristics and are not isolated. I conduct a series of robustness checks, including the analysis of precise employee movements between the two sectors to assess spillover, and the estimation of alternative specifications to assess the stability of the results.

The baseline results exhibit substantial heterogeneity between highly and sparsely populated living areas. In most populated areas, the number of for-profit establishments increases markedly, illustrating the success of the law in promoting their entry. Employment patterns follow, with an increase in for-profit employment but a decrease in non-profit employment. The reform results in a null effect on total private employment, suggesting substitution between the two types of organization in highly populated areas. This substitution is particularly pronounced following the 2008 recession. For-profit expansion is strong after the crisis and occurs concomitantly with a marked decrease in non-profit employment, indicating that for-profits likely benefited from the weakening of non-profits, durably replacing them in the market. In sparsely populated areas, however, for-profit employment shows no significant

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<sup>3</sup>Due to statistical confidentiality, these datasets can only be accessed through secure servers.

change, whereas non-profits negatively adjust employment, reducing total private employment. These findings are consistent with theoretical predictions. For-profit organizations focus on the most profitable markets (Hart et al., 1997), while non-profit organizations are constrained to adapt. Competition in the most profitable areas limits non-profit groups' ability to cross-subsidize and leads them to restrict less profitable activities to maintain financial balance (Faulhaber, 1975; Sloan, 2000; Glaeser and Shleifer, 2001).

To examine the mechanisms behind the direct effect of competition, the analysis focuses on highly populated areas where non-profit and for-profit organizations coexist. Using employee-level data on worker movements, the analysis identifies employee patterns that explain the substitution between non-profit and for-profit employment. The results show that new workers entering the home care sector tend to join for-profit rather than non-profit organizations. These inflows are much larger than movements within the sector or at exit, indicating that employment substitution between the two types of organizations occurs primarily at sector entry. The analysis then assesses for-profit advantages in these areas. For-profit organizations likely benefit from lower costs, as they concentrate on highly populated areas and employ a smaller share of administrative staff. They are unlikely to provide higher service quality, as their workforce is slightly younger and more likely to have recently entered the sector, resulting in lower employee experience. For-profits are also less attractive employers, with similar hourly wages but fewer hours per employee. These results suggest that, at the group level, for-profits' advantages primarily stem from lower operating costs. Finally, unlike non-profits, for-profit organizations benefit from the ability to advertise, which may allow them increase market share, and ultimately, employment share.

The negative effect on employment in weakly populated areas is likely the consequence of increased competition in highly populated areas. With large groups dominating the home care sector, a shock in one market could plausibly alter the group's activity in other markets. In particular, non-profit groups are more likely to consider quantity maximization in their production function and therefore provide services to clients and markets with varying profitability. A shock in a profitable activity may narrow their ability to cross-subsidize lower-margin activities. This mechanism may explain the simultaneous negative effect on employment in both highly and sparsely populated areas. Unfortunately, no database identifies non-profit establishments belonging to the same group, which prevents us from directly assessing this mechanism. Nevertheless, the paper analyses the impact of the law in more detail in weakly populated areas. In these areas, non-profit organizations reduce employment primarily in lower-revenue areas, consistent with group-level rationalization of less profitable activities.

While this is, to the best of my knowledge, the first paper leveraging an exogenous shock to evaluate the effect of competition between non-profits and for-profits on employment, the control and the treated groups are not random. A number of precautions are taken to investigate the validity of the results. First, identification relies on a control group with which substitution may be possible (Stabile et al., 2006; Guo et al., 2015). To assess whether the law affects the residential care home sector (control group) through spillovers from the home care sector (treated group), I examine precise employee movements between home care and residential care homes and assess whether these transitions respond to the law. Second, since the parallel trends assumption is violated in some cases, I conduct a battery of robustness checks, including estimating models with linear pre-trends, performing sensitivity analyses, estimating a synthetic difference-in-differences model, and using three alternative control groups: physicians, ancillary health services, and ambulance services. Third, the observed effects may arise from external factors. I therefore analyze public home care employment and discuss concerns regarding independent workers. I also address the possibility that the observed patterns reflect changes in public financing by controlling for local subsidies and public allowances. Finally, to assess sensitivity to the choice of the outcome variable, I consider two alternative variables: normalized employment per population aged 75+, and total working hours per inhabitant. Overall, the results are reassuring with respect to the baseline findings.

This paper contributes to several strands of literature. First, it uniquely evaluates the effect of competition between ownership structures on employment. The literature has primarily focused on the effect of entry barriers among for-profits (Bertrand and Kramarz, 2002; Viviano, 2008; Schivardi and Viviano, 2011), and the impact of privatization on employment (La Porta and López-de Silanes, 1999; Melly and Puhani, 2013; Arnold, 2022). But papers differentiating for-profits and non-profits are scant. Heimeshoff et al. (2014) and Duggan et al. (2023) differentiate both ownership structures, but examine public hospital conversions. The current analysis complements the aforementioned literature in three main ways. First, unlike previous research, this is the first paper to evaluate the effect of competition between non-profits and for-profits on employment, rather than evaluating the effect of competition within the same ownership type. Second, this paper uses an exogenous change in the entry regulation of for-profit organizations, and does not rely on the privatization of public establishments. Third, while most papers study hospitals and nursing homes, this paper analyzes home care services.

Second, this paper contributes to the literature on the cream-skimming behavior of organizations. Past studies have shown that for-profit organizations may tend to sort consumers

by operating in the most profitable areas (Norton and Staiger, 1994), and by serving the most profitable clients (Cooper et al., 2018; Beckert and Kelly, 2021). In contrast, non-profit organizations seem to sort to a lesser extent (Horwitz and Nichols, 2011; Bayindir, 2012). Still, when competing with for-profits, non-profits may adjust their behavior. Closely related to this paper, Horwitz and Nichols (2009) show that non-profit hospitals tend to close their less profitable services, and focus on the most profitable ones when competing with for-profits. The current paper complements this literature by showing that the deregulation in the French home care market resulted in a substantial concentration of for-profits in the most populated areas, where profits are likely to be higher due to economies of agglomeration (Puga, 2010). Meanwhile, non-profits negatively adjusted their activities in less populated markets, where profits are likely to be lower, even though no change in competition was observed.

Finally, this paper relates to the literature studying the effect of competition on costs and quality. Research shows that competition in the healthcare sector can lower costs and improve outcomes (Kessler and McClellan, 2000; Cooper et al., 2011; Gaynor et al., 2013). Nonetheless, when considering ownership structures, consequences on quality are mixed (Herrera et al., 2014; Bergman et al., 2016; Hjelm et al., 2018; Bach-Mortensen et al., 2021). For instance, Knutsson and Tyrefors (2022) show that for-profit ambulances have higher death rates than public ambulances due to cost-cutting at the expense of staff quality. The current paper contributes to this literature by showing that for-profits produce at lower costs, due to lower wages and fewer administrative staff, but with younger employees who are likely less experienced.

The remainder of this paper is organized as follows. Section 2 presents background information regarding the institutional context. Section 3 presents the data and discusses some summary statistics. Section 4 presents the empirical framework. Section 5 discusses the empirical results, followed by a heterogeneity analysis and a battery of robustness checks. Section 6 discusses the mechanisms. Section 7 concludes.

## 2 Institutional Background

### 2.1 Context

In France, home care services may be provided through different types of entities. The most common type is non-profit (DARES, 2017).<sup>4</sup> For-profits have grown markedly since the 2005 law, but still are a minority.<sup>5</sup> Both types are commonly organized into large groups, with some decisions centralized.<sup>6</sup> For example, a group could support or decide to definitively close an establishment due to financial difficulties.<sup>7</sup> Alongside these private organizations, some public establishments provide home care services, but their presence is very limited.<sup>8</sup> The government prefers to rely on private providers. Finally, home care services could be provided by independent workers, *Particulier Employeur*. These workers are directly employed by households, from whom they receive their salary. As no intermediate organization is needed, individual workers are missing from employee–employer datasets (INSEE, 2005). Nevertheless, aggregate figures show a strong and constant decrease in their working hours, which is commonly attributed to the competition from for-profit organizations (DARES, 2017).

Home care establishments provide a wide range of home services.<sup>9</sup> As opposed to the United States, home care in France does not include health services which are generally provided by independent workers or health care establishments (Orsini, 2010; Guo et al., 2015). Home care establishments primarily provide services to dependent individuals, including the elderly and disabled. These services aim to support and allow individuals to continue living in their own homes through various types of assistance, such as personal hygiene, moving, cooking, shopping, and cleaning. Home care establishments may also provide home services to non-dependent individuals. The share of services provided to these individuals varies markedly by ownership structure (DARES, 2017). Non-profits tend to provide a much higher proportion of services to dependent individuals than for-profit organizations.<sup>10</sup>

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<sup>4</sup>Non-profits had 96% of employment share among home care establishments in 2005, see Section 3.2 for more details.

<sup>5</sup>See Section 3.2 for more details.

<sup>6</sup>Research on the market structure of the French home care sector is rare, yet reports suggest concentration of employment in large home care groups (link, and link).

<sup>7</sup>Anecdotal evidence suggest the centralization of closure decisions in large home care groups (link).

<sup>8</sup>Public home care services are generally provided by the municipal government (link).

<sup>9</sup>In France, home care include assistance with getting up, bathing, going to bed, shopping, meal preparation, household maintenance, laundry, accompaniment for outings or leisure activities, teleassistance, and meal delivery (link).

<sup>10</sup>Non-profits provided 25pp more of their share of working hours to dependent individuals than for-profits

Training is not mandatory to provide services to dependent individuals, however, such training provides access to better-paid positions. Training takes place through apprenticeship or internships and can last between 9 and 36 months.<sup>11</sup>

Home care costs are for the most part financed through public funding.<sup>12</sup> The three main sources of financing are allowances to dependent individuals, tax reductions, and exemptions of employer’s social security contributions. Allowances are regulated and depend on the level of dependence of an individual.<sup>13</sup> Consumer tax reductions have been equal to 50% of expenses and were transformed into tax credits in 2007. Finally, authorized home care establishments are exempt from employer social security contributions.<sup>14</sup>

The residential care homes sector is the most comparable to home care in terms of product demand. This sector includes all types of long-term residential establishments for dependent individuals, including those for the elderly and disabled. Like home care, this sector provides assistance to dependent individuals and has the advantage of seeing the coexistence of non-profit and for-profit organizations. Among all French sectors, the residential care home sector is likely the most comparable to our sector of interest, and has not been subject to notable public policies between 1994 and 2014.

## 2.2 The 2005 Law

In 2005, 96% of private home care employment was provided by non-profits.<sup>15</sup> The primary factor explaining non-profits’ domination is likely to be legal. To benefit from the significant financial advantages related to home care, organizations had to be either authorized or certified. Authorizations were mostly granted to non-profits through public calls for projects, and certifications to for-profits ([Cour des Comptes, 2014](#)).<sup>16</sup> However, to be certified, for-

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in 2015 ([DARES, 2017](#)).

<sup>11</sup>See the 2007 government note on the *Diplôme d’État d’Auxiliaire de Vie Sociale* (DEAVS) ([link](#)).

<sup>12</sup>Considered part of the social services, the government has supported both the demand and supply sides of home care services for decades ([Gallois and Nieddu, 2015](#)). Numerous laws were implemented to regulate and favor the growth of the sector, notably the creation of an authorization to deliver household services to dependent individuals (1991), social security contribution reductions (1993 and 1997), implementation of vouchers and allowances (1993 and 2001), and reductions in the value-added tax rates (1999).

<sup>13</sup>There are two types of allowances for dependent individuals: *Allocation Personnalisée d’Autonomie* (APA) for dependent elderly individuals over 60, and *Prestation de Compensation du Handicap* (PCH) for individuals with disabilities.

<sup>14</sup>Additionally, authorized home care establishments have access to reduced-rate VAT.

<sup>15</sup>See Section 3.2 for more details.

<sup>16</sup>Two different types co-exist, the *agrément* which is mostly given to for-profits, and the *autorisation* mostly given to non-profits ([Gallois, 2013](#)). The authorization is valid for 15 years ([Cour des Comptes, 2014](#)).

profits had to navigate a complicated approval process, which varied across regions, could take several months to be granted, and had to be renewed annually.<sup>17</sup> This entry barrier likely explains, to a large extent, the marginal presence of for-profits before 2005.

The law that removed the barrier of entry for for-profit organizations was announced in 2005. In response to high unemployment rates and increasing demand for home care, the Ministry of Employment announced the *Plan Borloo*, a new law on social cohesion that came into effect on the first of January 2006.<sup>18</sup> The government’s goal was twofold, reduce low-skilled unemployment and meet the growing demand for household services.<sup>19</sup> The law had several aspects. First, the most structural change was related to the removal of the barrier of entry of for-profit firms. Up until the implementation of the law, each regional authority had its requirements to grant the annual certification to for-profit organizations. The reform streamlined the approval process, by defining precise rules and requirements at the national level, and extended the certification’s validity to five years. These certifications granted access to all public financing available for home care, including allowances spending, tax reductions, and social security contribution exemptions. The certification allowed for-profits to be able to compete with non-profit organizations with comparable advantages. Second, the government created a national agency for home care to steer the implementation of the reform and become the only point of contact for all players in the sector. Third, the law reduced social security contributions and simplified payment procedures for independent workers who were directly employed by households.

## 3 Data and Descriptive Statistics

### 3.1 Data

*Firms’ characteristics.* The main database used in this study is provided by INSEE (INSEE, 2014). The DADS are employer–employee matched datasets based on a mandatory declaratory form completed by all employing organizations and shared among tax and social security authorities. These comprise the most detailed and exhaustive data available on French employing organizations.<sup>20</sup> Due to confidentiality concerns, the usage of the data is restricted

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<sup>17</sup>For more details, see government report ([link](#)).

<sup>18</sup>Law number 2005-841, *LOI n° 2005-841 du 26 juillet 2005 relative au développement des services à la personne et portant diverses mesures en faveur de la cohésion sociale*([link](#)).

<sup>19</sup>For more details, see government report ([link](#)).

<sup>20</sup>The DADS exclude independent workers, *Particuliers employeurs*, who are directly employed by households.

to secured remote servers. The DADS-Poste include yearly information per job and provide numerous details such as the identifier of the employing establishment, job location, sector of activity, legal category of the organization, age, sex, working hours, and net wages. INSEE also provides an ownership classification of legal categories that allows the identification of non-profit, for-profit, and public establishments. Finally, sector identification is based on the INSEE classification of the main activity reported by the establishment.

*Regional characteristics.* Regional characteristics used for the heterogeneity analysis come from two different sources. Demographic-related information is provided by INSEE and collected during the national census, including the 2008 regional population. The data on revenue per inhabitant is based on tax returns provided by the Ministry of Finance.

*Public financing.* To evaluate the sensitivity of the results to public financial assistance, local subsidies and allowances are used as controls in the robustness check analyses. Municipality accounts are provided by the Ministry of Finance which includes yearly amounts of granted subsidies. The data on the two main allowances to dependent individuals distributed by the *département*, APA and PCH, are provided by the Ministerial Statistical Service for Health and Social Services (DREES).<sup>21</sup>

*Sample of analysis.* The sample of analysis is restricted to organizations operating in mainland France, following standard French analyses.<sup>22</sup> The period of analysis starts in 1994, the first year of the DADS data, and ends in 2014, just before a change in allowance amounts. The data is aggregated at the *living area* level, defined by INSEE as the smallest catchment area where residents have access to the most common facilities and services.<sup>23</sup> The baseline analysis covers a total of 1,632 living areas and includes all employees of private organizations, both for-profits and non-profits. Public employees are studied in Section 5.3. The main variable of interest, employment, is computed as the total number of jobs per 1,000 inhabitants based on the 2008 national census.

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<sup>21</sup>*Allocation Personnalisée d'Autonomie* (APA) is granted to dependent elderly individuals and *Prestation de Compensation Handicap* (PCH) to individuals with a disability. These allowances were put in place in 2001, replacing other types of allowances. With 2 years of transition, the data on allowances is usable from 2003. The data on these allowances is only available at the *département* level.

<sup>22</sup>I exclude all islands from the data.

<sup>23</sup>A living area, or *bassin de vie*, refers to the smallest geographical area where residents can access essential services and amenities, such as healthcare, education, and retail, based on their proximity.

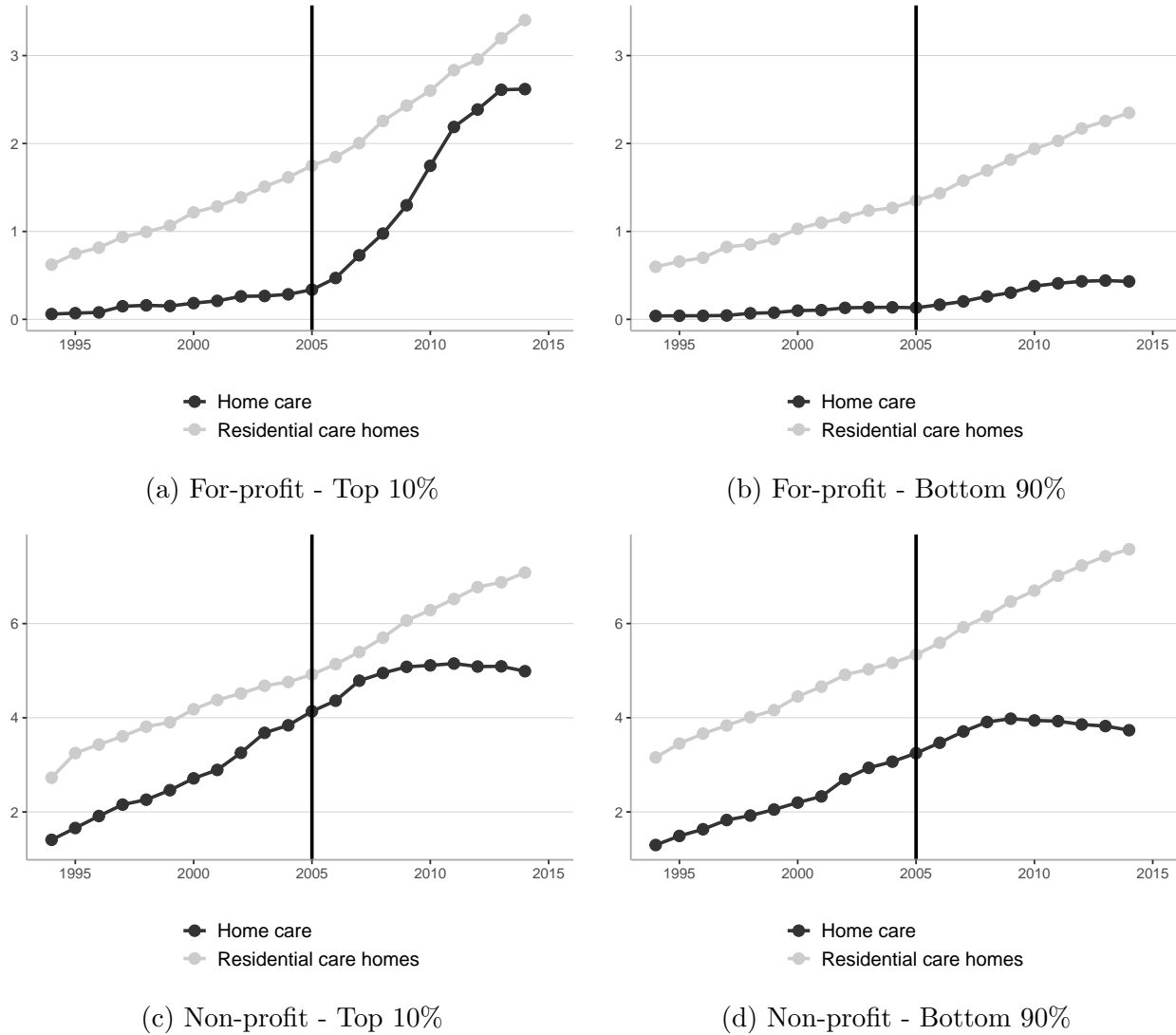
## 3.2 Descriptive Statistics

Table A2 reports descriptive statistics on employment in the home care and residential care home sectors in 2005 and 2014. In 2005, private home care employment represented 3.497 employees per 1,000 inhabitants (2008 population), largely dominated by non-profits with 96% of employment share. However, with the removal of the entry barrier, for-profits have substantially expanded. Between 2005 and 2014, for-profit employment grew by 333%. This massive growth is primarily concentrated in the top 10% of the largest regions (according to the number of inhabitants) with an increase of 677%, while the increase in the bottom 90% is of 227%. This change has reshuffled the employment shares, with an increase of 11 percentage points on average for for-profits, 26*pp* in the top 10%, and 6*pp* in the bottom 90% of regions. Table A3 further details the results for the top 1%, next 9%, middle 40%, and bottom 50% of regions, showing broadly similar distributional patterns.

Inequalities in home care employment across regions increased between 2005 and 2014. In 2005, there were  $4.474/3.378 \approx 1.32$  times more private employees per inhabitant in the largest 10% of regions than in the bottom 90%. Within ownership structures, this ratio varies markedly. Non-profits have  $4.137/3.247 \approx 1.27$  times more employment per inhabitant in the largest regions, while for-profits have  $0.337/0.132 \approx 2.55$  times more. By 2014, the average private employment gap between the top and bottom regions had widened, reaching a ratio of  $7.606/4.166 \approx 1.83$ . This increase is driven solely by for-profits, which reached a ratio of  $2.619/0.431 \approx 6.08$ , while non-profits kept approximately the same ratio of  $4.988/3.735 \approx 1.34$ . For-profits have a considerably higher proportion of their employees in large regions compared to non-profits, a disparity that has particularly widened after the law.

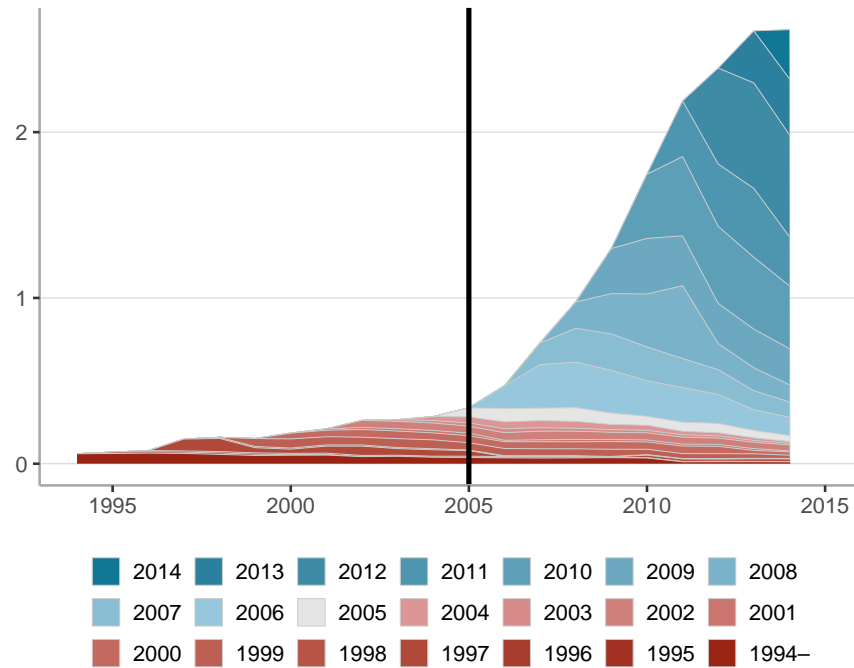
The changes observed since 2005 in the home care sector are not seen in the residential care home sector. To get insights into the dynamic evolution between the two sectors, Figure 1 plots the average employment per year. In all cases, before 2005, a fairly linear difference in trends is observable between the two sectors. After the law, patterns shift. Figure 1 Panel (a) and (b) reveal that for-profit home care employment strongly changes trend after the law in the top 10% of regions, while in the bottom 90% the change is very small. Figure 1, Panels (c) and (d), show a break in trend for non-profit organizations in the home care sector, with a decline in employment growth in both large and small categories of regions, particularly after 2008.

Figure 1: Average employment by region population categories and ownership types



Notes: This graph plots the average number of employees per year, per 1,000 inhabitants (2008 census), and per living area. Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). Home care and residential care home employment are identified using the INSEE establishment classification. Panel (a) includes only for-profit employees and restricts the sample to the top 10% of regions, panel (b) to the bottom 90%, panel (c) includes only non-profit employees in the top 10%, and panel (d) in the bottom 90%.

Figure 2: Average for-profit employment in the top 10% most populated regions by establishment birth year



Notes: This graph plots the average number of for-profit employees in the home care sector per year and per 1,000 inhabitants (2008 census) in the top 10% most populated regions. Average employment is broken down by establishment birth year.

The sharp increase in for-profit employment in the most populated regions is attributable to the entry of new for-profit establishments after the law. Figure A1 plots the average evolution in the number of establishments per living area and per 10,000 inhabitants (2008 population), showing that the number of for-profit establishments increased primarily in the top 10% of living areas. Most importantly, Figure 2 shows that the post-law increase in for-profit employment is entirely driven by establishments created after 2005, suggesting that the initial government goal of increasing for-profit employment through the removal of entry barriers was achieved. Figure A2 further presents these evolutions per category of region and per ownership structure, showing that the largest change occurred for for-profit organizations in the top 10% of living areas.

## 4 Empirical Strategy

This paper aims to identify the impact of competition between ownership structures on employment. A correlation analysis could be blurred by strong endogeneity concerns providing biased insights into the implications of competition. For instance, concerns could arise from reverse causality. A region with a growing demand could lead to the growth of both ownership structures, and show a positive effect of deregulation on employment. A difference-in-difference research design allows for a better identification of the impact of competition on employment. Under the parallel trends assumption, a difference-in-differences regression allows one to estimate the causal impact of an exogenous shock.

*Treatment and control groups.* As the law applied to the whole French territory simultaneously, regions could not be divided into treated and non-treated groups as per ideal research designs. Instead, this paper uses two different sectors as treated and control groups. The sector of home care constitutes the treated group, and the residential care home sector is used as the baseline control group. As the two groups serve similar types of individuals and have both non-profit and for-profit organizations, they are likely to have the closest patterns compared to any other pairs of sectors.<sup>24</sup> However, this choice presents several threats to identification that are discussed below.

*Identification strategy.* This paper uses the 2005 law as an exogenous shock. As the law applied at one point in time, concerns from the recent literature on staggered difference in differences do not arise (Goodman-Bacon, 2021; Sun and Abraham, 2021). To examine differences in trends between the treated and the control group prior to the law, the analysis estimates the following event study:

$$y_{rtd} = \alpha + \sum_{k=1994}^{2014} \beta_k 1_{\{t=k\}} 1_{\{d=treated\}} + \delta_t + \mu_d + \varepsilon_{rtd} \quad (1)$$

where  $y_{rtd}$  is the number of employees per 1,000 inhabitants in region  $r$ , in year  $t$ , and in the treated or control group  $d$ .  $1_{\{t=k\}}$  is an indicator variable equal to 1 for year  $k$  and 0 otherwise.  $1_{\{d=treated\}}$  is an indicator variable equal to 1 for the treated group and 0 for the control group.  $\delta_t$  stands for the year fixed effect and  $\mu_d$  for the group fixed effect. Note that the inclusion of region fixed effects, or region-by-treated fixed effects, does not affect  $\beta_k$  coefficients, as these are fixed over time.

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<sup>24</sup>The home care sector is a fast-growing sector due to the growing elderly population. The residential home care sector is likely to be the only sector with such growth serving similar types of individuals.

*Threats to identification.* The standard identification strategy relies on the parallel trend assumption. Absent the law, assuming a parallel trend between the control and the treated group, the coefficient  $\beta_k$  allows the identification of the causal impact of the treatment. However, there are two plausible threats to identification. First, absent the law, each group could have different trends. Although both the control (residential care home) and treated (home care) groups serve dependent individuals, their products and consumer characteristics differ to some extent. Thus, the trends between the two groups could be different. Second, one may express concerns about the potential impact of the reform on the control group. The law exclusively applied to the home care sector, therefore there are no concerns regarding a direct impact on the control group. However, indirect effects may arise, for instance through substitution between the treated and the control groups. An increase (decrease) in home care employment may lead to a decrease (increase) in residential care home employment (Charles and Sevak, 2005; Stabile et al., 2006; Guo et al., 2015; Perdrix and Roquebert, 2022). In that case, the estimated coefficients are unlikely to change sign but may be overestimated.<sup>25</sup>

To address these concerns, I proceed in five steps. I start by analyzing precise employee movements between the two sectors to assess substitution. Next, I examine event study coefficients to evaluate differences in pre-trends. I then estimate a model including group-specific linear trends before the law and analyze post-law coefficients. Subsequently, I rely on the recent literature on violations of parallel trends to estimate a synthetic difference-in-differences model. Finally, three other sectors are used as alternative control groups: the sector of physicians, medical auxiliaries, and ambulances.

## 5 Results

### 5.1 Baseline Results

This section begins by estimating the effect of the reform on for-profit organizations, which are directly affected by the policy. It then examines the impact on non-profit organizations, which may be indirectly affected through competition. Finally, it evaluates the overall effect on private organizations. As the effect of the law may vary markedly with regional population (see Section 3.2), baseline results are presented separately for the top 10% most populated

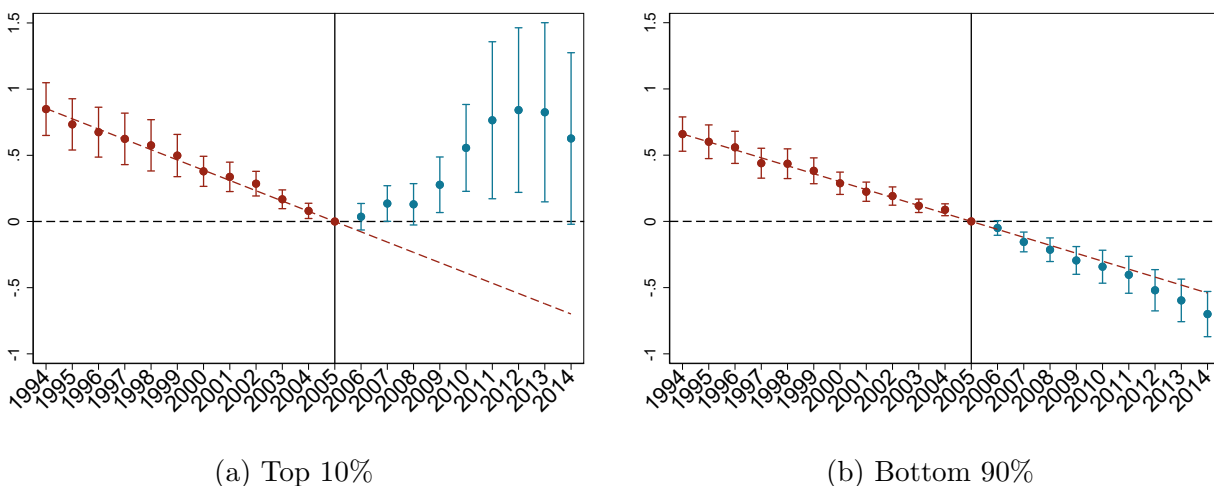
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<sup>25</sup>If home care employment is negatively affected by the reform, any substitution between home care and residential care homes could have a positive externality on the residential care home sector. As the control group could be positively affected, the difference-in-difference would be overestimated. The rationale is similar if the home care sector is negatively affected.

living areas and the remaining 90%.<sup>26</sup> Section 5.2 further examines heterogeneity using alternative regional classifications and measures.

**Impact on for-profits.** The analysis examines the impact of the reform on both the number of establishments and employment for for-profit organizations. Figure B1 first plots the  $\beta_k$  coefficients from Equation (1) for the number of establishments per 10,000 inhabitants (2008 population). These coefficients capture the deviation over time between the treated group (home care) and the control group (residential care homes). Panel (a) presents the results for the top 10% of regions, with few significant coefficients and small magnitudes before the law. After the law, the coefficients increase sharply and persist over time. Panel (b) shows a broadly similar pattern in the bottom 90% of regions, though with much smaller positive effects. These results suggest that the 2005 law, by facilitating access to operating certification, led to higher for-profit entry into the market.

Figure 3: Effects of the reform on for-profit employment



Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome is the employment per 1,000 inhabitants (2008 census). The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes only for-profit employees and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

Figure 3 plot the results for employment per 1,000 inhabitants. Consistent with the descriptive statistics, the results show a marked pre-trend before the law. This difference likely reflects the barrier to entry for for-profit organizations in the most populated areas, while it could reflect differences in transport costs between home care and residential care

<sup>26</sup>For-profit organizations are generally assumed to maximize profit and may therefore expand primarily in large and densely populated regions, where profits are likely higher (Norton and Staiger, 1994; Puga, 2010).

homes in the least populated areas. After the law, however, the pattern changes markedly in the top 10% of regions, with coefficients increasing immediately after the reform and rising more strongly after the 2008 crisis. In contrast, the bottom 90% of regions show no significant change in employment, suggesting no effect of the law on employment. These results indicate a strong positive effect of the law on for-profit employment in the most populated regions and no effect in the least populated ones.

To better understand variations in employment patterns, Figure B2 plots the impact of the law on establishment size. The results show a negative effect on for-profit establishment size, particularly in the least populated regions. On average, establishments created after 2005 are much smaller than earlier ones (Figure A2). These results suggest that smaller establishment sizes explain the lack of employment growth in the bottom 90% of regions, despite the increase in the number of establishments.

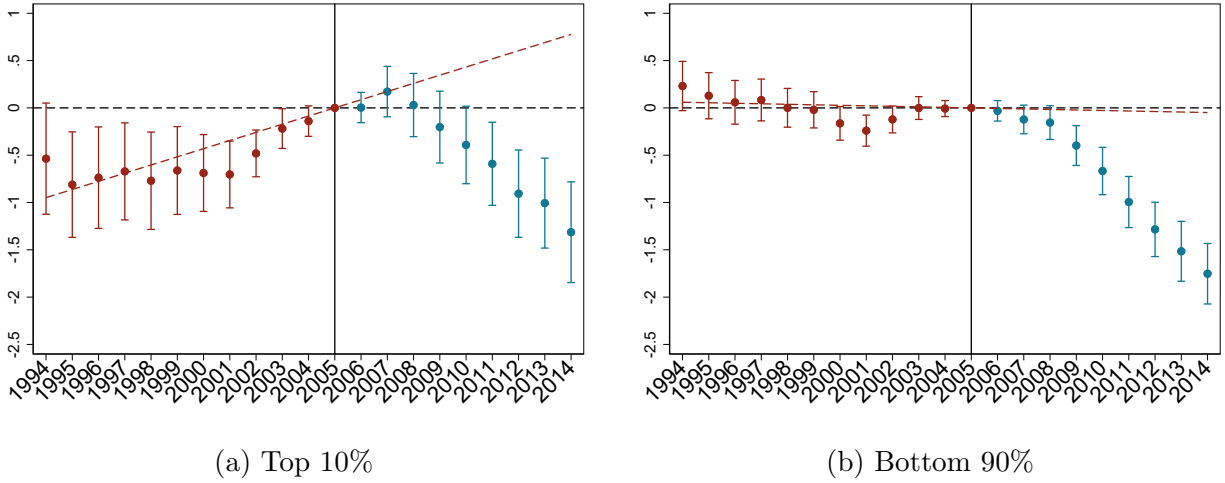
**Impact on non-profits.** The impact of the law on the number of non-profit establishments appears limited. Figure B3 shows a modest negative effect in the long run in both highly and sparsely populated regions.<sup>27</sup> The effects are, however, much more pronounced for employment. Figure 4, Panel (a), shows an increasing trend before the law in the top 10% of regions, which could be attributed to the barrier to entry for for-profits in home care, allowing non-profits to experience greater growth. The small deviation in 2001 likely results from the introduction of the APA and PCH allowances, which replaced the previous scheme. Following the reform—and especially after the 2008 crisis—employment declines markedly relative to the pre-trend. Panel (b) reports similar patterns for the bottom 90% of regions, showing a negative effect on employment from 2009 onward, with a less pronounced pre-trend. This decline in non-profit employment is partly attributable to the small negative effect on the number of establishments, but also to a reduction in establishment size (Figure B4).

**Overall impact.** The overall impact on private organizations largely reflects the combined dynamics of the two ownership types. Figure B5 shows a marked increase in the number of private establishments in the most populated areas, driven by the expansion of for-profit organizations. In the least populated areas, there is a small initial increase in the number of establishments, which gradually narrows over time. Figure 5 reports results for overall private employment, showing no significant effect in highly populated regions, while employment in less populated regions declines by 12.9%, driven by the reduction in

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<sup>27</sup>Figure B3 shows a negative effect on the number of non-profit establishments relative to a declining pre-trend before 2005.

Figure 4: Effects of the reform on non-profit employment



Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome is the employment per 1,000 inhabitants (2008 census). The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes only non-profit employees and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

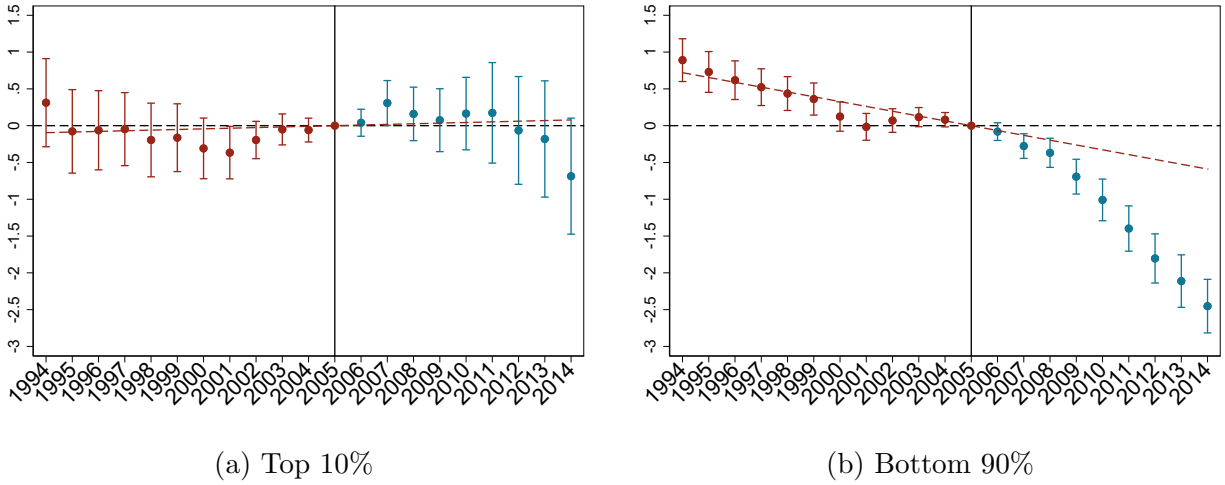
non-profit employment (Table B1).<sup>28</sup> Following the law, overall establishment size decreases, driven by the entry of smaller for-profit establishments and the reduction in size of non-profit establishments (Figure B6).

**Discussion.** The 2008 crisis appears to mark a major shift in employment patterns. In the most populated regions, for-profit employment increases immediately after the 2005 law, but a particularly strong rise follows the 2008 recession, which contrasts with typical post-recession expectations. Meanwhile, non-profit organizations may have experienced financial pressure following the entry of for-profits, but the crisis has further exacerbated these difficulties, translating into a substantial negative effect on their employment. This marked asymmetry in employment patterns, and more importantly its persistence over time, is suggestive of substitution. For-profit organizations likely benefited from the fragile position of non-profits by durably expanding employment and replacing non-profit jobs after the recession.

Interestingly, in the least populated areas, the 2008 crisis also negatively and persistently affected non-profit employment, which is all the more striking given that for-profit

<sup>28</sup>The 12.9% reduction is calculated as  $-0.6159 / (4.1528 - 0.6159)$ , based on the estimates reported in Table B1.

Figure 5: Effects of the reform on overall private employment



Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome is the employment per 1,000 inhabitants (2008 census). The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes all private employees and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

employment remained unchanged. These findings are consistent with cross-subsidization within non-profit groups. The home care market is highly concentrated; therefore, non-profit groups facing difficulties in the most profitable areas may have reduced their supply in less profitable regions to avoid overall losses. While this interpretation aligns with our results, testing this mechanism is challenging because group-level identifiers are not available. Section 5.3 presents analyses examining whether other factors may explain these patterns, and Section 6 discusses further such mechanisms.

## 5.2 Regional Heterogeneity

The growth of for-profit organizations and the adjustment of non-profit organizations may depend strongly on regional characteristics. Beyond regional population levels, which strongly influence economies of agglomeration, two additional factors may affect the profitability of home care establishments (Puga, 2010). In service provision, consumer density is a key determinant of profitability (Morikawa, 2011; Houde et al., 2023), as denser areas allow firms to benefit from economies of density. Regional wealth may also matter, since willingness to pay increases with income and revenues. To investigate these aspects, I conduct a heterogeneity analysis across (i) regional population levels, measured more finely than in the baseline anal-

ysis, capturing economies of agglomeration, (ii) population density, which proxies operating costs, and (iii) median revenue, which proxies consumers' willingness to pay.

*Population.* Figure C1 presents the event study by ownership type and regional population. Regions are divided into four groups: the top 1%, the next 9%, the middle 40%, and the bottom 50% of regions, based on the number of inhabitants. This finer classification provides valuable information, particularly within the top 10% of populated areas. In the top 1%, for-profit organizations grow particularly fast, with a strong and sharp increase immediately following 2005, while the increase in the next 9% is slower. For non-profit organizations, the negative adjustment in employment is slower in the top 1% than in the next 9%. This can be explained by the higher profitability of highly populated regions and the reduction of less profitable activities within non-profit groups. Within the bottom 90%, non-profit employment patterns are similar, likely reflecting the already low profitability in these regions. Overall, variations in total private employment are similar within the top 10% of regions and within the bottom 90% of regions.

*Density.* Figures C2 presents the estimates according to the density of regions. The difference between the top 10% and the bottom 90% is noticeable but less marked than the previous analysis. For-profit employment shows small positive effects in the top and a null effect in the bottom regions, while non-profits show significant negative coefficients in the two categories. When considering all private employment, there is no effect on employment in the top 10%, whereas in the bottom 90% the effect is negative and significant in the long run. Breaking down further into a more detailed categorization (Figure C3) reveals greater heterogeneity. For-profit employment is only affected in the top 1%, with strong and positive coefficients. The difference between categories of regions is less obvious for non-profit employment. However, for overall private employment, the denser the region the higher the coefficients in the long run. The density alone is likely to be less important than the overall advantages of economies of agglomeration, as for-profit employment patterns are less pronounced than for the categorization based on region size.

*Revenue.* Figures C4 reports the results according to the median revenue of inhabitants. For-profit employment shows insignificant effects in the top as well as in the bottom regions, while non-profit employment show negative effect particularly in the bottom 90% of living areas. The overall private employment shows a null effect in the top 10% and a negative effect in the bottom 90% in the long run. Interestingly, for-profit employment coefficients are insignificant independently of the category of revenue, even when broken down into detailed categorizations (Figure C5). This suggests that the income of inhabitants may not be the

primary factor affecting the home care profitability of a region.

## 5.3 Robustness checks

### 5.3.1 Control Group Robustness Checks

The main threat to identification in difference-in-differences designs is the violation of the parallel trends assumption. To address this concern, I conduct five analyses. First, because substitution may occur between home care (treated) and residential care homes (control), I examine precise employee movements between the two sectors before and after the law. Second, as the baseline analysis shows differences in pre-trends, I include group-specific linear trends and evaluate the post-reform coefficients. Third, I perform a sensitivity analysis on the linear pre-trend. Fourth, I estimate a synthetic difference-in-differences model to account for non-linear differences in trends. Finally, as the control and the treated groups are not random, I use alternative control groups.

*Spillover on the control group.* A key concern in the baseline empirical framework is substitution between the treated and control groups, which may bias the results. Even if limited, an increase in home care employment could decrease residential care home employment, and vice versa.<sup>29,30</sup> A simple correlation analysis does not indicate any substitution between the two sectors (Table D2).<sup>31,32</sup> Nonetheless, to investigate this further, I examine detailed employee trajectories, focusing on movements between the two sectors.

This analysis uses the panel version of the DADS, which follows 1/12 of the employee pop-

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<sup>29</sup>If substitution, the  $\beta_k$  coefficients from Equation (1) would also include the substitution effect. It is worth noting that the coefficients are unlikely to change sign, but they would be overestimated. The intuition can be described as follows: if the home care sector is negatively affected, and the residential care home sector is positively affected due to product or labor substitution, the coefficient of interest would capture both the reform's effect on home care and the impact of substitution on the residential care home sector. Thus the coefficient would be overestimated.

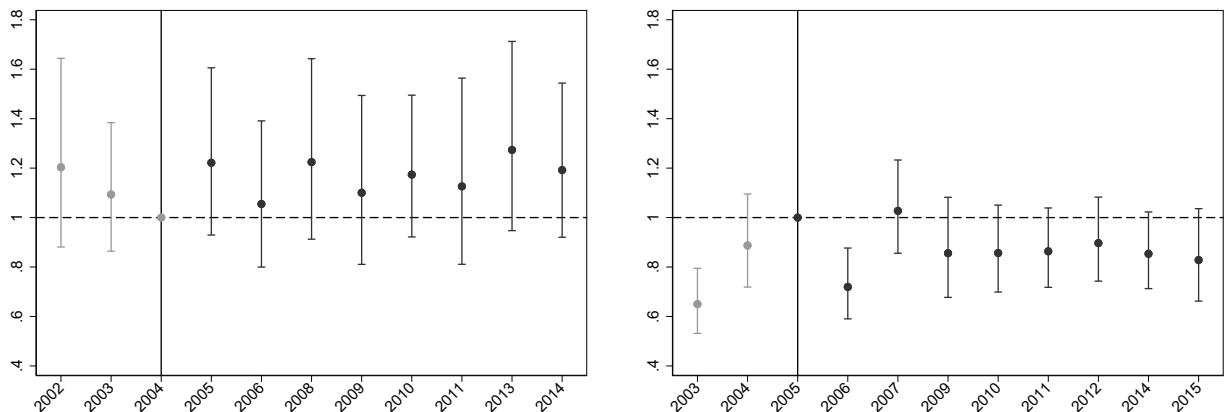
<sup>30</sup>This bias is unlikely to be sizeable from the demand side (of the product market) for several reasons: (i) the vast majority of dependent individuals would rather stay at home (Mattimore et al., 1997), (ii) out-of-pocket costs are on average ten times more costly in residential care homes (Sécurité Sociale, 2021), (iii) residential care homes are more suited to higher levels of dependence, (iv) dependent individuals could rely on informal care (Stabile et al., 2006; Bonsang, 2009), and finally (v) public institutions would likely favor home care over residential care homes, as public costs are considerably lower (Sécurité Sociale, 2021).

<sup>31</sup>The estimated two-way fixed effects model follows:  $Emp_{rt,Resid. care home} = \beta Emp_{rt,Home care} + \alpha_r + \delta_t + \varepsilon_{rt}$ , where  $Emp_{rt,sector}$  is the employment per 1,000 inhabitants in region  $r$  in year  $t$  for a given sector,  $\alpha_r$  is the region fixed effect,  $\delta_t$  is the year fixed effect, and  $\beta$  is the correlation coefficient between the two sectors.

<sup>32</sup>Note that the coefficients are likely positively biased, as any common increase (decrease) in dependent individuals in a given region would positively (negatively) affect both sectors.

ulation over time. I combine three panels provided by INSEE covering 2002–2007, 2008–2012, and 2013–2019; therefore, movements between 2007 and 2008 and between 2012 and 2013 cannot be identified.<sup>33,34</sup> The sample is restricted to employees working in home care in year  $t$ . I focus on two outcomes that capture movements between the two sectors: entry into home care from residential care, and exit from home care to residential care. The regressions rely on logit models and include year and regional dummies.<sup>35</sup>

Figure 6: Regression estimates of the probability of movements between home care and residential care home sectors



(a) Dependent variable: indicator for transition from residential care ( $t - 1$ ) to home care ( $t$ )

(b) Dependent variable: indicator for transition from home care ( $t$ ) to residential care home ( $t+1$ )

Notes: This figure plots the estimates and 95% confidence intervals from Equation (2) in odds ratios. Each coefficient is a year dummy and captures the annual change in the probability of movements. The regression uses the panel version of the DADS at the employee level, which covers one-twelfth of the population, combining the panels provided by INSEE for 2002–2007, 2008–2012, and 2013–2014. The analysis is restricted to employees working in year  $t$  in home care. The outcome in panel (a) is a dummy equal to 1 if the employee moves from a residential care home in year  $t - 1$  to home care in year  $t$ . The outcome in panel (b) is a dummy equal to 1 if the employee leaves the home care sector in year  $t$  for the residential care home sector in  $t + 1$ .

<sup>33</sup>INSEE provides one file per panel (2002–2007, 2008–2012, and 2013–2019), and employees cannot be tracked across panels.

<sup>34</sup>The 1/12 panel dataset provided by INSEE is structured at the employee-establishment-year level, meaning that individuals may appear multiple times within the same year if they held jobs at different establishments. I follow the literature and retain the highest-paying job for employees holding multiple positions in the same year to create an employee-year panel dataset (Palladino et al., 2021).

<sup>35</sup>The model follows:

$$\Pr(Move_{it} = 1) = \frac{\exp(\alpha + \delta_t + \gamma_r)}{1 + \exp(\alpha + \delta_t + \gamma_r)}. \quad (2)$$

$Move_{it}$  alternatively captures movements from residential care homes to home care and from home care to residential care homes.  $\gamma_r$  denote regional dummies. The coefficients of interest are  $\delta_t$ , which capture changes in movement patterns across years.

Figure 6 plots the results, showing small and mostly insignificant coefficients with odds ratios ranging only between 0.7 and 1.3. Given an average of 2% of movements between the two sectors (Table D1), these changes in movements correspond to an absolute probability change of  $\pm 0.6$  percentage points.<sup>36</sup> This is even more reassuring given that the baseline findings indicate a 12.9% negative effect on the bottom 90% of regions, substantially larger than the  $\pm 0.6$  percentage points change implied by potential substitution between the two sectors. This suggests that the baseline conclusions are not affected by substitution.

*Group-specific linear trend.* The parallel trend assumption of the difference-in-difference strategy does not hold in our case. To account for time trend differences, we follow the recent literature, and consider group-specific linear trends (Wooldridge, 2021; de Chaisemartin and D’Haultfoeuille, 2023).<sup>37</sup> Figure D2 plots the coefficients capturing the deviation between the two groups, relative to the linear pre-law time trend. The results are consistent with the baseline event studies. Overall private employment is unaffected by the reform in the most populated regions, whereas in the least populated regions it declines, particularly following the recession.

*Sensitivity to the pre-trend.* To obtain robust inference of the impact of the reform, I perform a sensitivity analysis. Figure D3 plots the confidence intervals based on smoothness restrictions following Rambachan and Roth (2023). This analysis evaluates the significance of the results, according to different levels of yearly deviation from the linear pre-trend. The breakdown value of the average effect is close to 0.025 and represents a 34.3% change in the initial linear pre-trend in the bottom 90% of living areas (Figure D3).<sup>38</sup> In other words, the null effect is rejected unless the initial slope is allowed to change by more than 0.025 (34.3%) each year. These results are reassuring, as the post-treatment parallel trend assumption can be violated, to a nontrivial degree, before the post-reform effect becomes insignificant.

*Synthetic difference-in-differences.* When the differences in pre-treatment trends between the treated and control groups are not linear, a common approach is the use of synthetic con-

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<sup>36</sup>Figure D1 further reports the estimates separately for the top 10% and bottom 90% of regions, revealing similarly small magnitudes.

<sup>37</sup>The following model is estimated:

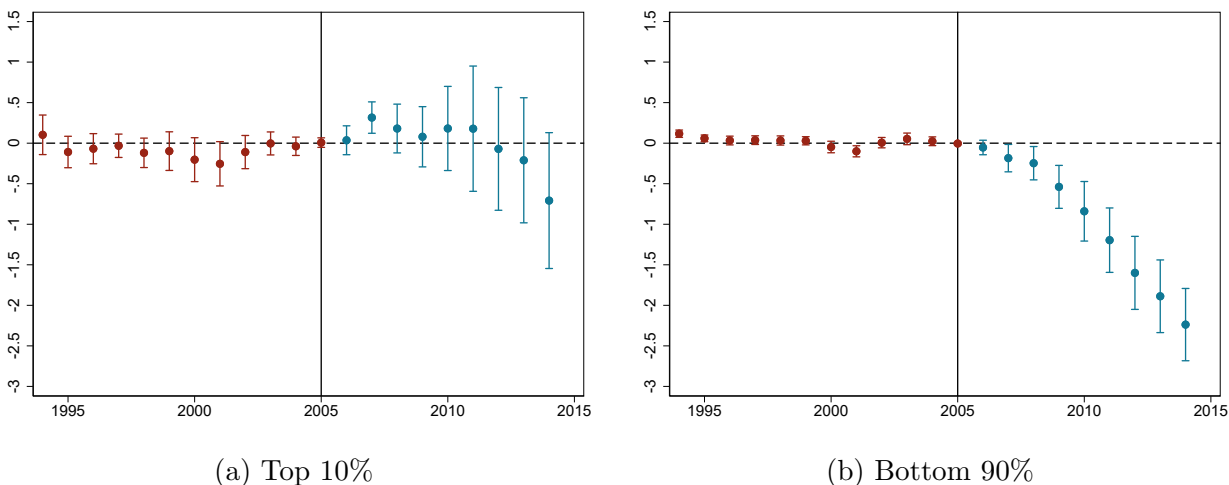
$$y_{rdt} = \alpha + \sum_{k=2006}^{2014} \beta_k 1_{\{t=k\}} 1_{\{d=treated\}} + \gamma 1_{\{d=treated\}} t + \mu_d + \varepsilon_{rdt} \quad (3)$$

where  $\gamma$  measures the linear trend difference between the treated and the control groups, and  $\beta_k$  coefficients measure the difference between the treated and the control group after 2006.

<sup>38</sup>The linear pre-trend estimation from Equation (3) on all private employment is equal to -0.0735 (Table B1 column (1)). A 0.025 deviation from this linear trend equals to a  $0.025/(-0.0735) \approx -34.3\%$  relative deviation.

trol methods (Abadie and Gardeazabal, 2003). In settings with multiple treated units, the synthetic difference-in-differences estimator (Arkhangelsky et al., 2021) allows one to construct a weighted combination of control units to form a control group that closely matches the treated units’ pre-treatment trends. The estimator provides a causal estimate under the assumption that, in the absence of treatment, the treated and synthetic control groups would have followed parallel trends. Figure 7 plots the estimated coefficients, showing smaller pre-treatment coefficients, particularly in the bottom 90%, and yielding conclusions similar to the baseline results.

Figure 7: Synthetic difference-in-differences on overall private employment



Notes: This graph plots the estimates and 95% confidence intervals of the synthetic difference-in-differences estimator (Arkhangelsky et al., 2021). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the synthetic control group is based on the residential care home sector. The outcome is the employment per 1,000 inhabitants (2008 census). Panel (a) includes all private employees and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

*Alternative control groups.* As the treated and control groups are not random, the results could be sensitive to the choice of the control group. To alleviate these concerns, Figure D4 plots the event studies for three different control groups: the sector of physicians, the ancillary health sector, and the sector of ambulances.<sup>39</sup> Interestingly, in all three cases, a positive deviation is observed between 2006 and 2008, particularly in the most populated areas, suggesting a short-run positive effect on home care employment. However, a similar increase is also seen in the residential care home sector, as indicated by the insignificance of the coefficients in the baseline results. This pattern may be explained by the sharp rise

<sup>39</sup>The auxiliary sector includes professionals such as nurses and midwives; rehabilitation specialists (e.g., physiotherapists, chiropractors, speech therapists); audioprosthodontists and podiatrists; as well as practitioners in psychotherapy, psychological therapy, acupuncture, homeopathy, and traditional healing.

in the over-85 population in 2005, a consequence of the post–World War I fertility boom. Regardless of the control group, the coefficients are insignificant in the long run for the most populated areas, and negative for the least populated areas.

### 5.3.2 Alternative Explanations

Home care employment may also be influenced by factors beyond the 2005 reform, such as changes in public funding, the availability of alternative service providers, regional demographic trends, and other policy reforms. We perform robustness checks or provide discussion for each of these factors and, additionally, consider two alternative outcome measures—working hours per employee and employment per elderly individual.

*Public financing.* A key aspect in the study of non-profit organizations is the extent to which they depend on public funding. In the French context, two main sources of funding exist: (i) public subsidies to organizations, and (ii) public allowances to consumers. To evaluate whether the observed patterns reflect a change in public support rather than competition, Figure D5 plots the event study with these controls.<sup>40</sup> As municipality subsidies are available from 2001 and *département* allowances usable from 2003, the estimations are based on a much smaller sample. Nonetheless, the results are consistent with baseline findings.

*Other service providers.* For-profits were the main type of organization directly affected by the 2005 law on dependent individuals. Nonetheless, changes in behaviors from other providers could affect non-profits and lead to misleading conclusions. Two other types of home care providers exist. First, there are public establishments. These establishments account for a very small share of employment (INSEE, 2005; DARES, 2017), and the event-study results show no positive deviations in public employment after 2005 (Figure D6), mitigating this concern. Second, there are independent workers who are directly employed by households. Despite their wide presence, they are missing from employer–employee databases, as they are not employed by any organization (INSEE, 2005). Descriptive statistics published by the government reveal a strong and constant decrease in the number of independent workers since 2008, which is attributed to the competition with for-profits (DARES, 2017). In sum, private employment patterns do not appear to have been affected by the other two types of service providers.

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<sup>40</sup>The subsidies used as controls are based on municipality-level subsidies. Allowances are based on the APA and PCH programs, which are transferred by the *département* to dependent individuals. These allowances can either be transferred directly to the individual or the service provider, or issued as a voucher (*Cesu préfinancé*). Their usage must relate to the dependence of the individual, and they can be spent regardless of the ownership type of the organization.

*Other reforms.* Several reforms were implemented during the studied period. The first reform concerned allowances for dependent individuals—the APA for elderly individuals and the PCH for disabled individuals. These allowances were formally introduced in 2001, replacing previous forms of transfers, and a 2004 policy change increased the APA more for home care than for residential care. Figure D5 presents results controlling for these allowances, suggesting that changes in allowances does not affect the main results. Second, a 2004 reform lowered out-of-pocket childcare costs for independent workers. This reform could have reduced home care employment if workers shifted from salaried home care positions to independent activity. However, this mechanism seems implausible, as the reduction in home care employment—especially after 2008—is also observed among independent workers in ministry reports and attributed to the growth of for-profit providers (DARES, 2017). Finally, the demand may have been affected by the transformation of tax reductions into tax credits in 2007, making home care more accessible to modest households. However, this change would have positively affected employment (Carbonnier, 2009), implying that the tax policy reform may have biased the original estimates upward and further supports the baseline conclusions.

*Age structure.* Changes from the demand side of home care services may also affect employment in this sector. Specifically, changes in the age structure of a living area may affect employment differently in the two sectors, as the average age of residential care home clients is generally higher than that of home care consumers (Sécurité Sociale, 2021). Panel data on the age structure are only available at the *département* level, which is a higher level than the baseline living area level. I therefore construct weighted age-category shares to approximate the age structure at the living-area level.<sup>41</sup> Figure D7 shows that the results are not affected when controlling for changes in the age structure of the population.

*Alternative outcome variables.* To probe whether the results are outcome dependent, I use two alternative variables. Instead of using the number of employees per 1,000 inhabitants (2008 census), the first row of Figure D8 reports the results per 1,000 individuals over 75 (2008 census), providing similar conclusions than baseline findings. The second row of Figure D8 plots the estimates for the number of working hours per inhabitant (2008 census). Since this variable has been consistently available only from 2002, the period of analysis is shorter than the baseline.<sup>42</sup> Working hours are negatively affected both in the top 10% and in the

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<sup>41</sup>When a living area is in two different *départements*, I use the weighted average of its population in each *département*, using the municipality-level population, to compute the share of the over-85 population.

<sup>42</sup>The calculation method in the DADS data of the number of working hours changed in 2001, making comparisons with subsequent years challenging. INSEE generally avoids providing aggregated working hours before 2001, as is also the case for the DADS at the establishment level (INSEE, 2001).

bottom 90% of regions. While this seems to differ from the baseline results, the event-study analysis using a finer regional categorization shows a null effect in the top 1% and negative effects in the remaining regions (Figure D9), suggesting that disparities are even more concentrated when considering working hours.

## 6 Mechanisms

This section first investigates the direct effect of competition by focusing on the most populated regions, where both types of organizations compete. It then examines the least populated regions to analyze indirect effects of competition, where mainly non-profits operate. Because these analyses rely on different samples and empirical strategies, the results should be considered exploratory.

### 6.1 Direct Effect of Competition: Most Populated Areas

Deregulation led to substantial growth in for-profit employment in the top 10% most populated regions, increasing the coexistence of for-profit and non-profit organizations in these areas. In 2005, only 57.4% of these regions featured both types of organizations, rising to 91.5% by 2014 (Table A1). Therefore, the following analysis focuses exclusively on these most populated regions.

#### 6.1.1 Employee Movements

The baseline results suggest a substitution between non-profit and for-profit employment in the top 10% of regions. A simple correlation analysis confirms this pattern, and indicates that the degree of substitution varies with population size (Table E1). However, the employee movements that drive this shift remain unclear. To shed light on these patterns, the analysis relies on the panel version of the DADS, which follows one twelfth of the employees over time. The analysis focuses on the 2006–2014 period to examine employee movements after the reform.

Substitution in employees between ownership structures results from movements between ownership types as well as from employees entering or leaving the sector. The analysis therefore considers three outcomes at the employee level: (i) a change in ownership structure

within the home care sector, (ii) entry into the home care sector, and (iii) exit from the home care sector. The analysis estimates logit regressions for these three outcomes and includes regional and year dummies.

Table 1: Logit regression estimates of employee movements to, from, and within the home care sector in the top 10% most populated regions, 2006–2014

Outcome	(1) Change of ownership from (t-1) to (t) (within Home care)	(2) Entry into Home Care from (t-1) to (t)	(3) Exit from Home care from (t) to (t+1)
For-profit dummy (t)	8.4961*** (2.2649)	2.4186*** (0.1088)	1.8660*** (0.1051)
Region FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
Observations	56,445	89,629	92,266

Notes: Standard errors are in parentheses and clustered at the living area level. \*\*\*, \*\*, and \* indicate significance at 1%, 5%, and 10%, respectively. Results are presented as odds ratios. The regression uses the panel version of the DADS at the employee level, which covers one-twelfth of the population and combines the panels provided by INSEE for 2002–2007, 2008–2012, and 2013–2014. The outcome in column (1) is a dummy equal to 1 if the employee changes ownership between years  $t - 1$  and  $t$ . The sample includes employees working in home care in  $t - 1$  and  $t$ . Column (2) uses a dummy equal to 1 if the employee was not in home care in year  $t - 1$  but works in home care in year  $t$ , and includes employees working in home care in year  $t$ . Column (3) uses a dummy equal to 1 if the employee works in home care in year  $t$  and in another sector in year  $t + 1$ , with the sample restricted to employees working in home care in year  $t$ .

Table 1 reports the for-profit dummy coefficients in odds ratios for each outcome. The results show markedly different patterns between non-profit and for-profit organizations. Column (1) shows a large and significant coefficient for the for-profit indicator: non-profit employees are more likely to join for-profit organizations than for-profit employees are to join non-profit organizations. Column (2) reports a significant coefficient above one, indicating that employees entering the sector are more likely to join for-profit than non-profit organizations. Finally, column (3) reports a significant coefficient above one, suggesting that for-profit employees are more likely to leave the sector than non-profit employees, although this coefficient is smaller than the coefficient for entry. These results suggest that employment substitution between for-profit and non-profit organizations occurs through movements within the home care sector and entry patterns. However, the total number of employees switching ownership types is much smaller than the number entering the sector (Table E2), indicating that substitution is primarily driven by entry.

### 6.1.2 For-profit Advantages

Why do for-profits succeed? First, for-profits may operate at lower costs (Kessler and McClellan, 2000; Claessens and Djankov, 2002). To examine this, I analyze hourly wages and the share of office employees. Second, the two types of organizations may provide different levels of quality (Grant et al., 2022; Knutsson and Tyrefors, 2022). I use employees’ age as a proxy for product quality and discuss differences in advertising. Third, I examine workplace attractiveness by comparing hourly wages and the number of working hours per employee (Elliott et al., 2007; Propper and Van Reenen, 2010). Finally, I discuss prices.

The empirical estimations rely on a two-way fixed effects model, which accounts for regional and year fixed effects.<sup>43</sup> The coefficients of interest are correlation coefficients that capture the difference between for-profit and non-profit organizations. To focus on regions where organizations directly compete, the analysis uses the baseline data at the living area level but restricts the sample to the 10% most populated regions over the 2006–2014 period.<sup>44</sup>

**Costs.** The main motivation behind the facilitation of for-profit entry into the home care market is higher-cost saving incentives (Hart et al., 1997). To probe differences in costs, I explore two dimensions. First, I examine hourly wages. As wages account for almost all costs in services such as home care, any difference in hourly wages would substantially affect production costs. Table 2 column (1) shows no difference in hourly wages between for-profit and non-profit organizations.<sup>45</sup> Second, for-profit organizations may be more productive (Claessens and Djankov, 2002). It is unlikely that the difference in productivity would come from the direct provision of home care services. These services are charged on an hourly basis and the scope for technological improvements is very limited.<sup>46</sup> Nonetheless, for-profit organizations may produce with lower levels of administrative staff. Table 2 column (4) shows that for-profits have a 2.6 percentage points lower share of office employees compared to non-profits, resulting in a share of office workers that is approximately 47.8% lower than

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<sup>43</sup>The empirical estimations rely on a two-way fixed effects model that follows:

$$y_{rto} = \alpha + \beta 1_{\{o=Forprofit\}} + \delta_t + \theta_r + \varepsilon_{rto} \quad (4)$$

$y_{rto}$  represents the outcome of interest in region  $r$ , for employees of ownership structure  $o$ , in year  $t$  (see details on outcome variables below).  $\delta_t$  is the year fixed effect.  $\theta_r$  is the living area fixed effect.  $\beta$  measures the difference between for-profit and non-profit employees at the living area level.

<sup>44</sup>Abnormal observations with hourly wages above 30 euros per hour per region are removed, representing less than 0.5% of total observations. These values are likely due to declaration errors, as 30 euros per hour is over three times the minimum wage.

<sup>45</sup>Controlling for differences in age also shows no difference between the two types of organizations (Table E3 column (2)).

<sup>46</sup>Productivity gains in such services are generally considered limited (Baumol, 1967).

Table 2: Two-way fixed effects estimates of the difference between non-profit and for-profit organizations in the home care sector, top 10% most populated regions, 2006–2014

	(1)	(2)	(3)	(4)
Outcome	Hourly wages	Hours per empl.	Age	Share of office empl.
For-profit Dummy	-0.0916 (0.0997)	-300.8116*** (18.0844)	-3.4101*** (0.2172)	-0.0263*** (0.0042)
Region FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	2,756	2,756	2,756	2,756
Mean DepVar	8.3227	815.2568	42.7364	0.0550

Notes: Standard errors are in parentheses and are clustered at the living area level. \*\*\*, \*\*, and \* indicate significance at 1%, 5%, and 10% respectively. The data is restricted to all private employees in home care, to regions where both ownership structures have employees in a given year in the 10% most populated regions, and to the 2006–2014 period. The mean of the dependent variable (Mean DepVar) gives the average of the outcome variable for non-profit employees during the post-reform period (2006–2014). The estimations of Equation (4) are reported for different outcome variables at the living area level: in column (1) the outcome is the net hourly wages per employee in euros, in column (2) it is number of working hours per employee per year, in column (3) the average age per employee, and in column (4) the share of office employees.

in non-profits.<sup>47</sup>

**Product.** As both ownership structures are considered to have different goals, they might provide products of different quality and engage in different levels of advertising (Grant et al., 2022). Higher levels of quality could lead to increased market shares. In home care services, where training durations are short and capital needs low, quality is generally measured by experience (Bartel et al., 2014). With experience data unavailable, the analysis examines the age of employees. Table 2 column (3) shows that for-profit employees are on average 3.4 years younger than non-profit employees. The difference is relatively small and may be expected, as these firms are newer. Assuming age is positively correlated with experience, these results do not suggest higher product quality in for-profit organizations. More importantly, beyond the quality of the service itself, differences in advertising practices may help explain the success of for-profits. Non-profit organizations are legally restricted from commercial advertising, which allows for-profits to enhance their product image and visibility, thereby increasing both their market and employment shares.<sup>48</sup>

**Workplace attractiveness.** The evolution of employment shares may stem not from the product but from the labor market (Elliott et al., 2007). In high-demand jobs such as

<sup>47</sup>The 2-digit socio-professional category of employees enables the classification into office and non-office workers.

<sup>48</sup>For more details on the prohibition of commercial advertising by non-profit organizations, see the government’s website (link).

home care, differences in the attractiveness of organizations to employees could facilitate the expansion of one type over the other. However, for-profits offer similar hourly wages (Table 2, column 1) while providing 300.8 (36.9%) fewer hours per employee per year than non-profit organizations (Table 2, column 2). This lower number of working hours likely reflects a higher share of small-hours contracts in for-profit organizations and suggests overall less attractive workplace conditions.<sup>49</sup>

**Prices.** Unfortunately, no database currently provides information on the rates charged. Nevertheless, the existing literature points toward higher for-profit prices (Gramain and Xing, 2012; Gallois, 2013). This could be explained by the difference in licensing. Non-profits have historically operated under the authorization system, granted through public calls, with prices regulated by regional authorities. For-profits, on the other hand, usually operate through the certification system, which has been more accessible since the law. Given the high demand in the home care market, and the pricing autonomy for certified organizations, for-profits are able to charge higher prices.

## 6.2 Indirect Effect of Competition: Least Populated Areas

To discuss the indirect effect of competition, this section focuses on the bottom 90% of least populated regions. In these regions, non-profit organizations are dominant, and competition remains weak even after deregulation. In 2014, 85.8% of these regions had no competition (Table A1). Nevertheless, competition among organizations in the most populated regions may still have indirect effects on these weakly populated areas.

The home care sector is highly concentrated, with large multi-site groups dominating the market.<sup>50</sup> These groups operate nationwide. While for-profit organizations are mainly present in urban areas, non-profit organizations are active in both urban and rural areas.<sup>51</sup> Theory suggests that when non-profit groups face competition in their more profitable activities, they adjust their less profitable activities (Hart et al., 1997; Glaeser et al., 2001). This is consistent with the negative effect on non-profit employment in the least populated areas (Norton and Staiger, 1994). Unfortunately, the DADS does not provide group-level identifiers that would allow the identification of establishments belonging to the same group, and no dataset is available with information on the financial statements of non-profit or-

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<sup>49</sup>The difference in hours per employee remains substantial even after excluding newcomers (Table E4).

<sup>50</sup>See sector reports ([link](#)).

<sup>51</sup>For instance, *Aide à Domicile en Milieu Rural* (ADMR) is the largest non-profit group, with a strong presence in both rural and urban areas with more than 2,700 local associations ([link](#)).

ganizations, which limits the ability to test this mechanism directly. Nonetheless, if this mechanism operates, competition would push non-profit organizations to adjust their less profitable activities, even in the bottom 90% of regions.

Table 3: Effect of the reform on non-profit employment in the bottom 90% of populated regions

Outcome	(1)	(2)	(3)	(4)	(5)	(6)
	Employment per 1,000 inhabitants					
	Population		Density		Revenue	
	Above med.	Below med.	Above med.	Below med.	Above med.	Below med.
Treatment	-0.5719*** (0.1414)	-0.5109** (0.2209)	-0.4868** (0.1888)	-0.5960*** (0.1821)	-0.3617* (0.1874)	-0.7211*** (0.1832)
Group Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Time Trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,576	30,576	30,576	30,576	30,576	30,576
Mean DepVar	3.6632	3.9699	3.4104	4.2226	3.2381	4.3949

Notes: Standard errors are in parentheses and are clustered at the living area level. \*\*\*, \*\*, and \* indicate significance at 1%, 5%, and 10% respectively. The sample is restricted to the 90% least populated regions. The treatment coefficients correspond to the average of all the  $\beta_k$  coefficients of Equation (3) over the 2006–2014 period. The outcome is the employment per living area, per year, and per 1,000 inhabitants (2008 census). The mean of the dependent variable (Mean DepVar) gives the average of the outcome variable in the treated group during the post-reform period (after 2006). Column (1) and (2) report results separately for regions above and below the median region size within the bottom 90% of least populated regions. Columns (3)–(4) and (5)–(6) report results for density and revenue, respectively, also within the bottom 90% of least populated regions.

Table 3 reports the difference-in-difference results for non-profit organizations, focusing on the bottom 90% of least populated regions. Within these weakly populated regions, the results are presented separately for above- and below-median population (within the bottom 90%), density, and revenue. The strongest contrast in effects appears between low- and higher-revenue regions. This shows that, among the least populated areas, non-profit organizations primarily adjust employment in the regions with the lowest revenue, which aligns with the theoretical prediction.

## 7 Conclusion

Outsourcing public services is widely practiced in many countries. Non-profits are natural candidates to take on such services, as they pursue goals that are in the general interest. However, governments have recently favored for-profit entry, aiming to increase productivity.

This induced competition has broad implications that have been largely overlooked by scholars. This study contributes to the literature by evaluating the consequences of competition between ownership structures on employment.

The paper leverages the removal of entry barriers for for-profit organizations in the French home care sector as an exogenous shock. Using matched employer–employee data and employing a difference-in-difference strategy, the results show heterogeneous effects depending on the size of the living area. For-profits grow almost exclusively in highly populated regions, where profitability is likely to be higher. Non-profits facing increased competition experience reductions in employment. These two opposite effects offset each other, resulting in an overall null effect on total private employment in highly populated areas. Interestingly, however, non-profits negatively adjust employment in sparsely populated areas, despite the absence of for-profit expansion. This is interpreted as an indirect effect of competition from the most profitable areas, which constrains multi-site non-profit groups to reduce their supply in less profitable, remote areas (Newhouse, 1970; Faulhaber, 1975; Hart et al., 1997; Sloan, 2000; Glaeser and Shleifer, 2001).

To further investigate the underlying mechanisms, this paper first examines detailed employee movements, and then compares operating characteristics across the two types of organizations. Substitution appears to operate primarily at sector entry, with employees more likely to join for-profit organizations when entering the home care sector. Although, non-profit employees are more likely to move to for-profits than vice versa, and for-profit employees are more likely to exit the sector, the volume of workers joining for-profits at entry is substantially larger. The analysis then compares costs, product, and workplace attractiveness across for-profit and non-profit establishments. For-profits appear to produce at lower costs at the group level as they operate in the most profitable areas and employ a lower share of administrative staff. Regarding product quality, it is plausible that quality is lower in for-profits, as employees are slightly younger and hiring is concentrated at sector entry, resulting in a less experienced workforce. Working conditions are also less favorable, with a higher proportion of small-hours contracts at comparable hourly wages. Overall, the results suggest that for-profits’ benefits likely stem from group-level cost advantages. For-profits may also benefit from their ability to advertise, which can signal higher product quality (Gramain and Xing, 2012; Gallois, 2013).

Dewatripont and Tirole (2024) highlights the importance of protecting non-profits from for-profit competition in sectors with strong moral overtones. The removal of entry barriers for for-profit organizations in the French home care market has likely led to a deterioration in

social welfare. This paper highlights the drawbacks of such competition and calls for further research.

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# Appendix

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## A Descriptive Statistics

Table A1: Descriptive statistics on the number of living areas with competition in the home care sector

Regions	Ownership structure	2005		2014	
		# Regions	Share (%)	# Regions	Share (%)
Top 10	Non-profits and for-profits	101	57,4%	161	91,5%
	Only for-profits	4	2,3%	6	3,4%
	Only non-profits	67	38,1%	9	5,1%
	No private provider	4	2,2%	0	0%
	Total	176		176	
Bottom 90	Non-profits and for-profits	48	3,3%	207	14,2%
	Only for-profits	32	2,2%	104	7,1%
	Only non-profits	876	60,2%	761	52,3%
	No private provider	500	34,3%	384	26,4%
	Total	1,456		1,456	

Notes: # Regions refers to the number of living areas with at least one employee for the specified ownership structure in the home care sector. Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) population according to the 2008 census.

Table A2: Descriptive statistics on employment per region size category

Regions	Ownership	2005		2014		2014 vs 2005	
		Emp.	Share (%)	Emp.	Share (%)	Emp. (%)	Share (pp)
Panel A: Home care							
All regions	All private	3.497	100	4.537	100	30	0
	For-profit	0.154	4	0.667	15	333	11
	Non-profit	3.343	96	3.870	85	16	-11
Top 10	All private	4.474	100	7.606	100	70	0
	For-profit	0.337	8	2.619	34	677	26
	Non-profit	4.137	92	4.988	66	21	-26
Bottom 90	All private	3.378	100	4.166	100	23	0
	For-profit	0.132	4	0.431	10	227	6
	Non-profit	3.247	96	3.735	90	15	-6
Panel B: Residential care homes							
All regions	All private	6.685	100	9.988	100	49	0
	For-profit	1.393	21	2.463	25	77	4
	Non-profit	5.292	79	7.525	75	42	-4
Top 10	All private	6.666	100	10.485	100	57	0
	For-profit	1.748	26	3.403	32	95	6
	Non-profit	4.917	74	7.082	68	44	-6
Bottom 90	All private	6.688	100	9.928	100	48	0
	For-profit	1.350	20	2.350	24	74	4
	Non-profit	5.337	80	7.578	76	42	-4

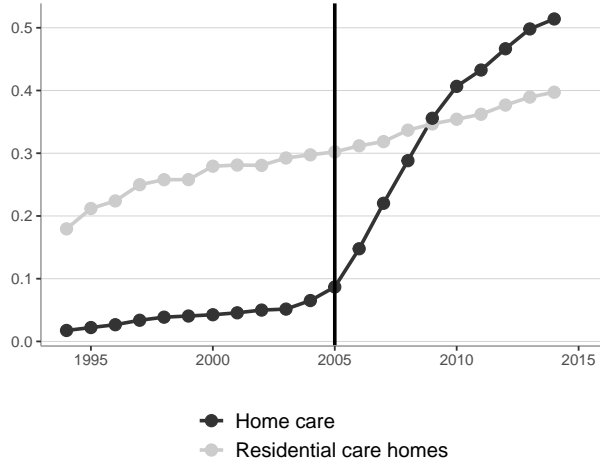
Notes: Employment refers to the average number of employees per 1,000 inhabitants (2008 census) and per living area, based on the DADS-Poste datasets. Top 10 (bottom 90) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The classification of employment into home care or residential care home is based on the INSEE classification of the main activity of the employing establishment. The ownership structure of an employer is identified by its legal form.

Table A3: Descriptive statistics on employment per detailed region size category

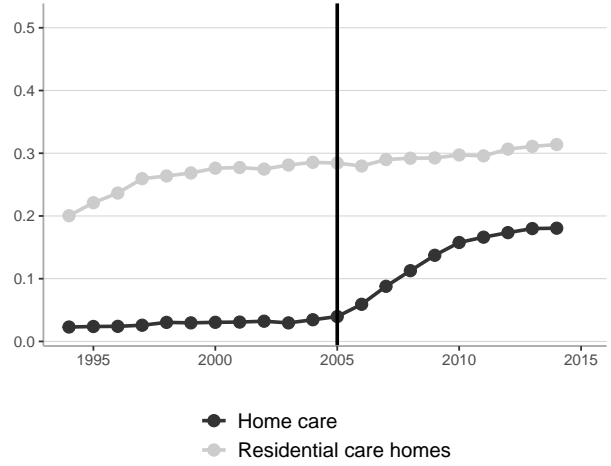
Regions	Ownership	2005		2014		2014 vs 2005	
		Emp.	Share (%)	Emp.	Share (%)	Emp. (%)	Share (pp)
Panel A: Home care							
All regions	All private	3.497	100	4.537	100	30	0
	For-profit	0.154	4	0.667	15	333	11
	Non-profit	3.343	96	3.870	85	16	-11
Top 1	All private	4.139	100	7.619	100	84	0
	For-profit	0.557	13	3.079	40	453	27
	Non-profit	3.583	87	4.541	60	27	-27
Top 10	All private	4.548	100	7.604	100	67	0
	For-profit	0.288	6	2.516	33	774	27
	Non-profit	4.260	94	5.087	67	19	-27
Middle 40	All private	3.225	100	4.173	100	29	0
	For-profit	0.092	3	0.560	13	509	10
	Non-profit	3.134	97	3.612	87	15	-10
Bottom 50	All private	3.499	100	4.161	100	19	0
	For-profit	0.163	5	0.330	8	102	3
	Non-profit	3.335	95	3.831	92	15	-3
Panel B: Residential care homes							
All regions	All private	6.685	100	9.988	100	49	0
	For-profit	1.393	21	2.463	25	77	4
	Non-profit	5.292	79	7.525	75	42	-4
Top 1	All private	6.637	100	10.784	100	62	0
	For-profit	2.053	31	4.140	38	102	7
	Non-profit	4.584	69	6.643	62	45	-7
Top 10	All private	6.672	100	10.418	100	56	0
	For-profit	1.681	25	3.239	31	93	6
	Non-profit	4.991	75	7.180	69	44	-6
Middle 40	All private	6.370	100	9.547	100	50	0
	For-profit	1.357	21	2.369	25	75	4
	Non-profit	5.013	79	7.178	75	43	-4
Bottom 50	All private	6.937	100	10.226	100	47	0
	For-profit	1.345	19	2.334	23	74	4
	Non-profit	5.592	81	7.892	77	41	-4

Notes: Employment refers to the average number of employees per 1,000 inhabitants (2008 census) and per living area, based on the DADS-Poste datasets. The living areas are classified into 4 categories according to their number of inhabitants (2008 census), the top 1%, the next 9%, the middle 40%, and the bottom 50%. The classification of employment into home care or residential care home is based on the INSEE classification of the main activity of the employing establishment. The ownership structure of an employer is identified by its legal form.

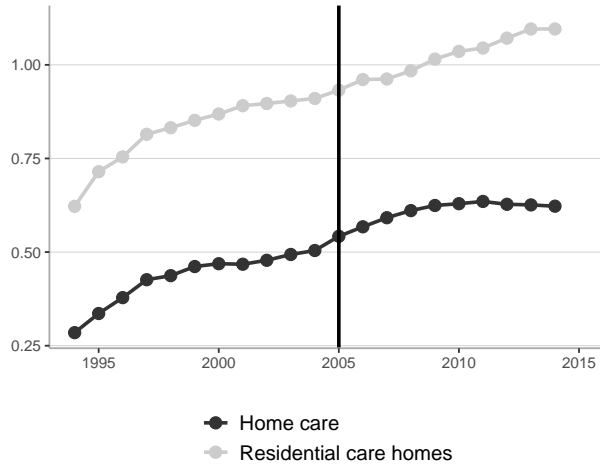
Figure A1: Average number of establishments by region population categories



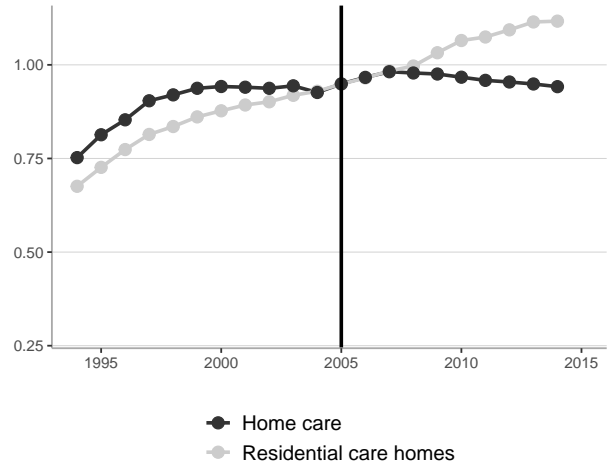
(a) For-profit - Top 10%



(b) For-profit - Bottom 90%



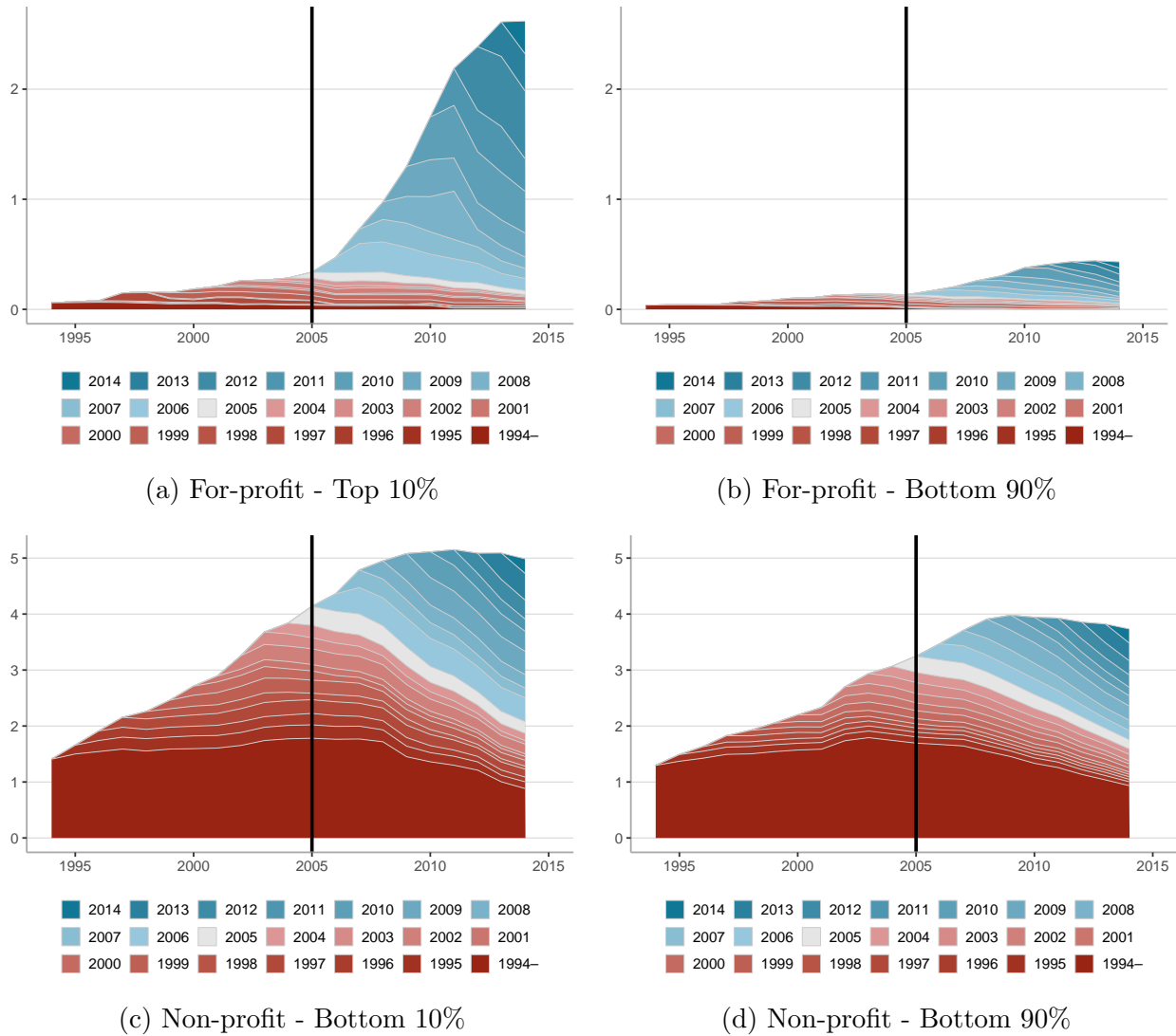
(c) Non-profit - Top 10%



(d) Non-profit - Bottom 90%

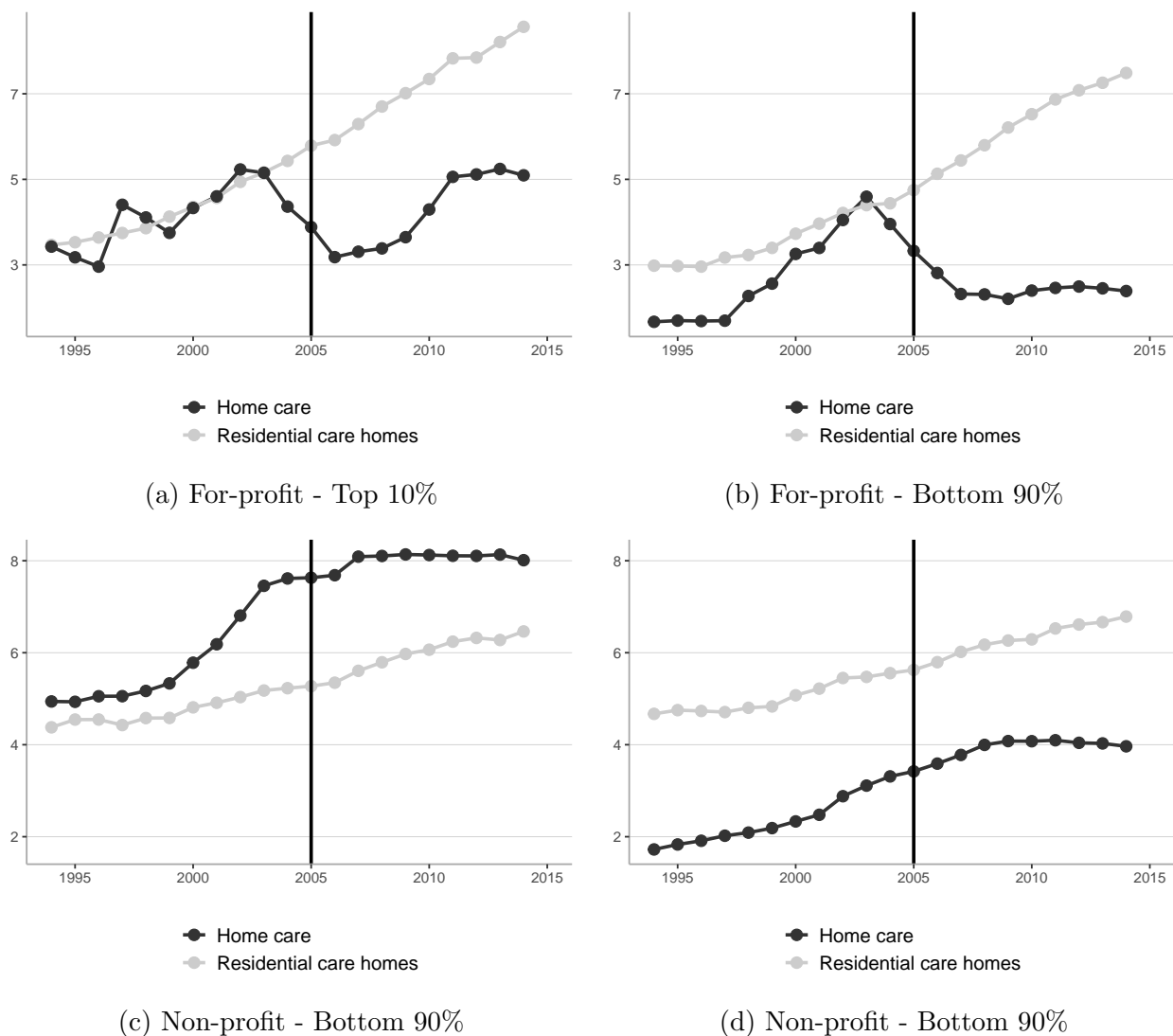
Notes: This graph plots the average number of establishments per year, per 10,000 inhabitants (2008 census), and per living area. Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). Home care and residential care home employment are identified using the INSEE establishment classification. Panel (a) includes only for-profit establishments and restricts the sample to the top 10% of regions, panel (b) to the bottom 90%, panel (c) includes only non-profit establishments in the top 10%, and panel (d) in the bottom 90%.

Figure A2: Average employment by region population categories, per establishment birth year



Notes: This graph plots the average number of employees per year, per 1,000 inhabitants (2008 census), and per living area. Average employment is broken down by establishment birth year. Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The data are restricted to home care establishments identified using the INSEE establishment classification. Panel (a) includes only for-profit employees and restricts the sample to the top 10% of regions, panel (b) to the bottom 90%, panel (c) includes only non-profit employees in the top 10%, and panel (d) in the bottom 90%.

Figure A3: Average establishment size by region population categories



Notes: This graph plots the average number of employees per establishment, per year, and per living area, where one unit on the vertical axis corresponds to 10 employees. Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). Home care and residential care home employment are identified using the INSEE establishment classification. Panel (a) includes only for-profit establishments and restricts the sample to the top 10% of regions, panel (b) to the bottom 90%, panel (c) includes only non-profit establishments in the top 10%, and panel (d) in the bottom 90%.

Figure A4: Average establishment size by region population categories, per establishment birth year

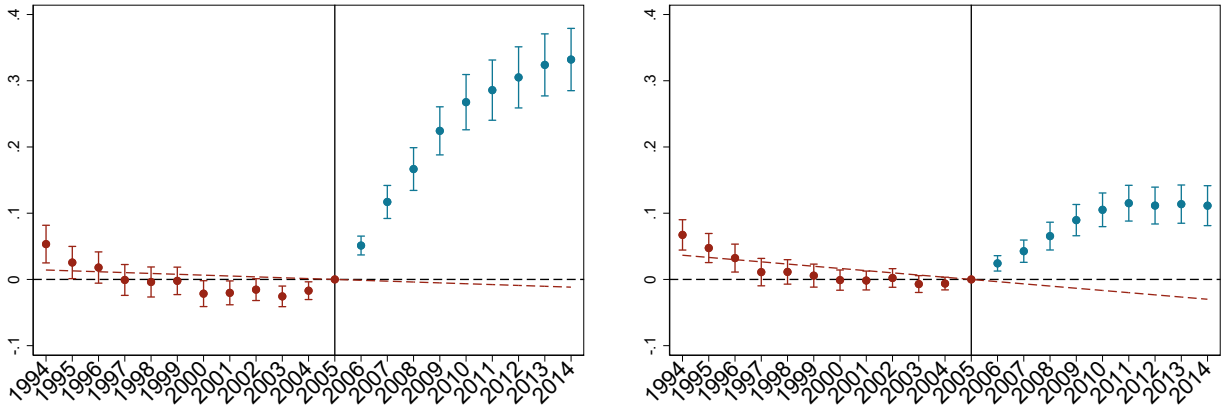


Notes: This graph plots the average number of employees per establishment, per year, and per living area, where one unit on the vertical axis corresponds to 10 employees. Averages are broken down by establishment birth year. Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The data are restricted to home care establishments identified using the INSEE establishment classification. Panel (a) includes only for-profit establishments and restricts the sample to the top 10% of regions, panel (b) to the bottom 90%, panel (c) includes only non-profit establishments in the top 10%, and panel (d) in the bottom 90%.

## B Baseline results

### B.1 For-profit organizations

Figure B1: Effects of the reform on the number of for-profit establishments

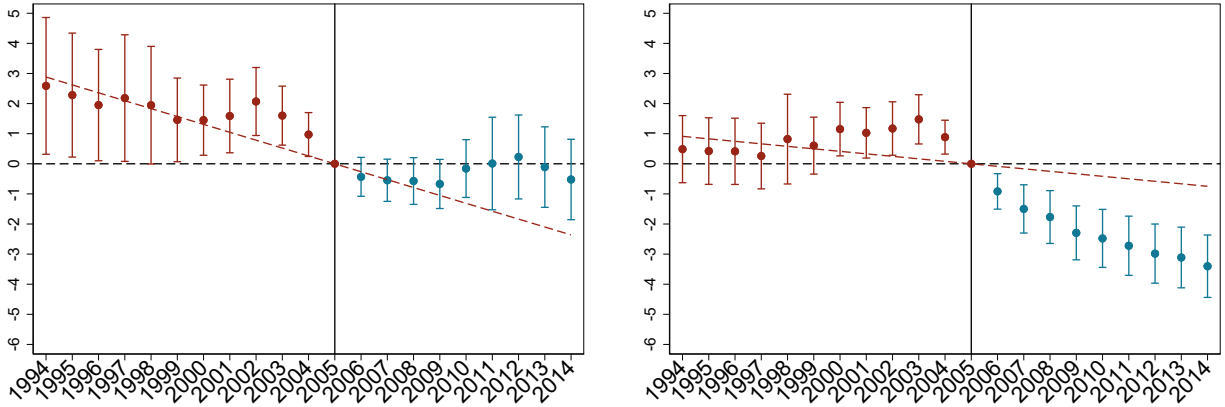


(a) Non-profit - Top 10%

(b) Non-profit - Bottom 90%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome is the number of establishments per 10,000 inhabitants (2008 census). The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes only for-profit establishments and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

Figure B2: Effects of the reform on for-profit establishment size



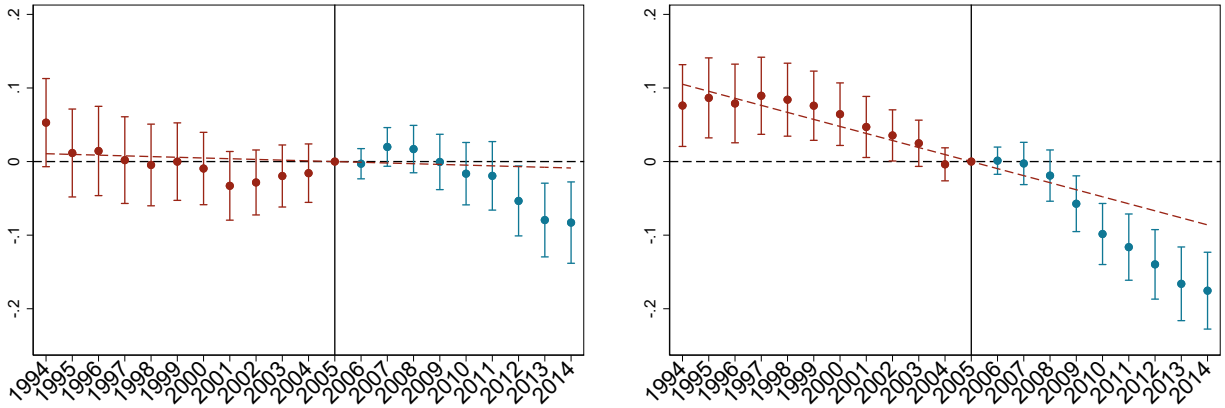
(a) Number of establishment - Top 10%

(b) Number of establishment - Bottom 90%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome variable is defined as ten times the number of employees per establishment. The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes only for-profit establishments and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

## B.2 Non-profit organizations

Figure B3: Effects of the reform on the number of non-profit establishments

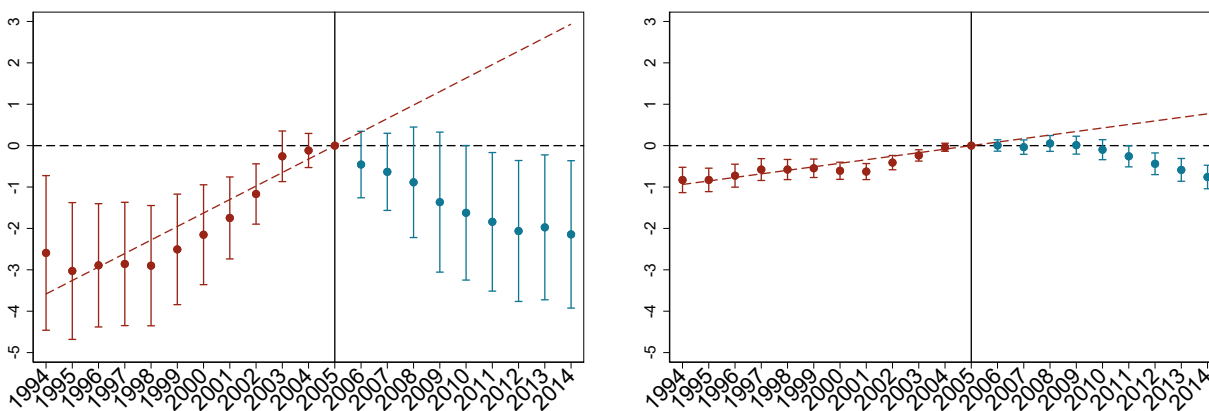


(a) Number of establishment - Top 10%

(b) Number of establishment - Bottom 90%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome is the number of establishments per 10,000 inhabitants (2008 census). The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes only non-profit establishments and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

Figure B4: Effects of the reform on non-profit establishment size



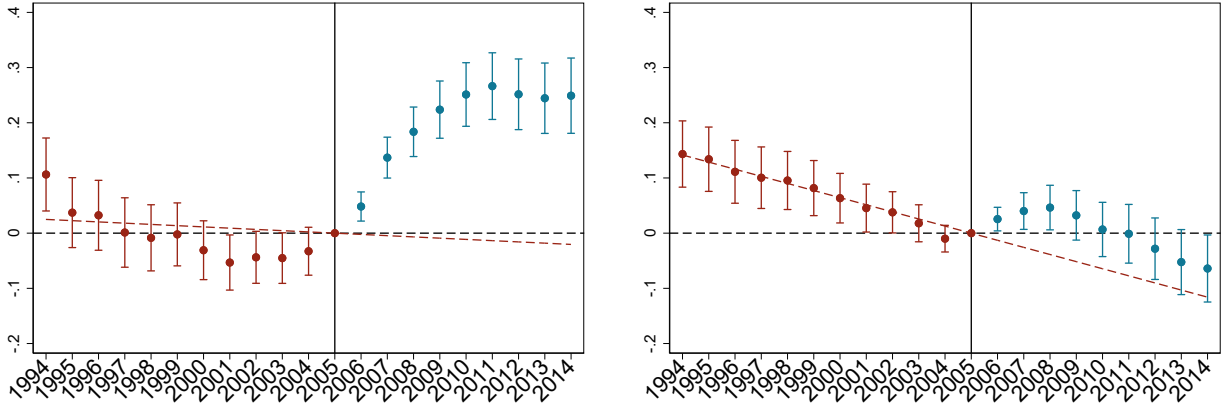
(a) Number of establishment - Top 10%

(b) Number of establishment - Bottom 90%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome variable is defined as ten times the number of employees per establishment. The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes only non-profit establishments and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

### B.3 Overall Private organizations

Figure B5: Effects of the reform on the number of private establishments

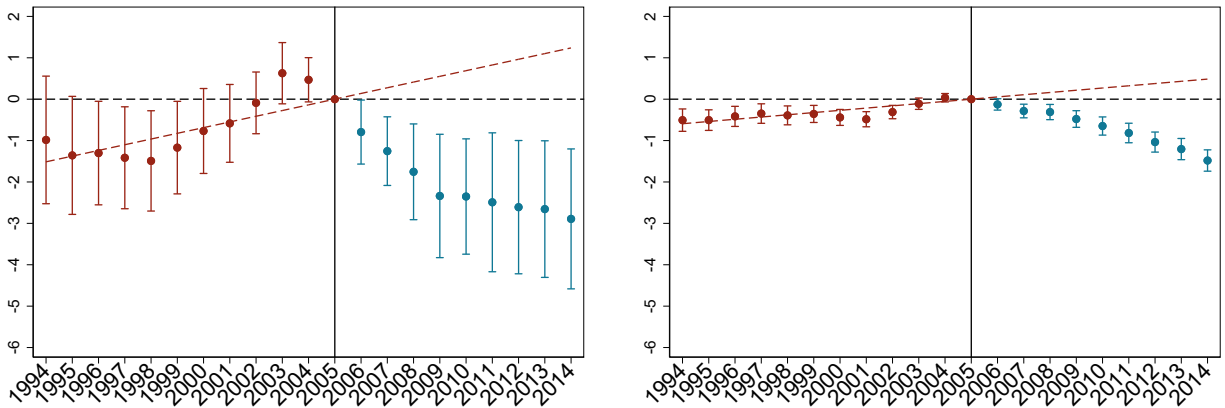


(a) Number of establishment - Top 10%

(b) Number of establishment - Bottom 90%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome is the number of establishments per 10,000 inhabitants (2008 census). The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes only private establishments and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

Figure B6: Effects of the reform on private establishment size



(a) Number of establishment - Top 10%

(b) Number of establishment - Bottom 90%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome variable is defined as ten times the number of employees per establishment. The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes only private establishments and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

Table B1: Average effect fo the reform on employment

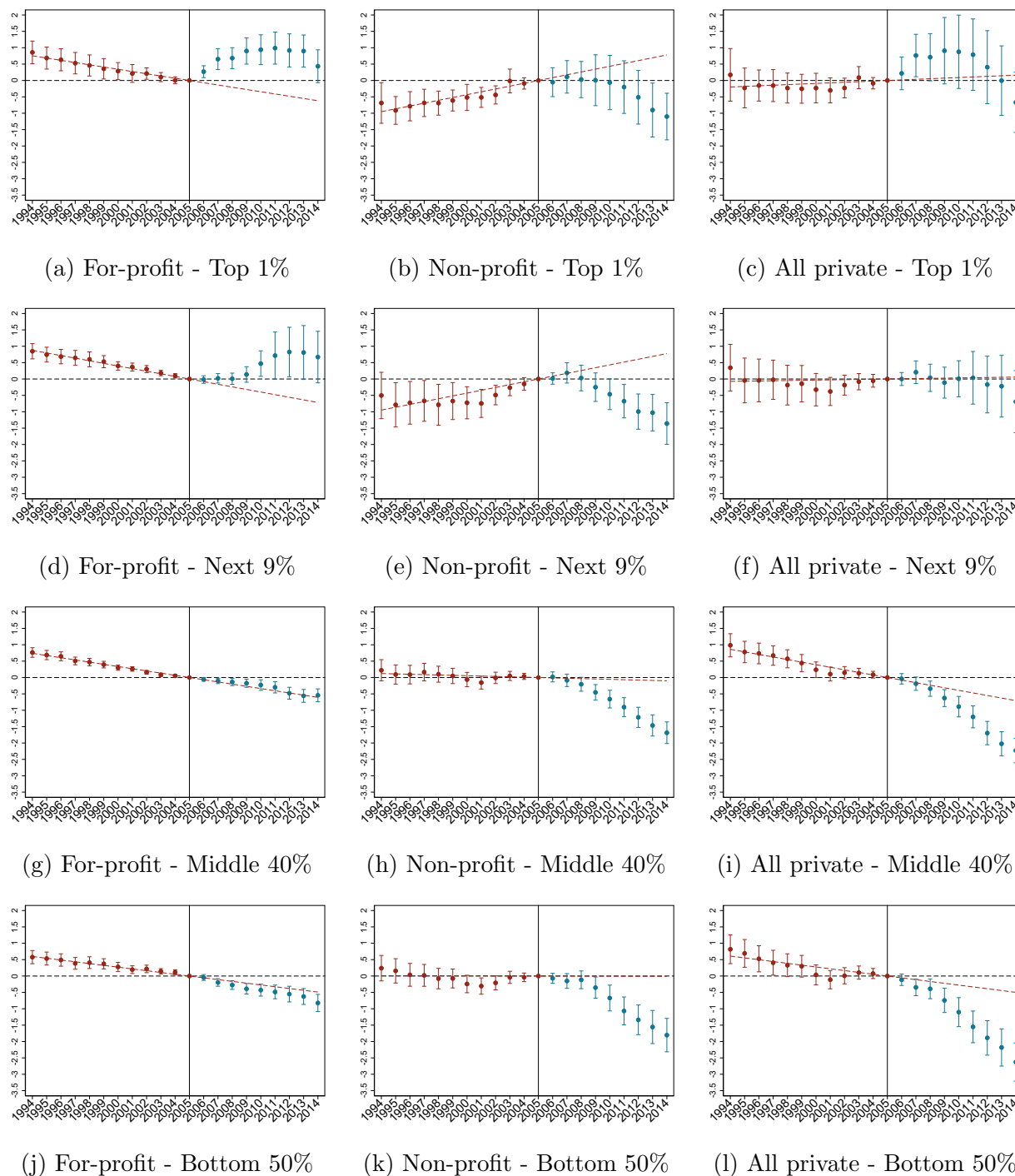
Outcome	(1)	(2)	(3)	(4)	(5)	(6)
	Employment per 1,000 inhabitants					
	All private		For-profit		Non-profit	
	Top 10%	Bottom 90%	Top 10%	Bottom 90%	Top 10%	Bottom 90%
Treatment	0.2686 (0.2846)	-0.6159*** (0.1475)	0.8141*** (0.1810)	-0.0745 (0.0678)	-0.5454** (0.2493)	-0.5414*** (0.1311)
Group Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Time Trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,392	61,152	7,392	61,152	7,392	61,152
Mean DepVar	6.6254	4.1528	1.6692	0.3363	4.9562	3.8165

Notes: Standard errors are in parentheses and are clustered at the living area level. \*\*\*, \*\*, and \* indicate significance at 1%, 5%, and 10% respectively. The treatment coefficients correspond to the average of all the  $\beta_k$  coefficients of Equation (3) over the 2006–2014 period. Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The outcome is the employment per living area, per year, and per 1,000 inhabitants (2008 census). The mean of the dependent variable (Mean DepVar) gives the average of the outcome variable in the treated group during the post-reform period (after 2006). Column (1) includes all private employees and restricts the sample to the top 10% of regions, column (2) to the bottom 90%, column (3) includes only for-profit employees in the top 10%, and column (4) in the bottom 90%, column (5) includes only non-profit employees in the top 10%, and column (6) in the bottom 90%.

## C Heterogeneity Analysis

### C.1 Region size

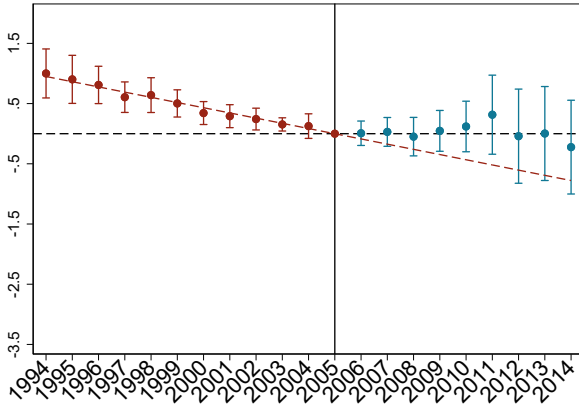
Figure C1: Effects of the reform on employment: Detailed region population size categories



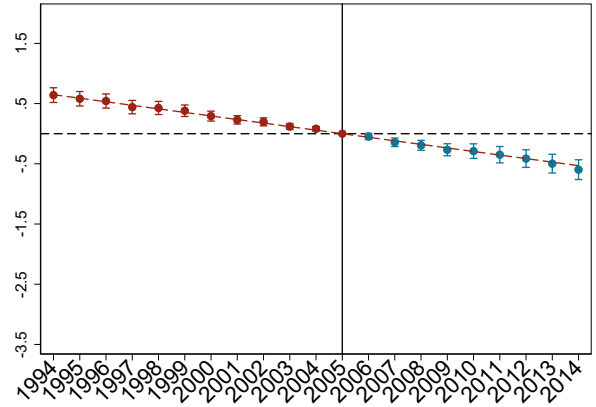
Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). The living areas are classified into 4 categories according to their number of inhabitants (2008 census), the top 1%, the next 9%, the middle 40%, and the bottom 50%. The outcome is the employment per 1,000 inhabitants (2008 census).

## C.2 Region Density

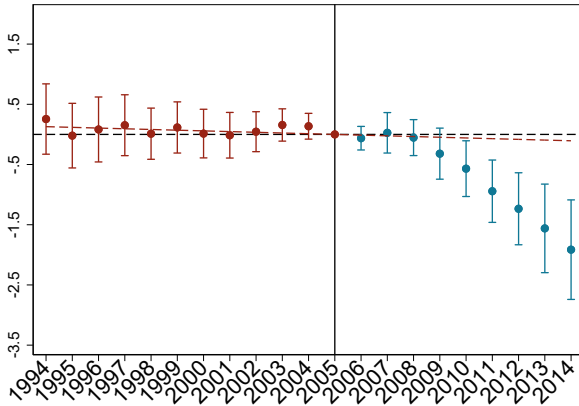
Figure C2: Effects of the reform on employment: Region density



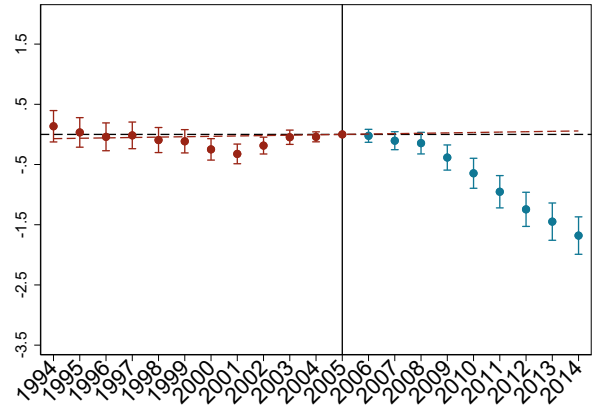
(a) For-profit - Top 10%



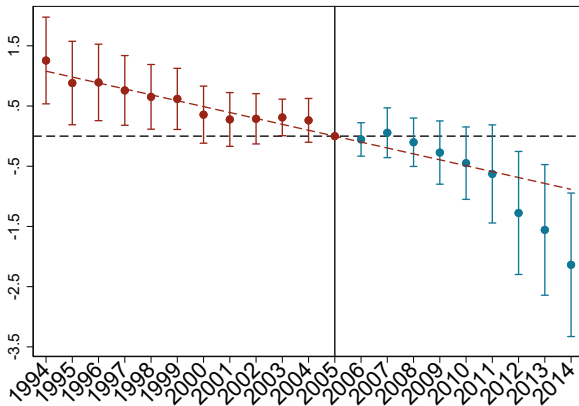
(b) For-profit - Bottom 90%



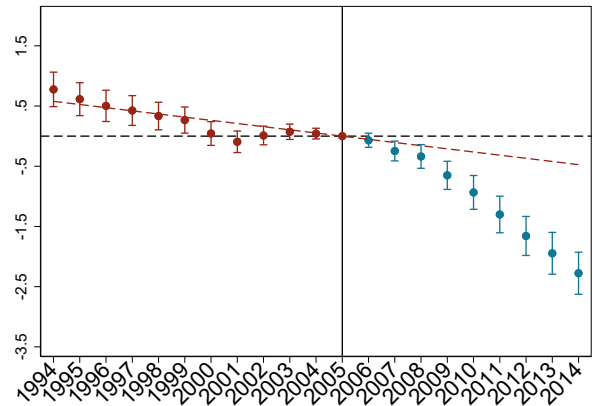
(c) Non-profit - Top 10%



(d) Non-profit - Bottom 90%



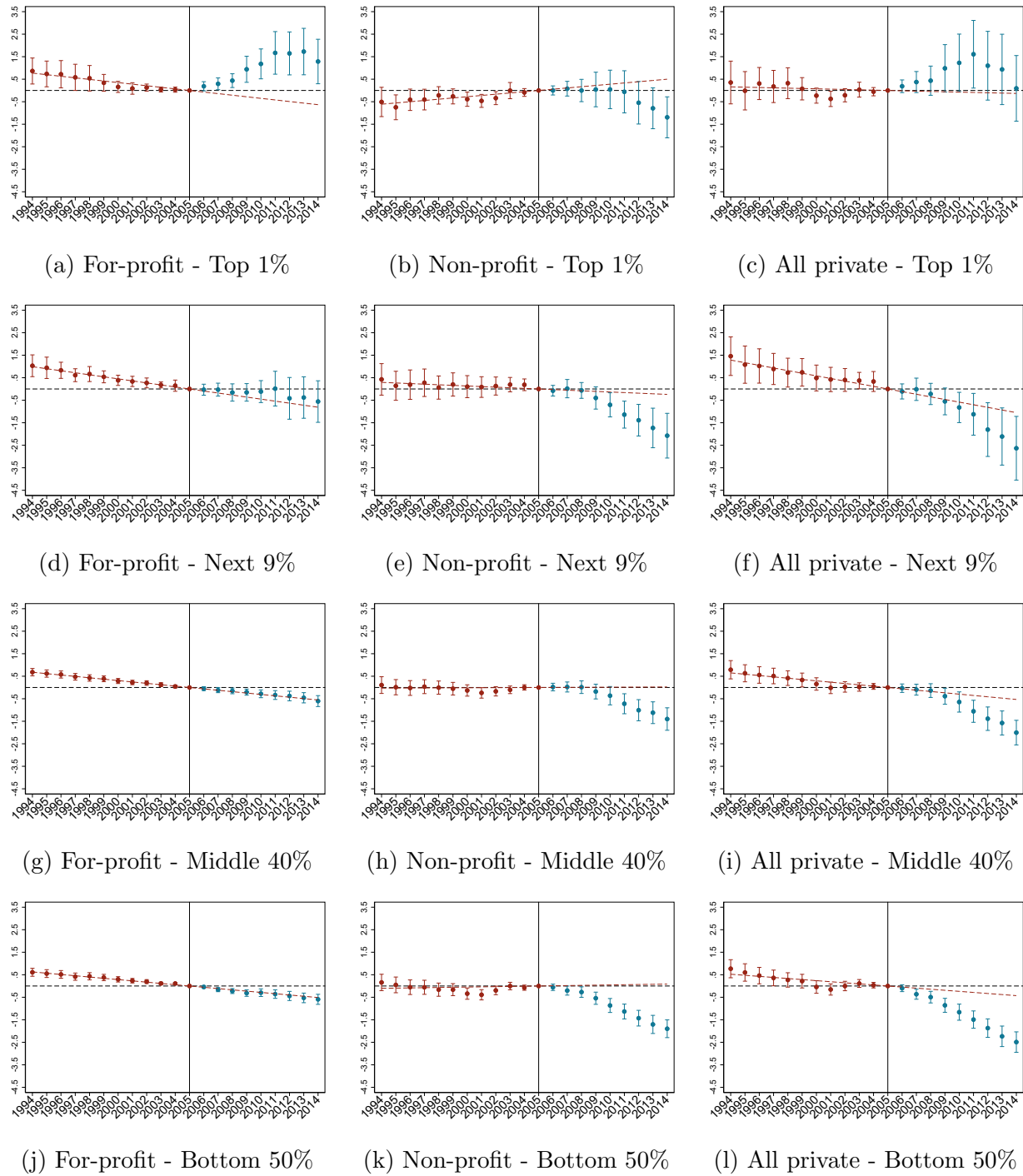
(e) All private - Top 10%



(f) All private - Bottom 90%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) density (2008 census). The outcome is the employment per 1,000 inhabitants (2008 census).

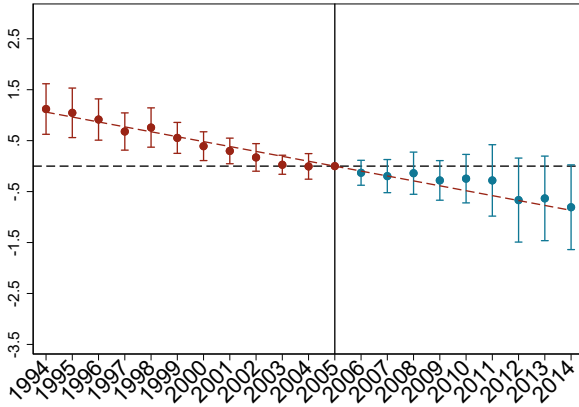
Figure C3: Effects of the reform on employment: Detailed region density categories



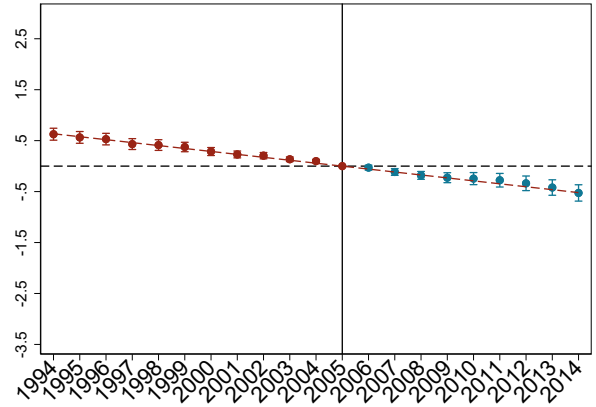
Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). The living areas are classified into 4 categories according to their density (2008 census), the top 1%, the next 9%, the middle 40%, and the bottom 50%. The outcome is the employment per 1,000 inhabitants (2008 census).

### C.3 Region Revenue

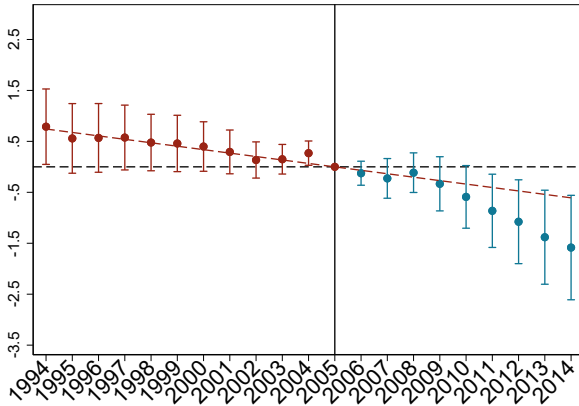
Figure C4: Effects of the reform on employment: Region revenue



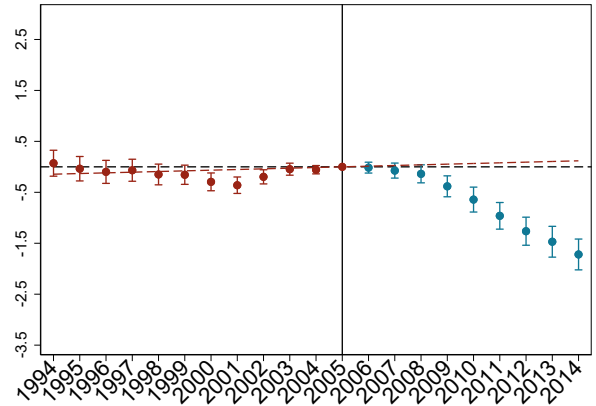
(a) For-profit - Top 10%



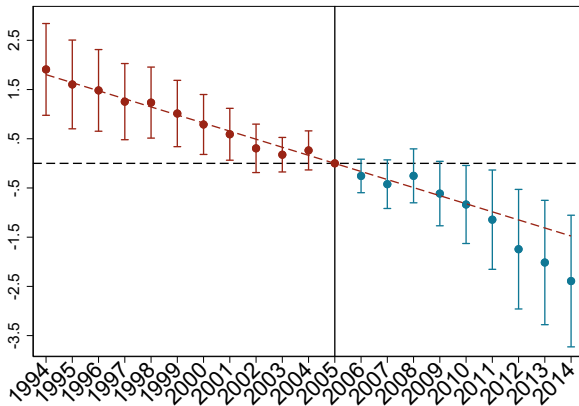
(b) For-profit - Bottom 90%



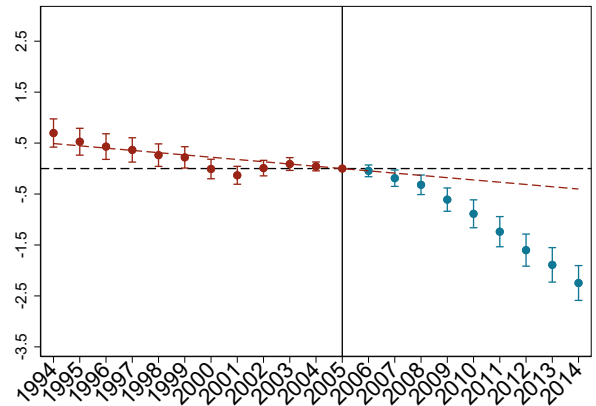
(c) Non-profit - Top 10%



(d) Non-profit - Bottom 90%



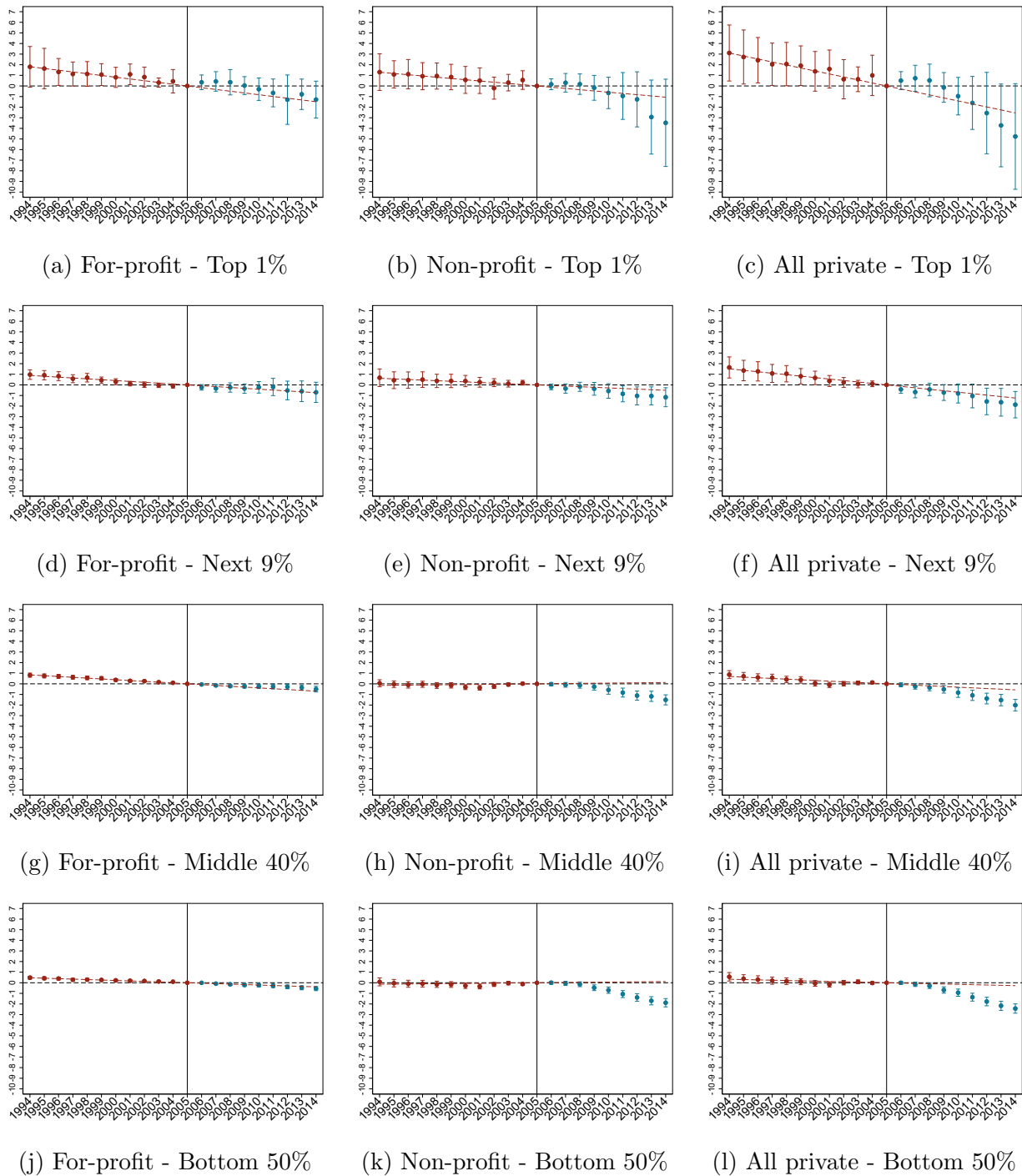
(e) All private - Top 10%



(f) All private - Bottom 90%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) median revenue (2008 census). The outcome is the employment per 1,000 inhabitants (2008 census).

Figure C5: Effects of the reform on employment: Detailed region revenue categories



Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). The living areas are classified into 4 categories according to their median revenue (2008 census), the top 1%, the next 9%, the middle 40%, and the bottom 50%. The outcome is the employment per 1,000 inhabitants (2008 census).

## D Robustness Checks

### D.1 Control Group Robustness Checks

Table D1: Descriptive statistics: Number of employees moving from home care to residential care home

Year	Top 10			Bottom 90		
	# Emp home care (t)	# Emp residential care home (t+1)	Share (%) care (t)	# Emp home care (t)	# Emp residential care home (t+1)	Share (%) care (t)
2002	5,766	111	1,9%	3,451	75	2,2%
2003	4,709	102	2,2%	2,683	56	2,1%
2004	5,192	102	2,0%	3,343	41	1,2%
2005	6,016	128	2,1%	3,604	59	1,6%
2006	6,676	127	1,9%	3,937	53	1,3%
2007	9,150			4,762		
2008	12,427	257	2,1%	5,543	112	2,0%
2009	11,754	212	1,8%	5,286	81	1,5%
2010	12,766	268	2,1%	5,587	77	1,4%
2011	12,946	234	1,8%	5,491	112	2,0%
2012	13,637			5,712		
2013	15,012	331	2,2%	5,951	134	2,3%
2014	13,715	282	2,1%	5,551	113	2,0%
Total	106,979	2,154	2,0%	50,427	913	1,8%

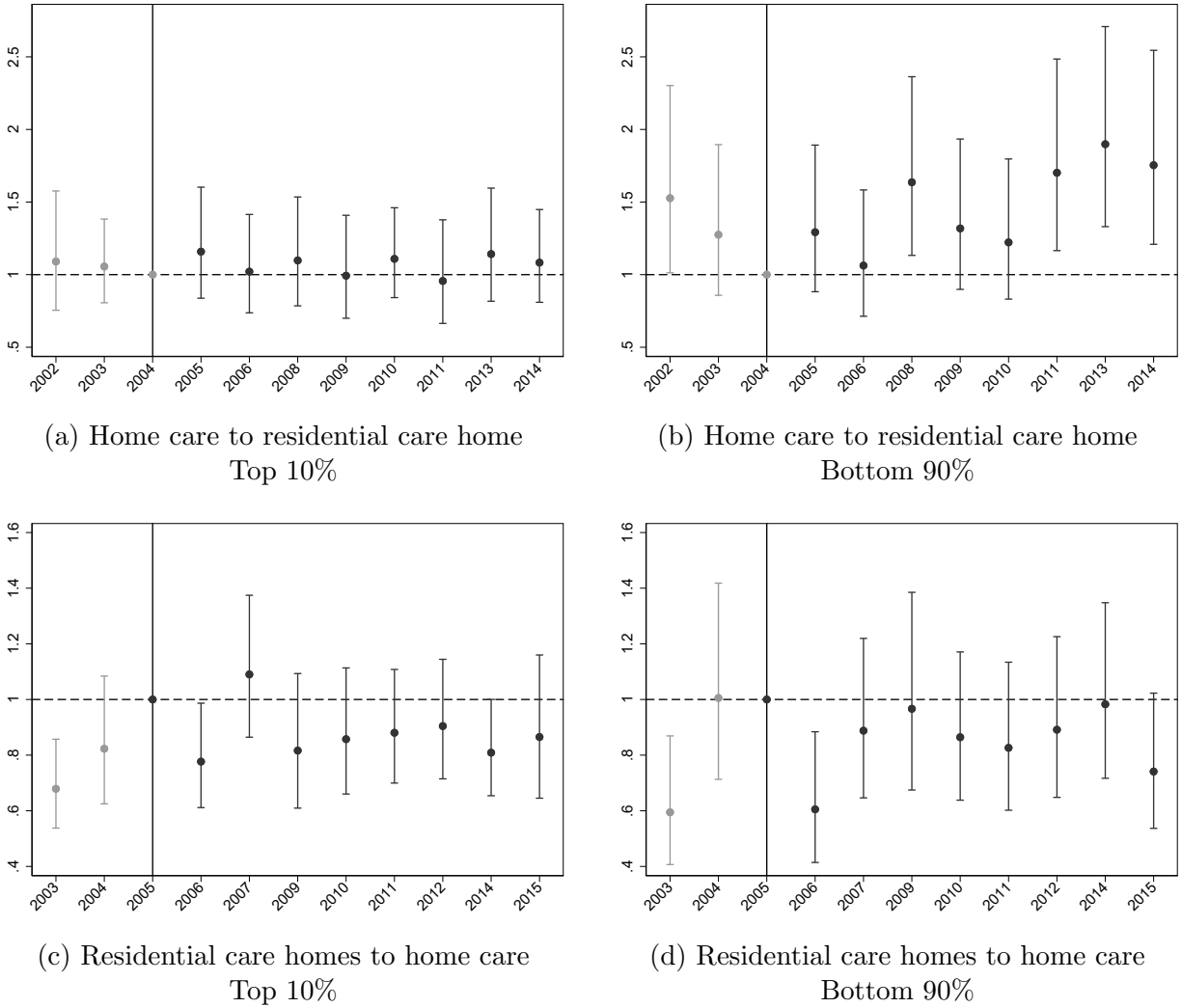
Notes: Column (1) reports the number of employees in the home care sector in year (t), and column (2) reports the subset of these employees who move to the residential care home sector in year (t+1), in the top 10% of living areas. Columns (3) and (4) report the same measures for the bottom 90% of regions. Top 10 (bottom 90) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The data come from the panel version of the DADS (1/12 sample) combining three panels (2002–2007, 2008–2012, 2013–2019); movements between 2007–2008 and 2012–2013 are not observed. For employees with multiple jobs in a year, only the highest-paying job is retained.

Table D2: Two-way fixed effects estimates of the correlation between home care and residential care home employment

Outcome	Residential care home employment (per 1,000 inhabitants)		
	(1) All years	(2) Before 2005	(3) After 2005
Home care employment (per 1,000 inhab.)	-0.0032 (0.0209)	0.0122 (0.0201)	-0.0075 (0.0171)
Region FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
Observations	34,272	19,584	14,688

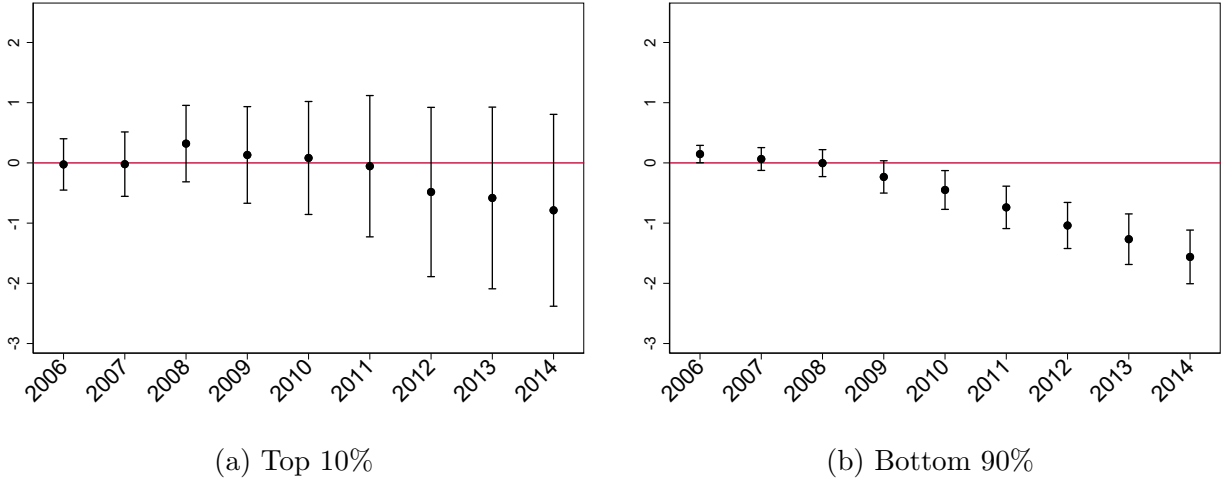
Notes: Standard errors are in parentheses and are clustered at the living area level. \*\*\*, \*\*, and \* indicate significance at 1%, 5%, and 10% respectively. The outcome is the number of residential care home employees per 1,000 inhabitants (2008 census). Coefficients report the correlation between residential care home and home care employment. Column (1) includes all years, column (2) years before 2005, and column (3) years after 2006.

Figure D1: Regression estimates of the probability of movements between home care and residential care home sectors



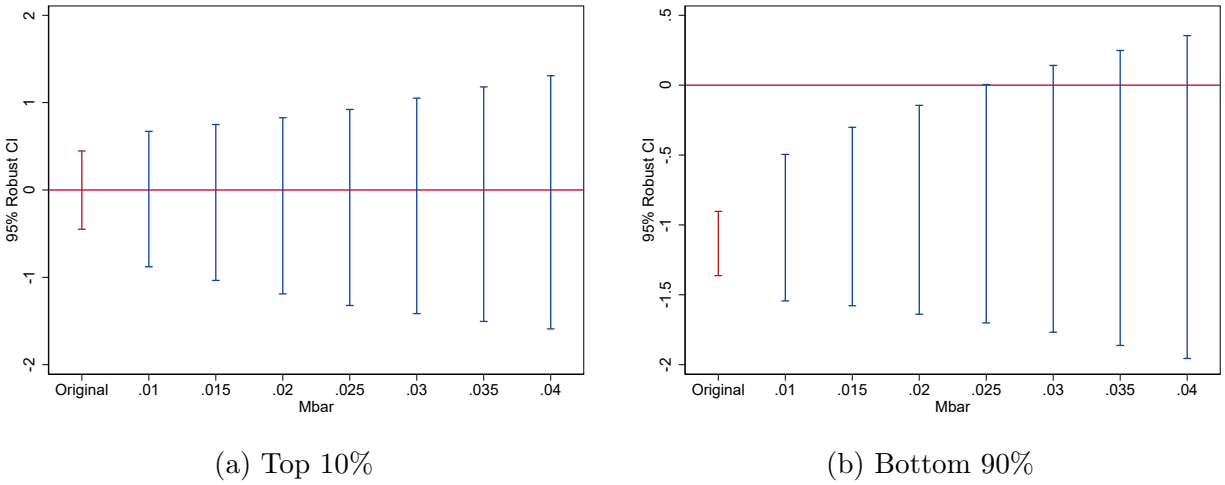
Notes: This figure plots the estimates and 95% confidence intervals from Equation (2) in odds ratios. Each coefficient is a year dummy and captures the annual change in the probability of movements. The regression uses the panel version of the DADS at the employee level, which covers one-twelfth of the population, combining the panels provided by INSEE for 2002–2007, 2008–2012, and 2013–2014. The analysis is restricted to employees working in year  $t$  in home care. The sample is restricted to the top 10% of regions for panels (a) and (c), and to the bottom 90% for panels (b) and (d). The outcome in panels (a) and (b) is a dummy equal to 1 if an employee moves from a residential care home in year  $t - 1$  to home care in year  $t$ , and in panels (c) and (d) if an employee leaves the home care sector in year  $t$  for the residential care home sector in year  $t + 1$ .

Figure D2: Effects of the reform on private employment, accounting for linear pre-trends



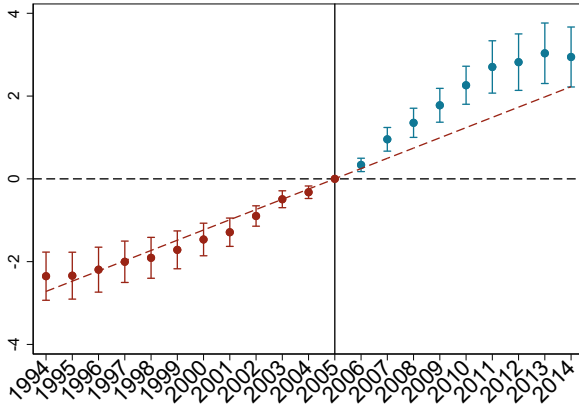
Notes: This graph plots the estimates and 95% confidence intervals of Equation (3) which includes group-specific time trends. Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The outcome is the employment per 1,000 inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. Panel (a) includes all private employees and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

Figure D3: Sensitivity to linear pre-trends

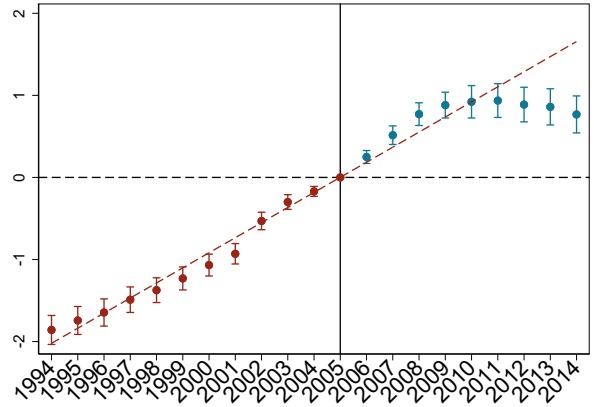


Notes: Plots the 95% confidence intervals of the smoothness sensitivity analysis of [Rambachan and Roth \(2023\)](#). The breakdown value for a significant effect is  $M \approx 0.025$ , meaning that a null effect can be rejected unless the linear extrapolation across consecutive periods is allowed to be off by more than 0.03 percentage points. The outcome is the employment per 1,000 inhabitants (2008 census). The treated group is the home care sector, and the control group is the residential care home sector. The data include all private employees.

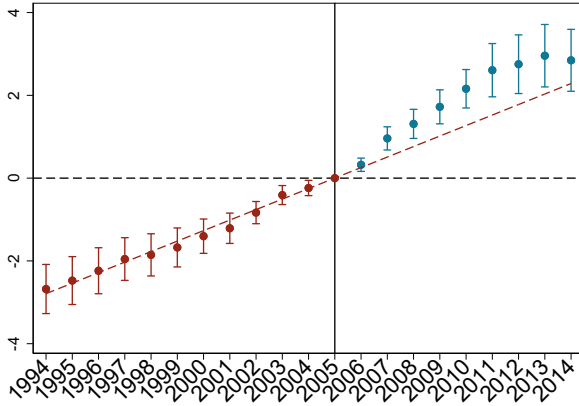
Figure D4: Effects of the reform on private employment: Alternative control groups



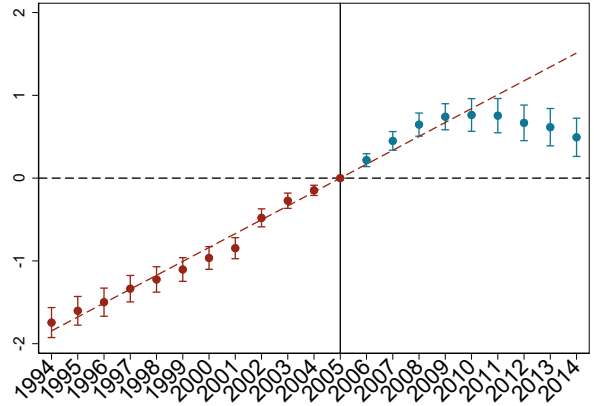
(a) Control group: physicians sector  
Top 10%



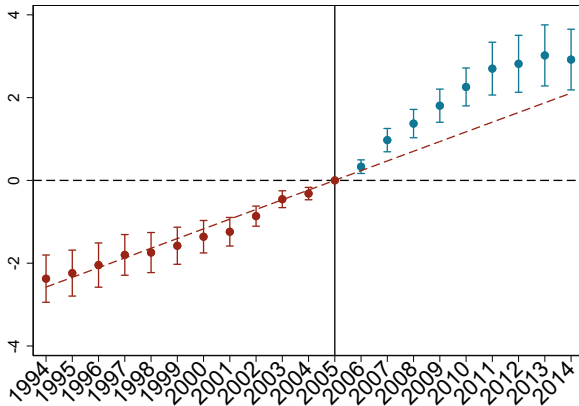
(b) Control group: physicians sector  
Bottom 90%



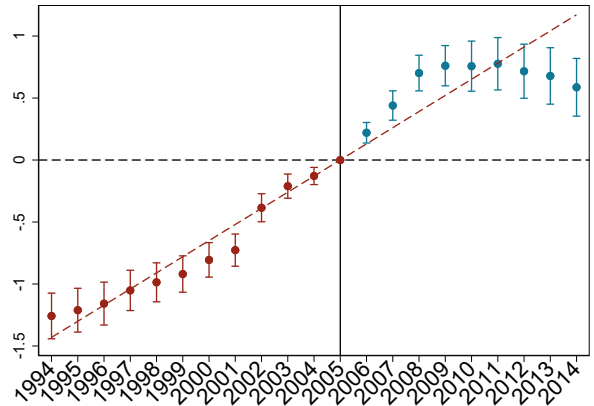
(c) Control group: ancillary health sector  
Top 10%



(d) Control group: ancillary health sector  
Bottom 90%



(e) Control group: ambulances sector  
Top 10%

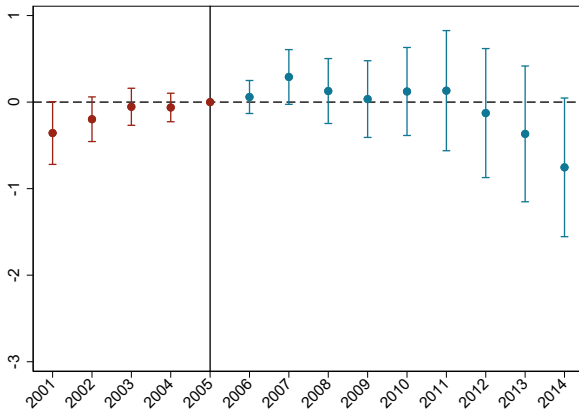


(f) Control group: ambulances sector  
Bottom 90%

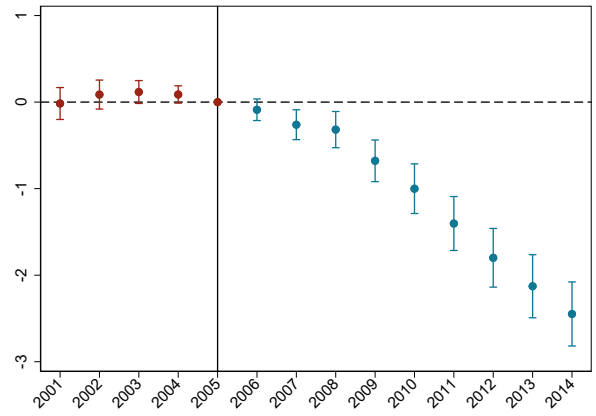
Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The outcome is the employment per 1,000 inhabitants (2008 census). In panels (a) and (b), the control group is the physicians' sector; in panels (c) and (d), the ancillary health sector; and in panels (e) and (f), the ambulance sector.

## D.2 Alternative Explanations

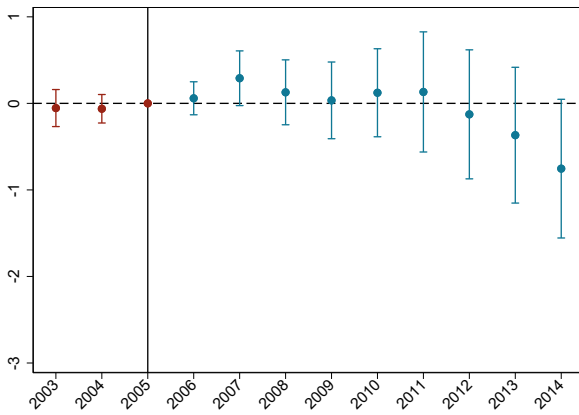
Figure D5: Effects of the reform on private employment: Accounting for subsidies and allowances



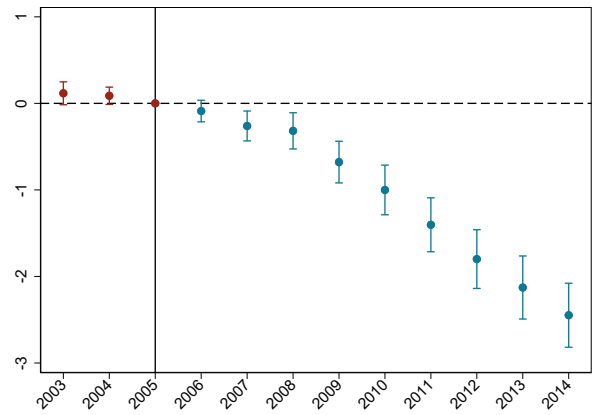
(a) Includes controls for subsidies  
Top 10%



(b) Includes controls for subsidies  
Bottom 90%



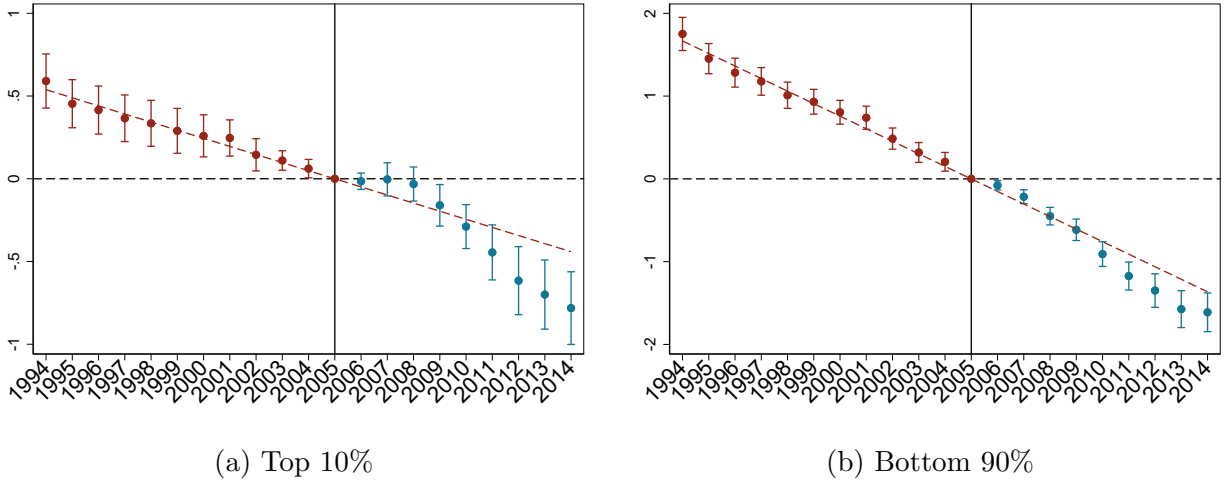
(c) Includes controls for subsidies and  
allowances  
Top 10%



(d) Includes controls for subsidies and  
allowances  
Bottom 90%

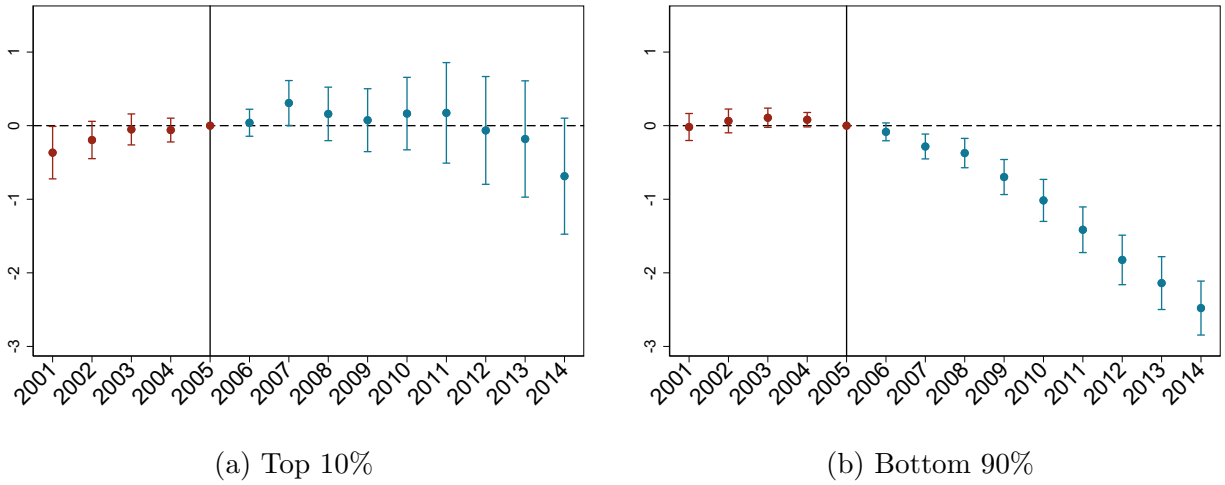
Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The outcome is the employment per 1,000 inhabitants (2008 census). Panels (a) and (b) include controls for municipality-level subsidies, while panels (c) and (d) add controls for *département*-level allowances.

Figure D6: Effects of the reform public employment



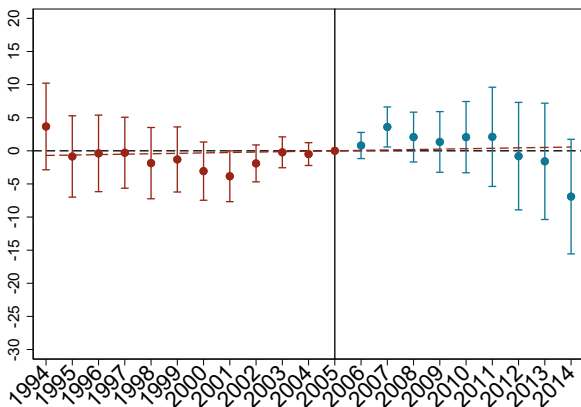
Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The treated group is the public home care sector, and the control group is the public residential care home sector. The outcome is the employment per 1,000 inhabitants (2008 census). The dashed lines correspond to a linear regression of the pre-treatment point estimates passing through 0 in 2005. Panel (a) includes only public employees and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

Figure D7: Effects of the reform on private employment: Controlling for age structure

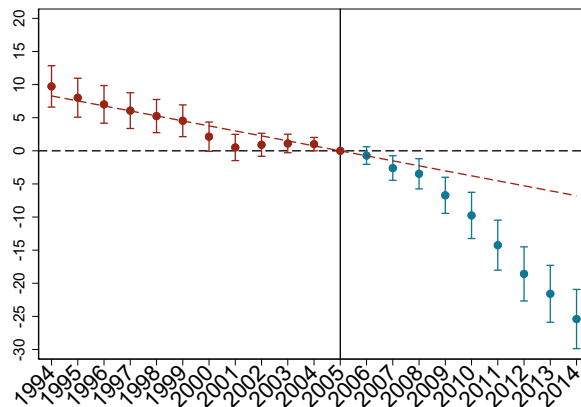


Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The outcome is the employment per 1,000 inhabitants (2008 census). The regressions include a control for the share of over-75, which is computed based on the *département* level population. Panel (a) includes all private employees and restricts the sample to the top 10% of regions, and panel (b) to the bottom 90%.

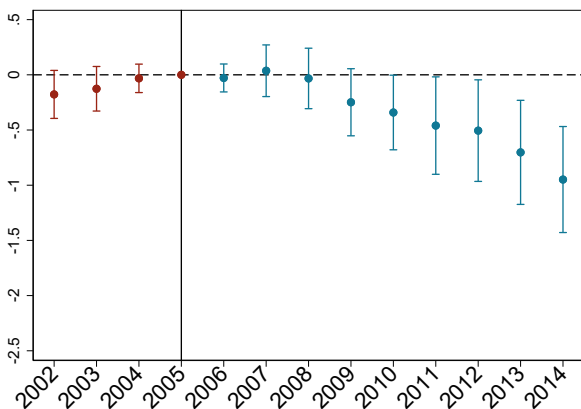
Figure D8: Effects of the reform on private employment: Alternative outcome variables



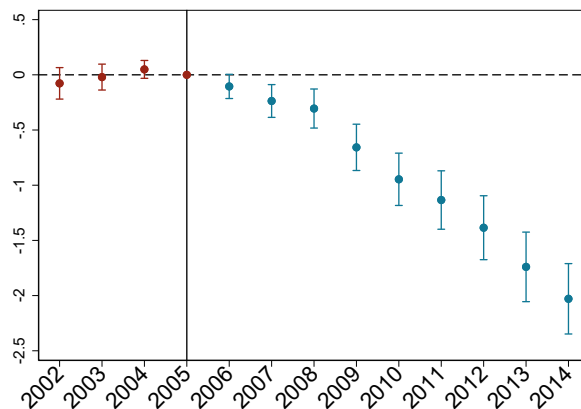
(a) Outcome: employment per 75+  
Top 10%



(b) Outcome: employment per 75+  
Bottom 90%



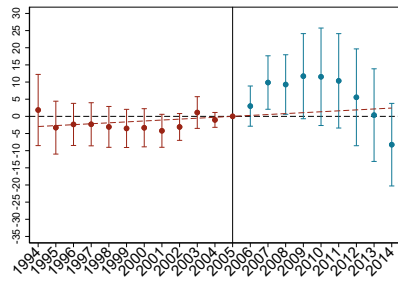
(c) Outcome: working hours per inahab.  
Top 10%



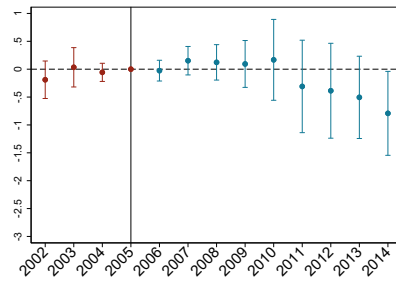
(d) Outcome: working hours per inahab.  
Bottom 90%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). Top 10% (bottom 90%) refers to the 10% (90%) of living areas with the highest (lowest) number of inhabitants (2008 census). The outcome in panels (a) and (b) is the number of employees per 75+ inhabitants (2008 census), while panels (c) and (d) use working hours per inhabitant (2008 census).

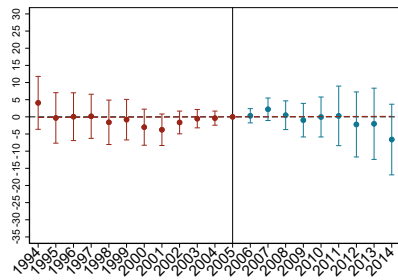
Figure D9: Effects of the reform on private employment: Alternative outcome variables



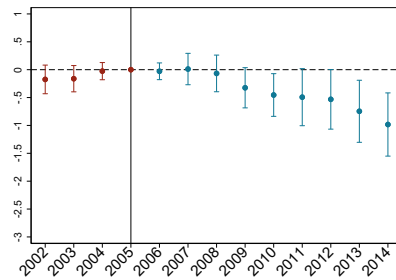
(a) Emp./75+ - Top 1%



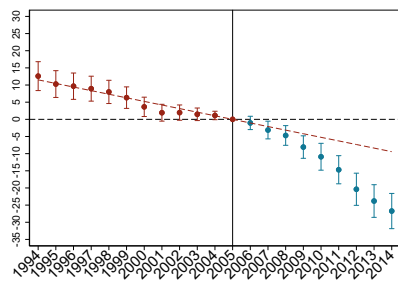
(b) Work. hours/inh. - Top 1%



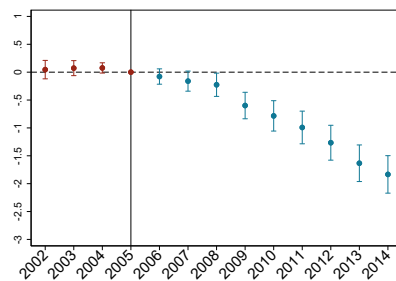
(c) Emp./75+ - Next 9%



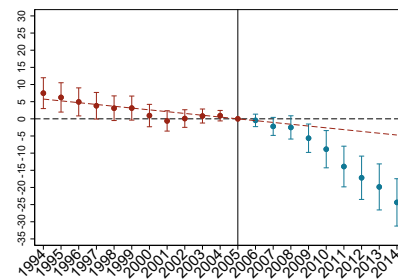
(d) Work. hours/inh. - Next 9%



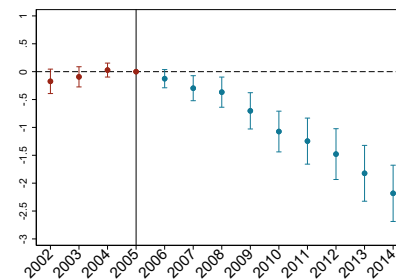
(e) Emp./75+ - Mid 40%



(f) Work. hours/inh. - Mid 40%



(g) Emp./75+ - Bot 50%



(h) Work. hours/inh. - Bot 50%

Notes: This graph plots the estimates and 95% confidence intervals of Equation (1). The living areas are classified into 4 categories according to their number of inhabitants (2008 census), the top 1%, the next 9%, the middle 40%, and the bottom 50%. The outcomes are, alternatively, the number of employees per 75+ inhabitants (2008 census) and working hours per inhabitant (2008 census).

## E Mechanisms

Table E1: Two-way fixed effects estimates of the correlation between non-profit and for-profit employment in the home care sector, top 10% most populated regions, 2006–2014

Outcome	(1)	(2)
	Non-profit employment	
For-profit employment	-0.0625 (0.0623)	-2.019*** (0.566)
For-profit employment x log(Pop.)		0.166*** (0.0469)
Region FE	Yes	Yes
Time FE	Yes	Yes
Observations	1,584	1,584

Notes: Standard errors are in parentheses and are clustered at the living area level. \*\*\*, \*\*, and \* indicate significance at 1%, 5%, and 10% respectively. The data is restricted to home care employees, in the 10% most populated regions, and to the 2006–2014 period. The estimates are based on a two-way fixed effects model.

Table E2: Descriptive statistics: Employee movements to, from, and within the home care sector in the top 10% most populated regions, 2006–2014

		(1)	(2)	(3)	(4)	(5)
		Average number of home care employees (t)				
		Total	Home care (t-1)		Another sector (t-1)	Another sector (t+1)
			Another ownership (t-1)	Same ownership (t-1)		
For-profit (t)	# Emp	3,288	123	1,958	1,208	894
	Share		3,7%	59,5%	36,7%	27,2%
Non-profit (t)	# Emp	13,453	68	11,033	2,352	1,812
	Share		0,5%	82,0%	17,5%	13,5%

Notes: This table reports the average number of employees per year over the 2006–2014 period. The data come from the panel version of the DADS (1/12 sample) combining three panels (2002–2007, 2008–2012, 2013–2019); movements between 2007–2008 and 2012–2013 are not observed. For employees with multiple jobs in a year, only the highest-paying job is retained. Within this sample, only employees working in year  $t$  in the home care sector are retained, with the average number of employees per year reported in column (1). Columns (2) and (3) report the number of employees who worked in the same sector in year  $t - 1$ : column (2) from another ownership and column (3) from the same ownership. Column (4) reports the average number of employees entering the sector, and column (5) the average number leaving the sector.

Table E3: Two-way fixed effects estimates of the difference between non-profit and for-profit organizations in the home care sector, top 10% most populated regions, 2006–2014

Outcome	(1)	(2)
	Euros per hour	
For-profit Dummy	-0.0916 (0.0997)	-0.0101 (0.1332)
Employee av. age		0.0239 (0.0176)
Region FE	Yes	Yes
Time FE	Yes	Yes
Observations	2,756	2,756
Mean DepVar	8.3227	8.3227

Notes: Standard errors are in parentheses and are clustered at the living area level. \*\*\*, \*\*, and \* indicate significance at 1%, 5%, and 10% respectively. The data is restricted to all private employees in home care, to regions where both ownership structures have employees in a given year in the 10% most populated regions, and to the 2006–2014 period. The mean of the dependent variable (Mean DepVar) gives the average of the outcome variable for non-profit employees during the post-reform period (2006–2014). The estimations are based on Equation (4). The outcome is the net hourly wages in euros.

Table E4: Two-way fixed effects estimates of the difference between non-profit and for-profit organizations in the home care sector, top 10% most populated regions, 2006–2014: Excluding new comers

(1)	
Outcome	Hours per employee
For-profit Dummy	-243.0086*** (15.6372)
Region FE	Yes
Time FE	Yes
Observations	11,787
Mean DepVar	1,006.0683

Notes: Standard errors are in parentheses and are clustered at the living area level. \*\*\*, \*\*, and \* indicate significance at 1%, 5%, and 10% respectively. The data is restricted to all private employees in home care, to regions where both ownership structures have employees in a given year in the 10% most populated regions, and to the 2006–2014 period. Additionally, the data exclude new comers within the year. The mean of the dependent variable (Mean DepVar) gives the average of the outcome variable for non-profit employees during the post-reform period (2006–2014). The estimations are based on Equation (4). The outcome is the number of working hours per.