# How Does Private Equity Shape Childcare? Implications for Competition, Pricing, and Quality

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January 15, 2025

#### Abstract

This paper examines whether private equity (PE) ownership affects the market competitiveness and quality of the daycare market in The Netherlands. We document a decrease in competition, alongside an increase in the market share of private equity. Daycares owned by private equity charge higher prices and increase their prices more when faced with an increase in allowance to parents. We analyze violations in annual inspections and find that PE ownership is positively associated with administrative quality improvements and negatively associated with labour-related improvements, but responds better to a tightening of regulation. Our results suggest that PE ownership strongly alters daycare operations and contributes to important changes in the daycare market.

Key Words: Private Equity, Leveraged Buyouts, Industrial Organization, Nurseries JEL Codes: L10, G32, G34

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# 1 Introduction

There is a concern that pursuing shareholder wealth may come at the expense of other stakeholders and this friction is particularly relevant in sectors such as education and healthcare. In this paper, we analyze the Dutch market for nurseries and ask whether private equity investments harm the competitiveness of this market.

Research on the interaction between private equity and other stakeholders is gaining attention, particularly in the United States (Eaton et al., 2019; Gupta et al., 2021; J. Cohn et al., 2021).<sup>1</sup> However, there is limited research on European markets, where institutional settings may differ strongly from those in the United States. Consider the Dutch market for nurseries which is heavily regulated and has only been privatized since 2005. The market is characterized by strong demand and limited supply, which cannot easily adjust because of regulation on (qualified) labour and the complexities of setting up new locations. At the same time, a substantial portion of the costs for parents is subsidized, which influences price setting. Understanding the role and impact of private equity in such markets is crucial for developing policies that balance the interests of investors with broader societal goals.

Whether private equity harms the competitiveness of the sector is not obvious. On the one hand, it is well documented that private equity firms are increasingly active in consolidating industries through "buy-and-build strategies", which may create value for the consolidator by enhancing market power.<sup>2</sup> This has prompted growing concern from antitrust authorities about private equity activity in essential sectors like childcare, healthcare, and education.<sup>3</sup> On the other hand, private equity firms are active owners, their involvement has

<sup>&</sup>lt;sup>1</sup>Most research focuses on the impact of private equity ownership on the labor force of portfolio companies rather than on other stakeholders (Davis et al., 2014; Antoni et al., 2019; J. Cohn et al., 2021).

<sup>&</sup>lt;sup>2</sup>In this strategy, the consolidation consists of an initial acquisition of a larger company that subsequently purchases many smaller peers. The size of the follow-on targets may be small and in some cases even a single location which makes it difficult to understand the competitive implications of a single deal. But the total size of the acquisition strategy can be large suggesting the potential existence of anti-competitive effects. Also known as roll-ups or build-ups.

<sup>&</sup>lt;sup>3</sup>The strong presence of private equity firms has been considered as a potential risk for public welfare by

been frequently associated with increases in productivity, growth, and profitability (Guo et al., 2011; Acharya et al., 2013; Davis et al., 2014; Bernstein and Sheen, 2016; Sorensen and Yasuda, 2022). In underperforming market, such changes could benefit consumers. Specifically, in buy-and-build strategies, economics of scale may reduce costs and increase labor flexibility within organizations, while heightened productivity at PE-owned locations may pressure competitors to enhance their own productivity (Aldatmaz and Brown, 2020). We examine these opposing dynamics of private equity investments in a well-regulated market characterized by low competition.

Our main findings focus on pricing and quality outcomes. First, we observe that daycares owned by private equity (PE) charge approximately 3.4% more than other forms of ownership, including foundations and other-for-profit entities. However, this may reflect selective acquisitions by PE firms of more expensive daycare centres that already charge higher prices. To address this potential selection bias, we exploit changes in the annual parental allowance to analyze how daycare locations adjust their prices depending on the type of ownership. PE-owned daycares raise their prices more and this finding holds across the sample and within districts in which private equity firms have invested. Given an average increase of 0.29 Euro in the maximum allowance, we find that PE-owned daycares raise their hourly rates by 0.19 Euro more than other types of daycares.

Second, we examine regulatory violations as a proxy for quality. PE-owned daycare centres have lower overall violation rates, but this may be driven by private equity firms selecting locations with initially higher quality. To partially alleviate these concerns, we analyze the impact of a new law introduced in 2019, which imposed stricter quality measures and enhanced staff requirements for daycare centers. While the introduction of the law

politicians. The authorities in The Netherlands mandated a private equity firm to sell three locations as a condition for approving their acquisition: https://www.acm.nl/nl/publicaties/kinderopvang-kidsfoundation-en-partou-mogen-samengaan-als-zij-drie-locaties-verkopen

generally led to an increase in violation counts, PE-owned daycares experienced a smaller increase compared to others, suggesting better compliance or adaptability to the new standards. Overall, these findings suggest that although PE firms focus on profit maximization by setting higher prices, they also improve operational practices.

We construct a panel dataset from 2016 to 2023 for the Dutch daycare sector using data from the National Registry for Daycare (*Landelijk Register Kinderopvang*, or LRK).<sup>4</sup> The sample includes 9,507 unique daycare locations, representing 302,320 child places in 2023. Additionally, we gather data on daycare locations that are no longer registered from the LRK website. To identify the owners of these locations, we map ownership structures using Orbis Ownership and Orbis M&A. For private equity-owned locations, we supplement this data with information from Preqin and private equity websites. We classify owners into non-profit and for-profit organizations, and within the for-profit category, we further differentiate between PE-owned and non-PE-owned entities. In 2023, PE firms operated 605 facilities, foundations managed 3,399, and other for-profit entities controlled 5,059.

We observe a strong increase in concentration in the Dutch daycare sector, both nationally and locally. The Herfindahl-Hirschman Index (HHI) indicates that local daycare markets can be highly concentrated, especially in smaller districts. But even in large districts the average local HHI is above 0.25 and has been rising in recent years. At the same time, we document that the supply of childcare places provided by PE-owned daycare centres has been growing. Nationally this trend is subtle, with the market share of PE-owned daycares increasing from 9.5% to just over 10% in 2023. However, when focusing on markets with private equity presence — where the impact of private equity entry is expected to be more pronounced — the supply of childcare places by PE-owned daycares has increased from 27%

<sup>&</sup>lt;sup>4</sup>We identify each daycare location using registration information in inspection reports. Since 2016, the LRK has provided inspection reports containing details such as the LRK ID, owner's business registry number, and address, along with results from violation investigations, including the items inspected and the nature of any violations.

in 2016 to 32% in 2023 (Figure 1 Panel B). In some local areas, this market share can reach up to 100% (Figure 3). PE-owned daycare organizations are also among the largest in the country, with the largest owner being a PE-owned company that accounts for nearly 7% of the national market.

Whether PE firms are able to leverage their market position, either through selection or consolidation, depends on the characteristics of the product market environment. Using regional data from Statistics Netherlands, which includes average income, population, number of new births, and urbanization metrics at the national, municipality, district, and neighborhood levels, we can examine factors that drive demand when analyzing changes in prices and the quality of supply. This data enables us to explore how private equity operates across different market environments.

First, private equity firms may choose to invest in specific local markets or target companies with attractive fundamentals where daycare locations have strong market power over customers. Our findings reveal that PE firms tend to invest in wealthier, more urbanized, and more competitive districts. Interestingly, they do not prefer districts with higher population density or a larger number of children, possibly because wealthier families, who are the primary users of daycare services, are less sensitive to price changes.

Second, after establishing our main results on pricing, we split local markets by characteristics related to price elasticity, local market concentration, and local demand for available child places to understand how prices changes are related to local market structures. In response to the annual increases in parental allowances, PE-owned daycares tend to raise prices more in concentrated markets and when organizations have a higher market share. There are also indications that high-income areas and tight daycare markets experience greater price increases by PE-owned daycares in response to allowance changes, although these results are weaker. These findings suggest that PE firms mostly adjust their pricing strategies based on local market competition.

Third, reorganizations of portfolio companies by private equity firms may improve the operating performance, as suggested by the lower overall violation rates observed. However, these restructuring activities may also be convoluted with changes in the labour force (Antoni et al., 2019). Running daycare centres is labor-intensive, so we further examine the nature of the changes in violation rates, categorizing them as either administrative or labor-related violations. Institutionalizing companies during private equity ownership, such as professionalizing management or updating IT systems, should reduce administrative violations. Our findings indicate that PE-owned daycares are more compliant with administrative standards, such as maintaining the pedagogical climate. However, they record more violations related to staff, areas that typically require additional labour resources for improvement.

Finally, we examine how PE firms expand their organizations. We find that PE firms prefer to establish new facilities rather than expand existing ones.

This paper contributes to the growing literature on the influence of private equity ownership in the context of specific sectors like nursing homes (Gupta et al., 2021), education (Eaton et al., 2019), restaurants (Bernstein and Sheen, 2016), and journalism (Ewens et al., 2022). Similar to Eaton et al. (2019), we study a sector in which maximizing shareholder value may conflict with societal preferences. However, our study focuses on a recently privatized European market characterized by sticky supply conditions, partly due to strict regulations. These factors create different market power dynamics and potentially distinct responses from private equity firms. In our paper, we specifically link the pricing strategies of PE-owned daycare centers to local market structures.

Secondly, our findings relate to the literature on the real effects of private equity ownership on the interests of broader stakeholder, such as employee (Davis et al., 2014; Acharya et al., 2013; Davis et al., 2019; Antoni et al., 2019; Fang et al., 2022; J. Cohn et al., 2021; Garcia Gomez et al., 2022), customers (Fracassi et al., 2022; Eaton et al., 2019; Matsa, 2011; Bernstein and Sheen, 2016; Chevalier, 1995b; Chevalier, 1995a), patients (Eliason et al., 2019; Gupta et al., 2021; Liu, 2022; Gao et al., 2021). We distinguish our research by examining the impact of private equity on daycare centers in a European context. In addition to analyzing changes within private equity-owned entities, we analyze how private equity investments are related to changes in concentration, and how concentration is related to local market prices.

The rest of the paper proceeds as follows. Section 2 provides the institutional setting of the Dutch nursery market. Section 3 reviews the related literature and discusses the hypothesis. Section 4 describes the data. Section 5 presents the statistics. Section 6 discusses the empirical strategies we use. Section 7 displays the findings and section 8 concludes.

# 2 The Dutch nursery market

Daycare in The Netherlands is divided into ages 0-4 and older than 4. From the age of 4, children go to school and daycare is only necessary for pre-school and after-school hours. Care can be managed by a daycare centre or by childminders. Additionally, toddlers (3-4) can go to a kindergarten that focuses solely on this age group. This distinction by age is relevant for the laws that are in place. In our study we focus on the former age group of 0-4.

A daycare organization (owner) can consist of a single or multiple daycare centres (locations). A nursery location may have more than one group, which can be either horizontally or vertically organized. For example, a location may have a group dedicated only to babies (horizontal), combine ages 0–4 within one group (vertical), or offer a mix between the two. The structure of these groups determine the number of employees that are necessary for each group.

# 2.1 Privatization and compliance with laws

With the law for daycare centres, Childcare Act (*Dutch: Wet Kinderopvang*), the daycare market in The Netherlands was privatized in 2005. The law regulates the requirements for running a daycare centre and focuses on the safety, health, and development of the child. For example, it stipulates the number of babies and children that one employee is allowed to take care of (employee-to-child ratio), it sets safety requirements like the number of children per location, and it regulates the qualifications of employees.<sup>5</sup>

In 2018 an additional law (*Wet IKK*)<sup>6</sup> with further quality requirements was introduced. Part of the reforms aimed at enhancing child pedagogical development and safety protocols. Significant measures included the concrete definitions of pedagogical goals within organizational policy plans, the establishment of a system to monitor the development of each child consistently, and the introduction of a mentor for every child. Additionally, the new regulations mandated that each childcare facility maintain an updated safety and health policy and ensure the presence of at least one adult certified in child first aid at all times.

A further modification came into force in 2019. Effective January 1, 2019, the employeeto-child ratio for babies (age 0-1) changed from 1:4 to 1:3. Similarly, after the modification, the ratios for ages 1-2 and 2-4 became 1:5 and 1:8 respectively. Location may deviate from these ratios for three hours per day.<sup>7</sup> Additionally, the 'four-eye principle' was introduced,

<sup>&</sup>lt;sup>5</sup>For example, up to 1 January 2024, it was allowed to have at most half of the employees to be in training and only one-third may be interning. If the daycare includes toddlers (2.5-4), there needs to be a specialized employee for developing and implementing the pre-school educational plan.

<sup>&</sup>lt;sup>6</sup>https://zoek.officielebekendmakingen.nl/blg-942770.pdf

<sup>&</sup>lt;sup>7</sup>This rule may also have the drawback that it leads to a preference at daycare centres to take in children only from the ages one and up. Further, in most daycare centres, children of different ages are played in one group, which increases the complexity of the rule. Another intricacy is that a child always needs to have one 'familiar' face. For babies, this rule states that a baby is only allowed to have a maximum of three different faces throughout the week to create stability. More details can be found on

which states that there always needs to be at least two adults present (two employees or one employee and a registered adult) in a group. These changes drastically increase the labour intensity of the sector and without sufficient adjustments in labour participation may limit the intake of children.

The regulation comes with a heavy administrative burden to prove that the location complies with the employee-to-child ratio also during deviating hours, and it requires locations to keep a detailed list of all the employees and children at the location from start-time to end-time. This may result in advantaging larger organizations since they can better streamline the administration by rolling out expensive IT systems across the many locations. We will use the introduction of the two laws as exogenous shocks to explore whether PE-owned daycare facilities reacted differently.

The Municipal Health Services (Dutch abbrev.: GGD) is in charge of investigating whether locations comply with regulations. Opening a location starts with an initial inspection, followed by a registration at the municipality if everything is according to regulations. Thereafter, a location will usually be inspected, unannounced, on an annual basis, although additional inspections may take place if an incident has occurred.

# 2.2 Prices and subsidies

The total costs depend on the hourly rate and on the number of hours stipulated in the contract between the daycare centre and parents. Hourly rates may differ per location, also within organizations, and the number of hours per day is equal to the opening hours of the daycare centre unless stated otherwise (e.g., some contracts may include half-days).<sup>8</sup> An

https://business.gov.nl/regulation/professional-childcarer-child-ratio/

<sup>&</sup>lt;sup>8</sup>While the general rate in most daycare centres covers similar services (snacks, lunch, diapers, food for babies), some have differentiated their services. For example, some centres only use highly qualified employees, and offer warm lunches, while others may not include the costs of certain foods for babies. Additionally, a few centres may offer flexible hours or evening-hour daycare, which often come with higher rates. Most are open between 7:30 and 18:30.

important note is that this does not consider the number of hours the child spends at the daycare. The yearly costs then depend on how many days per week the child goes to daycare and the number of weeks in the contract which is typically 40, 48, or 52 weeks.

Parents, however, do not bear the full costs of the daycare. Each year, there is a maximum rate that is covered by the government for which the parents can get a partial refund depending on the number of contracted daycare hours (e.g., a maximum of 230 hours per month in 2024 with a full-time job is covered) and the parent's joint income. For example, the maximum hourly rate covered by the government went from  $\notin 9.65$  in 2023 to  $\notin 10.25$  in 2024. If a daycare centre charges a higher rate, the difference between the rate and the maximum price is fully carried by the parents. For example, for parents with a joint income of 22,347, the government allowance for the first child covers 96%, but for parents with a joint income of 39,156 (median income) this percentage drops to 89.5%, and for the highest income brackets the minimum coverage is always 33.3%. <sup>9</sup>

The subsidy from the government may influence price setting. Consumers of daycare, particularly low-income families, may be less sensitive to price change below the maximum covered rate compared to price changes above this rate. Further, the income generated by daycare centres can come from optimally changing its price, increase its opening hours, grow the number of child places, or reduce costs through restructuring.

### 2.3 Types of daycare centres

Since the privatization in 2005, three different market participants can be identified. First, we can distinguish between for-profit and non-profit organizations. Second, within forprofit organizations, we can differentiate by PE-owned and non-PE-owned. While PE-owned

<sup>&</sup>lt;sup>9</sup>In 2022, the government initiated a plan to make daycare free in 2025. However, already then, there were clear concerns whether there would be sufficient employees in the sector. Estimates ran from a shortage of 29,000 employees in 2031 with free daycare and a shortage of 7,000 employees with the current system. Then in 2023, the introduction date was delayed by two years to 2027 due to employee shortages.

locations are often part of large organizations, there are several for-profit and non-PEowned for-profit entities which also run large organizations. A recent inquiry by the Dutch Parliament led to two reports on the presence and activity of for-profit organizations in the market.<sup>10</sup> From one of the studies, the authors concluded that more than 60% of the market is held by for-profit organizations, which is similar to the number in our study. We find that for-profit organizations, including PE firms, own 62% daycare locations and 70% child places.

# 3 Literature

Private equity firms aim to maximize shareholder value (Kaplan and Strömberg, 2009). The compensation structure of a typical deal aligns incentives between managers and shareholders through high equity stakes, and between the private equity firm and limited partners through an equity portion in the fund and carried interest. Buyouts are often characterized by high level of debt to minimize agency problems further. Returns may be driven by the use of cheap debt, restructuring the company by reducing costs or enhancing growth, or buying low and selling high.

Most evidence in the literature points towards a positive effect from private equity ownership on company performance. Earlier studies like Kaplan (1989) provide initial evidence of this effect. Later studies, using more detailed data and sophisticated methodologies mostly confirm these findings (Boucly et al., 2011; Acharya et al., 2013; Lerner et al., 2011; Gompers et al., 2016; Bloom et al., 2015; Axelson et al., 2009; J. B. Cohn et al., 2022).

and

<sup>&</sup>lt;sup>10</sup>https://www.tweedekamer.nl/kamerstukken/detail?id=2023D15108&did=2023D15108

 $<sup>\</sup>label{eq:https://www.tweedekamer.nl/kamerstukken/detail?id=2023D15784\& did=2023D15784. The former report focuses on the presence of private equity in the daycare market in 2022 and relates PE to neighbourhood characteristics, violations per location, and pedagogical development. Included in the study are the top 70 organizations (representing 52% of the daycare in KDV and BSO). The second study describes the developments in the market to understand the potential incentives of daycare providers under the subsidized system.$ 

But this objective of maximizing shareholder value can sometimes conflict with the interests of other stakeholders. Most attention has been given to the effects on employees (Antoni et al., 2019; Bloom et al., 2015; J. Cohn et al., 2021; Agrawal and Tambe, 2016). For example, J. Cohn et al. (2021) demonstrate that workplace injury rates tend to decline following PE buyouts, while Antoni et al. (2019) and Agrawal and Tambe (2016) analyze how employees are differently affected by private equity ownership with related to their income or career trajectories. These studies collectively suggest that PE can be a catalyst for positive change across various aspects of stakeholder interests, challenging the narrative that PE involvement is solely profit-driven at the expense of broader stakeholder welfare. At the same time, studies like Garcia Gomez et al. (2022) noted that a significant loss of employee earnings and deterioration of health conditions are following PE buyouts. And Gornall et al. (2021) observed that PE buyouts lead to a decline in employee satisfaction and an increase in employees' risk perception. Thus, there does not appear to be a clear positive or negative effect from private equity ownership and it remains an empirical question.

More recently, a stream of research has analyzed the effect of private equity ownership in specific sectors like the restaurant industry (Bernstein and Sheen, 2016), supermarkets, education (Eaton et al., 2019), elderly care (Gupta et al., 2021), and journalism. These sector studies allow for more precise measurement of stakeholder outcomes which are relevant to that specific sector. For example, Eaton et al. (2019) documents an increases in tuition and student debt, along with decreases in education inputs, graduation rates, loan repayment rates, and graduate earnings following PE buyouts in higher education. And Gupta et al. (2021) found that PE ownership in nursing homes is associated with a decline in nursing staff and compliance with standards, leading to increased short-term mortality and decreased patient well-being. On the other side of the spectrum, positive effects from private equity ownership have been document by Bernstein and Sheen (2016) and Fracassi et al. (2022). Bernstein and Sheen (2016) observed improvements in sanitation and food safety standards in the restaurant industry after PE buyouts. Fracassi et al. (2022) discovered that PE buyouts lead to increased sales in the retail market, primarily driven by product diversification and geographic expansion rather than price increases. These findings suggest that the impact of PE ownership on service quality and cost may be very much context-dependent.

In markets that are highly subsidized and less competitive, PE ownership may have lower incentives to compete with their rivals on quality and price, and there may be a concern that private equity firms extract rents from these subsidies.<sup>11</sup> Eaton et al. (2019) observe that following a PE buyout, schools become more effective capturing of government aid in higher education institutions. This may be particularly true in markets in which competition has naturally been low. In the context of nurseries, Gandhi et al. (2020) posit that the effect of private equity ownership may depend on on how they adapt to local market competitiveness. In competitive markets and those that rely less on government subsidies, PE ownership tends to enhance customer welfare. The restaurant and retail sectors, being less regulated and more competitive, are examples where PE ownership is more likely to adopt strategies that enhance product services, quality, and variety, especially in response to price-elastic demand. Thus, the overall impact of PE on various stakeholders can greatly depending on the regulatory environment and the market competitive dynamics within which the portfolio companies operate (Sorensen and Yasuda, 2022).

Reflecting on the discussion above, we ask how does private equity (PE) ownership shape product market outcomes? To answer this question, we use the Dutch market for childcare as a setting for a heavily subsidized market and varying market competition by geography and over time. In line with the papers on US sectors, we first analyze the daycare

<sup>&</sup>lt;sup>11</sup>Olbert and Severin (2022) document that the effect tax rate decreases after a private equity buyout.

operations under private equity ownership compared to other types of owners and focus on price and quality outcomes. PE firms are often specialized in certain sectors, which enable them to adopt more effective operations. Being in a larger organizational form, PE-owned daycares might leverage their resources to streamline operations and invest in staff training and development, which can enhance the quality of care and education provided. This scale may also enable PE-owned daycares to invest more in facilities and educational resources, offering a richer and more diverse learning environment for children. Larger organizations can facilitate the sharing of best practices across different locations, ensuring consistent standards of care and innovation in introducing educational methodologies and programs. Balancing the goals of profitability with the enhancement of childcare quality, PE-owned daycares strive to maintain or even raise their service standards to attract and retain more customers, especially in a competitive market. When private equity is involved, it can lead to beneficial changes in childcare, linking the success of the business with providing high-quality care and education.

Second, following work in Gandhi et al. (2020), we ask how these changes under private equity ownership depend on the market structure. As noted above, the action may depend on the intensity of competition and can either be positive or negative. In The Netherlands, childcare spots are in high demand, often resulting in parents waiting months for availability. In a less competitive local market dominated by private equity, there is a risk that PE may compromise quality. The root of any negative effects on other stakeholders may then not be the result of private equity ownership (or other for-profit organizations) per se, but may be a result of the market structure.

Lastly, we introduce novel work on how private equity investments may change the market structure. It may be that private equity firms consolidate markets, e.g., through buy-and-build strategies, which enables them to extract more rents. The capital – a mixture

of cash injections and debt – provided by private equity firms may enable daycares to expand aggressively and take away market share of other participants. While these effects may be hard to observe from the purchase of individual locations, the effect may accumulate over time, hampering market competition.

# 4 Data

To understand the influence of private equity ownership in the market for nurseries, we collect data from several sources. First, for the supply side, we identify each invidual daycare location and number of child places through the inspection reports from the National Registry for Daycare (*Landelijk Register Kinderopvang*, or LRK). From these reports, we also extract detailed information on violations during inspections as a proxy for quality.

Second, we collect regional data from Statistics Netherlands, which includes information on the average income, population, the number of new births, and urbanization at the national, municipality, district and neighbourhood levels. This way, we can control for relevant factors that drive demand when analyzing the (quality of) supply.

Third, we use the ownership information in the inspection reports to identify the initial holder (i.e., the organization running the daycare centre) of each location and to which organization the location belongs. We then complement this with information from Orbis Ownership, Orbis M&A, Preqin and private equity website to identify shareholders of the organizations and differentiate between non-profit and for-profit. And for-profit locations are further split into PE-owned and non-PE-owned.

Lastly, we collect pricing information from the websites of daycare centres using the Wayback machine.

## 4.1 Location Registration and childplaces

In The Netherlands, the Municipal Health Service (GGD) is in charge of inspecting daycare centres. Such an inspection is mandatory before opening a daycare centre and centres are inspected annually to ensure daycare locations comply with the requirements of the Childcare Act. Next to these routine inspections, additional inspections may take place.<sup>12</sup>

Since 2016, each inspection report is made publicly available on the National Registry for daycare. We collect all reports from 2016 to 2023 and extract information on registration details such as the address, owner, and the number of child places available (also see the Figure A4 for further details). In total, we collect 79,028 reports across 9,507 unique daycare locations, representing 285,119 child places in 2021.<sup>13</sup>

As shown in Table 1 Panel A, there was a notable decrease in the number of reports during 2020 and 2021, likely attributable to reduced inspection visits due to COVID-19. On average, 1.3 inspection visits are conducted per location. To address the missing data in 2020 and 2021, we employ linear interpolation. Given regulatory requirements mandating at least one annual inspection per location, we reasonably assume the significant deduction was not because of the closure of daycare locations. We estimate the missing supply data using the average child places from the year preceding and succeeding the missing year. For other missing registration information, we use the data from the year prior to the missing year. We impute information for 2,432 locations in 2020 and 726 locations in 2021 (also see

FigureA1 in the Appendix).

<sup>&</sup>lt;sup>12</sup>Inspections are conducted for various purposes. The registration inspection is carried out before a facility is permitted to open. Once the facility is operational, a post-registration inspection is done to verify that children are receiving proper care. There is also an annual inspection that takes place at all daycare centre locations. If any violations are observed during an inspection, a subsequent inspection is conducted to ensure these have been addressed. Incidental investigations are triggered by complaints from parents, employees, or local residents, or when a daycare location wishes to modify its registration details, such as the owner's information, location, or the number of registered child spaces at the LRK.

 $<sup>^{13}</sup>$ Providing us with an estimate of the supply, which accounts for 55% of the total number of children under the age of 3.

#### [Table 1 about here]

As shown in Table 1 Panel B, the total number of daycare locations increased from 6,361 to 9,063, representing a 42% increase, and the total number of childcare places increased from 209,782 to 302,320, representing a 44% increase from 2016 to 2023. However, the number of owners has only increased from 2,120 to 2,165, a mere 2% increase. The total number of births across the country in the past three years has remained consistent over time. Notably, the supply from both PE and non-PE daycare is rising.

Inspection reports are only available for daycare locations that are currently registered. We therefore additionally gather data on unregistered daycare locations from the LRK website, which includes information on the timing of registration and de-registration, as well as the owner's national registry number. Unfortunately, for the unregistered locations, there is no information on the number of childplaces or former inspection reports.

# 4.2 Measuring quality through violations

An important indicator of the quality is the development of children based on the pedagogical plan, but data on this is scarce, and relating child outcomes at later years to the environment of the daycare is complex. More so, while most parents would prefer to choose the best location for their child's development, it is difficult for parents to understand these affects when deciding to which daycare they send their children. Instead, we rely on the violations from the inspection reports which provide an annual and directly observable measure for quality, and which is also accessible to parents. During each inspection, there are six potential items which can be inspected: registration, pedagogical environment, staff and group, safety and health, accommodation, and parental issues. Not all items have to be inspected during an annual inspection, so this may vary by location by year. We conduct textual analysis on each report to understand which items have been inspected and whether the daycare location complies with regulations. Specifically, we separate the inspection report according to the items in the table of contents (See A3). If one of the six categories appears in the report, it indicates that the item was inspected during the visit. Second, within each section of the report, we search for specific phrases that indicate violations of certain items<sup>14</sup>. We then count the number of violations found in each inspected item.

Around 90% of the inspection visits examine the pedagogical, and staff and group. 10% of the inspection visits examine the registration and accommodation, as they are usually investigated only at the opening of the locations, 57% visits examine the safety and health and 30% examine the parental issue. For each report, we count the number of violations for each inspected item. The overall violation counts scaled by the number of inspected items are used as proxies of the quality.

Panel A in Figure 4 presents the change in violations over the sample years for three different ownership types: PE, foundation, and other-for-profit. There are some striking trends. First, the violation likelihood and average number of violations has gone up over time. Second, PE-owned daycares are less likely to violate regulations and have fewer violations compared to the other two ownership types.

#### [Figure 4 about here]

But is not clear whether private equity ownership will facilitate improvements across all parts of the organization. On the one hand, PE firms may perform better due to their ability to implement standardized policies and administration efficiently across their portfolio. As Table 2 shows, PE firms own a significantly larger number of daycare locations compared

<sup>&</sup>lt;sup>14</sup>We use two Dutch phrases: "uit bovenstaande constatering blijkt dat aan de volgende voorwaarde niet is voldaan" and "op basis hiervan is geconstateerd dat aan de volgende voorwaarde niet is voldaan".

to other ownership types. The larger organizational structure potentially facilitates the development and dissemination of standardized, high-quality pedagogical practices across their network, potentially contributing to a reduction in pedagogy-related violations. The larger organization may also benefit from sharing labour across locations. On the other PE ownership structure may exacerbate labor-related violations, possibly due to cost-saving strategies commonly associated with PE management approaches.

In Panel B of Figure 4, we decompose violations into sub-categories to understand how private equity ownership is related to different aspects of daycare quality.<sup>15</sup> Overall, PE ownership is related to lower violations in pedagogical climate, safety and health, and parental committee. For the category Staff and Group, we find that in the earlier part of our sample, violations in PE-owned daycares is high and similar to other for-profit organizations. However, from 2019, there is a clear downward trend for PE ownership compared to the other two categories. Interestingly, this change coincides with a regulation change in 2019 that increased the labour regulation and required more staff per child. In the empirical analysis, we will exploit this regulation change to see how the different ownership types respond to an increase in regulation.

# 4.3 Demand for daycare

Demand for daycare cannot be directly observed, but we can collect data on factors that drive demand. We collect information on the number of births per region per year, average income of households, and other demographic characteristics of districts and municipalities. All information is collected from public records of Statistics Netherlands.

<sup>&</sup>lt;sup>15</sup>There are six categories in total. Investigated items vary in different visits. Although inspection visits are mandated annually, not all items are reviewed each time. The varying importance among the six items leads to different frequencies of investigation for them (Table 2).

## 4.4 Daycare Location Ownership

Next, we identify the ultimate owner for each location and whether these owners are private equity firms or not. For the identification, we combine information from the inspection reports, Orbis Ownership data, Orbis M&A, Preqin, and private equity websites where necessary.

We start with mapping the ownership structures of each daycare location. From the report, we can identify the location and the owner of the location, which is named as the "holder" of the location. The holder is the registered company that owns the location. Each location with the same holder is part of the same ownership, and this concerns our first level of ownership.

Also from the report, we can collect the national registry number from the Chambers of Commerce which can be matched to Orbis Ownership. We note that not all owners will be matched in Orbis, which is mostly driven by their size. Very small companies (either profit or non-profit) without statements will not be included. For our purposes, this is unlikely to pose a problem since these companies are likely to be standalone locations or organizations that are not part of a larger ownership structure. For the holders that we can match, we use historic versions of Orbis to identify the controlling shareholders of each owner each year. This presents the second layer of ownership.

Then to understand which ownership structures are owned by private equity firms, we collect private equity deals in Orbis M&A and Preqin, which we match to the original holders and shareholders.

Table 2 provides summary statistics on the characteristics of daycare locations and their owners. Panel A shows that a PE-owned daycare location offers an average of 52 childplaces, which is nearly twice the number offered by foundation and non-profit daycare locations. Across all types of daycare, the average number of inspected items is similar. Only 7% of the inspection visits to PE daycares are announced in advance, compared to 13% for the foundation and 12% for other-for-profit daycares. However, despite the similar number of inspected items and fewer prior announcements, PE daycare locations have an average of 0.28 violations per visit, lower than the 0.41 average for foundations and 0.49 for other-forprofit daycares.

Panel B of Table 2 presents the characteristics of owners by ownership type. On average, PE firms own 59 daycare locations and 3,064 childplaces, significantly more than those owned by foundations and other-for-profit organizations.

#### [Table 2 about here]

## 4.5 Price Data

Lastly, we collect price data from daycare centres' websites. In The Netherlands, it is common for daycare centres to publish prices and service information on their website. To retrieve historical price data, we use the Wayback Machine.<sup>16</sup>

Initially, we utilize the Wayback Machine API to obtain all the sub-URLs under the main website URL, which we extracted from the inspection reports. Subsequently, we filter out URLs with Dutch and English keywords related to "price", and download all price-related web pages (HTML) and PDF files. Next, using a rule-based algorithm, we extract all price numbers and the texts around each price number. We input the texts around the price number into GPT-40 to confirm information related to certain price numbers, such as service type, contract length and service hour.

Some daycare centers use calculation tools which typically cannot be captured by the

<sup>&</sup>lt;sup>16</sup>The Wayback Machine, a digital archive of websites launched in 1996, allows us to access historical versions of websites over time.

Wayback Machine. To complement the data retrieved from the Wayback Machine, we manually collect price data from these daycare centres' websites.

Daycares may offer different pricing based on the number of weeks purchased per year. In Table A2, we present hourly prices based on 52-week contracts and the coverage across our sample by ownership type (Panel A) and owner size (Panel B). Due to the data collection methodology, obtaining pricing information for earlier years is more challenging. Additionally, the likelihood of historical data being captured by the Wayback Machine depends on website traffic, which tends to be higher for larger organizations. These two limitations are evident in our sample, where coverage is better for more recent years and for larger owners. Regarding coverage by ownership type, there does not appear to be a significant difference in the availability of pricing information between PE-owned, foundations, and other for-profit organizations, except in 2022 and 2023, where coverage for PE-owned locations is much better due to our manual efforts to collect more data. A final trend we observe is a general increase in prices over time, consistent across different ownership types and size categories.

# 4.6 Market evolution

In our analysis, we define the local daycare market on a district level. According to ACM  $(2020)^{17}$ , the geographical market for daycare should be defined based on a travel time of at most around ten minutes. A city is therefore too extensive. Conversely, a neighborhood, consisting only of a few streets, is too limited to be defined as a market. We argue that a district is a reasonable definition for daycare markets considering travel time. Another advantage of using a fixed district rather than travel time is that we can match supply to demand characteristics.<sup>18</sup>

<sup>&</sup>lt;sup>17</sup>ACM, The Netherlands Authority for Consumers and Markets, is the Dutch antitrust agency.

<sup>&</sup>lt;sup>18</sup>An alternative approach might consider the actual distance and travel time from households to daycare locations. However, this method would result in the loss of district-level statistics, such as birth rates and other demographic data. Thus, we maintain the definition of a district as the local daycare market.

Table 3 presents the changes in market concentration from 2016 to 2023, and the statistics imply that the Dutch daycare market is becoming increasingly concentrated. From Panel A, it is evident that both the Herfindahl-Hirschman Index (HHI) and the Concentration Ratio of the largest eight firms (CR8) have been increasing nationally. Although the national HHI value is low, the market is considerably more concentrated at the local market. We present the average HHI index for small, medium, and large-sized districts, respectively. In large districts with more than 10 daycare locations, the HHI exceeds 0.25, indicating highly concentrated markets. In small and medium-sized districts, the HHIs are even higher. Over time, we observe a slight decrease in HHI for small and medium districts, but an increase for large districts. This may suggest that new entrants are penetrating smaller markets, while incumbent providers are consolidating in larger markets.

#### [Table 3 about here]

We analyze the market share of three types of daycare owners, PE owners, foundation owners, and other-for-profit owners, at both the national and district levels. Nationally, the market share held by PE-owned childcare locations has remained quite stable at approximately 10% in terms of childplaces (Panel A in Figure 1). But PE firms are likely to target certain areas more than others. Panel B in Figure 1, we present the market share data for districts with at least one PE-owned location. In these districts, the PE market share rose from 27% to 32% according to childplaces, with foundational ownership also gaining a 4% stake. Although the comparison between PE and foundations might suggest that PE firms do not differ significantly from foundations, it is important to note that the total number of unique PE owners is much smaller than the number of unique owners of foundations, indicating that the increased stake of PE may be more concentrated among a few large owners.

#### [Figure 1 about here]

To understand the factors influencing PE firms' choice of market targeting, we estimate the relationship between PE market choice and district characteristics. We present the results in Table 4. Columns 1-5 use different proxies of PE daycare presence as dependent variables. PE firms target districts that are more urbanized and have higher average incomes. This pattern might naturally result from PE firms focusing on wealthier areas where parents can afford higher fees, potentially leading to more profits. Perhaps surprisingly, the results indicate that PE firms tend to operate in relatively more competitive districts.

#### [Table 4 about here]

Besides these three variables, we do not observe any other significant factors that may influence PE investment decisions. PE firms do not specifically operate in areas with larger populations, higher population density, more households with children, or higher birth rates. These characteristics are more closely related to higher demand for daycare services. This indicates that PE firms prioritize market conditions conducive to profitability over demand indicators, which may be driven by the relatively high demand for daycare in The Netherlands compared to the current supply.

# 5 Empirical Strategy

We examine the relation between private equity ownership and location-level outcomes using the following specification:

$$y_{it} = \beta \times \mathrm{PE}_{it} + \gamma' X_{it} + \lambda_{kt} + \varepsilon_{it}, \tag{1}$$

where i indicates the daycare location and t indicates the year. PE is a dummy variable

that equals one if the daycare location i is owned by a PE firm at time t and zero otherwise.  $X_{it}$  are the control variables.  $\lambda_{kt}$  represents the district-year or municipality-year fixed effects.  $\varepsilon_{it}$  is the error term.  $y_{it}$  is the dependent variable of interest. As outcomes, we analyze the hourly prices in a 52-week contract and the number of violations observed during inspection.

We include location level control variables to rule out potential factors that might affect compliance with regulations. First, we consider the size of the daycare location, as a higher number of children can increase the uncertainty and complexity of daily operations, potentially leading to more violations. We use the number of child places a location can accommodate as a proxy for its size. Second, we take into account the age of the daycare location, as older establishments may have more mature management policies and staff who are more experienced in handling inspections. The group size, proxied by the total number of daycare locations an owner operates, is also considered. Owners who operate more locations might have well-developed and standardized rules that can mitigate violations. Finally, since all inspection reports explicitly state whether the investigation was pre-announced, we include this information as a dummy variable when analyzing the violations. Naturally, a pre-announced inspection is expected to result in fewer violations.

District-year fixed effects are included to control for demographic differences between districts varying over time (e.g. income level, urbanization level, birth rate population density, population density and other demographics) and common factors affecting all districts (e.g. inflation, regulation changes). In The Netherlands, although inspections of daycare locations are mandated nationwide and the investigated items and standards are aligned nationally, the actual inspections are conducted by the Municipal Health Service (GGD) at the municipality level. If some GGDs in certain municipalities conduct less stringent inspections, there might be a concern that PE firms prefer daycare locations in these areas. Districts are located within municipalities and should alleviate concerns with variation in inspection strictness between municipalities.

## 5.1 Limitations of empirical design

While our empirical strategy attempts to address critical concerns as thoroughly as possible, it cannot completely eliminate the concerns about selection bias. PE firms may have superior expertise in selecting daycare operations that perform better. In our sample, we see limited variation in private equity ownership within locations, since most private equity investments occurred before 2016. We therefore cannot compare changes in location performance preand post-private equity ownership. Instead, we exploit changes in annual allowances for prices and regulation to get a source of exogenous variation when analyzing hourly rates and violations. We can then determine how PE-owned and other daycare locations respond to this variation.

We further acknowledge that the analysis on the Dutch daycare market has only seen a handful of private equity firms that have invested in this market. It is not clear that these private equity firms represent a unique subset of the private equity market, but we also cannot claim that they are representative of the general private equity firm.

However, we do believe that this analysis of the Dutch daycare market is informative on similarly structured markets. Within Europe, there are plenty of markets with high levels of government subsidies, with local competition, and concerns for a conflict between socially optimal outcomes and pursuing shareholder value. The Dutch daycare market offers an informative setting to analyze how private equity ownership (and its motives) are related to location level outcomes, since the high quality data allows us to control for demographic conditions.

# 6 Results

## 6.1 Pricing of PE-owned Daycares

We first look at how PE-owned daycares set prices compared to other ownership types. The results in Table 5 reveal that daycares owned by PE typically charge more than their non-PE counterparts in the same district. Column 1 presents the results of the full sample, showing about 3.4% higher prices for PE-owned daycares. However as we saw before, PE firms may selectively target markets, for example in those where parents may have a lower price inelasticity due to their higher income and lower levels of subsidies. In Column 2, we restrict the sample to districts where PE firms operate, the findings are the same. In columns 3 and 4, we compare prices in PE-owned daycares to prices in other-for-profit daycares and foundations, respectively. Not surprisingly, PE-owned daycares charge higher prices than both foundations and other for-profit daycares, with the difference being larger compared to foundations.

#### [Table 5 about here]

While our initial analysis provides insights into overall pricing differences, patterns might vary across market conditions. Therefore, we investigate PE pricing strategies across various markets, considering factors such as average household income levels, market concentration, private equity market share, and the childcare demand-supply ratio proxied by the number of births in a region to the number of child places supplied. We split the market according to the median values of these variables of interest.

The results in Table 6 suggest that PE-owned daycares consistently charge higher prices regardless of market characteristics. Fees appear to be higher particularly in districts with higher average income, but the local concentration, local owner market share, and demandsupply ratio do not appear to drive the differences in pricing.

#### [Table 6 about here]

It is possible that PE firms selectively acquire daycare centers that are already charged higher prices. To alleviate this selection concern, we analyze how PE-owned daycares adjust their pricing in response to exogenous annual increases in parental allowances. Each year, the government sets the maximum hourly rate which is covered by the subsidies and this has increased from &6.84 to &9.12, from 2016 to 2023.<sup>19</sup>. The average increase in allowance is &0.29, with an average percentage increase of 3.5% each year.

Table 7 shows that PE-owned daycares increase their prices more than other daycares when facing an annual increase in allowance. Focusing on districts where PE firms operate (column 4), PE-owned daycares raise their hourly prices by approximately 0.19 Euro given an average annual change in allowance of 0.29 Euros.<sup>20</sup> These findings suggest that our findings are not merely driven by private equity firms selecting more expensive locations, but rather also raise the prices of locations more than other types of ownership. In the context of the highly subsidised EU childcare market, PE-owned facilities demonstrate a greater ability to capture policy-induced increases in parents' willingness to pay, potentially translating public subsidies into returns for their investors.

### [Table 7 about here]

We again split the districts by market characteristics, but now employing the annual allowance increase. In Table 8, we present the results. First, we confirm our prior finding that PE-owned daycare locations increase prices significantly more than non-PE daycare locations in markets characterized by higher local average income. However now, we also

<sup>&</sup>lt;sup>19</sup>From 2016 to 2023, the maximum allowance are  $\notin 6.89$ ,  $\notin 7.18$ ,  $\notin 7.45$ ,  $\notin 8.02$ ,  $\notin 8.17$ ,  $\notin 8.46$ ,  $\notin 8.50$  and  $\notin 9.12$ , respectively.

 $<sup>^{20}\</sup>text{Calculated}$  as: 0.648  $\times$  0.29  $\approx$  0.188.

find a stronger relation with respect to the market share held by the local owners of the locations. Markets in which private equity firms hold a large share, see stronger increase in prices with respect to the annual allowance change from PE-owned daycares. There is also some evidence that PE-owned daycare locations increase their prices more in market with higher concentration and higher ratio with birth-to child places.

#### [Table 8 about here]

The pricing difference can be driven by different services provided. As shown in Table A3, PE-owned daycare locations indeed provide different services. To address this concern, We control for availability of various services and repeat the analysis. We find the results remain the same (A4, A5, A6, A7).

## 6.2 Daycare Services Quality

Next, we explore the relationship between private equity ownership and daycare service quality. Table 9 presents the results. Columns 1-3 use a violation dummy as a dependent variable, which equals one if any violation occurs during an inspection and zero otherwise. Columns 4–6 use the count of violations per inspection as dependent variable. On average, PE ownership is associated with a 3% lower probability of a violation and this relation seems to be driven by the lower performance of other for-profit daycare centres. PE ownership does not perform better than foundations. Similarly, when looking at the total violation count scaled by the number of inspected items as the dependent variable, we again find private equity ownership is mostly outperforming other for profit entities. PE ownership is associated with a 12.9% decrease in the expected number of violations compared to otherfor-profit ownership.<sup>21</sup> There is no significant difference in the total violation count between

<sup>&</sup>lt;sup>21</sup>The percentage change in the violation count is then calculated as  $[\exp(\beta) - 1] \times 100$ . In this case,  $\exp(-0.129) \approx 0.879$ , resulting in a percentage change of  $(0.879 - 1) \times 100 \approx -12.1\%$ .

PE-owned locations and foundations.

#### [Table 9 about here]

We then analyze four sub-categories of violations. We exclude *Registration* and *Accom*modation from our regression analysis, as they are infrequently inspected and daycares are expected to be well-prepared for announced inspections that occur when the location is established. Table 10 presents the Poisson regression of the count of different items on private equity ownership and other daycare location characteristics. The coefficient on *Pedagogical Climate* is -0.658 and significant at the 1% level, representing a 48.2% decrease in the number of violations in *Pedagogical Climate*. The coefficient on *Staff group* is 0.287, representing a 33.2% increase in the expected number of violations. For the other two categories *Safety health* and *Parent rights*, we do not find significant results.

## [Table 10 about here]

The observed differences in childcare service quality may come from private equity firms selecting higher quality locations, which is in line with the higher prices that these daycare facilities charge. To partially address these concerns, we examine how PE-owned daycares respond to a regulatory change implemented in 2019, which imposes more stricter requirements for childcare staffing and increased the required staff-child ratio from 1:4 to 1:3. For this regulation change we only consider staff-related violations. The results are presented in Table 11. First, this legislative change has led to higher *Staff group* violation rates across all daycares. However, the negative coefficient on the interaction term between the PE ownership dummy and the indicator variable *Post2019* suggests that PE-owned daycares experienced a smaller increase in *Staff group* violations. This differential response to the regulatory change suggests better adaptive capabilities of PE-owned daycares when facing

tightened regulation.  $^{22}$ 

#### [Table 11 about here]

#### 6.3 Investment Strategies

Lastly, we examine the investment strategies of private equity (PE) firms in the daycare sector and how they expand their market share. Panel A in Table 12 compares how private equity-owned locations expand the number of child places, using a dummy indicator (column 1) or change in the lof of the number of child places (column 2). The coefficients are significant and negative, indicating that PE-owned daycare locations are less likely to increase the number of childplaces within the location. In Panel B, we turn to investments at the owner level, thus also including growth by opening new locations of buying existing locations of other owners. We look at the change in the number of locations (column 1) and the change in the number of child places (column 2). The results paint a different picture. We find that PE firms are more likely to increase the total number of daycare locations they operate. Combining these two sets of results, we can conclude that compared to other-for-profit and foundation owners, PE firms tend to invest in new locations rather than expanding existing ones.

#### [Table 12 about here]

# 7 Conclusion

This paper examines the effects of private equity ownership on the daycare market in The Netherlands. We have documented an increasing share of PE-owned daycares in recent

 $<sup>^{22}</sup>$ We conduct a place bo test using 2022 as the legislation change year and find no results in this case. A8

years, accompanied by a trend to greater market concentration both nationally and locally. Our findings reveal that PE ownership alters daycare centers pricing strategy and service quality. We find PE-owned daycare charge higher price and respond to allowance increase by increasing price more than other types of daycares. PE is positively associated with administrative compliance but negatively associated with labor-related compliance. Additionally, PE-owned daycares react better to an increase in regulation. Furthermore, we observe distinct investment patterns among private equity firms. PE firms predominantly target wealthier, less competitive, and more urbanized markets, showing a preference for investing in new daycare locations rather than expanding existing ones. Our study provides new insights into how private equity operates in low-competitive and highly subsidized environments, and how it might influence market dynamics.

In vital sectors, particularly those recently privatized, market imperfections may prevent the achievement of optimal outcomes. This is true in the Dutch daycare sector in which a labor shortage has led to a rigid supply despite high demand. Additionally, the sector is heavily subsidized, similar to higher education as noted by Eaton et al. (2019). For policymakers and antitrust authorities, understanding the long-term effects of privatization and buy-and-build strategies, which consolidate numerous small industry players, can be challenging. The opacity often associated with private equity operations is a growing concern, as this lack of transparency can obscure the true impacts of PE involvement, making it difficult to assess whether these actions align with broader societal and economic objectives.

# References

- Acharya, V. V., Gottschalg, O. F., Hahn, M., and Kehoe, C. (2013) Corporate governance and value creation: Evidence from private equity, *The Review of Financial Studies* 26, 368–402.
- ACM (2020) Besluit. goedkeuring onder voorwaarden voor de concentratie tussen kidsfoundation holdings b.v. en partou holding b.v. den haag: acm.
- Agrawal, A. and Tambe, P. (2016) Private equity and workers' career paths: the role of technological change, *The Review of Financial Studies* 29, 2455–2489.
- Aldatmaz, S. and Brown, G. W. (2020) Private equity in the global economy: evidence on industry spillovers, *Journal of corporate finance* 60, 101524.
- Antoni, M., Maug, E., and Obernberger, S. (2019) Private equity and human capital risk, Journal of Financial Economics 133, 634–657.
- Axelson, U., Strömberg, P., and Weisbach, M. S. (2009) Why are buyouts levered? The financial structure of private equity funds, *The Journal of Finance* 64, 1549–1582.
- Bernstein, S. and Sheen, A. (2016) The operational consequences of private equity buyouts: Evidence from the restaurant industry, *The Review of Financial Studies* **29**, 2387–2418.
- Bloom, N., Sadun, R., and Van Reenen, J. (May 2015) Do private equity owned firms have better management practices?, *American Economic Review* 105, 442–46.
- Boucly, Q., Sraer, D., and Thesmar, D. (2011) Growth LBOs, *Journal of Financial Economics* **102**, 432–453.
- Chevalier, J. A. (1995a) Capital structure and product-market competition: empirical evidence from the supermarket industry, *The American Economic Review*, 415–435.
- Chevalier, J. A. (1995b) Do lbo supermarkets charge more? an empirical analysis of the effects of lbos on supermarket pricing, *The Journal of Finance* **50**, 1095–1112.
- Cohn, J. B., Hotchkiss, E. S., and Towery, E. M. (2022) Sources of value creation in private equity buyouts of private firms. *Review of Finance* 26, 257–285.
- Cohn, J., Nestoriak, N., and Wardlaw, M. (2021) Private equity buyouts and workplace safety, The Review of Financial Studies **34**, 4832–4875.
- Davis, S. J., Haltiwanger, J. C., Handley, K., Lerner, J., and Miranda, J. (2014) Private equity, jobs, and productivity, *The American Economic Review* **104**, 3956–3990.
- Davis, S. J., Haltiwanger, J. C., Handley, K., Lipsius, B., Lerner, J., and Miranda, J. (Oct. 2019) The (heterogenous) economic effects of private equity buyouts. Working Paper 26371. National Bureau of Economic Research.
- Eaton, C., Howell, S. T., and Yannelis, C. (2019) When investor incentives and consumer interests diverge: Private equity in higher education, *The Review of Financial Studies*.
- Eliason, P. J., Heebsh, B., McDevitt, R. C., and Roberts, J. W. (Nov. 2019) How acquisitions affect firm behavior and performance: Evidence from the dialysis industry, *The Quarterly Journal of Economics* 135, 221–267.
- Ewens, M., Gupta, A., and Howell, S. T. (2022) Local journalism under private equity ownership. Tech. rep. National Bureau of Economic Research.
- Fang, L. H., Goldman, J., and Roulet, A. (2022) Private equity and pay gaps inside the firm, Available at SSRN 4306840.
- Fracassi, C., Previtero, A., and Sheen, A. (2022) Barbarians at the store? private equity, products, and consumers, *The Journal of Finance* **77**, 1439–1488.

- Gandhi, A., Song, Y., and Upadrashta, P. (2020) Have private equity owned nursing homes fared worse under covid-19?, *Available at SSRN 3682892*.
- Gao, J., Sevilir, M., and Kim, Y. S. (2021) Private equity in the hospital industry, *European* Corporate Governance Institute-Finance Working Paper.
- Garcia Gomez, P., Maug, E. G., and Obernberger, S. (2022) *Private equity buyouts and employee health.* Available at SSRN https://ssrn.com/abstract=3601813.
- Gompers, P., Kaplan, S. N., and Mukharlyamov, V. (2016) What do private equity firms say they do?, Journal of Financial Economics 121, 449–476.
- Gornall, W., Gredil, O., Howell, S. T., Liu, X., and Sockin, J. (2021) Do employees cheer for private equity? the heterogeneous effects of buyouts on job quality, *Working paper*.
- Guo, S., Hotchkiss, E. S., and Song, W. (2011) Do buyouts (still) create value?, *The Journal of Finance* **66**, 479–517.
- Gupta, A., Howell, S. T., Yannelis, C., and Gupta, A. (2021) Does private equity investment in healthcare benefit patients? evidence from nursing homes. Working Paper Series.
- Kaplan, S. N. (1989) The effects of management buyouts on operating performance and value, Journal of Financial Economics 24, 217–254.
- Kaplan, S. N. and Strömberg, P. (2009) Leveraged buyouts and private equity, The Journal of Economic Perspectives 23, 121–146.
- Lerner, J., Sørensen, M., and Strömberg, P. (2011) Private equity and long-run investment: The case of innovation, *The Journal of Finance* **66**, 445–477.
- Liu, T. (2022) Bargaining with private equity: implications for hospital prices and patient welfare, Available at SSRN 3896410.
- Matsa, D. A. (2011) Running on empty? financial leverage and product quality in the supermarket industry, *American Economic Journal: Microeconomics* **3**, 137–173.
- Olbert, M. and Severin, P. (2022) *Private equity and local public finances*. Available at SSRN https://ssrn.com/abstract=3287687.
- Sorensen, M. and Yasuda, A. (2022) Chapter 7 impact of private equity. Vol. 1. Elsevier. Chap. 7.

# 8 Figures



Panel A: Market Share Nationally

Figure 1: Market Share Change. This figure illustrates the changes in market share of three different owner types over time. The market share is calculated based on the number of daycare locations and the number of child places, respectively. Panel A shows the market share trends at the national level. Panel B displays the market share in the districts in which PE firms operate.



Figure 2: National Market Concentration. This figure presents the national market concentration change over the years. The market share is calculated based on the number of daycare locations and the number of child places, respectively. The left-hand side calculates the Herfindahl–Hirschman Index (HHI) and the right-hand side calculates the concentration ratio of the 8 largest ultimate owners (CR8).



Figure 3: PE Market Share Distribution in 2022 This histogram illustrates the distribution of Private Equity (PE) market share in terms of childplaces provided across districts with at least one PE-owned daycare locations in 2022. The x-axis represents the PE market share percentage, ranging from 0% to 100%, while the y-axis shows the number of districts.



Figure 4: Violation by Owner Type. This figure presents the violation by different ultimate owner types. Panel A shows the probability of violation on the left and the average number of violations reported in inspection reports. Panel B shows the average number of violations in different categories, which are registration, pedagogical climate, staff and group, safety and health, accommodation, and parental committee, respectively.

# 9 Tables

		Panel A: re	ariy inspectio	n Summary	
Year	No. of Reports	No. of Uniq	ue KDV	Avg Report per KDV	No. of Unique KDV After Inserted
$\begin{array}{c} 2016 \\ 2017 \\ 2018 \\ 2019 \\ 2020 \\ 2021 \\ 2022 \\ 2023 \end{array}$	$\begin{array}{r} 8,530\\ 9,315\\ 10,246\\ 10,701\\ 7,351\\ 9,931\\ 11,378\\ 11,576\end{array}$	$\begin{array}{c} 6,36\\ 6,96\\ 7,37\\ 7,83\\ 5,74\\ 7,87\\ 8,99\\ 9,06\end{array}$	1 0 2 8 9 6 6 3	$ \begin{array}{r}     1.34 \\     1.34 \\     1.39 \\     1.37 \\     1.28 \\     1.26 \\     1.26 \\     1.26 \\     1.28 \\ \end{array} $	$\begin{array}{c} 6,361\\ 6,960\\ 7,372\\ 7,838\\ 8,181\\ 8,602\\ 8,996\\ 9,063\end{array}$
Total	79,028	60,21	.5	1.31	$63,\!373$
		Panel B: Numb	per of KDV by	y Owner Type	
Year	PE	Foundation	Other-for-F	Profit Total	No. Unique Owners
$\begin{array}{c} 2016\\ 2017\\ 2018\\ 2019\\ 2020\\ 2021\\ 2022\\ 2022\\ 2023\\ \end{array}$	$\begin{array}{r} 371 \\ 396 \\ 442 \\ 481 \\ 534 \\ 587 \\ 605 \\ 605 \end{array}$	$\begin{array}{c} 2,095\\ 2,362\\ 2,583\\ 2,714\\ 2,751\\ 2,911\\ 3,394\\ 3,399\end{array}$	3,895 4,183 4,346 4,643 4,896 5,104 4,997 5,059	$\begin{array}{c} 6,361\\ 6,941\\ 7,371\\ 7,838\\ 8,181\\ 8,602\\ 8,996\\ 9,063\end{array}$	$\begin{array}{c} 2,120\\ 2,187\\ 2,174\\ 2,218\\ 1,886\\ 2,100\\ 2,186\\ 2,165\\ \end{array}$
Total	4,021	22,209	37,123	63,353	3 17,036
	Pa	anel C: Number	of Childplace	by Owner Type	
Year	PE	Foundation	Other-for-F	Profit Total	Children under 3
2016 2017 2018 2019 2020 2021 2022 2023 Total	$     \begin{array}{r}       19,847 \\       21,221 \\       23,633 \\       25,376 \\       27,438 \\       29,665 \\       30,796 \\       30,817 \\       \hline       208,793 \\     \end{array} $	$\begin{array}{r} 58,052\\ 64,614\\ 70,911\\ 75,056\\ 77,090\\ 83,332\\ 100,461\\ 100,679\\ \hline 630,195\\ \end{array}$	$\begin{array}{r} 131,883\\140,000\\146,973\\157,878\\165,947\\172,122\\167,752\\170,824\end{array}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
100001	200,100	000,100	1,200,00	2,002,0	

# Table 1: Sample Summary

Panel A: Yearly Inspection Summary

This table shows the summary of the sample of daycare locations. Panel A shows the number of all the inspection reports and unique daycare locations. Panel B shows the number of KDV by different owner types. Panel C displays the supply and demand of daycare services at the national level.

Table	2:	Summary	Statistics
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		Mean		Differences			
_	PE	Foundation	Other-for- Profit	PE vs non-PE	PE vs Foundation	PE vs Other-for-Profit	
Number of Childplaces Hourly Price Number of Daily Open Hours Number of Item Inspected Total Violations Inspect Announced	$52.19 \\ 9.81 \\ 10.86 \\ 2.87 \\ 0.28 \\ 0.07$	$28.69 \\ 8.72 \\ 10.55 \\ 2.83 \\ 0.41 \\ 0.12$	$\begin{array}{c} 34.17 \\ 8.44 \\ 10.51 \\ 2.85 \\ 0.49 \\ 0.12 \end{array}$	$\begin{array}{c} 20.07^{***} \\ 1.26^{***} \\ 0.34 \\ 0.03 \\ -0.17^{***} \\ -0.05^{***} \end{array}$	$\begin{array}{c} 23.49^{***} \\ 1.09^{***} \\ 0.31 \\ 0.04^{**} \\ -0.12^{***} \\ -0.05^{***} \end{array}$	$18.02^{***} \\ 1.37^{***} \\ 0.35 \\ 0.02 \\ -0.21^{***} \\ -0.05^{***}$	
Inspect Registration Inspect Pedagogical climate Inspect Staff group Inspect Safety health Inspect Accommodation Inspect Parental law	$\begin{array}{c} 0.08 \\ 0.90 \\ 0.91 \\ 0.58 \\ 0.09 \\ 0.32 \end{array}$	$\begin{array}{c} 0.08 \\ 0.89 \\ 0.90 \\ 0.56 \\ 0.09 \\ 0.31 \end{array}$	$\begin{array}{c} 0.08 \\ 0.89 \\ 0.90 \\ 0.57 \\ 0.09 \\ 0.31 \end{array}$	$\begin{array}{c} 0.00 \\ 0.01 \\ 0.00 \\ 0.01 \\ 0.00 \\ 0.01 \\ 0.01 \end{array}$	$\begin{array}{c} 0.00 \\ 0.01 \\ 0.01 \\ 0.02^{**} \\ 0.00 \\ 0.01 \end{array}$	$\begin{array}{c} 0.00 \\ 0.00 \\ 0.00 \\ 0.01 \\ 0.00 \\ 0.01 \end{array}$	
Violation Registration Violation Pedagogical climate Violation Staff group Violation Safety health Violation Accommodation Violation Parental law	$\begin{array}{c} 0.00 \\ 0.08 \\ 0.12 \\ 0.06 \\ 0.00 \\ 0.02 \end{array}$	$\begin{array}{c} 0.00 \\ 0.16 \\ 0.12 \\ 0.08 \\ 0.00 \\ 0.04 \end{array}$	$\begin{array}{c} 0.00 \\ 0.15 \\ 0.17 \\ 0.11 \\ 0.00 \\ 0.05 \end{array}$	$\begin{array}{c} -0.00 \\ -0.08^{***} \\ -0.03^{***} \\ -0.04^{***} \\ 0.00 \\ -0.02^{***} \end{array}$	$\begin{array}{r} -0.00 \\ -0.08^{***} \\ 0.00 \\ -0.02^{***} \\ 0.00 \\ -0.02^{***} \end{array}$	$-0.00^{*}$ $-0.08^{***}$ $-0.05^{***}$ $-0.05^{***}$ -0.00 $-0.03^{***}$	

Panel A: Daycare Location Characteristics

#### Panel B: Owner-Level Characteristics

	Mean			Differences			
-	$\mathbf{PE}$	Foundation	Other-for- Profit	PE vs non-PE	PE vs Foundation	PE vs Other-for-Profit	
No. of KDV per group No. of Childplaces per group	$59.15 \\ 3064.76$	$\begin{array}{c} 6.80\\ 194.74\end{array}$	$2.43 \\ 82.34$	$55.96^{***}$ 2962.83 <sup>***</sup>	52.36*** 2870.02***	56.72*** 2982.42***	

This table presents summary statistics and comparisons of characteristics for different owner types. Panel A provides an overview of the characteristics of daycare locations. *Childplaces* counts the number of children each location can admit. *Inspection announced* indicates the probability that an investigation is announced in advance. Panel B presents statistics of characteristics at the ultimate owner level. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

#### Table 3: Market Concentration

Year	HHI KDV	HHI Childplace	CR8 KDV	CR8 Childplace
$\begin{array}{r} \hline 2016 \\ 2017 \\ 2018 \\ 2019 \\ 2020 \\ 2021 \\ 2022 \\ 2023 \\ \end{array}$	$\begin{array}{c} 0.0038\\ 0.0035\\ 0.0037\\ 0.0038\\ 0.0041\\ 0.0061\\ 0.0065\\ 0.0068\end{array}$	$\begin{array}{c} 0.0059\\ 0.0052\\ 0.0054\\ 0.0057\\ 0.0061\\ 0.0093\\ 0.0096\\ 0.0101\end{array}$	$\begin{array}{c} 0.1302\\ 0.1214\\ 0.1247\\ 0.1276\\ 0.1332\\ 0.1611\\ 0.1707\\ 0.1745\end{array}$	$\begin{array}{c} 0.1689\\ 0.1580\\ 0.1617\\ 0.1668\\ 0.1728\\ 0.1968\\ 0.2052\\ 0.2109\end{array}$
		Panel B: Market Concer	tration by District Size	
		HHI KDV	HHI C	Childplace
Year	Small	Medium Large	Small M	edium Large
2016 2017 2018 2019 2020 2021 2022	$\begin{array}{c} 0.7311\\ 0.7253\\ 0.7197\\ 0.7188\\ 0.7137\\ 0.7167\\ 0.7156\end{array}$	$\begin{array}{ccccc} 0.3238 & 0.2465 \\ 0.3149 & 0.2624 \\ 0.3102 & 0.2512 \\ 0.3232 & 0.2571 \\ 0.3133 & 0.2541 \\ 0.3129 & 0.2669 \\ 0.3267 & 0.2828 \end{array}$	$\begin{array}{ccccc} 0.7584 & 0\\ 0.7520 & 0\\ 0.7476 & 0\\ 0.7437 & 0\\ 0.7408 & 0\\ 0.7416 & 0\\ 0.7398 & 0\\ \end{array}$	$\begin{array}{ccccccc} 0.3551 & 0.2636 \\ 0.3561 & 0.2654 \\ 0.3487 & 0.2619 \\ 0.3571 & 0.2675 \\ 0.3493 & 0.2621 \\ 0.3496 & 0.2791 \\ 0.3653 & 0.2931 \\ \end{array}$

Panel	A٠	National	Market	Concentrati	ion
I and	41.	rautonar	mance	Concentrati	ion

This table presents the evolution of market concentration over time. Columns 1 and 2 in Panel A show the trend of the Herfindahl-Hirschman Index (HHI) nationally, calculated based on the number of daycare locations and childplaces, respectively. Columns 3 and 4 in Panel A display the market share of the eight largest owners, measured in terms of the number of locations and childplaces. Panel B categorizes three groups according to district size. A small district contains no more than 5 daycare locations. A medium district has more than 5 but fewer than 10 daycare locations. A large district comprises more than 10 daycare locations.

	(1)	(2)	(3)	(4)	(5)
	PE presence	PE KDV pct	ΡÉ	PE KĎV No	ΡÉ
			childplace		childplace
			$\operatorname{pct}$		No
Avg Income	0.22***	8.35***	13.40***	0.47***	37.43***
	(3.29)	(2.74)	(3.73)	(3.58)	(4.51)
HHI	$-0.24^{***}$	-1.07	-3.24* <sup>*</sup> *	$-0.31^{***}$	-15.73 <sup>****</sup>
- ( )	(-8.97)	(-0.71)	(-2.02)	(-5.91)	(-5.38)
Log(No of residents)	0.01	-0.81	-0.78	0.07**	3.81**
Population density	(0.75) -0.00	$(-1.27) \\ 0.13$	$(-1.05) \\ 0.38$	(2.31) -0.04	$(2.19) \\ -2.53^*$
	(-0.27)	(0.25)	(0.62)	(-1.51)	(-1.81)
Household with $kids(\%)$	0.10	5.36	6.42	0.47	24.91
Birth Rate	(0.79) 0.00	$(0.76) \\ 0.07 $	(0.84) 0.07	(1.58) 0.00	$(1.46) \\ 0.27 $
Degree of Urbanity	(0.87) - $0.03^{**}$ (2.10)	(0.46) -1.53** (2.16)	$(0.46) \\ -1.35^{*} \\ (1.70)$	(1.18) - $0.07^{***}$ (3.03)	(1.03) -4.02*** (2.04)
	(-2.19)	(-2.10)	(-1.70)	(-3.03)	(-2.94)
Ν	12,976	12,976	12,976	12,976	12,976
R-squared	0.402	0.337	0.334	0.376	0.370
Municipality*Year FE	Yes	Yes	Yes	Yes	Yes

 Table 4: PE Market Choice

This table presents the results from OLS regression of private equity presence on district-level characteristics. Columns 1-5 show the regression of different measures of private equity presence. Column 1 is the dummy equals one if at least one PE-owned daycare appears in the district. Column 2 is the PE market share in terms of the number of daycare locations. Column 3 is the market share in terms of the number of childplaces. Column 4 is the natural logarithm of the number of PE-owned daycare locations and column 5 is the natural logarithm of PE-owned childplaces. Municipality-fixed effects and year-fixed effects are included all specifications. Standard errors are clustered by district. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	
		Hourly Price			
	Full sample	PE_district	Other-for-Profit	Foundation	
pe	$0.034^{***}$	$0.035^{***}$	$0.036^{***}$	$0.058^{***}$	
Location size	0.006***	(3.22) $0.010^{***}$	0.009***	(3.31) 0.009**	
Location age	(3.73) - $0.003^{**}$	(3.22) - $0.005^{**}$	(2.66) - $0.006^{**}$	$(2.50) \\ -0.005$	
Owner size	$(-2.22) \\ 0.003^{***} \\ (3.00)$	$(-2.13) \\ 0.003^{*} \\ (1.65)$	$(-2.10) \\ 0.002 \\ (0.94)$	(-1.50) -0.006* (-1.85)	
Hourly Price Mean Observations Adj R-squared District-Year FE	8.73 5,900 0.891 Yes	9.17 2,203 0.857 Yes	$9.22 \\ 1,651 \\ 0.859 \\ Yes$	9.70 1,086 0.863 Yes	

#### Table 5: PE and Daycare Pricing

This table presents the results from a regression of hourly price on private equity ownership. The dependent variable is the natural logarithm of the hourly price. The independent variable is pe dummy indicating whether the location is owned by a PE firm in a given year. Location size is measured by the natural logarithm if the number of children the childcare location can admit. Location age is measured by the natural logarithm of the years the location has operated. Owner size is measured by the natural logarithm of the total number of locations run by the location's ultimate owner. Column 1 presents the results of full sample regression and column 2 presents the results for daycare locations located in the districts where PE firms operate in. Column 3 excludes foundation daycare locations and column 4 excludes other-for-profit daycare locations. All regression includes district-year fixed effects. Standard errors are clustered by location. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Income		HHI		Market Share		Birth-to-Place	
	High	Low	High	Low	High	Low	High	Low
pe	$0.042^{***} \\ (4.70)$	$0.018^{**} \ (1.97)$	$0.035^{***} \ (3.28)$	$0.033^{***} \ (4.08)$	$0.037^{stst} (2.58)$	$0.034^{***} \ (3.47)$	$0.022^{**} \ (2.54)$	$0.037^{***} \ (3.81)$
Observations Adj. R-squared Location Control District-Year FE	1,074 0.837 Yes Yes	1,080 0.875 Yes Yes	1,020 0.884 Yes Yes	1,182 0.839 Yes Yes	980 0.927 Yes Yes	950 0.859 Yes Yes	883 0.835 Yes Yes	$\begin{array}{c} 1,078\\ 0.768\\ \mathrm{Yes}\\ \mathrm{Yes}\end{array}$

 Table 6: PE Pricing in Different Markets

This table presents the results from a regression analysis examining the pricing strategies in different markets. The dependent variable is the natural logarithm of the hourly price. Columns 1 and 2 split the sample based on whether the KDV location is in a high-income or low-income district, respectively. Columns 3 and 4 split the sample based on whether the KDV location is in a high-concentration or low-concentration district, respectively. Concentration is measured by the Herfindahl-Hirschman Index (HHI), calculated using the market share of childcare places held by each ultimate owner in the district. Columns 5 and 6 split the sample based on whether the KDV location is in a district with a high or low market share in the district, respectively. Columns 7 and 8 split the sample based on whether the KDV location is in a district with a high or low birth-to-place ratio, respectively. This ratio is calculated as the number of new births divided by the total number of childplaces provided by all KDV locations in the district. Location controls are location size, location age, and owner size, consistent with Table 5. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Hourly Price Change						
	Full s	ample	PE di	strict	Other-fe	or-Profit	Found	lation
ре	-0.060	-0.096	-0.074	-0.119	-0.003	-0.067	-0.064	0.011
$\mathbf{pe} \times \Delta \mathbf{Allowance}$	(-0.95) $0.523^{***}$ (3.77)	(-1.41) <b>0.663***</b> (3.41)	(-1.06) <b>0.485***</b> (3.39)	(-1.33) 0.648** (2.47)	(-0.04) $0.552^{***}$ (3.26)	(-0.63) $0.826^{***}$ (2.96)	(-0.53) $0.529^{**}$ (2.37)	(0.06) 0.377 (0.90)
Location size $\times$ $\Delta$ Allowance	(3.11)	(0.41) -0.001	(0.00)	(2.41) -0.044	(3.20)	(2.50) 0.045 (0.42)	(2.51)	0.216
Location age $\times$ $\Delta$ Allowance		(-0.01) $-0.134^{**}$ (-2.52)		(-0.41) $-0.204^{**}$ (-2.40)		(0.42) -0.165** (-2.05)		(1.59) $-0.225^{**}$ (-2.31)
Owner size $\times$ $\Delta$ Allowance		(-0.043) (-1.11)		(-0.038) (-0.64)		(-1.43)		(0.101) (0.10)
Observations Adj. R-squared Location Control Location Control $\times \Delta$ Allowance District-Year FE	2,598 0.662 Yes No Yes	2,598 0.664 Yes Yes Yes	987 0.549 Yes No Yes	987 0.552 Yes Yes Yes	752 0.593 Yes No Yes	752 0.597 Yes Yes Yes	514 0.569 Yes No Yes	514 0.570 Yes Yes Yes

This table presents the results from a regression of annual price changes on the interaction between private equity ownership and allowance increases. The dependent variable is the change in hourly price, calculated as the difference between the hourly prices in year t and year t-1. pe is a dummy indicating whether the location is owned by a PE firm in a given year.  $\Delta Allowance$  is the difference between the maximum parental allowance in year t and year t-1. Columns 1 and 2 present the results for the full sample. Columns 3 and 4 show the results for daycare locations in districts where PE firms operate. Columns 5 and 6 display the results for other-for-profit daycare locations, and Columns 7 and 8 present the results for foundation-owned daycare locations. All the models include location controls. For each pair of columns, the first column shows the basic model, while the second column includes interactions between location controls and allowance changes. Location controls are location size, location age, and owner size, consistent with Table 5. Standard errors are clustered by location. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) (2) Average Income		(3) Concent	$\begin{array}{ccc} (3) & (4) & (5) \\ Concentration & \mathcal{N} \end{array}$		(5) (6) Market Share		(7) (8) Birth-to-Place	
	High	Low	High	Low	High	Low	High	Low	
$pe \\ pe \times \Delta Allowance$	-0.213*	0.042	-0.247	-0.060	-0.173	0.092	-0.190	-0.140	
	(-1.87)	(0.31)	(-1.22)	(-0.63)	(-1.14)	(0.63)	(-1.22)	(-1.19)	
	<b>0.755**</b>	<b>0.459</b>	<b>1.030**</b>	<b>0.414</b>	<b>0.972**</b>	<b>0.013</b>	<b>0.923*</b>	<b>0.605*</b>	
	(2.14)	(1.30)	(2.35)	( <b>1.19</b> )	(2.03)	(0.03)	(1.94)	(1.93)	
Observations	501	465	449	537	433	434	417	559	
Adj. R-squared	0.524	0.634	0.570	0.543	0.661	0.634	0.650	0.525	
Location Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Location Control $\times \Delta$ Allowance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
District-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

Table 8: PE Response to Allowance Increase in Different Markets

This table presents the results from a regression of price change each year on the interaction of private equity ownership and allowance increase in different markets. The dependent variable is the natural logarithm of the hourly price. Columns 1 and 2 split the sample based on whether the KDV location is in a high-income or low-income district, respectively. Columns 3 and 4 split the sample based on whether the KDV location is in a high-concentration or low-concentration district, respectively. Concentration is measured by the Herfindahl-Hirschman Index (HHI), calculated using the market share of childcare places held by each ultimate owner in the district. Columns 5 and 6 split the sample based on whether the KDV locations' ultimate owner of the KDV location has a high or low market share in the district, respectively. Columns 7 and 8 split the sample based on whether the KDV location is in a district with a high or low birth-to-place ratio, respectively. This ratio is calculated as the number of new births divided by the total number of childplaces provided by all KDV locations in the district. All the models include the location controls and interactions between location controls and allowance changes. Location controls are location age, and owner size, consistent with Table 5 \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Viola	tion dummy (	(OLS)	Violat	ion count (Po	isson)
	Full	Other-for-	Foundation	Full	Other-for-	Foundation
	sample	Profit		$\operatorname{sample}$	Profit	
pe	-0.029***	-0.041***	-0.013	-0.061	-0.129*	0.002
Location size	(-3.01) 0.026***	(-3.53) 0.026***	(- <b>0.90)</b> 0.033***	(-1.04) 0.115***	(-1.92) 0.093***	<b>(0.02)</b> 0.218***
Location age	(7.18) - $0.009^{***}$	(5.80) - $0.007^*$	(4.70) - $0.012^{**}$	(6.20) - $0.058^{***}$	(4.01) - $0.035^*$	(6.06) - $0.085^{**}$
Owner size	(-3.26) $-0.015^{***}$	(-1.93) $-0.013^{***}$	(-2.08) - $0.017^{***}$	(-3.51) - $0.129^{***}$	(-1.73) $-0.119^{***}$	(-2.50) $-0.130^{***}$
Inspection announced	(-10.55) $-0.176^{***}$ (-30.45)	$(-6.86) \\ -0.183^{***} \\ (-23.94)$	(-4.21) - $0.169^{***}$ (-16.08)	(-17.72) $-1.081^{***}$ (-22.78)	(-12.62) $-1.171^{***}$ (-20.32)	(-6.83) -1.056*** (-11.44)
Observations Adj/Pseudo R-squared District-Year FE	${}^{69,131}_{0.056}$ Yes	$44,403 \\ 0.046 \\ Yes$	$24,614 \\ 0.064 \\ Yes$	$53,297 \\ 0.145 \\ Yes$	$33,210 \\ 0.154 \\ Yes$	$15,659 \\ 0.157 \\ Yes$

**Table 9:** PE Effect on Total Violation

This table presents the results from regressions of inspection violation outcomes on private equity ownership and daycare location characteristics. Columns 1-2 use OLS regression where the dependent variable, violation during, is equal to 1 if there is any violation during the inspection visit. Columns 3-4 use Poisson regression where the dependent variable, violation count, is the total count of violations scaled by the number of items inspected during the visit. pe is a dummy variable that equals one if the daycare location is owned by a private equity firm. Location size is the natural logarithm of the number of childplaces at the daycare location. Location age is the natural logarithm of the daycare location. Owner size is the total number of daycare locations owned by its owner. Announcement is equal to one if an inspection visit is pre-announced. All specifications include district-year fixed effects. Standard errors are clustered by daycare location. Adjusted R-squared for OLS (columns 1-3), Pseudo R-squared for Poisson (columns 4-6). \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) Pedagogical climate	(2) Staff group	(3) Safety health	(4)Parent rights
pe	$-0.658^{***}$ (-8.08)	$0.287^{***}$ (4.03)	-0.176 $(-1.52)$	-0.228 (-0.77)
Location size	0.032 (1.36)	$0.330^{***}$ (13.66)	-0.007	$0.292^{***}$ (3.02)
Location age	(1.50) $-0.035^{*}$ (1.72)	$0.065^{***}$	$-0.221^{***}$	$-0.507^{***}$
Owner size	0.028***	-0.232***	-0.136***	-0.222***
Inspection announced	(3.21) -0.922*** (-16.69)	(-24.02) $-1.229^{***}$ (-17.79)	(-9.49) $-1.151^{***}$ (-11.57)	(-6.07) $-1.630^{***}$ (-7.19)
Observations District-Year FE Pseudo R-squared	$30,947 \\ Yes \\ 0.110$	$32,552 \\ Yes \\ 0.132$	12,236 Yes 0.119	$2,354 \\ Yes \\ 0.153$

 Table 10: PE Effect on Sub-Violation

This table presents the results from Poisson regression of the count of different inspection items on private equity ownership and daycare location characteristics. *pe* is a dummy variable that equals one if the daycare location is owned by a private equity firm. *Location size* is the natural logarithm of the number of childplaces at the daycare location. *Location age* is the natural logarithm of the age of the daycare location. *Owner size* is the total number of daycare locations owned by its owner. *Announcement* is equal to one if an inspection visit is pre-announced. District-year fixed effects are included in all specifications. Standard errors are clustered by location. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
		Full sample		4	years window	N
			Staff g	group		
ре	0.383***	0.535***	0.552***	0.479***	0.650***	0.638***
	(4.81)	(4.82)	(4.74)	(4.76)	(5.22)	(4.93)
Post2019	$0.274^{***}$	$0.288^{***}$	0.276	$0.271^{***}$	$0.289^{***}$	0.290
	(6.49)	(6.73)	(1.61)	(5.04)	(5.34)	(1.35)
$pe \times Post2019$	· · · ·	-0.247**	-0.271**	× ,	-0.326**	-0.306*
-		(-1.98)	(-1.98)		(-2.17)	(-1.85)
Location size $\times$ Post2019			-0.016			-0.020
			(-0.34)			(-0.34)
Location age $\times$ Post2019			0.023			0.034
0			(0.66)			(0.78)
Owner size $\times$ Post2019			0.013			-0.002
			(0.61)			(-0.10)
Observations	38595	38595	38595	19563	19563	19563
KDV Controls	Yes	Yes	Yes	Yes	Yes	Yes
District Controls	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.107	0.107	0.107	0.120	0.120	0.120

Table 11: PE reaction to 2019 staff-child ratio increase

This table presents the results of the Poisson regression of the count of staff and the group inspection on private equity ownership and the increase in the staff-child ratio in 2019. The term pe is a dummy variable equal to one if the daycare location is owned by a private equity firm. *Post2019* equals to one after 1 January, 2019. Interactions of pe with *Post2019* are shown. KDV location Controls, district-level demographic controls and district-fixed effects are included in all specifications. Standard errors are clustered by location. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1% levels, respectively.

	I aller M. Location Level I	
	(1)Expansion	$\stackrel{(2)}{\Delta ln(childplace)}$
ре	-0.011** (-2.17)	$-0.009^{***}$ $(-3.63)$
Observations R-squared Location Controls District-Year FE	69,131 0.043 Yes Yes	60,232 -0.010 Yes Yes
	Panel B: Owner Level In	vestment
	$\stackrel{(1)}{\Delta ln(kdv)}$	$\stackrel{(2)}{\Delta ln(childplace)}$
ре	$2.432^{***}$ (2.62)	$2.143^{**}$ (2.48)

 Table 12: Investment Strategies

	Panel B: Owner Level	Investment
	${(1)} \Delta ln(kdv)$	$(2) \\ \Delta ln(childplace)$
pe	$2.432^{***}$ (2.62)	$2.143^{**}$ (2.48)
Observations R-squared Owner FE Year FE	$12,374 \\ 0.182 \\ Yes \\ Yes$	$\begin{array}{c} 12,264\\ 0.174\\ \mathrm{Yes}\\ \mathrm{Yes}\end{array}$

Panel A. Location Level Investment

This table presents the results from a regression analysis examining the impact of private equity ownership on daycare expansion. Panel A displays the results at the daycare location level investment. The dependent variable Expansion in column 1 is a dummy variable that equals one if the number of childplaces at a daycare location increases in a year.  $\Delta ln(childplace)$  is calculated as the difference between the logarithm of childplaces and the logarithm of childplaces in the previous year. Municipality\_year fixed effects are included in all specifications. Panel B shows the owner-level investment.  $\Delta ln(kdv)$  is calculated as the difference between the logarithm of the number of locations and the logarithm of the number of locations in the previous year. The owner fixed effects and year-fixed effects are included. Standard errors are clustered by location. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

# A Appendix



Figure A1: Summary of Sample. This figure shows the summary of the sample. Panel A shows the total number of reports downloaded from Landelijk Register Kinderopvang (LRK). Panel B shows the number of unique childcare locations. However, due to COVID-19, the number of inspection visits reduced significantly in 2020 and 2021. Thus, in Panel C, we use linear interpolation to insert observations to calculate the market share in 2020 and 2021.



Figure A2: Price Data Coverage. This figure shows price coverage for different owner types and different size bin.

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Figure A3: Inspection Report Content Page

#### Gegevens voorziening

#### **Opvanggegevens**

Naam voorziening	:
Website	:
Aantal kindplaatsen	:

#### Gegevens houder

Naam houder	;
Adres houder	:
Postcode en plaats	:
KvK nummer	:
Aansluiting geschillencommissie	:

# Gegevens toezicht

<u>Gegevens toezichthouder (GGD)</u>	
Naam GGD	;
Adres	:
Postcode en plaats	:
Telefoonnummer	:
Onderzoek uitgevoerd door	:

#### Gegevens opdrachtgever (gemeente)

Naam gemeente	;
Adres	:
Postcode en plaats	:

#### Planning

Planning	
Datum inspectie	:
Opstellen concept inspectierapport	:
Vaststelling inspectierapport	:
Verzenden inspectierapport naar houder	:
Verzenden inspectierapport naar gemeente	:
Openbaar maken inspectierapport	:

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# Figure A4: Inspection Report Registration Information

.

Variable name	Years cov- ered	Source	Description
	1	Panel 1: Daycare	location
Number of Child- places	2016-2023	Inspection report	The number of children that can be admitted in the childcare centre.
Location size	2016-2023	Inspection report	The natural logarithm of the number of childplaces.
Location age	2016-2023	LRK website	The natural logarithm of the difference be- tween current year and the year of regis- tration.
Owner size	2016-2023	Inspection report	The natural logarithm of the number of daycare locations owned by the ultimate owner.
Inspection an- nounced	2016-2023	Inspection report	A dummy indicator for whether an inspection visit is pre-announced.
Violation dummy	2016-2023	Inspection report	A dummy indicator for whether there is any violation happened during the inspec- tion visit.
Violation count	2016-2023	Inspection report	The total number of inspection violations scaled by the number of items being in- spected in the inspection visit. For the sub-category, it is the number of violations in the category.
Number of Item In- spected	2016-2023	Inspection report	The number of items (in the six categories) inspected in the inspection visit.
Hourly Price	2016-2023	Wayback, Day- care websites	Hourly price for 52-weeks full day daycare contract.
$\Delta$ Allowance	2016-2023	Government website	Annual increases in maximum allowance for services per hour parents can apply for.
Post2019	2016-2023	IKK law	A dummy indicator for whether the staff- child ratio change after 2019.
Preschool Educa- tion	2016-2023	Inspection report	A dummy indicator for whether preschool education is provided, which is checked and explicitly recorded in the administration page of each inspection report.
Multilingual	2016-2023	Inspection report	A dummy indicator for whether multilin- gual education is available. The dummy equals one if related keywords are found in the inspection report. The keywords are 'bilingual', 'multilingual', 'tweetalig', 'meertalig', 'meertalige', 'tweetaligheid', 'taaldiversiteit', 'vreemde talen', 'tweede taal'
			Continued on next page

# Table A1: Variable Descriptions

Variable name	Years cov- ered	Source	Description
Hot meal	2016-2023	Inspection report	A dummy indicator for whether hot meals are provided. The dummy equals one if related keywords are found in the inspec- tion report. The keywords are 'hot meal', 'warme maaltijd', 'warme eten', 'warme lunch', 'warme avondeten', 'warme maalti- jden'
Food	2016-2023	Inspection report	A dummy indicator for food-related services. The dummy equals one if re- lated keywords are found in the in- spection report. The keywords are 'dagverse lunch', 'biologische', 'gezonde', 'gezonde voeding', 'verantwoorde maaltij- den', 'rauwkost', 'groente', 'vers fruit'
Extra services	2016-2023	Inspection report	A dummy indicator for additional services. The dummy equals one if related key- words are found in the inspection report. The keywords are 'workshops', 'yoga', 'the- ather', 'extra services', 'knipbeurt', 'koffie', 'broodje', 'digitale', 'additionele services'
Environment	2016-2023	Inspection report	A dummy indicator for environmental fo- cus. The dummy equals one if related key- words are found in the inspection report. The keywords are <i>'milieu'</i> , <i>'natuur'</i> , <i>'du- urzaamheid'</i>
Extra activities	2016-2023	Inspection report	A dummy indicator for other activities. The dummy equals one if related keywords are found in the inspection report. The keywords are 'muziek', 'bewegen', 'sporten', 'buiten'
		Panel 2: Demog	raphics
Avg Income	2016-2021	CBS	The average income per resident in the dis- trict.
Log(No of residents)	2016-2021	CBS	Natural logarithm of the number of residents in the district.
Population density	2016-2021	CBS	Population density in the district.
Household with $kids(\%)$	2016-2021	CBS	The percentage of households with kids in the district.
Birth Rate	2016-2021	CBS	Birth rate in the district.
Degree of Urbanity	2016-2021	CBS	The district's urbanisation level, ranging from 1-5, with 1 being the most urbanized.
		Panel 3: Owne	ership
pe	2016-2023	Inspection re- port, Orbis, Preqin	A dummy indicator for whether the ulti- mate owner is private equity company.
			Continued on next page

Variable name	Years cov- ered	Source	Description
		Panel 4: Mar	kets
Market share	2016-2023	Inspection report	The percentage of the number of child- places an ultimate owner has divided by the total number of childplaces in the mar- ket (National or district level).
нні	2016-2023	Inspection report	Herfindahl-Hirschman Index (HHI) calculated from the market share at the district level or the national level.
CR8 (National)	2016-2023	Inspection report	The total market share of the eight largest ultimate owners at national level.

						I allel A.	Owner	rype and	I IICE D	ala					
			PE					Foundatio	n			Otl	ner-for-Pr	ofit	
Year	Mean I	Price	Price	Ι	Price	Mean I	Price	Price		Price	Mean	Price	Price	]	Price
			Available	e Av	ailable			Available	e A	vailable			Available	e Av	vailable
					(%)					(%)					(%)
2016	7.3	9	30		8.09	6.9	3	269		12.87	6.9	4	694	]	17.79
2017	$7.3 \\ 7.9$	1	12		3.01 2.71	7.13	0	$\frac{150}{23}$		6.34	7.2	3	$315 \\ 181$		7.44
2018	0.00	)			0.00	7.90	)	$134^{23}$		4.94	8.0	9	$151 \\ 156$		3.35
2020	9.09	9	75	1	4.04	8.34	4	516		18.89	8.2	8	872	1	17.86
2021	9.4	2	$116 \\ 460$	5	19.80	8.6	1	$448 \\ 505$		15.43 17 51	8.5	9 4	1036	4	20.32
$2022 \\ 2023$	10.2	4	400	8	30.66	9.6	3	$\frac{535}{788}$		23.20	9.5	7	882	-	17.42
						Panel B	: Owner	Size and I	Price Da	ata					
		0-1			2-5			6-15			16-50			51 +	
Year	Mean	Price	Price	Mean	Price	Price	Mean	Price	Price	Mean	Price	Price	Mean	Price	Price
	Price	Avail-	Avail-	Price	Avail-	Avail-	Price	Avail-	Avail-	Price	Avail-	Avail-	Price	Avail-	Avail-
		able	able		able	able		able	able		able	able		able	able
			(%)			(%)			(%)			(%)			(%)
2016	6.95	171	11.88	6.90	266	18.91	7.05	161	13.88	6.96	230	17.01	6.95	147	17.29
2017	7.17 7.40	$104 \\ 56$	$7.08 \\ 3.88$	7.15 7 63	$\frac{115}{57}$	$\frac{7.83}{3.79}$	7.25 7.61	$153 \\ 70$	517	$7.24 \\ 7.35$	$\frac{100}{29}$	$0.25 \\ 1.68$	$0.00 \\ 7.45$	$\frac{0}{3}$	$0.00 \\ 0.23$
2019	8.06	$50 \\ 59$	4.09	8.01	$57 \\ 57$	3.69	7.93	$53^{+0}$	3.92	8.32	$\overline{53}$	2.63	7.75	65	4.68
2020	8.29	164	11.37	8.23	288	18.03	8.20	268	20.71	8.46	$499_{-49}$	23.85	8.44	231	14.31
$2021 \\ 2022$	$8.50 \\ 8.75$	$\frac{220}{202}$	15.22 14 $41$	$8.53 \\ 8.77$	$\frac{294}{282}$	$18.01 \\ 17.77$	$8.50 \\ 8.78$	$\frac{266}{223}$	19.35	8.74 8.94	548 $483$	25.29 23.08	8.81 9.11	$\frac{266}{765}$	$13.84 \\ 30.44$
2023	9.42	$\frac{202}{207}$	14.71	9.54	252	16.54	9.28	$\frac{220}{170}$	12.45	9.74	509	25.60	9.94	998	42.54

# Table A2: Price characteristics by ownership type and daycare size

Panel A: Owner Type and Price Data

This table presents the 52-week full-day daycare price data coverage by owner types and different owner sizes.

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		Par	nel A: Location Lev	vel Additional Ser	rvices		
	(1) Preschool Education	(2) Multilingual	(3) Hot Meal	(4) Food	(5) Extra Services	(6) Environment	(7) Extra Activities
pe	$-0.383^{***}$ $(-14.40)$	$0.009 \\ (1.01)$	$0.045^{***} \ (4.74)$	$0.020 \ (1.54)$	$-0.038^{***}$ $(-2.78)$	$0.007 \ (0.85)$	-0.003 $(-0.42)$
Observations Adj. R-squared District-Year FE	13,530 0.312 Yes	$13,530 \\ 0.011 \\ Yes$	$13,530 \\ 0.087 \\ Yes$	13,530 0.380 Yes	$13,530 \\ 0.149 \\ Yes$	$13,530 \\ 0.410 \\ Yes$	$13,530 \\ 0.080 \\ Yes$
		Pa	anel B: Owner Lev	el Additional Ser	vice		
		(1) Multilingual	(2) Hot Meal	(3) Food	(4) Extra Services	(5) Environment	(6) Extra Activities
ре		$0.082 \ (0.95)$	$0.142^{**}$ $(2.33)$	-0.006 (-0.08)	-0.060 (-0.80)	$egin{array}{c} 0.030 \ (0.59) \end{array}$	-0.048 (-1.08)
Owner size		$0.025^{***}$ (4.69)	$0.014^{*}$ (1.92)	$0.037^{***}$ (5.65)	$0.096^{***}$ (14.33)	$0.025^{***}$ (4.60)	$0.023^{***}$ (5.88)
Observations Adj. R-squared Year FE		$11,162 \\ 0.026 \\ Yes$	$11,162 \\ 0.026 \\ Yes$	$11,162 \\ 0.125 \\ Yes$	$11,162 \\ 0.120 \\ Yes$	$     \begin{array}{r}       11,162 \\       0.123 \\       Yes     \end{array} $	$11,162 \\ 0.051 \\ Yes$

#### Table A3: Additional Service Availability

This table presents the results of the regression analysis of additional service availability. Panel A shows the regression of the availability of products on PE ownership at daycare location level, where pe is a dummy indicating whether the location is owned by a PE firm in a given year. Panel B presents the the results at owner level, where pe indicates maximum PE ownership and *Owner size* represents the size of the daycare group. The product definitions are provided in Table A1. District-Year fixed effects are included in Panel A and Year fixed effects in Panel B. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)				
	Hourly Price							
	Full sample	PE_district	Other-for-Profit	Foundation				
pe	0.031***	0.030***	0.031***	0.051***				
Location size	(5.61)	(4.58)	(3.75)	(4.89)				
	$0.006^{***}$	0.009***	0.009**	0.008**				
Location age	(3.48)	(3.02)	(2.50)	(2.01)				
	-0.003**	-0.005*	- $0.006^{*}$	-0.006				
Owner size	(-2.11)	(-1.94)	(-1.93)	(-1.60)				
	$0.004^{***}$	0.003**	0.003	$-0.005^{*}$				
Preschool education	(3.56)	(2.30)	(1.51)	(-1.66)				
	-0.004**	-0.007*	-0.007	$-0.012^{**}$				
Multilingual	(-2.00)	(-1.78)	(-1.51)	(-2.02)				
	0.018	0.027	$0.037^{**}$	0.026				
Hot meal	(1.62)	(1.61)	(2.08)	(1.24)				
	$0.010^*$	$0.018^{*}$	0.009	0.019				
Food	(1.67)	(1.91)	(0.91)	(1.62)				
	-0.000	0.003	-0.000	0.006				
Extra Services	(-0.09)	(0.89)	(-0.07)	(1.37)				
	-0.004**	-0.006	-0.008*	-0.003				
Environment	(-2.06) 0.003 (1.17)	(-1.56) 0.004	(-1.83) 0.004 (0.60)	(-0.58) 0.006 (0.58)				
Extra Activities	(1.17)	(0.08)	(0.09)	(0.58)				
	-0.004	$-0.009^{*}$	-0.007	-0.003				
	(-0.95)	(-1.70)	(-1.07)	(-0.32)				
Observations	5,847	2,192	1,642	1,082				
Adjusted R-squared	0.890	0.858	0.858	0.866				
Location Control	Yes	Yes	Yes	Yes				
District-Year FE	Yes	Yes	Yes	Yes				

Table A4: PE and Daycare Pricing Control Services

This table presents the results from a regression of hourly price on private equity ownership. The dependent variable is the natural logarithm of the hourly price. The independent variable is *pe* dummy indicating whether the location is owned by a PE firm in a given year. *Location size* is measured by the natural logarithm if the number of children the childcare location can admit. *Location age* is measured by the natural logarithm of the years the location has operated. *Owner size* is measured by the natural logarithm of the total number of locations run by the location's ultimate owner. Column 1 presents the results of full sample regression and column 2 presents the results for daycare locations located in the districts where PE firms operate in. We include service availability dummy as controls. The service availability dummy definitions are provided in A1. Column 3 excludes foundation daycare locations and column 4 excludes other-for-profit daycare locations. All regression includes district-year fixed effects. Standard errors are clustered by location. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	Income		Н	ΉI	Marke	t Share	Birth-t	Birth-to-Place	
	High	Low	High	Low	High	Low	High	Low	
pe	0.035***	0.016*	0.029**	0.027***	0.033**	0.031***	0.016*	0.030***	
	(4.01)	(1.67)	(2.54)	(3.37)	(2.59)	(3.19)	(1.79)	(3.17)	
Location size	0.007	$0.011^{***}$	0.005	0.013***	$0.006^{*}$	0.008*	0.008**	0.010**	
	(1.53)	(2.86)	(1.16)	(3.23)	(1.87)	(1.75)	(2.28)	(2.12)	
Location age	-0.007**	-0.003	-0.002	-0.008**	-0.005*	0.000	0.000	$-0.014^{***}$	
	(-2.01)	(-0.77)	(-0.57)	(-2.12)	(-1.95)	(0.03)	(0.10)	(-2.94)	
Owner size	0.002	$0.006^{***}$	0.006**	0.003	0.002	$0.005^{**}$	$0.005^{**}$	$0.005^{**}$	
	(0.86)	(3.47)	(2.04)	(1.61)	(0.55)	(2.46)	(2.42)	(2.13)	
Preschool education	$-0.017^{**}$	-0.001	-0.000	-0.013**	-0.002	-0.006	-0.006	-0.010	
	(-2.40)	(-0.25)	(-0.10)	(-2.41)	(-0.39)	(-0.94)	(-1.27)	(-1.47)	
Multilingual	0.048**	0.001	0.004	0.049**	0.045**	-0.003	-0.012	$0.067^{***}$	
0	(2.45)	(0.03)	(0.19)	(2.25)	(2.12)	(-0.12)	(-0.47)	(3.53)	
Hot meal	0.022*	-0.002	0.022*	0.013	0.017	0.001	0.005	0.023*	
	(1.78)	(-0.28)	(1.68)	(1.22)	(1.57)	(0.06)	(0.36)	(1.73)	
Food	-0.003	0.010**	-0.002	0.006	0.005	-0.003	0.005	0.003	
1004	(-0.53)	(2.36)	(-0.44)	(1.26)	(1.28)	(-0.58)	(1.18)	(0.67)	
Extra services	-0.007	-0.007	-0.007	-0.004	-0.005	-0.011*	-0.009*	-0.005	
	(-1, 29)	(-1.40)	(-1, 22)	(-0.82)	(-0.98)	(-1, 90)	(-1, 71)	(-0.90)	
Environment	(1.20)	0.005	-0.001	(0.02)	-0.001	0.006	0.009	0.010	
	(0.52)	(0.80)	(-0.07)	(0.69)	(-0.21)	(0.89)	(1.00)	(0.88)	
Other activities	-0.010	-0.007	-0.003	-0.010	-0.012*	-0.002	-0.006	-0.012	
	(-1.33)	(-0.90)	(-0.55)	(-1.53)	(-1.87)	(-0.25)	(-0.92)	(-1.41)	
Observations	1.067	1 076	1 017	1 174	976	947	883	1.078	
Adi B-squared	0.841	0.875	0.884	0.841	0 930	0.857	0.838	0,777	
Location Control	Ves	Yes	Ves	Ves	Yes	Ves	Yes	Yes	
District-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

 Table A5: PE Pricing in Different Markets Control Services

This table presents the results from a regression analysis examining the pricing strategies in different markets. The dependent variable is the natural logarithm of the hourly price. Columns 1 and 2 split the sample based on whether the KDV location is in a high-income or low-income district, respectively. Columns 3 and 4 split the sample based on whether the KDV location is in a high-concentration or low-concentration district, respectively. Concentration is measured by the Herfindahl-Hirschman Index (HHI), calculated using the market share of childcare places held by each ultimate owner in the district. Columns 5 and 6 split the sample based on whether the KDV location is in a district with a high or low market share in the district, respectively. Columns 7 and 8 split the sample based on whether the KDV location is in a district with a high or low birth-to-place ratio, respectively. This ratio is calculated as the number of new births divided by the total number of childplaces provided by all KDV locations in the district. Location controls are location size, location age, and owner size, consistent with Table 5. We include service availability dummy as controls. The service availability dummy definitions are provided in A1. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
		Hourly Price Change							
	Full s	ample	PE d	PE district		Other-for-Profit		Foundation	
pe	-0.069	-0.113*	-0.083	-0.123	-0.024	-0.058	-0.068	0.001	
$\mathbf{pe} \times \Delta \mathbf{Allowance}$	(-1.24) <b>0.543***</b>	(-1.86) <b>0.707***</b>	(-1.26) <b>0.525***</b>	(-1.53) <b>0.654***</b>	(-0.33) <b>0.642***</b>	(-0.70) <b>0.800***</b>	(-0.55) <b>0.503**</b>	(0.01) <b>0.354</b>	
Location size	(4.42) 0.011 (1.00)	(3.80) 0.018 (1.10)	(4.08) -0.003	(2.60) 0.016 (0.44)	(4.45) -0.025	(3.18) -0.058 (1.20)	(2.42) 0.001 (0.02)	(0.82) -0.055 (0.75)	
Location age	(1.00) -0.008 (-0.69)	(1.19) $0.030^{*}$ (1.86)	(-0.10) -0.028 (-1.36)	(0.44) 0.030 (0.99)	(-0.97) -0.005 (-0.24)	(-1.39) 0.042 (1.35)	(0.03) $-0.082^{***}$ (-3.17)	(-0.75) 0.005 (0.14)	
Owner size	-0.009	(1.00) 0.007 (0.59)	0.001	(0.05) (0.012) (0.65)	(-0.24) $-0.030^{*}$ (-1.88)	-0.002	0.005	(0.14) -0.014 (-0.40)	
Location size $\times$ $\Delta$ Allowance	(-1.04)	(0.55) -0.026 (-0.54)	(0.10)	(0.05) -0.052 (-0.55)	(-1.00)	(-0.08) 0.076 (0.86)	(0.20)	(-0.40) 0.114 (0.81)	
Location age $\times$ $\Delta$ Allowance		$-0.114^{**}$		$-0.158^{**}$		-0.118		$-0.191^{**}$	
Owner size $\times$ $\Delta$ Allowance		(-2.30) (-0.047) (-1.30)		(-0.027) (-0.49)		(-1.07) (-1.26)		(2.04) 0.044 (0.48)	
Observations Adj. R-squared Location Control Location Control $\times \Delta$ Allowance Additional services controls District-Year FE	2,554 0.692 Yes No Yes Yes	2,554 0.694 Yes Yes Yes Yes	973 0.572 Yes No Yes Yes	973 0.574 Yes Yes Yes Yes	741 0.635 Yes No Yes Yes	741 0.636 Yes Yes Yes Yes	507 0.606 Yes No Yes Yes	507 0.605 Yes Yes Yes Yes	

**Table A6:** PE Response to Allowance Increase Control Services

This table presents the results from a regression of annual price changes on the interaction between private equity ownership and allowance increases. The dependent variable is the change in hourly price, calculated as the difference between the hourly prices in year t and year t-1. pe is a dummy indicating whether the location is owned by a PE firm in a given year.  $\Delta Allowance$  is the difference between the maximum parental allowance in year t and year t-1. Columns 1 and 2 present the results for the full sample. Columns 3 and 4 show the results for daycare locations in districts where PE firms operate. Columns 5 and 6 display the results for other-for-profit daycare locations, and Columns 7 and 8 present the results for foundation-owned daycare locations. All the models include location controls. For each pair of columns, the first column shows the basic model, while the second column includes interactions between location controls and allowance changes. Location controls are location size, location age, and owner size, consistent with Table 5. We include service availability dummy as controls. The definitions of available services are provided in A1 and include Preschool education, multilingual, hot meals, food, extra services, environment, and other activities. Standard errors are clustered by location. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) Average	(2) Income	(3) Concen	(4) tration	(5) Market	(6) Share	(7) Birth-te	(8) p-Place
	High	Low	High	Low	High	Low	High	Low
ре	-0.175	0.116 (1.16)	-0.214	-0.084	-0.205 (-1.22)	0.056 (0.58)	-0.184	-0.119
$\mathbf{pe} \times \Delta \mathbf{Allowance}$	$0.677^{*}$	0.381 (1.39)	$1.020^{**}$ (2.47)	0.424 (1.27)	$0.988^{**}$	0.027 (0.08)	$0.920^{**}$	$0.551^{*}$
Location size	0.002	(1.00) 0.035 (0.71)	0.039	0.008	0.038	-0.087	0.055	-0.016
Location age	(0.03) 0.077 (1.52)	(0.71) -0.003 (0.10)	(0.00) -0.005 (0.11)	(0.13) 0.053 (1.47)	(1.14) 0.006 (0.17)	(-1.59) 0.028 (0.73)	(1.03) -0.027 (0.61)	(-0.34) 0.074 (1.54)
Owner size	(1.52) $0.062^{*}$ (1.80)	(-0.10) $-0.044^{*}$ (-1.07)	(-0.11) $0.071^{*}$ (1.82)	(1.47) -0.010 (0.47)	(0.17) 0.026 (0.70)	(0.13) -0.021 (0.82)	-0.023	(1.54) 0.024 (1.13)
Location size $\times$ $\Delta$ Allowance	(1.09) -0.022 (0.12)	(-1.97) -0.113 (-0.80)	(1.02) -0.065 (0.40)	(-0.47) -0.054 (-0.20)	(0.79) -0.064 (0.84)	(-0.32) 0.197 (1.27)	(-0.00) -0.152 (-1.24)	(1.13) 0.023 (0.20)
Location age $\times$ $\Delta$ Allowance	(-0.13) $-0.331^{**}$	(-0.03) -0.021 (-0.24)	(-0.49) -0.098 (-0.01)	(-0.39) $-0.201^{*}$	(-0.04) (-0.064) (-0.85)	(1.37) -0.130 (1.21)	(-1.24) 0.052 (0.55)	$-0.326^{***}$
Owner size $\times$ $\Delta$ Allowance	(-2.49) -0.085 (-0.98)	(-0.24) 0.042 (0.70)	(-0.91) -0.143 (-1.60)	(-1.87) (0.027) (0.39)	(-0.83) -0.109 (-1.06)	(-1.31) 0.079 (1.03)	(0.53) -0.012 (-0.13)	(-2.72) -0.012 (-0.18)
Observations Adj. R-squared Location Control Location Control $\times \Delta$ Allowance	492 0.541 Yes Yes	460 0.669 Yes Yes	442 0.585 Yes Yes	530 0.580 Yes Yes	427 0.685 Yes Yes	429 0.664 Yes Yes	417 0.667 Yes Yes	545 0.555 Yes Yes
District-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table A7: PE Response to Allowance Increase in Different Markets Control Services

This table presents the results from a regression of price change each year on the interaction of private equity ownership and allowance increase in different markets. The dependent variable is the natural logarithm of the hourly price. Columns 1 and 2 split the sample based on whether the KDV location is in a high-income or low-income district, respectively. Columns 3 and 4 split the sample based on whether the KDV location is in a high-concentration or low-concentration district, respectively. Concentration is measured by the Herfindahl-Hirschman Index (HHI), calculated using the market share of childcare places held by each ultimate owner in the district. Columns 5 and 6 split the sample based on whether the KDV location is in a district with a high or low birth-to-place ratio, respectively. This ratio is calculated as the number of new births divided by the total number of childplaces provided by all KDV locations in the district. All the models include the location controls and interactions between location controls and allowance changes. Location controls are location age, and owner size, consistent with Table 5. The definitions of available services are provided in A1 and include Preschool education, multilingual, hot meals, food, extra services, environment, and other activities. Standard errors are clustered by location. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

		Staff Group	
_	(1) Placebo 2022	(2) Placebo 2022	
pe	0.232**	0.129	0.181
Placebo year	(2.24) -0.023 (0.26)	(0.93) -0.033 (0.38)	(1.26) -0.435* (1.88)
$pe \times Placebo year$	(-0.20)	0.229	0.110
Location size $\times$ Placebo year		(1.27)	(0.56) $0.211^{***}$
Location age $\times$ Placebo year			(3.43) -0.162*** (2.02)
Group size $\times$ Placebo year			(-2.93) 0.013 (0.55)
Observations KDV Controls District Controls District FE Pseudo R-squared	17,345 Yes Yes Yes 0.107	17,345 Yes Yes Yes 0.107	17,345 Yes Yes Yes 0.108

Table A8: 2019 staff-child ratio placebo 2022

This table presents the results from a Poisson regression analysis of staff and group inspection counts, focusing on the effects of private equity ownership and the assumed change in the staff-child ratio that occurred in 2022. The term *pe* is a dummy variable that equals one if the daycare location is owned by a private equity firm. *staff-child ratio increase* equals to one after 1 January, 2022. Interactions of *pe* with *staff-child ratio increase* are shown. Municipality fixed effects are included in all specifications. Standard errors are clustered by location. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.