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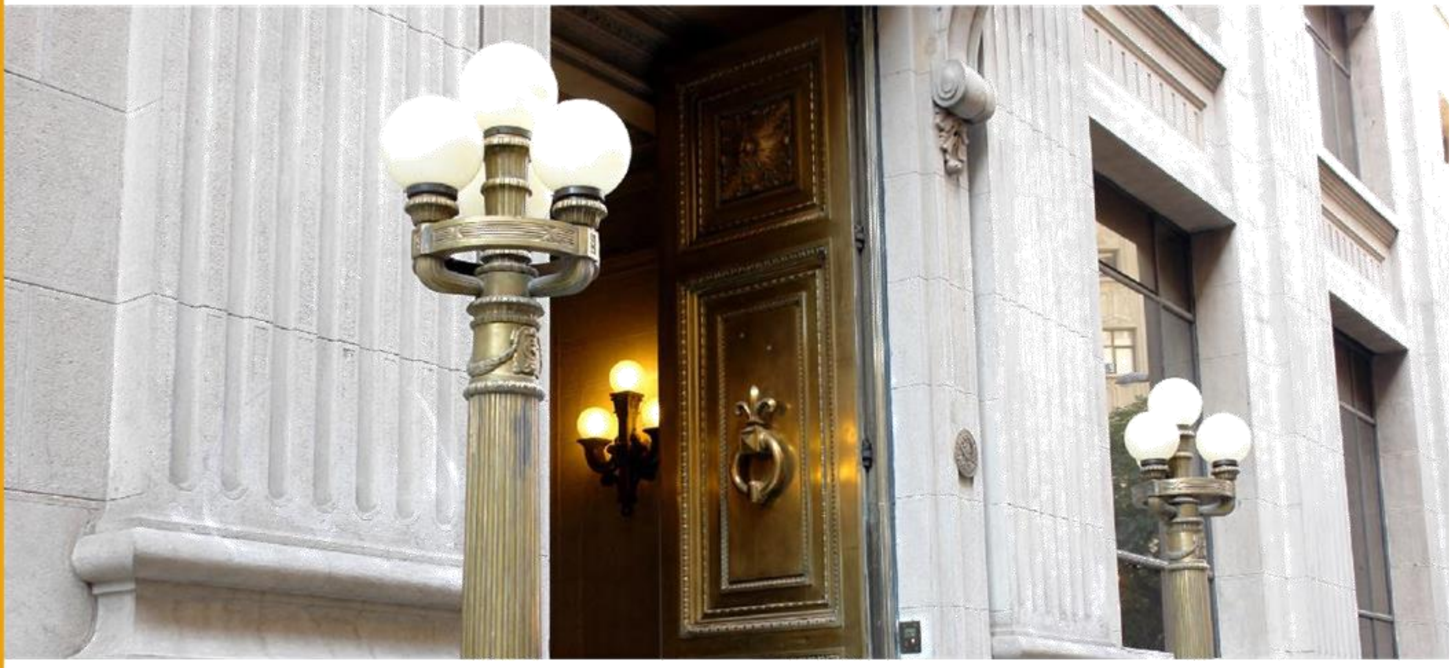

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Hospital choice, C-sections, and long-term maternal health*

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Resumen

En este trabajo estudiamos el efecto causal de tener el parto en un hospital privado, en lugar de uno público, sobre los resultados maternos en Chile. Explotamos una reducción de copagos en 2003 que amplió el acceso a hospitales privados para mujeres aseguradas por el sistema público como instrumento para la probabilidad de tener el parto en el sector privado. Combinando registros administrativos de nacimientos con datos de egresos hospitalarios, que permiten seguir a las madres por hasta quince a˜nos después del primer parto, estimamos un modelo de diferencias en diferencias con variables instrumentales (IV) para identificar el efecto de tener el parto en un hospital privado sobre resultados de corto y largo plazo. Tener el parto en hospitales privados mejora los resultados de corto plazo, reduciendo las hospitalizaciones prolongadas y las readmisiones dentro de 30 días. Sin embargo, estos efectos positivos se ven compensados por peores resultados de largo plazo: las mujeres inducidas a tener el parto en hospitales privados enfrentan mayores riesgos de cesáreas repetidas, complicaciones asociadas a cicatrices de cesárea y histerectomía, pero sin efectos sobre la fertilidad posterior. Los resultados destacan un trade-off entre mejoras de corto plazo en resultados observables y riesgos de salud materna de largo plazo generados por prácticas organizacionales que incentivan la realización de cesáreas programadas.

Abstract

We study the causal effect of delivering in a private rather than a public hospital on maternal outcomes in Chile. We exploit a 2003 copayment reduction that expanded access to private hospitals for women insured by the public system as an instrument for private delivery. Combining administrative birth records with hospital discharge data, we estimate an IV difference-in-differences model that follows mothers for up to fifteen years after the first birth. Private hospital delivery improves short-term outcomes, reducing prolonged hospitalizations and 30-day readmissions. These gains are offset by worse long-term outcomes: women induced to deliver in private hospitals face higher risks of repeat C-sections, cesarean-scar complications, and hysterectomy, with no effects on subsequent fertility. The results highlight a trade-off between short-run improvements in observable outcomes and long-run maternal health risks generated by organizational practices that encourage planned cesarean delivery.

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1 Introduction

Over the past three decades, the share of births delivered by cesarean section has risen across both developed and developing countries, often exceeding clinical recommendations (Vogel et al., 2015; Betrán et al., 2018; Begum et al., 2021). At the same time, many countries have expanded patients' ability to choose between public and private hospitals, aiming to foster competition and improve service quality (Kessler and McClellan, 2000; Cooper et al., 2011; Brekke et al., 2021). Together, these changes have reshaped the incentives and organization of maternity care. Whether such changes improve women's health or create new risks, however, remains an open question. On one hand, private hospitals may offer higher-quality care and greater comfort; on the other, information asymmetries and physician/hospital incentives can encourage the overuse of surgical procedures, creating long-term health risks for women (Gruber and Owings, 1996; Hoxha et al., 2017; Berta et al., 2020). These contrasting forces make childbirth an especially relevant setting to study how ownership and provider incentives shape health outcomes.

In this paper, we exploit a natural experiment that allows us to identify the effects of hospital ownership and provider incentives on maternal outcomes. Chile provides an ideal setting for this analysis because the public insurer, Fonasa, allows beneficiaries to deliver in private hospitals subject to a copayment, and a policy reform substantially reduced these payments. In 2003, copayments for delivery services at private hospitals were sharply reduced for women insured by Fonasa through the Pago Asociado a Diagnóstico (PAD), a fixed-payment system similar to diagnosis-related group (DRG) schemes. This reform significantly lowered the out-of-pocket cost of private hospital delivery, creating an exogenous expansion in access to private maternity care among eligible women—those in Fonasa groups B, C, and D—who had previously delivered mainly in public facilities. Following the reform, the share of deliveries taking place in private hospitals rose substantially, accompanied by a marked increase in cesarean-section rates among eligible women (de Elejalde and Giolito, 2021).

We use this policy change to evaluate both the short- and long-term effects of private hospital delivery on maternal outcomes, focusing on how expanded access to private care—where financial and organizational incentives favor cesarean sections—affects women's health over time.

To estimate these effects, we link detailed administrative records on births and hospitalizations, enabling us to follow mothers for up to 15 years after their first delivery. We focus on births from 2002 to 2005 and exploit differences in reform eligibility across Fonasa insurance groups to implement an instrumented difference-in-differences strategy. Specifically, we compare outcomes for women in Fonasa groups B, C, and D (who gained access to private hospitals through the reform) with those in Fonasa group A and private insurance (Isapre), using an interaction between eligibility and the post-reform period as an instrument.

We find that delivering in a private hospital improves short-term maternal outcomes, reducing the likelihood of remaining hospitalized for seven days or more by roughly 9 percentage points and the probability of readmission within 30 days by about 3 percentage points. However, these gains come with important long-term costs. Women who delivered in private hospitals experienced higher rates of repeat C-sections (around 31 percentage points higher), cesarean scar-related hospitalizations (5 to 10 percentage points higher), and hysterectomies (about 0.7 percentage points higher). Unlike recent evidence on unplanned C-sections (Halla et al., 2020), we find no effects on fertility. These findings highlight a key policy trade-off—while increased competition and access to private care can improve immediate health outcomes, they may also promote delivery practices that carry persistent health risks.

We run several validation exercises to assess the plausibility of our identifying assumptions.

First, we test the parallel trends assumptions by examining pre-reform trends in the probability of delivering at a private hospital, and in both short- and long-term maternal health outcomes. Across all outcomes, we find no evidence of differential pre-treatment trends between treatment and control groups.

Second, we address concerns about potential compositional changes in insurance affiliation over time. A plausible concern is that the expansion of PAD coverage may have induced some women—particularly those in Fonasa Group D—to switch from private insurance (Isapre) to Fonasa. To evaluate this possibility, we estimate placebo regressions using predetermined maternal characteristics such as age, education, and employment. We find no systematic changes following the reform. In addition, we estimate alternative specifications that are more robust to insurance switching from private insurance to Fonasa group D. We first redefine the treatment group to include Isapre affiliates and, alternatively, restrict the sample to Fonasa Groups A–C only. In both cases, the results are very similar to our main estimates.

As a further robustness check, we implement an alternative identification strategy that instruments for private hospital delivery using the 2018 share of the population affiliated with Fonasa B, C, or D, defined by age group and municipality of residence. This strategy requires weaker assumptions about compositional stability, relying only on the plausibility that the population distribution by age and municipality remains stable over time. The results are qualitatively similar to those obtained using our baseline model.

Finally, we assess the robustness of our findings to functional form assumptions. Since our endogenous variable—delivery at a private hospital—is binary, we implement a control function approach using an IV Probit. The results are consistent with those from the linear IV model.

We contribute to three strands of literature. First, we add to the growing body of work on how competition affects hospital performance. Studies in high-income settings, such as the U.S., U.K., and Norway, show that increased competition under fixed prices can improve clinical outcomes, particularly for acute conditions like myocardial infarction (Kessler and McClellan, 2000; Cooper et al., 2011; Gaynor et al., 2013; Bloom et al., 2015; Brekke et al., 2021). However, most of this research focuses on competition within public hospital systems. We study a context in which competition occurs between public and private providers, and show that, when financial incentives differ across providers, competition can shift clinical practice in ways that have mixed consequences for patient outcomes.

Second, we contribute to the literature on hospital ownership and quality (Moscelli et al., 2018; Jensen et al., 2009; Duggan et al., 2023). Duggan et al. (2023) find that hospital privatization in the U.S. increased revenues but reduced access to care and raised mortality, highlighting trade-offs between financial and clinical performance. Our findings suggest more nuanced effects. In our setting, private hospital incentives led to short-term benefits—such as fewer complications and shorter hospital stays—but also increased long-term maternal morbidity, through greater use of planned cesarean delivery. A key advantage of our context is that childbirth involves a limited set of clearly defined treatment options. This allows us to trace differences in outcomes back to specific procedures, something that studies covering a wide range of hospitalizations typically cannot do.

A third strand of research highlights how hospital incentives shape delivery practices, particularly the use of cesarean sections. Private hospitals consistently exhibit higher C-section rates, often driven by physician and hospital financial incentives and capacity management strategies (Berta et al., 2020; Yu et al., 2022; Gruber and Owings, 1996; Gruber et al., 1999; de Elejalde and Giolito, 2021). While much of this literature documents the presence of physician-induced demand, a growing number of papers study the causal effects of cesarean delivery on maternal and child outcomes (Jensen and Wüst, 2015; Costa-Ramón et al., 2018, 2022; Mühlrad, 2022). Most of these papers, however, focus on unplanned C-sections or situations in which the procedure is medically indicated (such as breech presentation). Yet the global rise in cesarean rates is largely driven by non-medically indicated, planned C-sections (Begum et al., 2021; Betrán et al., 2018; Vogel et al., 2015), for which evidence on long-term impacts—particularly for maternal health—remains scarce.[1]

We contribute to this literature by studying the long-term maternal consequences

[1] For a review of the long-run consequences of cesarean sections, see Sandall et al. (2018) or Keag et al. (2018).

of an increased likelihood of a planned C-section, induced by a policy reform in Chile that expanded coverage for private hospital deliveries. Our findings align with those of Card et al. (2023), who show that delivering at hospitals with high C-section rates generates short-run health benefits for newborns but increases morbidity later in life. We extend this line of research by focusing on maternal outcomes and showing a similar trade-off: although delivery in private hospitals improves short-run maternal indicators, it raises the risk of long-term maternal morbidity. Our paper complements our earlier work (de Elejalde and Giolito, 2021), which shows that the reform studied here increased cesarean rates primarily through greater scheduling flexibility associated with C-sections rather than direct financial incentives for physicians. While that study highlights the behavioral response to the policy, this paper focuses on the health consequences of delivering in private rather than public hospitals.

The remainder of this paper is organized as follows. Section 2 discusses the institutional setting in Chile. Section 3 describes the rich administrative data we use and the process we follow to link datasets from different sources. Section 4 describes our identification strategy. Section 5 reports our results. Section 6 reports robustness exercises. Finally, the last section summarizes and concludes the paper.

2 Institutional Setting

In Chile, individuals can choose between public and private health insurance. Private insurance is provided by firms called *Isapres* (an acronym for *Institución de Salud Previsional*), while public insurance is administered by the *Fondo Nacional de Salud* (Fonasa). Fonasa is financed by a 7% payroll tax on enrollees' taxable income, supplemented by government transfers.

Fonasa affiliates are divided into four groups—A, B, C, and D—based on their income level. Group A includes those living below the poverty line, those receiving government subsidies, and those with no declared income. The remaining groups are determined by monthly income: individuals earning less than approximately USD 360 per month are assigned to Group B, those earning between USD 360 and USD 530 to Group C, and those earning above USD 530 to Group D. These groupings are important because they determine the level of coinsurance required in public hospitals: individuals in Groups A and B are exempt from coinsurance, those in Group C pay 10%, and those in Group D pay 20%.

As of 2024, Fonasa covers approximately 16.75 million people—about 82% of the population—compared with 2.76 million (13.7%) insured by Isapres. Among Fonasa affiliates, Group B represents the largest share at 40.5%, followed by Group D (24.7%), Group A (19%), and Group C (16%).

Individuals in groups B, C, or D have two options for accessing health care: *Modalidad*

Atención Institucional (MAI), which provides care through the public health care network, and *Modalidad Libre Elección* (MLE), which allows access to private hospitals. Under the MLE option, the government regulates hospital fees and copayments for all medical procedures covered by Fonasa, and these charges are the same for all Fonasa groups (B, C, and D). Private hospitals may choose to participate in the MLE program, and beneficiaries can select among participating hospitals.[2]

In 1996, the government introduced a diagnosis-related group (DRG) payment system known as PAD (Pago Asociado a Diagnóstico). Under PAD, both the patient copayment and the hospital reimbursement are set by Fonasa based on the diagnosis, regardless of the specific medical procedures performed during treatment.[3]

A key component of PAD is the PAD delivery package, which applies to childbirth. Under PAD delivery, private hospitals receive the same fixed payment for deliveries, whether vaginal or cesarean. The payment covers physician and midwife fees, hospitalization, medical examinations, medications, vaccinations, and postnatal care for up to 15 days after discharge. To be eligible for PAD delivery, a woman must meet the following criteria: (i) be enrolled in Fonasa Group B, C, or D; (ii) expect a singleton birth; (iii) be at least 37 weeks gestational age at the time of delivery; and (iv) have a pregnancy classified as low risk.[4]

[2]Individuals in Fonasa Group A are limited to using the public health care network.

[3]For a detailed account of the evolution of the PAD program, see de Elejalde and Giolito (2021).

[4]In order to certify a low-risk pregnancy, a physician's statement must be submitted to the chosen hospital by the 37th week. Because the definition of a high-risk pregnancy under the PAD requirements is somewhat vague, the hospital may request additional tests and reserves the right to reject the case. If accepted, the woman pays a copayment to receive PAD coverage.

Figure 1: Trends in the share of births in private hospitals by insurance type, 2001–2006

Note: The figure plots the share of first, in-hospital singleton births that occurred in private hospitals, by insurance type at the time of delivery. The data span from the first half of 2001 to the second half of 2006. The sample includes mothers aged 15 to 47 enrolled in public insurance (Fonasa groups A–D) or private insurance (Isapre).

The policy of interest is a 2003 reform that lowered the copayment for PAD deliveries from 60% to 25%. In practice, this represented a substantial reduction in out-of-pocket costs, from USD 630 to USD 270 dollars (2003 dollars).[5] Following the reform, the share of deliveries in private hospitals among women enrolled in Fonasa D increased from 25% in the first quarter of 2003 to 60% by the third quarter of 2006 (see Figure 1). The increases were smaller for the other two groups: for Fonasa C, the share rose from 7.5% to 23%, and for Fonasa B, from 1.5% to 8%.

During this period, most private hospitals in Chile performed at least one delivery financed through the PAD system. In 2005, there were 233 hospitals with recorded deliveries: 70 private and 163 public. Of the 70 private hospitals, only 9 performed no PAD-financed deliveries between 2001 and 2005. These 9 hospitals accounted for approximately 3% of total deliveries during the analysis period.

[5]Decreto 48, issued by the Ministry of Health on February 11, 2003, came into effect on April 2, 2003 (see http://bcn.cl/2bofl.).

Figure 2: C-section rates vs. share of first births to Fonasa B–D mothers across hospitals, 2002

Note: Each point represents a hospital. The y-axis shows the C-section rate. The x-axis shows the share of first, singleton births to mothers in Fonasa groups B–D out of all first, singleton births at that hospital during the first semester of 2002. Diamonds represent private hospitals; circles represent public hospitals. Point size is proportional to the number of deliveries at that hospital.

Figure 2 characterizes hospitals by their C-section rates and the share of births to mothers in Fonasa groups B, C, or D in 2002, prior to the reform. Private hospitals (represented by diamonds) show substantial variation in the share of births from Fonasa groups B, C, and D and consistently show higher C-section rates than public hospitals (represented by circles), both on average and conditional on the share of Fonasa B–D births. This pattern suggests that the reform facilitated access to hospitals with higher C-section rates, allowing women to switch from hospitals with low C-section rates to hospitals with high C-section rates.

Beyond their higher C-section rates, private hospitals in Chile tend to outperform public hospitals on several quality and efficiency measures. Figure 3 shows differences between private and public hospitals in length of stay, 30-day readmission rates, in-hospital mortality, and 30-day mortality—both overall and for acute myocardial infarction— using all hospitalizations from 2012 to 2016. These estimates come from regressions controlling for the Charlson comorbidity index and including fixed effects for age, sex, principal diagnosis, and year. While we cannot claim that these results have a causal interpretation, private hospitals show better indicators across all outcomes. Figure C.1 in the Online Appendix extends these comparisons to additional conditions such as heart failure, stroke, pneumonia, and hip fracture.
[6]

[6]The difference in outcomes between public and private hospitals may have narrowed in recent years due to policies targeting the management of public establishments. Muñoz and Otero (2025) find that a reform in

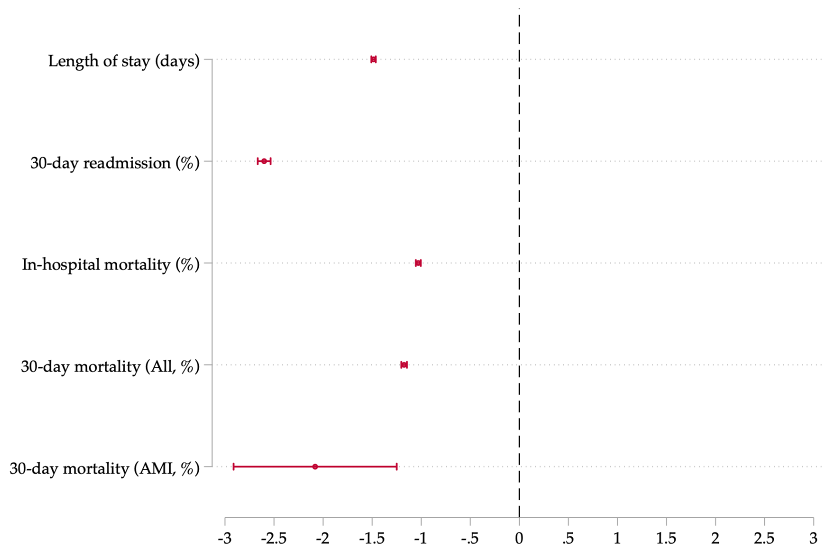

Figure 3: Risk-adjusted hospital outcomes: Private vs. public hospitals, 2012-2016

Note: This figure plots 95% confidence intervals for the coefficient on the private hospital indicator from regressions where the outcome (listed on the x-axis) is regressed on a private hospital dummy and controls for the Charlson comorbidity index, age, sex, principal diagnosis, and year fixed effects.

3 Data

Our analysis combines two administrative datasets from Chile: birth certificates and hospital discharge records, both provided by the Ministry of Health.

The birth certificate data include all registered births in Chile between 2001 and 2018.[7] Each record contains a unique anonymized ID for both the mother and the child, along with detailed information such as date of birth, birth weight, size at birth, gestational age, indicators for singleton or multiple births, parity, and the delivery hospital. Maternal characteristics—age, municipality of residence, educational attainment, and employment status—are also recorded.

The hospital discharge data include all inpatient admissions in Chile between 2001 and 2020. Each record contains a unique anonymized patient ID, the discharging hospital, discharge date, length of stay, and the principal diagnosis coded under ICD-10. The data also report whether a surgical procedure was performed, the corresponding Fonasa procedure code, and patient characteristics such as age, gender, municipality of residence, and type of

Chile introducing competitive recruitment and improved compensation for public hospital CEOs significantly reduced hospital mortality by 8% in the three years following its adoption.

[7]Although the dataset is available starting in 1992, records prior to 2001 include neither a mother nor a child identifier.

insurance.[8]

Crucially, both datasets use a common anonymized identifier, enabling linkage at the individual level.

To construct our final sample, we implement a multi-step record-linking procedure that matches birth records to corresponding hospital admissions for childbirth. We begin by identifying childbirth-related admissions in the hospital discharge data, selecting female patients whose primary diagnosis code begins with "O," which corresponds to pregnancy, childbirth, and the puerperium under ICD-10 classification. We then apply a sequential matching algorithm. In the first step, we match records when the patient ID matches the mother ID and the hospital discharge month is within ± 2 months of the recorded birth month. For unmatched cases, we apply a less restrictive rule: the patient's municipality matches the mother's municipality, the discharging hospital matches the delivery hospital, the patient's age is within ± 1 year of the mother's age, and the discharge date is within ± 3 days of the birth date. Finally, for the small number of cases in which the exact discharge date is missing, we match using the mother ID and year of delivery.[9] Using this matching algorithm, we successfully match 89% of birth records to hospitalizations, with 96% of these matches achieved through the first, more precise rule.

We then restrict the sample to matched, in-hospital singleton births to nulliparous women between 2001 and 2005. We further limit the sample to women aged 15 to 47 who were covered by either public insurance (Fonasa) or private insurance (Isapre) at the time of delivery.[10]

Using this matched sample, along with birth and hospital discharge data for subsequent years, we construct variables capturing *short-term* (immediately following the first birth hospitalization), *and long-term outcomes.*

Short-term outcomes include: (i) an indicator for *cesarean section*, identified using the principal diagnosis codes and whether a surgical procedure was performed, (ii) an indicator for *prolonged maternal hospitalization*, defined as a stay exceeding seven days; and (iii) an indicator for *a readmission within 30 days* of discharge date.[11]

Long-term outcomes include both health and subsequent fertility measures. Health outcomes are obtained from hospital discharge data covering up to 15 years after the first

[8] Information on surgical procedure codes is available from 2004 onward.

[9] See Appendix A for more details on the dataset construction.

[10] Due to the substantial number of records lacking IDs in 2001, our estimation sample is restricted to the period 2002–2005. Nevertheless, we include data from 2001 in graphical analyses to assess pre-existing trends. The inclusion of observations from 2001 does not affect our results.

[11] Online Appendix B provides additional details on the construction of the cesarean section variable. Importantly, we do not classify every diagnosis code into a mode of delivery; as a result, the mode of delivery cannot be identified for 2.3 percent of births in the main sample.

birth, and include hospitalizations related to maternal care, specifically for *cesarean scar complications* (ICD-10 code O342) and *hysterectomy* (ICD-10 code O822 and corresponding surgical procedure codes from Fonasa).[12] For a subsample of mothers with two or more children within 12 years of the first birth, we also construct indicators for having *a cesarean section in the second birth* and for having *cesarean sections in both the first and second births* (repeat C-sections). Finally, subsequent fertility outcomes are derived from birth certificate data covering up to 12 years after the first birth. Specifically, we create indicators for *whether the mother had a second or third child* within 1 to 12 years of the first birth.

Table 1 presents summary statistics for our main sample, with columns corresponding to different insurance affiliations: Fonasa A (47% of the sample), B (17%), C (10%), D (12%), private insurance (14%), and a final column for the full sample ("All").

Panel A reports demographic characteristics at the time of the first birth. In the full sample, mothers are, on average, 23 years old, 30% report being employed, and the average educational attainment is 11.6 years. As expected, there are differences across insurance groups: mothers in Fonasa A tend to be younger, less likely to be employed, and have fewer years of education, while mothers with private insurance are older, more likely to be employed, and have more years of education.

Panel B summarizes short-term outcomes. In the full sample, 21% of deliveries take place in private hospitals, 34% are cesarean sections, 6% of mothers remain hospitalized for more than seven days post-delivery, and 3% are readmitted within 30 days of discharge. Delivery in private hospitals and cesarean rates increase progressively from Fonasa A to private insurance, while prolonged hospital stays and readmissions are more frequent among Fonasa A affiliates.

Panel C shows long-term outcomes. In the full sample, 1.5% of mothers are hospitalized for cesarean scar complications within 3 years of the first birth, and 1.9% undergo a hysterectomy within 15 years. Both outcomes are more prevalent among women with private insurance.[13] Regarding fertility, 41% of mothers have a second child within six years of the first birth, and 14% have a third child within nine years. Fertility outcomes also vary by insurance status: mothers in Fonasa A and those with private insurance are more likely to have additional children.[14]

Table 2 presents summary statistics for a restricted sample of women with two or more pregnancies. Across all insurance groups, cesarean section rates are higher at the second birth

[12] See Online Appendix B for details on the construction of the hysterectomy variable.

[13] Table C.1 in the Online Appendix shows how these rates increase over time—at 3, 6, 9, 12, and 15 years after the first delivery—across all insurance groups.

[14] Online Appendix Table C.2 provides a detailed summary by insurance group and years since the first birth, showing that privately insured mothers are more likely to have a second child within 3, 6, and 9 years—likely reflecting their older age at first birth and a shorter reproductive window.

than at the first, and the upward gradient from Fonasa A to Fonasa D persists.[15]

Together, these descriptive patterns underscore the importance of accounting for maternal age at first birth, which differs across insurance groups and likely contributes to variation in both delivery practices and health outcomes. Accordingly, all empirical models include controls for maternal age at baseline.

4 Empirical Strategy

We estimate the effects of delivering in a private hospital—defined as any hospital that is not part of the public health system—on short- and long-term outcomes. To address potential endogeneity in hospital choice, we use an instrumented difference-in-differences (DID-IV) strategy that exploits a 2003 policy reform that reduced the copayment for delivery in a private hospital under the PAD scheme. Specifically, we instrument for delivery in a private hospital using the interaction of a post-reform indicator (equal to one for births from April 2003 onward) with indicators for affiliation with Fonasa B, C, or D. We use separate indicators for each Fonasa group to capture the heterogeneous effects of the reform, reflecting group-specific differences in policy take-up.

Our estimating equation is:

$$\begin{aligned} Y_{it} = & \beta_0 + \beta_1 \, Private_{it} + \beta_2 \, Fonasa\ A_{it} + \beta_3 \, Fonasa\ B_{it} \\ & + \beta_4 \, Fonasa\ C_{it} + \beta_5 \, Fonasa\ D_{it} + \tau_t + \alpha_{ay(t)} + \epsilon_{it}, \end{aligned} \tag{1}$$

where Y_{it} is the outcome variable for delivery i in month-year t, $Private_{it}$ is a dummy variable that equals one if the delivery occurred in a private hospital, $Fonasa\ A_{it}$ through $Fonasa\ D_{it}$ indicate insurance group affiliation at delivery, τ_t are month-year fixed effects, $\alpha_{ay(t)}$ are mother's age-year fixed effects, and ϵ_{it} captures unobservables that affect the outcome variable. The coefficient β_1 represents the causal effect of interest.

The first stage equation is:

$$\begin{aligned} Private_{it} = & \pi_0 + \pi_1 \, Fonasa\ B_{it} \times Post_t + \pi_2 \, Fonasa\ C_{it} \times Post_t \\ & + \pi_3 \, Fonasa\ D_{it} \times Post_t + \pi_4 \, Fonasa\ A_{it} + \pi_5 \, Fonasa\ B_{it} \\ & + \pi_6 \, Fonasa\ C_{it} + \pi_7 \, Fonasa\ D_{it} + \tau_t + \alpha_{ay(t)} + \epsilon_{it}, \end{aligned} \tag{2}$$

where $Post_t$ is a dummy equals to one for deliveries occurring after April 2003.[16] The

[15] The sample of mothers with two or more children includes only those who have at least two births within a 12-year period and for whom we are able to identify the mode of delivery for both the first and the second birth.

[16] The norm that decreased the copayment for PAD delivery was approved on February 11th, 2003, but

interaction terms $Fonasa\,Group_{it} \times Post_t$ are used as instruments and capture differential changes in private hospital utilization following the reform across Fonasa groups B, C, and D. The coefficients π_1, π_2, and π_3 thus measure the increase in the probability of delivering in a private hospital after the reform, conditional on insurance affiliation.

Following Miyaji (2025), our design identifies the local average treatment effect on the treated (LATET)—that is, the effect of delivering at a private hospital on maternal outcomes for women enrolled in Fonasa groups B, C, or D who switched from public to private hospitals due to the increased coverage.

We rely on the following identifying assumptions:[17]

No compositional changes: This assumption rules out changes over time in the distribution of women across insurance groups, which is necessary given our use of repeated cross-sectional data. A plausible concern is that the expansion of PAD coverage may have incentivized switching from private insurance (Isapre) to Fonasa, particularly into Group D.[18]

In Section 6, we assess this empirically. Using placebo regressions on predetermined maternal characteristics, we find no systematic post-reform changes. We also estimate alternative specifications that are less sensitive to switching—by including Isapre within the treatment group and, alternatively, by restricting the sample to Fonasa Groups A, B and C—and obtain very similar results.

As an additional check, we use an alternative identification strategy that relies on weaker compositional assumptions. We instrument private hospital delivery using the 2018 share of the population affiliated with Fonasa Groups B, C, or D, measured by age group and municipality of residence. This approach assumes that individuals' age and municipality of residence remain stable over time—a credible assumption, as these characteristics are unlikely to be affected by the reform. The estimates from this specification are consistent with our main results, although less precise, since they exploit variation only across age–municipality cells.

Exclusion restriction: The instruments—interactions between insurance affiliation and a post-reform indicator—should affect outcomes only through their effect on the choice of delivery hospital. Since we exploit the timing of the PAD copayment reduction, a concern is that other contemporaneous policy changes may have differentially affected the health outcomes across insurance groups.

Two potentially relevant reforms occurred around this period: (i) the 2005 regulation

went into effect on April 2nd, 2003.

[17] These assumptions follow the theoretical framework outlined in Miyaji (2025).

[18] Although moving into Fonasa is relatively easy, returning to an Isapre is costly and uncertain—insurers can reject applicants or deny coverage for pre-existing conditions—so temporary or strategic switching is unlikely.

limiting Isapres' ability to adjust premiums (implemented in 2006), and (ii) the introduction of the AUGE/GES program in July 2005, which expanded coverage for a set of prioritized health conditions, including preterm birth. Although both policies could affect maternal health in general, there is little reason to expect differential effects across insurance groups. To be conservative, we restrict our sample to births between 2002 and 2005—before either reform was implemented.

Another concern is that PAD copayment reductions may have applied to other procedures affecting maternal health. In practice, the reform was narrowly targeted: beyond deliveries, it only covered a few unrelated procedures (such as cataract surgery and hemodialysis), which are unlikely to matter for first-time mothers. Taken together, these considerations support the plausibility of the exclusion restriction.

Monotonicity: The expansion of PAD coverage should weakly increase the probability of delivering in a private hospital. Since the reform reduced the price of private delivery relative to public alternatives, it is difficult to construct a credible scenario in which demand for private hospitals would decrease as a result of the policy.

No anticipation: Individuals should not adjust their choice of delivery hospital before the reform. Because PAD copayment reductions applied only after implementation and women could not benefit in advance, there was no incentive to change behavior beforehand.

Parallel trends (treatment): In the absence of the reform, trends in the probability of delivering at a private hospital would have been similar across insurance groups. To address this, we estimate differences in pre-reform trends in private hospital deliveries among mothers with different insurance affiliations.

Parallel trends (outcomes): Likewise, in the absence of the reform, trends in C-section rates and other maternal health outcomes would have followed similar trends across insurance groups. To address this, we estimate differences in pre-reform trends in these outcomes among mothers with different insurance affiliations.

Relevance: Finally, the reform must increase the probability of delivering at a private hospital for women affiliated with Fonasa B, C, and D relative to women in Fonasa A and Isapre. We test this condition using the first-stage regression to verify that the instrument has a statistically significant effect on treatment status.

Before we estimate equation (1), we assess whether the data support our identification strategy.

First, we test the relevance condition using the first stage estimates from equation (2). Table 3 presents these results. In our baseline specification (column 1), we find that women in Fonasa group D—the highest income group within Fonasa—are 28 percentage points more likely to deliver in private hospitals after the reform, compared to increases of 12 percentage

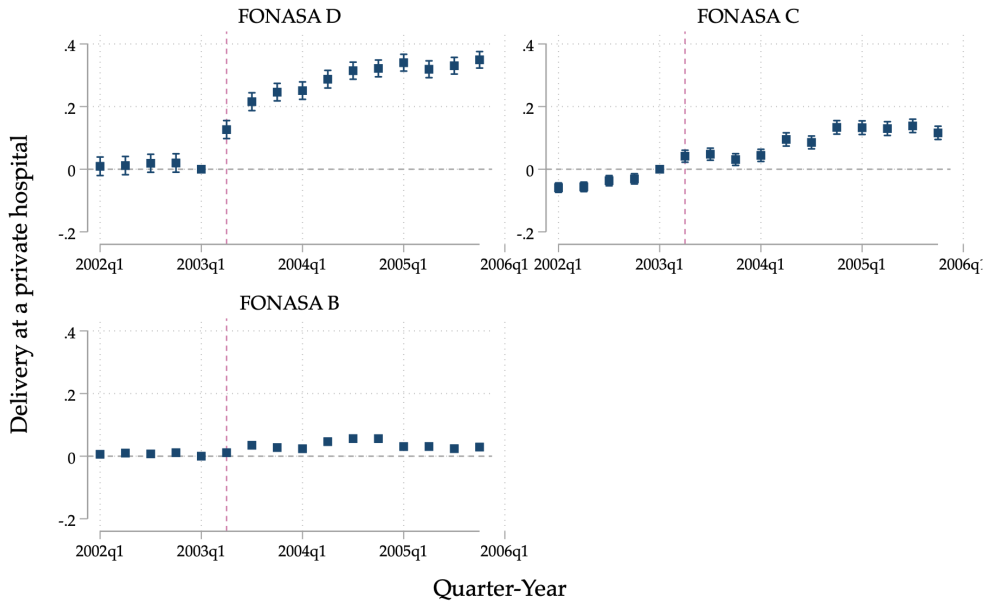

Figure 4: Dynamic effects of the policy on the probability of delivery in a private hospital

Note: This figure plots estimated coefficients from equation (3), where each point represents the interaction between quarter dummies and insurance group status (Fonasa B, C, or D), relative to the reference period (the quarter preceding the PAD reform). The dependent variable is an indicator for delivery in a private hospital. Vertical lines represent 95% confidence intervals. Fonasa A and Isapre beneficiaries serve as the comparison group.

points for group C and 2.7 percentage points for group B.

These estimates are robust to sequentially adding municipality-age fixed effects (column 2), municipality-year fixed effects (column 3), and a linear trend for Fonasa group A (column 4). To formally test for relevance, we compute the effective F-statistic proposed by Olea and Pflueger (2013) and reject the null of weak instruments at the 5% significance level.[19]

Second, we test the parallel trends assumption by checking for pre-treatment differences in trends for both treatment and outcomes. To this end, we estimate the following equation:

$$\begin{aligned} Y_{it} \;=\;& \gamma_0 + \textstyle\sum_{\tau=1}^{T} \gamma_{1,\tau} Fonasa\ D_{it} \times \mathbb{1}(t=\tau) + \sum_{\tau=1}^{T} \gamma_{2,\tau}\, Fonasa\ C_{it} \times \mathbb{1}(t=\tau) \\ &+ \textstyle\sum_{\tau=1}^{T} \gamma_{3,\tau} Fonasa\ B_{it} \times \mathbb{1}(t=\tau) + \gamma_4\, Fonasa\ A_{it} + \gamma_5\, Fonasa\ B_{it} \\ &+ \gamma_6\, Fonasa\ C_{it} + \gamma_7\, Fonasa\ D_{it} + \tau_t + \alpha_{ay(t)} + \epsilon_{it}, \end{aligned} \tag{3}$$

where each $\gamma_{j,\tau}$ is the coefficient of the interaction between a quarter dummy and Fonasa

[19]The effective F-statistic, proposed by Olea and Pflueger (2013), is a statistic used to test for weak instruments in instrumental variable models under heteroskedasticity or clustered errors. For our application, a critical value of 37.4 corresponds to a 5% maximal asymptotic relative bias of the 2SLS estimator in the worst-case direction.

group status, with the quarter prior to the reform as the reference period. Figure 4 plots the time-varying coefficients from equation (3) for the probability of delivering at a private hospital (our treatment variable). The results show no evidence of differential pre-trends between women in Fonasa groups B, C or D and those in Fonasa A or Isapre.

5 Results

5.1 Short-term outcomes

Table 4 presents estimates of the effect of delivering at a private hospital on short-term outcomes, including cesarean delivery (Panel A), hospital stays of seven days or more (Panel B), and 30-day readmissions (Panel C). Column (1) reports OLS estimates, while columns (2) to (4) report IV estimates with increasingly rich sets of controls. The baseline IV specification in Column (2) includes month-by-year fixed effects and interactions between maternal age and year of birth. Column (3) adds municipality-by-year and municipality-by-age interactions. Column (4) further includes a linear time trend interacted with a dummy for affiliation with Fonasa Group A.

The results indicate a significant effect of delivering at a private hospital on short-term outcomes. Consistent with de Elejalde and Giolito (2021), we find that delivering in a private hospital increases the probability of cesarean delivery by 44 percentage points in the baseline IV specification. We also find significant improvements in immediate postnatal outcomes: the probability of a hospital stay lasting seven days or more falls by 9 percentage points and the probability of readmission within 30 days decreases by 4 percentage points. These estimates remain robust across specifications.

The IV estimates for cesarean delivery are larger than the OLS estimates. This is consistent with the interpretation that our estimates capture a local average treatment effect for women in Fonasa B, C, or D who switched from public to private hospitals in response to the copayment reduction. These women, who tend to have lower income and education than typical private hospital users, may be more susceptible to physician-induced demand. An alternative explanation is that women who switch from public to private hospitals may have had stronger underlying preferences for elective C-sections that public providers were less willing to accommodate. However, existing survey evidence suggests that such differences in preferences are unlikely to explain the gap.[20]

[20] Angeja et al. (2006), using a survey of pregnant women in Santiago, show that both public and private patients overwhelmingly preferred vaginal over cesarean delivery—77 % of public and 79 % of private patients favored vaginal birth, while only 11 % and 8 %, respectively, preferred a cesarean—indicating no significant difference in preferences across hospital types.

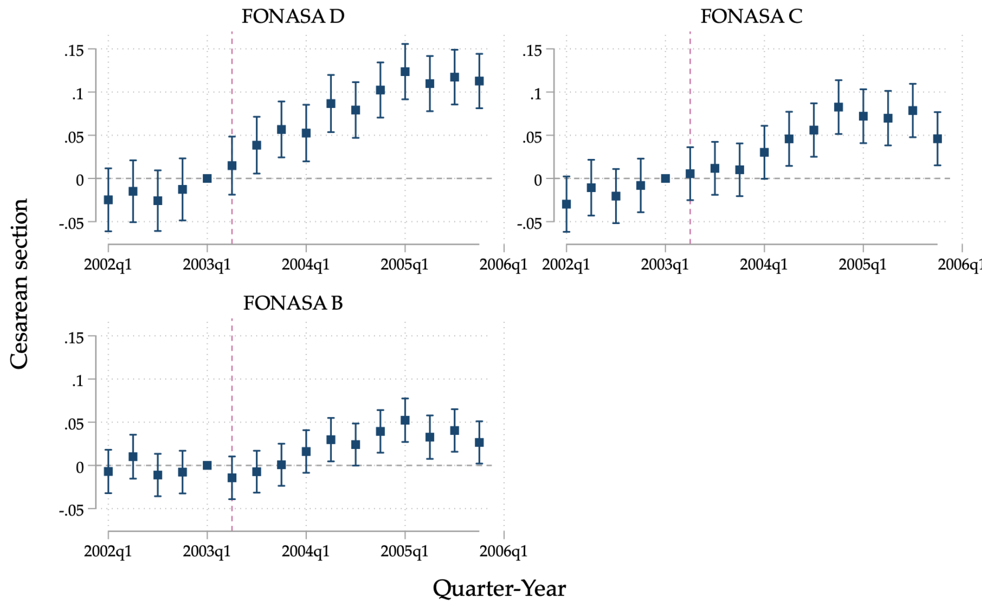

Figure 5: Dynamic effects of the policy on the probability of cesarean section at first birth

Note: This figure plots estimated coefficients from equation (3), where each point represents the interaction between quarter dummies and insurance group status (Fonasa B, C, or D), relative to the reference period (the quarter preceding the PAD reform). The dependent variable is an indicator for cesarean delivery at first birth. Vertical lines represent 95% confidence intervals. Fonasa A and Isapre beneficiaries serve as the comparison group.

The magnitude of our estimates aligns with differences in C-section rates across hospital types. In our sample, the cesarean rate is 27% in public hospitals and 59% in private hospitals—a gap of 32 percentage points. For comparison, Card et al. (2023) report a 7 percentage point difference between high- and low-C-section hospitals in the U.S. and find that switching to a higher-rate hospital increases the probability of cesarean delivery by 11 percentage points. The larger baseline gap in our setting aligns with the larger estimated effect.

The reduction in prolonged hospitalization likely reflects both a greater use of planned C-sections, which shorten the time between admission and delivery (Card et al., 2023), and stronger efficiency incentives in private facilities (Duggan et al., 2023). The decline in readmissions may indicate higher quality of care in private hospitals or fewer complications arising during the immediate postpartum period associated with C-sections.

Figures 5 through 7 plot dynamic reduced-form estimates of the policy's effects on short-term outcomes using quarter-level interactions with insurance group affiliation. Across all three outcomes—cesarean delivery (Figure 5), extended hospitalization (Figure 6), and 30-day readmission (Figure 7)—we find no evidence of differential pre-trends between Fonasa

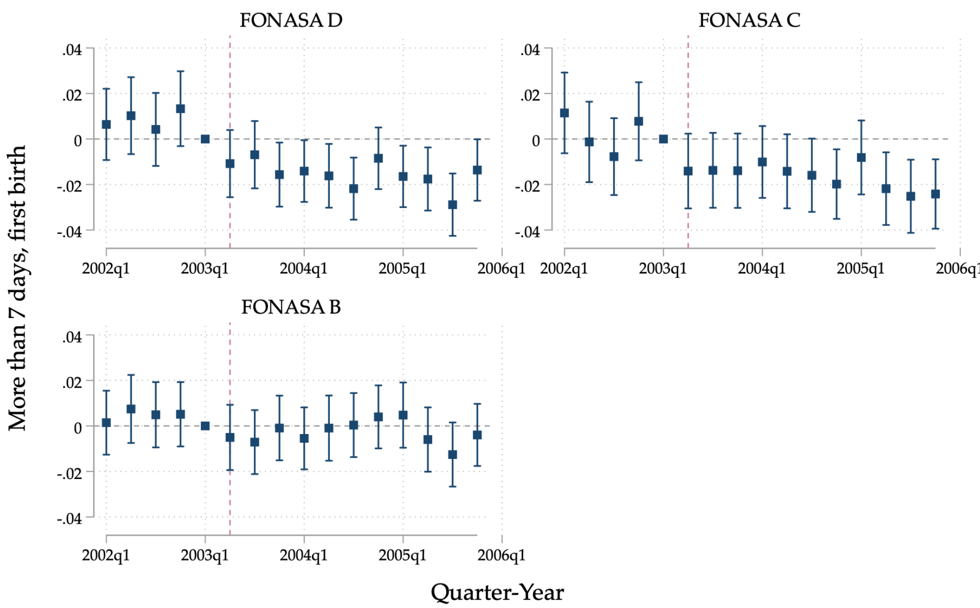

Figure 6: Dynamic effects of the policy on the probability of extended hospitalization

Note: This figure plots estimated coefficients from equation (3), where each point represents the interaction between quarter dummies and insurance group status (Fonasa B, C, or D), relative to the reference period (the quarter preceding the PAD reform). The dependent variable is an indicator for maternal hospitalization lasting seven days or more. Vertical lines represent 95% confidence intervals. Fonasa A and Isapre beneficiaries serve as the comparison group.

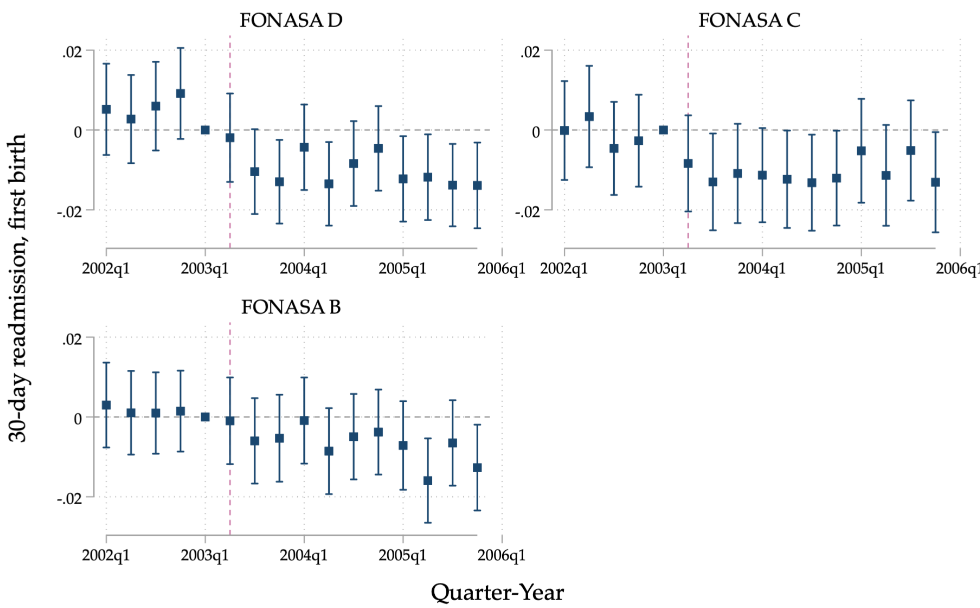

Figure 7: Dynamic effects of the policy on the probability of 30-day readmission

Note: This figure plots estimated coefficients from equation (3), where each point represents the interaction between quarter dummies and insurance group status (Fonasa B, C, or D), relative to the reference period (the quarter preceding the PAD reform). The dependent variable is an indicator for maternal readmission within 30 days of delivery. Vertical lines represent 95% confidence intervals. Fonasa A and Isapre beneficiaries serve as the comparison group.

Groups B, C, and D and the comparison groups (Fonasa A and Isapre). Estimated coefficients in the pre-reform period are small and statistically insignificant, supporting the plausibility of the parallel trends assumption.

Following the reform, the timing and magnitude of effects track the increase in private hospital deliveries shown in Figure 4. Among Fonasa D beneficiaries, deliveries in private hospitals rose beginning in Q2 of 2003, followed by sharp increases in Q3 and again in 2004. C-section rates for this group exhibit a nearly identical pattern, suggesting a tight behavioral response. For Groups C and B, take-up of private hospital delivery intensifies in 2004, coinciding with increases in C-section rates. This temporal alignment strengthens the case for a causal interpretation of our estimates.

For extended hospitalization and 30-day readmissions, the dynamic estimates are less precise but they show a negative effect, particularly for Groups D and C—the groups with the largest exposure to the reform.

5.2 Long-term outcomes

We next estimate the long-term effects of delivering in a private hospital on maternal outcomes. We focus on several outcomes observed years after the first birth: repeat cesarean sections, hospitalization due to cesarean scar complications, hysterectomy, and subsequent fertility.

Repeat C-sections

Table 5 presents OLS and IV estimates of the effect of delivering at a private hospital on the probability of a cesarean section at the first birth (Panel A), the second birth (Panel B), and repeat cesarean sections (Panel C). This sample is restricted to women with at least two births between 2002 and 2018.

The results show substantial and persistent effects of private hospital delivery on cesarean use. In Column (4), delivering at a private hospital increases the probability of a cesarean at first birth by 45 percentage points, at second birth by 37 percentage points, and the probability of a repeat C-section (i.e., cesareans in both births) by 47 percentage points. These findings imply strong path dependence: private hospital exposure at first birth substantially increases the likelihood of subsequent cesarean delivery.

Figure 8 plots dynamic reduced-form estimates of the policy's effect on repeat C-sections, using quarter-level interactions by insurance group. The timing of effects aligns closely with the rise in first-birth cesarean rates shown in Figure 5, with initial increases for Fonasa Group D in early 2003, followed by Groups C and B by 2004. This pattern is consistent with the interpretation that increases in repeat C-sections are driven by earlier

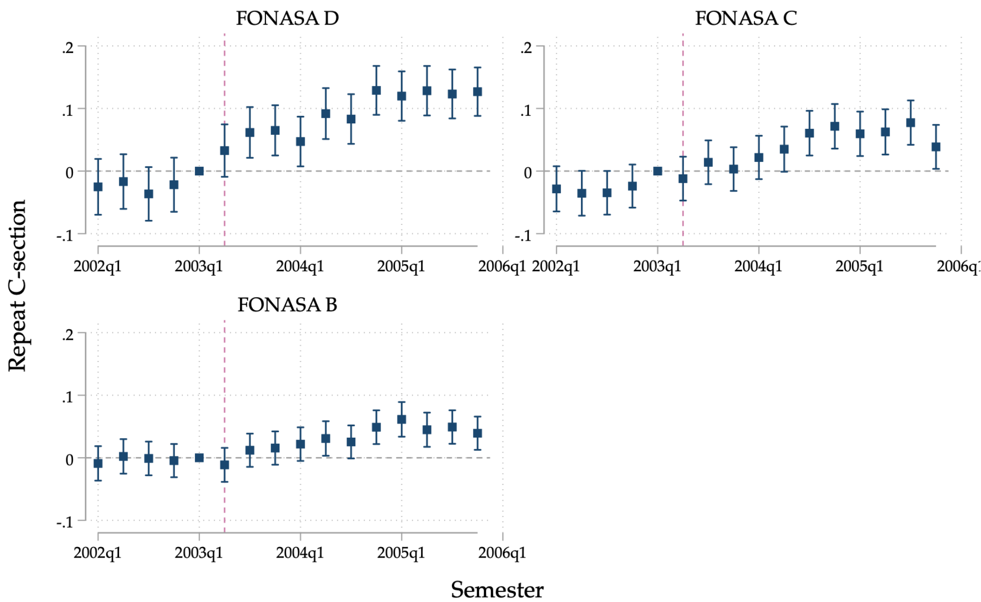

Figure 8: Dynamic effects of the policy on the probability of repeat cesarean sections

Note: This figure plots estimated coefficients from equation (3), where each point represents the interaction between quarter dummies and insurance group status (Fonasa B, C, or D), relative to the reference period (the quarter preceding the PAD reform). The dependent variable is an indicator for C-sections in both the first and second births. Vertical lines represent 95% confidence intervals. Fonasa A and Isapre beneficiaries serve as the comparison group.

shifts in first-birth cesarean delivery associated with expanded access to private hospitals.

Hospitalization due to cesarean scar complications

Panel A of Table 6 presents OLS and IV estimates of the effect of delivering at a private hospital on the probability of hospitalization due to cesarean scar complications within three years of the first birth. Across all IV specifications, we find that delivery at a private hospital increases the probability of hospitalization for cesarean-related complications by approximately 5 percentage points. This effect is robust to the inclusion of progressively richer sets of controls from columns (2) to (4).

Figure 9 plots IV estimates at different time horizons—from 3 to 15 years after the first birth. The purpose of this figure is to assess the persistence and evolution of health risks associated with cesarean delivery over the long term. Each bar represents a point estimate with its confidence interval from a separate regression using the specification in Column (2) of Table 6, which includes month–year fixed effects and age–year of birth interactions. The results show a clear upward trend: the estimated effect increases from 5.1 percentage points at year 3 to 10.6 percentage points by year 12, after which it stabilizes. This pattern suggests that the long-term risks of cesarean delivery accumulate over time and persist well beyond the immediate postpartum period.

Figure 10 plots the dynamic reduced form estimates of the probability of hospitalization due to cesarean scar complications 3 years after the first birth. The estimates show no evidence of differential pre-trends across insurance groups prior to the reform. Following the reform, however, there is a clear divergence between treated and comparison groups, consistent with the timing of increased private hospital use.

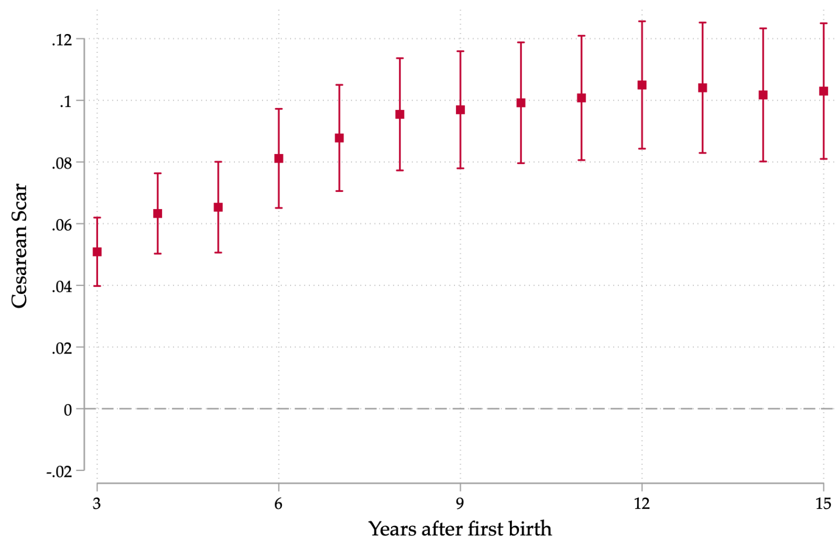

Figure 9: IV estimates of hospitalization due to cesarean scar complications at different horizons (3–15 years) after first birth

Note: This figure plots the effect of delivering at a private hospital on the probability of hospitalization due to cesarean scar complications for different horizons after first birth. Each estimate is from a separate IV regression using insurance group affiliation as an instrument. All regressions include month-by-year fixed effects and maternal age–year of birth interactions.

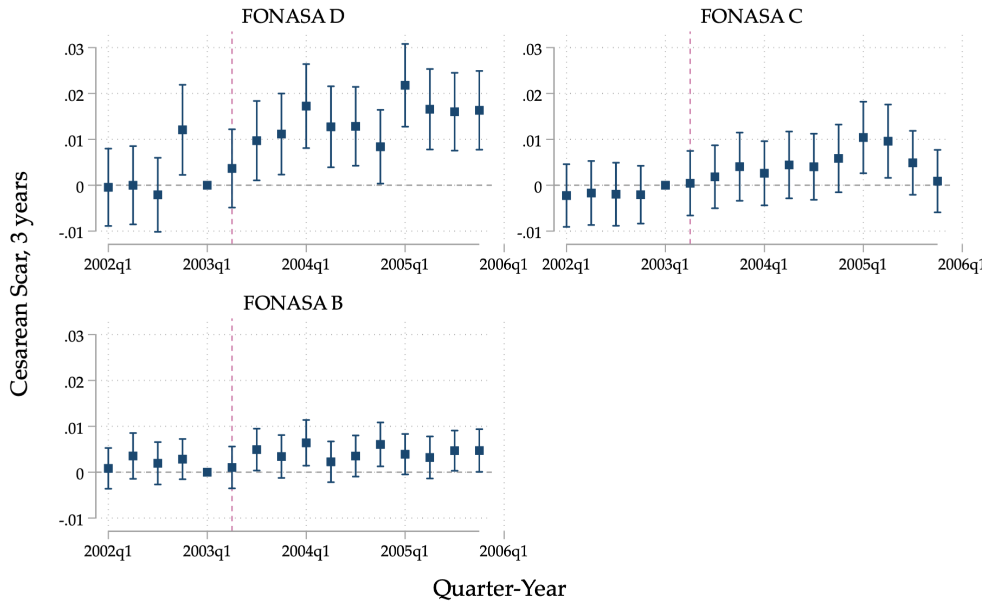

Figure 10: Dynamic effects of the policy on the probability of hospitalization due to cesarean scar complications 3 years after first birth

Note: This figure plots estimated coefficients from equation (3), where each point represents the interaction between quarter dummies and insurance group status (Fonasa B, C, or D), relative to the reference period (the quarter preceding the PAD reform). The dependent variable is an indicator for hospitalization due to cesarean scar complications 3 years after first birth. Vertical lines represent 95% confidence intervals. Fonasa A and Isapre beneficiaries serve as the comparison group.

Hysterectomy

Panel B of Table 6 presents OLS and IV estimates of the effect of delivering at a private hospital on the probability of undergoing a hysterectomy 9 years after the first birth. Across specifications, the IV estimates show a positive effect of approximately 0.8 percentage points. However, this effect becomes statistically insignificant when a linear trend interacted with Fonasa A is included.

Figure 11 plots IV estimates at different time horizons since the first birth. The results suggest a modest and horizon-specific impact: statistically significant effects are observed only around 9 years after the first birth, while estimates at other horizons are smaller and less precise.

Figure 12 plots dynamic reduced form estimates for the probability of hysterectomy 9 years after the first delivery. The figure shows no evidence of differential pre-trends across insurance groups and no clear post-reform divergence. This visual stability reflects the very small absolute magnitude of the effect, which is statistically detectable in the pooled estimates but difficult to discern in quarterly event-study coefficients.

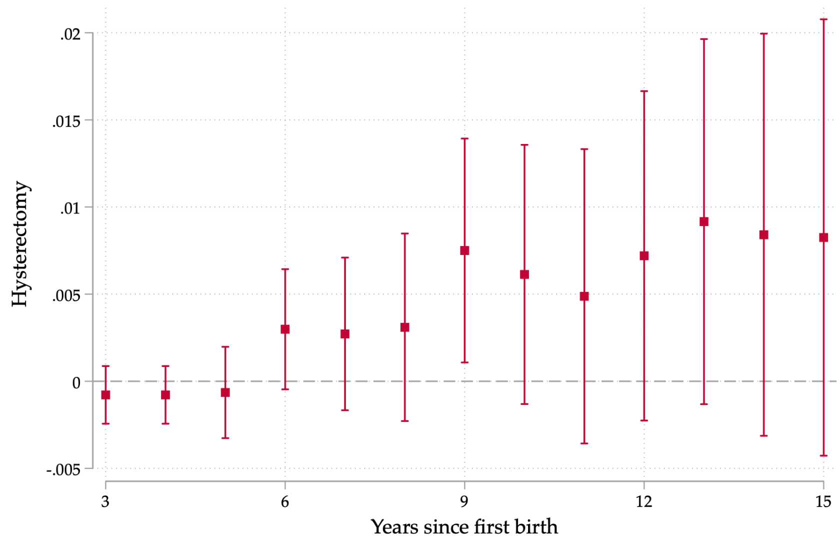

Figure 11: IV estimates of the probability of hysterectomy at different horizons (3–15 years) after first birth

Note: This figure plots the effect of delivering at a private hospital on the probability of hysterectomy for different horizons after first birth. Each estimate is from a separate IV regression using insurance group affiliation as an instrument. All regressions include month-by-year fixed effects and maternal age–year of birth interactions.

Overall, while some suggestive evidence points to a potential increase in long-run hysterectomy risk following private hospital delivery, the effects are not consistently observed across different time horizons and are not robust to more demanding specifications.

Subsequent fertility

Table 7 presents OLS and IV estimates of the effect of delivering at a private hospital on the probability of having two or more children 6 years after the first birth (Panel A), and the probability of having three or more children 9 years after then first birth (Panel B). We do not find a significant effect of delivery at a private hospital on either the probability of having two or more children or three or more children.

Figures 13 and 14 plot the IV estimates of the effect of delivering at a private hospital on subsequent fertility over a 1- to 12-year horizon following the first birth. Figure 13 shows that most estimates for having two children or more are statistically insignificant, although in the very long run there appears to be a positive effect. Figure 14 shows that the estimates for having three children or more are small and statistically insignificant across all time-horizons.[21]

[21] Online Appendix Figures C.2a and C.2b show no evidence of differential pre-treatment trends in fertility across insurance groups, supporting the validity of the identification strategy. In the post-reform period, the estimated effects on both outcomes—having two or more or three or more children— are statistically

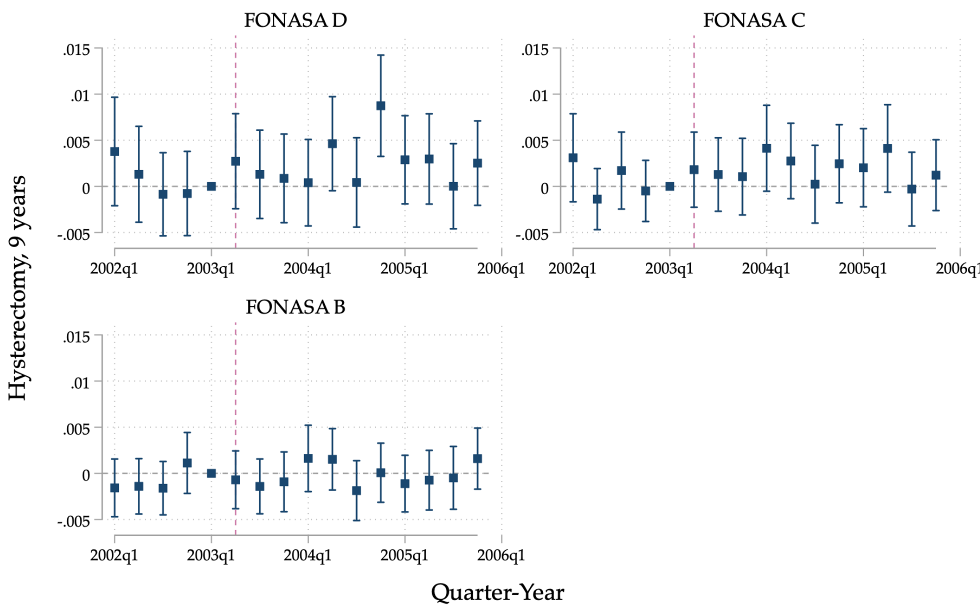

Figure 12: Dynamic effects of the policy on the probability of hysterectomy 9 years after first birth

Note: This figure plots estimated coefficients from equation (3), where each point represents the interaction between quarter dummies and insurance group status (Fonasa B, C, or D), relative to the reference period (the quarter preceding the PAD reform). The dependent variable is an indicator for hysterectomy 9 years after first birth. Vertical lines represent 95% confidence intervals. Fonasa A and Isapre beneficiaries serve as the comparison group.

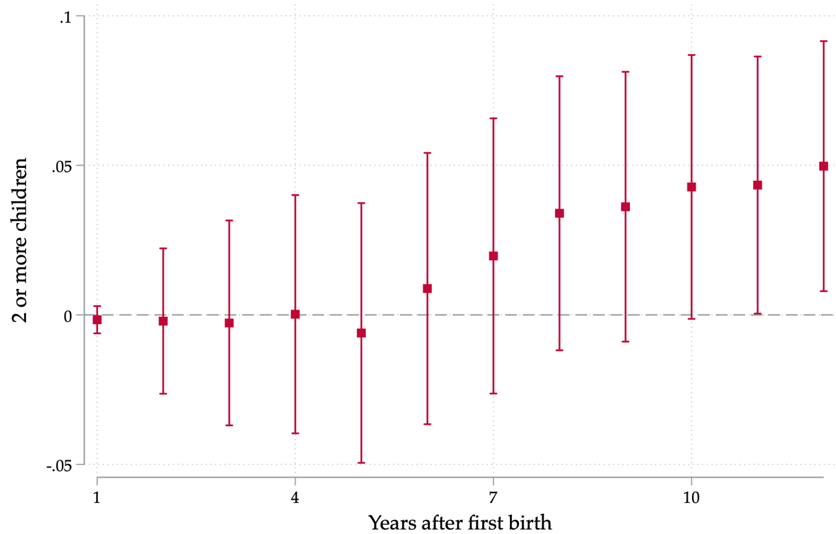

Figure 13: IV estimates of the probability of having 2 children or more at different horizons (1–12 years) after first birth

Note: This figure plots the effect of delivering at a private hospital on the probability of having 2 children or more for different horizons after first birth. Each estimate is from a separate IV regression using insurance group affiliation as an instrument. All regressions include month-by-year fixed effects and maternal age–year of birth interactions.

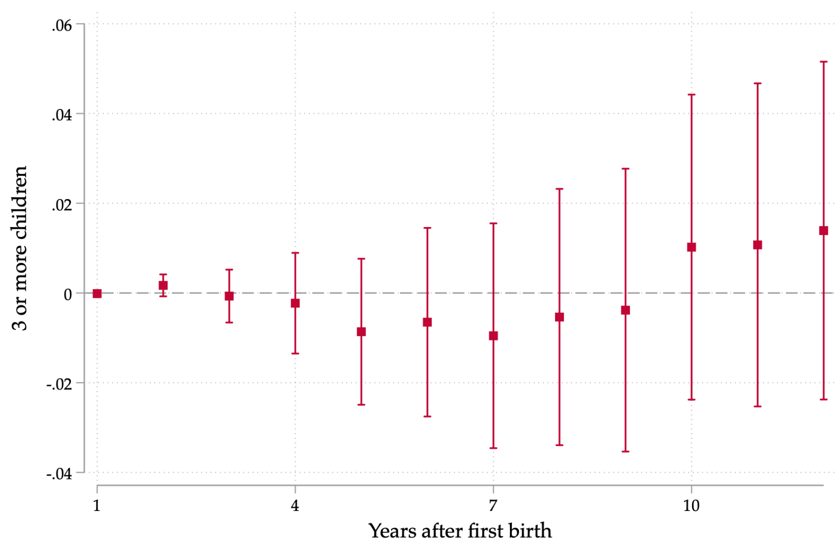

Figure 14: IV estimates of the probability of having 3 children or more at different horizons (1–12 years) after first birth

Note: This figure plots the effect of delivering at a private hospital on the probability of having 3 children or more for different horizons after first birth. Each estimate is from a separate IV regression using insurance group affiliation as an instrument. All regressions include month-by-year fixed effects and maternal age–year of birth interactions.

5.3 Discussion

Overall, our findings show short-term benefits and long-term risks for women associated with private hospital delivery. Private management improves immediate postnatal outcomes—reducing both length of stay and 30-day readmissions—while simultaneously increasing cesarean deliveries. This increase in C-sections, in turn, is linked to an increase in long-term maternal risks, including higher probabilities of repeat cesarean sections and hospitalizations related to cesarean scar complications.

These results contribute to the broader literature showing that efficiency gains in private healthcare settings do not necessarily translate into better health outcomes. For instance, Duggan et al. (2023) find that hospital privatizations in the United States increased revenues—driven by patient selection, higher pricing, and cuts to unprofitable services—but also resulted in higher mortality among Medicare patients. In contrast, our results suggest a more nuanced trade-off: short-run maternal benefits but also persistent long-term health risks for mothers.

Our results also relate to the literature on hospital competition and health outcomes. Prior work has generally found that greater competition—particularly among public hospitals in settings with fixed prices—improves health outcomes (Kessler and McClellan, 2000; Cooper et al., 2011; Gaynor et al., 2013; Bloom et al., 2015; Brekke et al., 2021). However, our context differs in that increased competition arises from expanded access to private hospitals, where the interaction between financial incentives and informational asymmetries is more salient. While greater patient choice between public and private providers may facilitate access to better care, private delivery settings are also more susceptible to physician-induced demand—especially in environments with limited patient information and high provider discretion.

Our findings are also related to recent studies in health economics that examine the causal effects of cesarean delivery on maternal and child outcomes (Costa-Ramón et al., 2018, 2022; Mühlrad, 2022). In particular, they are closely connected to the work of Card et al. (2023), who show that delivering at hospitals with high C-section rates—where women are quasi-randomly exposed to different clinical practices—generates short-run benefits for newborns but leads to higher risks of respiratory and other health problems later in life. Their results highlight how institutional and provider-level delivery practices can have long-term health implications beyond the immediate episode of childbirth. In contrast, our analysis focuses on the maternal side of this trade-off.

While most existing studies emphasize unplanned or medically indicated procedures,

insignificant, reinforcing the conclusion that private hospital delivery does not significantly influence long-run fertility decisions.

the global increase in cesarean rates is largely driven by planned interventions (Begum et al., 2021; Betrán et al., 2018; Vogel et al., 2015). In our previous work (de Elejalde and Giolito, 2021), we show that the rising trend in cesarean deliveries in Chile's private hospitals is not primarily explained by direct financial incentives but by organizational practices—particularly the ability to schedule deliveries in advance. Although this scheduling flexibility can improve hospital efficiency and resource allocation, it also increases the incidence of non-medically indicated cesareans, with potential long-term consequences for maternal health.

Our analysis of long-term maternal outcomes highlights a cumulative process: once a woman undergoes a first cesarean, the likelihood of surgical delivery in subsequent pregnancies increases substantially—even in the absence of medical indications. Jensen and Wüst (2015) show that in Denmark, over 90% of women whose first delivery was a cesarean had a repeat cesarean, compared to less than 10% following a vaginal birth, with no measurable health benefits for either mothers or infants. This path dependence elevates the risk of future complications, including placenta accreta, uterine rupture, and hysterectomy (Keag et al., 2018; Sandall et al., 2018).

Consistent with these findings, we show that women who delivered in private hospitals are more likely to be hospitalized for cesarean-scar complications and, to a lesser extent, undergo hysterectomy up to 15 years after the first birth. Although the estimates for hysterectomy are less precise, they are consistent with the cumulative obstetric risks associated with repeated cesareans. From an economic perspective, these results underscore an intertemporal trade-off: organizational practices that promote planned cesarean deliveries may yield short-run benefits—such as scheduling convenience and more efficient resource use—but at the cost of higher long-term health risks for women and increased healthcare system expenditures.

Finally, we relate our findings to the literature on fertility effects of cesarean delivery. Halla et al. (2020) instrument unplanned cesarean sections using time-of-arrival variation—reflecting physicians' scheduling incentives—and find a negative effect on subsequent fertility. In contrast, we use a policy reform as an instrument that increased the likelihood of planned cesarean sections and find no impact on long-term childbearing. These differences may arise from the distinct nature of the procedures induced in each setting, suggesting that planned and unplanned cesareans may entail different long-term consequences for fertility. [22]

Taken together, our results highlight the importance of distinguishing between organizational practices aimed at improving hospital performance and genuine improvements in quality of care. Policies or institutional environments that encourage planned cesarean delivery may yield immediate gains in operational outcomes such as shorter lengths of stay or lower

[22] Consistent with our findings, Wilbert and Homme (2026) use U.S. Army health claims and administrative records to show that unplanned cesarean sections adversely affect subsequent fertility, whereas planned cesarean sections have small and statistically insignificant impacts.

readmission rates, but also risk imposing substantial long-term health costs. These trade-offs should be carefully considered in the design of maternal health systems, particularly in contexts where patient information is limited and provider discretion remains high.

6 Robustness checks

We run several exercises to validate our identification strategy and to check the robustness of our results.

First, to assess whether our results could be driven by compositional changes in the sample, we estimate a series of placebo regressions using predetermined maternal characteristics as outcomes. These include maternal age, education, and employment status at the time of first birth.

Online Appendix Table C.3 reports OLS and IV estimates of the effect of delivering at a private hospital on maternal age. The OLS estimates show a positive correlation: women delivering in private hospitals tend to be older. However, this relationship disappears once we instrument for private hospital delivery using insurance affiliation, regardless of the set of controls included.

Online Appendix Table C.4 presents similar placebo tests for maternal education and employment. In OLS, both characteristics are positively and significantly correlated with private hospital delivery. The IV estimates for education remain statistically significant in some specifications, but the effect loses significance once a linear trend is included, indicating that the relationship is not robust. This attenuation may reflect underlying trends in education, particularly the rapid expansion in university enrollment during the study period, which could confound the association.[23] For maternal employment, the IV estimates show a small positive effect that is only marginally significant (10%) and becomes insignificant when controlling for a linear trend.

Overall, these placebo results provide reassurance that the main findings are not driven by compositional changes in maternal characteristics, and support the validity of the identification strategy.

Second, we examine robustness to alternative definitions of the treatment and control groups. In one specification, we expand the treated group to include women with private insurance in addition to those in Fonasa B, C, or D. This addresses the concern that some women—particularly in group D—may have switched from private to public coverage following

[23]According to official statistics from the Chilean Ministry of Education, average years of schooling among the labor force increased from 10.2 years in 2000 to 11.1 years in 2006 (Ministerio de Educación de Chile, Indicadores de la Educación 2006, p. 93, available at https://centroestudios.mineduc.cl/wp-content/uploads/sites/100/2017/06/IndicadoresdelaEducacion2006.pdf).

the policy reform. If our results remain robust under this broader treatment definition, such compositional shifts are less likely to bias the main estimates. In a complementary approach, we restrict the sample to women affiliated with Fonasa A, B, or C, excluding group D altogether. This strategy offers an additional check against insurance switching into group D, at the cost of reduced statistical power due to lower private hospital take-up among groups B and C.

Online Appendix Tables C.5 to C.8 present IV estimates from two robustness exercises that use insurance affiliation as an instrument, based on alternative definitions of the treatment and control groups. In each table, column (1) reports estimates from our preferred specification. Column (2) presents estimates from a specification that also includes the interaction between private insurance affiliation and the post-treatment indicator as an additional instrument, thereby redefining both the treatment group (Fonasa B, C, and D, plus private insurance) and the control group (Fonasa A). Columns (3) and (4) report results from a second exercise that restricts the sample to women affiliated with public insurance, using those in Fonasa A as the control group. Column (3) reports estimates from the main specification, while column (4) excludes group D from the sample, using affiliation with groups B and C as instruments for delivery at a private hospital.

Overall, leaving aside fertility outcomes—which, as stated above, are generally insignificant—the significance of the results is robust across both exercises, although the estimated coefficients tend to be smaller when private insurance is included as part of the treatment group. The only other exception is the effect on hysterectomy nine years after the first birth, which loses significance when municipality fixed effects and interactions are included (Online Appendix Table C.7, panel B).

Third, we use an alternative instrument that is more robust to compositional changes. Specifically, we construct the 2018 share of the population affiliated with Fonasa Groups B, C, or D, calculated by age group and municipality of residence. We then estimate a difference-in-differences IV (DID-IV) model, using this group-level share as an instrument for private hospital delivery. This strategy rests on the assumption that individuals' age group and municipality of residence are stable over time—a credible condition, as these characteristics are unlikely to be directly affected by the reform.

Online Appendix Tables C.9 through C.13 report results from the alternative specification using the group-level Fonasa B, C, or D share as an instrument. Table C.9 presents first stage estimates and confirms that the instrument satisfies the relevance assumption, with strong and statistically significant effects on the probability of delivering at a private hospital. Online Appendix Tables C.10 through C.13 show the IV estimates with the Fonasa B, C, or D share as an instrument for our outcomes. The point estimates are generally larger in magnitude than those from the main specification, but are also less precise, reflecting the more limited variation available in the aggregated (age–municipality) instrument.[24]

Fourth, our definition of mode of delivery is deliberately comprehensive. For births that can be matched to a hospital discharge record, we classify the delivery using both the principal diagnosis code and whether a surgical procedure was performed (see Appendix Section B.1 for details). While several ICD-10 codes unambiguously identify the delivery mode, others are more ambiguous.

To verify that our results are not driven by these borderline categories, we construct a narrower definition of delivery mode. Following Jackson et al. (2012), we restrict classification to a subset of codes that clearly indicate cesarean or vaginal delivery, and we set the mode of delivery to missing for all remaining codes (Appendix Table C.14 describes this alternative definition). Table C.15 compares results obtained under both definitions. The estimates are very similar, indicating that our findings are not sensitive to the way we classify delivery mode.

Finally, to assess the sensitivity of our findings to functional form assumptions, we estimate an IV Probit model using a control function approach. Online Appendix Tables C.16 to C.19 report estimates from an IV Probit. In particular, columns (3) and (4) of each table present Probit estimates of equation (1), using as a control variable the residuals from the first stage equations.

The results are remarkably similar to those obtained with the linear IV approach (column (2)), although the coefficients are generally smaller—except in the cases of prolonged hospitalization and 30-day readmission (Table C.16).

7 Conclusion

In this paper, we exploit a 2003 copayment reduction that increased access to private hospitals for women insured by Fonasa as an instrument for private delivery. The reform generated a sizable shift from public to private maternity care, providing plausibly exogenous variation in hospital choice. Using linked administrative data and an IV difference-in-differences design, we estimate the causal effect of private hospital delivery on maternal outcomes up to fifteen years after the first birth.

Our results reveal a clear intertemporal trade-off. Women induced to deliver in private hospitals experience better short-term outcomes, including fewer prolonged hospitalizations

[24] For example, column (3) of Panel B in Online Appendix Table C.13 shows a sizable negative effect on the probability of having a third child within 9 years. However, the effect becomes statistically insignificant once age-year interactions are included, as shown in column (4).

and lower rates of readmission. Over the long run, however, they face higher risks of repeat C-sections, cesarean-scar complications, and, to a lesser extent, hysterectomy. We find no evidence that private delivery affects subsequent fertility. These patterns underscore the role of organizational practices—particularly the scheduling of planned C-sections—in driving short-run improvements in observable outcomes while generating adverse long-term maternal risks.

Taken together, our findings highlight that policies that expand access to private delivery may generate short-term efficiency gains while introducing persistent health risks. As health systems adopt payment mechanisms and competitive structures that favor planned interventions, it becomes increasingly important to account for these dynamic trade-offs when evaluating reforms to maternity care.

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8 Tables

Table 1: Descriptive statistics by insurance type

	Fonasa A	Fonasa B	Fonasa C	Fonasa D	Priv. Ins.	All
Panel A: Demographics						
Age	20.853	22.412	23.305	25.225	27.484	22.836
	(4.488)	(5.591)	(5.525)	(5.535)	(5.476)	(5.605)
Mother employed	0.052	0.322	0.509	0.606	0.688	0.301
	(0.222)	(0.467)	(0.500)	(0.489)	(0.463)	(0.459)
Mother's education	10.509	11.289	11.701	12.742	14.507	11.601
	(2.432)	(2.415)	(2.216)	(2.359)	(2.469)	(2.779)
Panel B: Short-term outcomes						
Private hospital	0.007	0.044	0.152	0.478	0.870	0.207
	(0.082)	(0.206)	(0.359)	(0.500)	(0.337)	(0.405)
Cesarean section	0.243	0.307	0.342	0.518	0.548	0.340
	(0.429)	(0.461)	(0.474)	(0.500)	(0.498)	(0.474)
7+ days hospitalization	0.074	0.066	0.051	0.031	0.014	0.057
	(0.262)	(0.248)	(0.220)	(0.172)	(0.116)	(0.231)
30-day readmission	0.041	0.036	0.029	0.019	0.012	0.032
	(0.199)	(0.187)	(0.167)	(0.137)	(0.110)	(0.177)
Panel C: Long-term outcomes						
Cesarean scar complic. in 3 years	0.005	0.008	0.013	0.025	0.047	0.015
	(0.069)	(0.091)	(0.114)	(0.156)	(0.213)	(0.120)
Hysterectomy in 15 years	0.011	0.016	0.017	0.027	0.040	0.019
	(0.106)	(0.124)	(0.130)	(0.162)	(0.197)	(0.135)
Second birth in 6 years	0.402	0.376	0.380	0.395	0.510	0.410
	(0.490)	(0.484)	(0.485)	(0.489)	(0.500)	(0.492)
Third birth in 9 years	0.150	0.117	0.112	0.103	0.152	0.135
	(0.357)	(0.321)	(0.316)	(0.304)	(0.359)	(0.342)
Observations	142,909	53,050	30,875	36,085	44,132	307,051

Note: This table reports descriptive statistics by insurance type at the time of first birth: Fonasa A, B, C, D, and private insurance (Isapre). Panels report demographic characteristics (A), short-term delivery outcomes (B), and long-term outcomes (C). Unless otherwise specified, all statistics refer to the mother's first birth. The sample includes in-hospital, singleton first births to women aged 15–47 with public or private insurance between 2002 and 2005.

Table 2: Descriptive statistics by insurance type: Sample of mothers with two or more births

	Fonasa A	Fonasa B	Fonasa C	Fonasa D	Priv. Ins.	All
C-section (first pregnancy)	0.230	0.286	0.323	0.496	0.523	0.316
	(0.421)	(0.452)	(0.467)	(0.500)	(0.499)	(0.465)
C-section (second pregnancy)	0.333	0.421	0.454	0.594	0.591	0.422
	(0.471)	(0.494)	(0.498)	(0.491)	(0.492)	(0.494)
Repeated C-section	0.162	0.227	0.261	0.434	0.458	0.251
	(0.368)	(0.419)	(0.439)	(0.496)	(0.498)	(0.434)
Observations	94,735	33,438	19,024	20,952	25,472	193,621

Note: This table reports the probability of C-section in the first and second births for mothers with at least two births. Columns correspond to insurance affiliation at the time of the first birth: Fonasa A, B, C, D, and private insurance (Isapre). The sample includes in-hospital, singleton first births to women aged 15–47 with public or private insurance between 2002 and 2005.

Table 3: First stage estimates

	Private Hospital			
	(1)	(2)	(3)	(4)
Fonasa B * post	0.027***	0.035***	0.034***	0.011***
	[0.002]	[0.002]	[0.002]	[0.003]
Fonasa C * post	0.124***	0.119***	0.113***	0.091***
	[0.004]	[0.003]	[0.003]	[0.004]
Fonasa D * post	0.277***	0.269***	0.263***	0.242***
	[0.006]	[0.005]	[0.005]	[0.006]
Month-Year FE	X	X	X	X
Age-Year FE	X	X	X	X
Municipality-Age FE		X	X	X
Municipality-Year FE			X	X
Linear trend				X
Effective F-stat	1,574.4	1,624.3	1,545.4	1,046.0
Mean DV	0.207	0.207	0.207	0.207
Observations	307,050	306,904	306,893	306,893

Note: Linear trend is a linear trend for Fonasa A. Effective F-stat is the effective F-statistic proposed by Montiel Olea and Pflueger (2013) to test the presence of weak instruments. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table 4: Effect of delivery at private hospital on short-term maternal outcomes (at first birth): OLS and IV estimates

	OLS	IV Fonasa B, C, D		
	(1)	(2)	(3)	(4)
Panel A: Cesarean section, first birth				
Private Hospital	0.205***	0.441***	0.446***	0.426***
	[0.003]	[0.022]	[0.023]	[0.027]
Mean DV	0.340	0.340	0.340	0.340
Observations	300,106	300,106	299,942	299,942
Panel B: 7+ days hospitalization				
Private Hospital	-0.049***	-0.089***	-0.087***	-0.083***
	[0.001]	[0.011]	[0.012]	[0.013]
Mean DV	0.057	0.057	0.057	0.057
Observations	307,050	307,050	306,893	306,893
Panel C: 30-day readmission				
Private Hospital	-0.018***	-0.039***	-0.032***	-0.021**
	[0.001]	[0.008]	[0.009]	[0.010]
Mean DV	0.032	0.032	0.032	0.032
Observations	307,050	307,050	306,893	306,893
Month-Year FE	X	X	X	X
Age-Year FE	X	X	X	X
Municipality-Age FE			X	X
Municipality-Year FE			X	X
Linear trend				X

Note: Linear trend is a linear trend for Fonasa A. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table 5: Effect of delivery at private hospital on C-section in the first and second births: OLS and IV estimates

	OLS	IV Fonasa B, C, D		
	(1)	(2)	(3)	(4)
Panel A: C-section in first birth				
Private Hospital	0.206***	0.454***	0.451***	0.427***
	[0.004]	[0.028]	[0.030]	[0.035]
Mean DV	0.316	0.316	0.316	0.316
Observations	193,617	193,617	193,448	193,448
Panel B: C-section in second birth				
Private Hospital	0.162***	0.336***	0.337***	0.305***
	[0.004]	[0.030]	[0.032]	[0.037]
Mean DV	0.422	0.422	0.422	0.422
Observations	193,617	193,617	193,448	193,448
Panel C: Repeat C-section				
Private Hospital	0.209***	0.468***	0.477***	0.448***
	[0.004]	[0.026]	[0.028]	[0.032]
Mean DV	0.251	0.251	0.251	0.251
Observations	193,617	193,617	193,448	193,448
Month-Year FE	X	X	X	X
Age-Year FE	X	X	X	X
Municipality-Year FE			X	X
Municipality-Age FE			X	X
Linear trend				X

Note: The sample is restricted to women with at least two births, for whom the mode of delivery can be identified in both the first and second birth. Linear trend is a linear trend for Fonasa A. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table 6: Effect of delivery at private hospital on hospitalizations due to obstetric complications: OLS and IV estimates

	OLS	IV Fonasa B, C, D		
	(1)	(2)	(3)	(4)
Panel A: Cesarean scar hospitalization, 3 years				
Private Hospital	0.030***	0.051***	0.055***	0.054***
	[0.001]	[0.006]	[0.006]	[0.007]
Mean DV	0.015	0.015	0.015	0.015
Observations	307,050	307,050	306,893	306,893
Panel B: Hysterectomy, 9 years				
Private Hospital	0.003***	0.008**	0.007**	0.006
	[0.001]	[0.003]	[0.004]	[0.004]
Mean DV	0.005	0.005	0.005	0.005
Observations	307,050	307,050	306,893	306,893
Month-Year FE	X	X	X	X
Age-Year FE	X	X	X	X
Municipality-Age FE			X	X
Municipality-Year FE			X	X
Linear trend				X

Note: Linear trend is a linear trend for Fonasa A. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table 7: Effect of delivery at private hospital on subsequent fertility: OLS and IV estimates

	OLS	IV Fonasa B, C, D		
	(1)	(2)	(3)	(4)
Panel A: 2 or more children, 6 years				
Private Hospital	0.047***	0.009	0.010	0.029
	[0.003]	[0.023]	[0.025]	[0.029]
Mean DV	0.410	0.410	0.410	0.410
Observations	307,050	307,050	306,893	306,893
Panel B: 3 or more children, 9 years				
Private Hospital	0.018***	-0.004	-0.002	0.016
	[0.002]	[0.016]	[0.017]	[0.020]
Mean DV	0.135	0.135	0.135	0.135
Observations	307,050	307,050	306,893	306,893
Month-Year FE	X	X	X	X
Age-Year FE	X	X	X	X
Municipality-Age FE			X	X
Municipality-Year FE			X	X
Linear trend				X

Note: Linear trend is a linear trend for Fonasa A. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Appendix

A Dataset construction

A.1 Data sources

Our analysis combines two administrative datasets from Chile: birth certificates and hospital discharge records, both provided by the Ministry of Health.

The birth certificate data include all registered births between 2001 and 2018. Each record contains a unique anonymized ID for both the mother and the child, along with detailed information such as date of birth, birth weight, size at birth, gestational age, indicators for singleton or multiple births, parity, and the delivery hospital. Maternal characteristics—age, municipality of residence, educational attainment, and employment status—are also reported.

The hospital discharge data cover all inpatient admissions between 2001 and 2020. For each hospitalization, the data report a unique anonymized patient identifier, the discharging hospital, discharge date, length of stay, principal diagnosis coded under ICD-10, whether a surgical procedure was performed, Fonasa procedure codes (since 2004), and patient characteristics such as age, gender, municipality of residence, and insurance affiliation (Fonasa group or Isapre). Because both datasets rely on the same anonymized identifier system, we can link births and hospitalizations at the individual level.

A.2 Identifying obstetric hospitalizations to match with birth data

We identify childbirth-related hospitalizations by selecting female patients whose principal diagnosis begins with the letter "O," corresponding to pregnancy, childbirth, and the puerperium under ICD-10. For these admissions, we keep the patient identifier, discharge date, length of stay, hospital identifier, municipality of residence, and patient age.

When multiple obstetric records occur for the same patient within a month, we retain the record that most clearly corresponds to delivery: first those with diagnosis codes O80–O84, and, if more than one remains (or none exists), the one with the latest discharge date. The resulting dataset is then used to match births to hospitalizations.

A.3 Linking births to hospital records

We link birth certificates to childbirth hospitalizations using a multi-step matching procedure that prioritizes precise identifiers while allowing for minor discrepancies in recorded dates and characteristics.

In the first stage, we perform a deterministic match based on the mother identifier and the month of delivery. A birth is linked to a hospitalization when the mother identifier coincides with the patient identifier and the hospitalization discharge month falls within two months (before or after) of the birth month.

For births that remain unmatched, we rely on observed demographic and geographic characteristics. In this second stage, records are matched using the date of birth, municipality of residence, maternal age, and delivery hospital. We begin with exact matches and then allow the birth date to vary by up to three days and maternal age by up to one year to account for small reporting errors.

Finally, for the small number of cases in which the exact discharge date is missing but the discharge year is reported, we match births and hospitalizations using the mother identifier and calendar year of delivery.

All matched cases are flagged according to the rule used, allowing us to assess match quality. Overall, 89 percent of births are successfully linked to a hospitalization. Among matched births, 95.5 percent are matched using the mother identifier and month of delivery, 4.2 percent using date of birth, municipality, maternal age, and delivery hospital, and 0.3 percent using the mother identifier and year of delivery.

A.4 Sample selection

From the matched data, we define the analytic sample used in the empirical analysis. We restrict to in-hospital singleton births to nulliparous women and focus on deliveries occurring between 2001 and 2005. We further limit the sample to mothers aged 15 to 47 who were enrolled in either public insurance (Fonasa) or private insurance (Isapre), and we require complete information on delivery hospital and insurance affiliation.

For mothers enrolled in Fonasa whose specific insurance group was not reported, we impute the missing group using information from hospitalizations in adjacent years. This correction applies to 2.8 percent of observations among Fonasa affiliates.

Because a relatively large share of records lack identifiers in 2001, the estimation sample is restricted to 2002–2005. However, data from 2001 are retained for descriptive figures used to assess pre-existing trends.

A.5 Outcome construction

Using this matched sample, together with subsequent birth and hospitalization records, we construct the outcomes analyzed in the paper.

Short-term outcomes are defined immediately following the birth hospitalization and include indicators for cesarean delivery, prolonged maternal hospitalization (a stay longer than seven days), and readmission within thirty days of discharge.

Long-term outcomes are derived from hospital discharge data observed for up to fifteen years after the first delivery. These include hospitalizations related to maternal obstetric care, particularly cesarean-scar complications and hysterectomy, identified using ICD-10 diagnosis codes and corresponding Fonasa procedure codes. For mothers who have additional births within twelve years, we also construct indicators for cesarean delivery in the second birth and for having cesarean deliveries in both the first and second births. Finally, we use subsequent birth certificates to construct indicators for whether the mother has a second or third child within one to twelve years after the initial birth.

B Variables definition

Cesarean section:

Table B.1 summarizes the classification of the binary indicator Cesarean Section, constructed from ICD-10 diagnosis codes recorded at delivery. Because we match hospital discharge data to birth records, all observations correspond to delivery events. However, in Chile's hospital data, childbirth hospitalizations are often coded under pregnancy or labor complications rather than delivery-specific ICD-10 codes (O80-O84). We therefore use an expanded list of ICD-10 codes covering pregnancy, labor, and delivery-related diagnoses.

Table B.1: Definition of Cesarean Section

ICD-10 diagnosis code	C-section = 1	C-section = 0
O140, O141, O149, O160, O240, O249, O266, O300, O321, O322, O324, O325, O329, O330, O331, O334, O335, O339, O342, O348, O349, O363, O365, O366, O368, O410, O411, O441, O459, O603, O610, O619, O620, O621, O622, O639, O640, O641, O648, O649, O651, O654, O655, O662, O664, O669, O680, O682, O688, O689, O691, O820, O821, O822, O828, O829, O842	Yes	No
O100, O130, O244, O269, O360, O400, O420, O421, O429, O470, O471, O479, O480, O600, O601, O602, O623, O629, O668, O681, O698, O700, O701, O702, O703, O709, O714, O757, O758, O800, O801, O808, O809, O810, O811, O812, O813, O814, O815, O830, O831, O832, O833, O834, O838, O839, O840, O841, O860, O909, O990, O992, O993, O996, O998	No	Yes
O848, O849	has_surgery = 1	has_surgery = 0

Note: This table summarizes the classification of the binary indicator C-section, constructed from ICD-10 diagnosis codes recorded at delivery. Codes listed in the first row are always classified as cesarean section (C-section = 1), while codes in the second row are always classified as noncesarean (C-section = 0). For diagnoses O848 and O849, the classification depends on whether a surgical procedure is recorded in the hospital discharge data: the delivery is classified as a C-section when $has\_surgery = 1$, and as noncesarean when $has\_surgery = 0$. All remaining obstetric diagnoses are left unclassified and the mode of delivery is coded as missing.

Hysterectomy:

Defined as hospital discharges with ICD-10 code O822 (cesarean section with hysterectomy) or with any of the following Fonasa surgical procedure codes: 2003009–2003010 (abdominal hysterectomy with unilateral/bilateral anexectomy), 2003014 (vaginal hysterectomy), 2003015 (radical hysterectomy with pelvic and para-aortic lymph node dissection), 2003016 (total hysterectomy with concurrent urinary incontinence surgery), 2501034 (unspecified hysterectomy), and 2004005 (cesarean section with hysterectomy). Since surgical procedure codes are available only from 2004 onward, this variable is defined for all patients starting three years after the first birth.

C Tables and Figures

C.1 Summary Statistics

Table C.1: Descriptive statistics: Long-term outcomes by insurance type

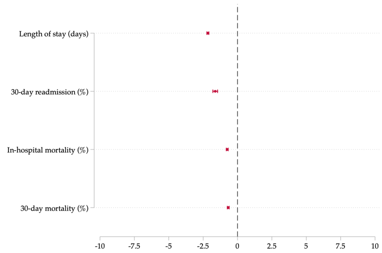
	Fonasa A	Fonasa B	Fonasa C	Fonasa D	Priv. Ins.	All
Panel A: Cesarean scar hospitalization						
3 years	0.005	0.008	0.013	0.025	0.047	0.015
	(0.069)	(0.091)	(0.114)	(0.156)	(0.213)	(0.120)
6 years	0.012	0.022	0.027	0.054	0.093	0.032
	(0.111)	(0.145)	(0.163)	(0.226)	(0.290)	(0.176)
9 years	0.021	0.034	0.039	0.074	0.117	0.045
	(0.145)	(0.181)	(0.193)	(0.261)	(0.321)	(0.208)
12 years	0.029	0.043	0.045	0.084	0.128	0.054
	(0.167)	(0.204)	(0.208)	(0.277)	(0.334)	(0.225)
15 years	0.036	0.051	0.052	0.092	0.135	0.061
	(0.187)	(0.221)	(0.221)	(0.289)	(0.341)	(0.240)
Panel B: Hysterectomy						
3 years	0.000	0.000	0.000	0.000	0.001	0.000
	(0.015)	(0.016)	(0.017)	(0.020)	(0.024)	(0.018)
6 years	0.001	0.001	0.001	0.002	0.003	0.001
	(0.029)	(0.031)	(0.035)	(0.049)	(0.053)	(0.037)
9 years	0.003	0.004	0.005	0.008	0.011	0.005
	(0.052)	(0.061)	(0.070)	(0.086)	(0.103)	(0.069)
12 years	0.006	0.009	0.010	0.015	0.023	0.011
	(0.077)	(0.094)	(0.100)	(0.123)	(0.151)	(0.102)
15 years	0.011	0.016	0.017	0.027	0.040	0.019
	(0.106)	(0.124)	(0.130)	(0.162)	(0.197)	(0.135)
Observations	142,909	53,050	30,875	36,085	44,132	307,051

Note: This table reports the share of mothers hospitalized for cesarean scar complications (Panel A) and for hysterectomy (Panel B) at 3, 6, 9, 12, and 15 years after the first birth, by insurance affiliation at the time of the first birth. The sample includes in-hospital, singleton first births to women aged 15–47 with public or private insurance between 2002 and 2005.

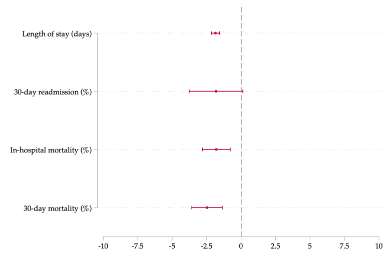
Table C.2: Descriptive statistics: Subsequent fertility by insurance type

	Fonasa A	Fonasa B	Fonasa C	Fonasa D	Priv. Ins.	All
Panel A: 2 or more children						
3 years	0.152	0.138	0.142	0.155	0.261	0.165
	(0.359)	(0.345)	(0.349)	(0.362)	(0.439)	(0.371)
6 years	0.402	0.376	0.380	0.395	0.510	0.410
	(0.490)	(0.484)	(0.485)	(0.489)	(0.500)	(0.492)
9 years	0.593	0.561	0.560	0.557	0.630	0.586
	(0.491)	(0.496)	(0.496)	(0.497)	(0.483)	(0.493)
12 years	0.707	0.673	0.668	0.649	0.690	0.688
	(0.455)	(0.469)	(0.471)	(0.477)	(0.463)	(0.463)
Panel B: 3 or more children						
3 years	0.004	0.003	0.003	0.003	0.006	0.004
	(0.064)	(0.055)	(0.057)	(0.058)	(0.079)	(0.063)
6 years	0.057	0.044	0.040	0.041	0.079	0.054
	(0.232)	(0.205)	(0.197)	(0.198)	(0.270)	(0.227)
9 years	0.150	0.117	0.112	0.103	0.152	0.135
	(0.357)	(0.321)	(0.316)	(0.304)	(0.359)	(0.342)
12 years	0.247	0.199	0.187	0.168	0.204	0.217
	(0.431)	(0.399)	(0.390)	(0.373)	(0.403)	(0.412)
Observations	142,909	53,050	30,875	36,085	44,132	307,051

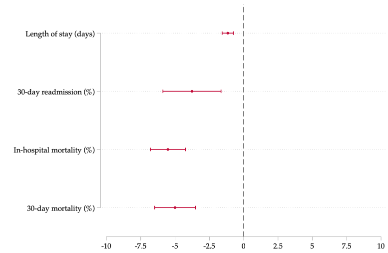
Note: This table reports the probability of having a second child and a third child within 3, 6, 9 and 12 years of the first birth, by insurance affiliation at the time of the first birth. The sample includes in-hospital, singleton first births to women aged 15–47 with public or private insurance between 2002 and 2005.



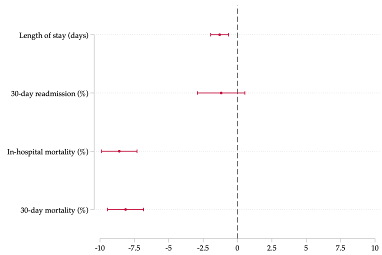
(a) Emergency surgery



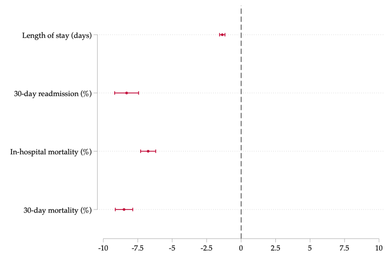
(b) Acute myocardial infarction



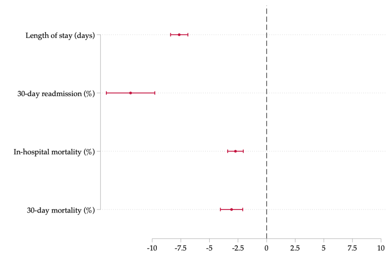
(c) Heart failure



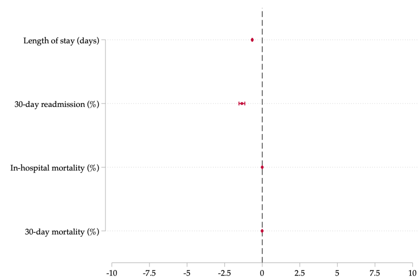
(d) Stroke



(e) Pneumonia



(f) Hip fracture

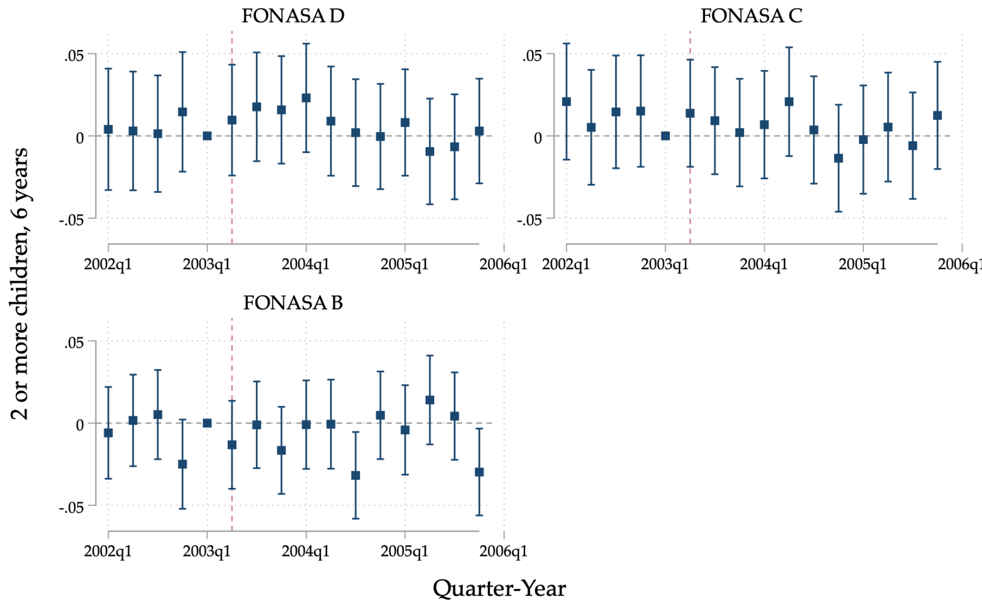


(g) Delivery

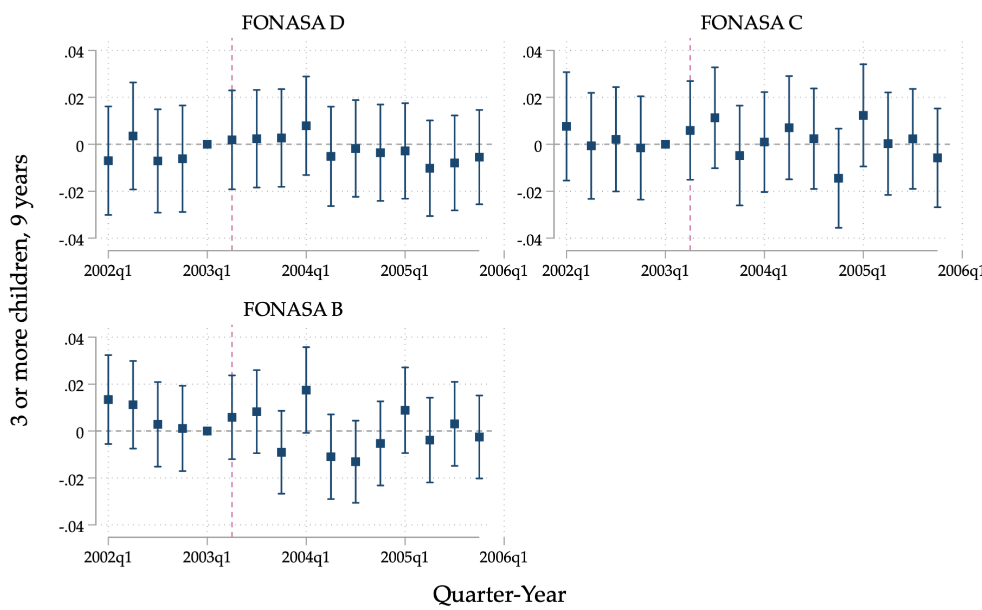
Figure C.1: Risk-adjusted hospital outcomes: Private vs. public hospitals, 2012-2016

Note: These figures show 95% confidence intervals for the coefficient on the private hospital indicator from regressions where the outcome (listed on the x-axis) is regressed on a private hospital dummy and controls for the Charlson comorbidity index, age, sex, principal diagnosis, and year fixed effects.

C.2 IV and reduced form estimates



(a) Probability of having two children or more, 6 years after first birth



(b) Probability of having three children or more, 9 years after first birth

Figure C.2: Dynamic effects of the policy on subsequent fertility after first birth

Note: These figures plot estimated coefficients from equation (3), where each point represents the interaction between quarter dummies and insurance group status (Fonasa B, C, or D), relative to the reference period (the quarter preceding the PAD reform). The dependent variables are an indicator for having two children or more 6 years after first birth and an indicator for having three children or more 9 years after first birth. Vertical lines represent 95% confidence intervals. Fonasa A and Isapre beneficiaries serve as the comparison group.

C.3 Placebos

Table C.3: Placebo test: Maternal age

	OLS	IV Fonasa B, C, D		
	(1)	(2)	(3)	(4)
Private Hospital	2.264***	-0.320	-0.367	-0.564*
	[0.039]	[0.233]	[0.245]	[0.292]
Mean DV	22.836	22.836	22.836	22.836
Observations	307,051	307,051	307,038	307,038
Month-Year FE	X	X	X	X
Municipality-Year FE			X	X
Linear Trend				X

Note: This table reports OLS and IV estimates of the effect of delivering at a private hospital on maternal age at first birth–a predetermined characteristic. Columns (2) to (4) report IV estimates using individual insurance affiliation as the instrument. Linear trend is a linear trend for Fonasa A. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors are reported in brackets .
*** Significant at the 1 percent level. ** Significant at the 5 percent level.
* Significant at the 10 percent level.

Table C.4: Placebo test: Maternal education and employment

	OLS	IV Fonasa B, C, D		
	(1)	(2)	(3)	(4)
Panel A: Mother's years of education				
Private Hospital	1.143***	0.511***	0.457***	-0.059
	[0.015]	[0.103]	[0.107]	[2.505]
Mean DV	11.601	11.601	11.601	11.601
Observations	307,038	307,038	306,881	306,881
Panel B: Mother employed				
Private Hospital	0.128***	0.031*	0.031*	-0.519
	[0.003]	[0.016]	[0.017]	[0.522]
Mean DV	0.301	0.301	0.301	0.301
Observations	307,050	307,050	306,893	306,893
Month-Year FE	X	X	X	X
Age-Year FE	X	X	X	X
Municipality-Age FE			X	X
Municipality-Year FE			X	X
Linear Trend				X

Note: This table reports OLS and IV estimates of the effect of delivering at a private hospital on maternal education and employment at first birth–a predetermined characteristic. Columns (2) to (4) report IV estimates using individual insurance affiliation as the instrument. Linear trend is a linear trend for Fonasa A. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors are reported in brackets. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

C.4 Alternative treatment/control definitions

Table C.5: Robustness: Short-run outcomes using alternative treatment/control definitions

	Main sample		Fonasa only	
	(1) Main	(2) B, C, D + Private	(3) Main	(4) B + C only
Panel A: Cesarean section, first birth				
Private Hospital	0.441***	0.364***	0.362***	0.468***
	[0.022]	[0.048]	[0.023]	[0.051]
Mean DV	0.340	0.340	0.340	0.340
Observations	300,106	300,106	257,392	222,188
Panel B: 7+ days hospitalization				
Private Hospital	-0.089***	-0.137***	-0.086***	-0.151***
	[0.011]	[0.024]	[0.012]	[0.029]
Mean DV	0.057	0.057	0.057	0.057
Observations	307,050	307,050	262,919	226,833
Panel C: 30-day readmission				
Private Hospital	-0.039***	-0.098***	-0.051***	-0.083***
	[0.008]	[0.018]	[0.009]	[0.022]
Mean DV	0.032	0.032	0.032	0.032
Observations	307,050	307,050	262,919	226,833

Note: This table reports IV estimates using alternative treatment and control definitions. Columns (1) and (2) use the full sample of women with public or private insurance. Column (1) follows our main specification, instrumenting private hospital delivery with affiliation to Fonasa Groups B, C, or D. Column (2) extends the treatment group to include privately insured women. Columns (3) and (4) restrict the sample to publicly insured women. Column (3) excludes private insurance, while Column (4) further excludes Fonasa Group D, retaining only Groups A, B, and C.
All specifications include month-year fixed effects and age of mother-year of birth interactions. Robust standard errors are reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.6: Robustness: C-section in the first and second births using alternative treatment/control definitions

	Main sample		Fonasa only	
	(1) Main	(2) B, C, D + Private	(3) Main	(4) B + C only
Panel A: C-section in first birth				
Private Hospital	0.454***	0.395***	0.382***	0.568***
	[0.028]	[0.066]	[0.029]	[0.076]
Mean DV	0.316	0.316	0.316	0.316
Observations	193,617	193,617	168,145	147,193
Panel B: C-section in second birth				
Private Hospital	0.336***	0.282***	0.271***	0.385***
	[0.030]	[0.070]	[0.031]	[0.084]
Mean DV	0.422	0.422	0.422	0.422
Observations	193,617	193,617	168,145	147,193
Panel C: Repeat C-section				
Private Hospital	0.468***	0.407***	0.386***	0.573***
	[0.026]	[0.061]	[0.026]	[0.068]
Mean DV	0.251	0.251	0.251	0.251
Observations	193,617	193,617	168,145	147,193

Note: This table reports IV estimates using alternative treatment and control definitions. Columns (1) and (2) use the full sample of women with public or private insurance. Column (1) follows our main specification, instrumenting private hospital delivery with affiliation to Fonasa Groups B, C, or D. Column (2) extends the treatment group to include privately insured women. Columns (3) and (4) restrict the sample to publicly insured women. Column (3) excludes private insurance, while Column (4) further excludes Fonasa Group D, retaining only Groups A, B, and C.
All specifications include month-year fixed effects and age of mother-year of birth interactions. Robust standard errors are reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.7: Robustness: Hospitalizations due to obstetric complications using alternative treatment/control definitions

	Main sample		Fonasa only	
	(1)	(2)	(3)	(4)
	Main	B, C, D + Private	Main	B + C only
Panel A: Cesarean scar, 3 years				
Private Hospital	0.051***	0.036***	0.042***	0.049***
	[0.006]	[0.012]	[0.005]	[0.009]
Mean DV	0.015	0.015	0.015	0.015
Observations	307,050	307,050	262,919	226,833
Panel B: Hysterectomy, 9 years				
Private Hospital	0.008**	0.010	0.007**	0.012*
	[0.003]	[0.007]	[0.003]	[0.006]
Mean DV	0.005	0.005	0.005	0.005
Observations	307,050	307,050	262,919	226,833

Note: This table reports IV estimates using alternative treatment and control definitions. Columns (1) and (2) use the full sample of women with public or private insurance. Column (1) follows our main specification, instrumenting private hospital delivery with affiliation to Fonasa Groups B, C, or D. Column (2) extends the treatment group to include privately insured women. Columns (3) and (4) restrict the sample to publicly insured women. Column (3) excludes private insurance, while Column (4) further excludes Fonasa Group D, retaining only Groups A, B, and C.
All specifications include month-year fixed effects and age of mother-year of birth interactions. Robust standard errors are reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.8: Robustness: Subsequent fertility using alternative treatment/control definitions

	Main sample		Fonasa only	
	(1) Main	(2) B, C, D + Private	(3) Main	(4) B + C only
Panel A: 2 or more children, 6 years				
Private Hospital	0.009	-0.093*	0.002	-0.036
	[0.023]	[0.050]	[0.024]	[0.056]
Mean DV	0.410	0.410	0.410	0.410
Observations	307,050	307,050	262,919	226,833
Panel B: 3 or more children, 9 years				
Private Hospital	-0.004	-0.016	0.008	0.003
	[0.016]	[0.035]	[0.017]	[0.039]
Mean DV	0.135	0.135	0.135	0.135
Observations	307,050	307,050	262,919	226,833

Note: This table reports IV estimates using alternative treatment and control definitions. Columns (1) and (2) use the full sample of women with public or private insurance. Column (1) follows our main specification, instrumenting private hospital delivery with affiliation to Fonasa Groups B, C, or D. Column (2) extends the treatment group to include privately insured women. Columns (3) and (4) restrict the sample to publicly insured women. Column (3) excludes private insurance, while Column (4) further excludes Fonasa Group D, retaining only Groups A, B, and C.
All specifications include month-year fixed effects and age of mother-year of birth interactions. Robust standard errors are reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

C.5 IV and reduced form estimates with share Fonasa B, C or D

Table C.9: First stage estimates

	Private Hospital	
	(1)	(2)
Share Fonasa B, C, or D * post	0.162***	0.143***
	[0.028]	[0.034]
Month-Year FE	X	X
Age mother FE	X	X
Municipality-Age FE	X	X
Age-Year FE		X
Effective F-stat	32.3	17.6
Mean DV	0.207	0.207
Observations	306,909	306,904

Note: Share Fonasa B, C, or D is the 2018 share of the population affiliated with Fonasa Groups B, C, or D, measured by age group and municipality of residence. Effective F-stat is the effective F-statistic proposed by Montiel Olea and Pflueger (2013) to test the presence of weak instruments. Mean DV is the average of the dependent variable in the estimation sample. Standard errors clustered at the municipality of residence level.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.10: Effect of delivery at private hospital on short-term maternal outcomes: OLS and IV estimates with share Fonasa B, C, or D

	OLS	IV Fonasa B, C, D		IV Share B, C, D	
	(1)	(2)	(3)	(4)	(5)
Panel A: Cesarean section, first birth					
Private Hospital	0.230***	0.432***	0.438***	0.993***	1.057***
	[0.004]	[0.021]	[0.022]	[0.171]	[0.253]
Mean DV	0.340	0.340	0.340	0.340	0.340
Observations	299,955	299,960	299,955	299,960	299,955
Panel B: 7+ days hospitalization					
Private Hospital	-0.052***	-0.094***	-0.093***	-0.136***	-0.161*
	[0.001]	[0.011]	[0.011]	[0.050]	[0.085]
Mean DV	0.057	0.057	0.057	0.057	0.057
Observations	306,904	306,909	306,904	306,909	306,904
Panel C: 30-day readmission					
Private Hospital	-0.015***	-0.039***	-0.037***	-0.152**	-0.192*
	[0.001]	[0.008]	[0.009]	[0.064]	[0.099]
Mean DV	0.032	0.032	0.032	0.032	0.032
Observations	306,904	306,909	306,904	306,909	306,904
Month-Year FE	X	X	X	X	X
Municipality-Age FE	X	X	X	X	X
Age-Year FE	X		X		X

Note: Columns (2) and (3) report IV estimates using individual insurance affiliation as the instrument. Columns (4) and (5) use the 2018 share of the population affiliated with Fonasa Groups B, C, or D, measured by age group and municipality of residence, as the instrument. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors are reported in brackets for Columns (1) through (3), while standard errors clustered at the municipality level are reported in Columns (4) and (5).
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.11: Effect of delivery at private hospital on C-section in the first and second births: OLS and IV estimates with share Fonasa B, C, or D

	OLS	IV Fonasa B, C, D		IV Share B, C, D	
	(1)	(2)	(3)	(4)	(5)
Panel A: C-section in first birth					
Private Hospital	0.229***	0.440***	0.443***	1.076***	1.156***
	[0.005]	[0.028]	[0.029]	[0.223]	[0.320]
Mean DV	0.316	0.316	0.316	0.316	0.316
Observations	193,475	193,480	193,475	193,480	193,475
Panel B: C-section in second birth					
Private Hospital	0.192***	0.328***	0.328***	0.785***	0.815***
	[0.005]	[0.030]	[0.031]	[0.205]	[0.268]
Mean DV	0.422	0.422	0.422	0.422	0.422
Observations	193,475	193,480	193,475	193,480	193,475
Panel C: Repeat C-section					
Private Hospital	0.240***	0.461***	0.465***	1.094***	1.194***
	[0.005]	[0.026]	[0.027]	[0.219]	[0.323]
Mean DV	0.251	0.251	0.251	0.251	0.251
Observations	193,475	193,480	193,475	193,480	193,475
Month-Year FE	X	X	X	X	X
Municipality-Age FE	X	X	X	X	X
Age-Year FE	X		X		X

Note: The sample is restricted to women with at least two births, for whom the mode of delivery can be identified in both the first and second birth. Columns (2) and (3) report IV estimates using individual insurance affiliation as the instrument. Columns (4) and (5) use the 2018 share of the population affiliated with Fonasa Groups B, C, or D, measured by age group and municipality of residence, as the instrument. Robust standard errors are reported in brackets for Columns (1) through (3), while standard errors clustered at the municipality level are reported in Columns (4) and (5).
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.12: Effect of delivery at private hospital on hospitalizations due to obstetric complications: OLS and IV estimates with share Fonasa B, C, or D

	OLS	IV Fonasa B, C, D		IV Share B, C, D	
	(1)	(2)	(3)	(4)	(5)
Panel A: Cesarean scar, 3 years					
Private Hospital	0.029***	0.051***	0.055***	0.188***	0.258***
	[0.001]	[0.006]	[0.006]	[0.072]	[0.079]
Mean DV	0.015	0.015	0.015	0.015	0.015
Observations	306,904	306,909	306,904	306,909	306,904
Panel B: Hysterectomy, 9 years					
Private Hospital	0.002***	0.008***	0.007**	0.015	0.015
	[0.001]	[0.003]	[0.003]	[0.013]	[0.016]
Mean DV	0.005	0.005	0.005	0.005	0.005
Observations	306,904	306,909	306,904	306,909	306,904
Month-Year FE	X	X	X	X	X
Municipality-Age FE	X	X	X	X	X
Age-Year FE	X		X		X

Note: Columns (2) and (3) report IV estimates using individual insurance affiliation as the instrument. Columns (4) and (5) use the 2018 share of the population affiliated with Fonasa Groups B, C, or D, measured by age group and municipality of residence, as the instrument. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors are reported in brackets for Columns (1) through (3), while standard errors clustered at the municipality level are reported in Columns (4) and (5).
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.13: Effect of delivery at private hospital on subsequent fertility: OLS and IV estimates with share Fonasa B, C, or D

	OLS	IV Fonasa B, C, D		IV Share B, C, D	
	(1)	(2)	(3)	(4)	(5)
Panel A: 2 or more children, 6 years					
Private Hospital	0.040***	-0.007	0.015	-0.155	0.027
	[0.004]	[0.023]	[0.024]	[0.150]	[0.169]
Mean DV	0.410	0.410	0.410	0.410	0.410
Observations	306,904	306,909	306,904	306,909	306,904
Panel B: 3 or more children, 9 years					
Private Hospital	0.012***	-0.009	-0.002	-0.237**	-0.174
	[0.002]	[0.016]	[0.017]	[0.101]	[0.120]
Mean DV	0.135	0.135	0.135	0.135	0.135
Observations	306,904	306,909	306,904	306,909	306,904
Month-Year FE	X	X	X	X	X
Municipality-Age FE	X	X	X	X	X
Age-Year FE	X		X		X

Note: Columns (2) and (3) report IV estimates using individual insurance affiliation as the instrument. Columns (4) and (5) use the 2018 share of the population affiliated with Fonasa Groups B, C, or D, measured by age group and municipality of residence, as the instrument. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors are reported in brackets for Columns (1) through (3), while standard errors clustered at the municipality level are reported in Columns (4) and (5).

*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

C.6 Alternative definition of Cesarean Section

Table C.14: Alternative definition of Cesarean Section

ICD-10 diagnosis code	C-section = 1	C-section = 0
O820, O821, O822, O828, O829, O842	Yes	No
O700, O701, O702, O703, O709, O714, O757, O800, O801, O808, O809, O810, O811, O812, O813, O814, O815, O830, O831, O832, O833, O834, O838, O839, O840, O841	No	Yes
O848, O849	has_surgery = 1	has_surgery = 0

Note: This table summarizes an alternative, more restrictive, classification of the binary indicator C-section following Jackson et al. (2012), constructed from ICD-10 diagnosis codes recorded at delivery. Codes listed in the first row are always classified as cesarean section (C-section = 1), while codes in the second row are always classified as noncesarean (C-section = 0). For diagnoses O848 and O849, the classification depends on whether a surgical procedure is recorded in the hospital discharge data: the delivery is classified as a C-section when $has\_surgery = 1$, and as noncesarean when $has\_surgery = 0$. All remaining obstetric diagnoses are left unclassified and the mode of delivery is coded as missing.

Table C.15: Robustness: C-section in the first and second births using different definitions of C-sections

	Main definition		Alternative definition	
	(1)	(2)	(3)	(4)
Panel A: Cesarean section, first birth				
Private Hospital	0.454***	0.427***	0.454***	0.410***
	[0.028]	[0.035]	[0.033]	[0.039]
Mean DV	0.316	0.316	0.191	0.191
Observations	193,617	193,448	135,817	135,613
Panel B: C-section in second birth				
Private Hospital	0.336***	0.305***	0.340***	0.297***
	[0.030]	[0.037]	[0.038]	[0.046]
Mean DV	0.422	0.422	0.303	0.303
Observations	193,617	193,448	135,817	135,613
Panel C: Repeat C-section				
Private Hospital	0.468***	0.448***	0.432***	0.389***
	[0.026]	[0.032]	[0.030]	[0.036]
Mean DV	0.251	0.251	0.154	0.154
Observations	193,617	193,448	135,817	135,613
Month-Year FE	X	X	X	X
Age-Year FE	X	X	X	X
Municipality-Year FE		X		X
Municipality-Age FE		X		X
Linear trend		X		X

Note: This table reports IV estimates using alternative definitions for Cesarean section. Columns (1) and (2) use the definition in the main paper (see Table B.1 for details). Columns (3) and (4) use an alternative definition (see Table C.14 for details). The sample is restricted to women with at least two births, for whom the mode of delivery can be identified in both the first and second birth. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

C.7 IV Probit estimates

Table C.16: Robustness: IV Probit (control function) estimates of delivery at private hospital on short-term maternal outcomes (at first birth)

	OLS	Linear IV	IV Probit
	(1)	(2)	(3)
Panel A: Cesarean section, first birth			
Private Hospital (marginal effect)	0.205***	0.441***	0.385***
	[0.003]	[0.022]	[0.021]
Mean DV	0.340	0.340	0.340
Observations	300,106	300,106	300,102
	(1)	(2)	(3)
Panel B: 7+ days hospitalization			
Private Hospital (marginal effect)	-0.049***	-0.089***	-0.145***
	[0.001]	[0.011]	[0.012]
Mean DV	0.057	0.057	0.057
Observations	307,050	307,050	307,015
	(1)	(2)	(3)
Panel C: 30-day readmission			
Private Hospital (marginal effect)	-0.018***	-0.039***	-0.045***
	[0.001]	[0.008]	[0.010]
Mean DV	0.032	0.032	0.032
Observations	307,050	307,050	306,901
Month-Year FE	X	X	X
Age-Year FE	X	X	X

Note: This table reports estimated marginal effects of delivering at a private hospital on short-term maternal outcomes. Column (1) reports OLS estimates, column (2) reports linear IV estimates, and column (3) reports IV Probit estimates. IV estimates use individual insurance affiliation as the instrument. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.17: Robustness: IV Probit (control function) estimates of delivery at private hospital on C-section in the first and second births

	OLS	Linear IV	IV Probit
	(1)	(2)	(3)
Panel A: C-section in first birth			
Private Hospital (marginal effect)	0.206***	0.454***	0.389***
	[0.004]	[0.028]	[0.027]
Mean DV	0.316	0.316	0.316
Observations	193,617	193,617	193,614
	(1)	(2)	(3)
Panel B: C-section in second birth			
Private Hospital (marginal effect)	0.162***	0.336***	0.325***
	[0.004]	[0.030]	[0.030]
Mean DV	0.422	0.422	0.422
Observations	193,617	193,617	193,614
	(1)	(2)	(3)
Panel C: Repeat C-section			
Private Hospital (marginal effect)	0.209***	0.468***	0.364***
	[0.004]	[0.026]	[0.024]
Mean DV	0.251	0.251	0.251
Observations	193,617	193,617	193,614
Month-Year FE	X	X	X
Age-Year FE	X	X	X

Note: This table reports estimated marginal effects of delivering at a private hospital on repeat C-sections for a sample of women with two or more births. Column (1) reports OLS estimates, column (2) reports linear IV estimates, and column (3) reports IV Probit estimates. IV estimates use individual insurance affiliation as the instrument. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.18: Robustness: IV Probit (control function) estimates of delivery at private hospital on hospitalizations due to obstetric complication

	OLS	Linear IV	IV Probit
	(1)	(2)	(3)
Panel A: Cesarean scar hospitalization, 3 years			
Private Hospital (marginal effect)	0.030***	0.051***	0.037***
	[0.001]	[0.006]	[0.005]
Mean DV	0.015	0.015	0.015
Observations	307,050	307,050	306,691
	(1)	(2)	(3)
Panel B: Hysterectomy, 9 years			
Private Hospital (marginal effect)	0.003***	0.008**	0.006**
	[0.001]	[0.003]	[0.003]
Mean DV	0.005	0.005	0.005
Observations	307,050	307,050	306,923
Month-Year FE	X	X	X
Age-Year FE	X	X	X

Note: This table reports estimated marginal effects of delivering at a private hospital on hospitalizations due to obstetric complication. Column (1) reports OLS estimates, column (2) reports linear IV estimates, and column (3) reports IV Probit estimates. IV estimates use individual insurance affiliation as the instrument. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table C.19: Robustness: IV Probit (control function) estimates of delivery at private hospital on subsequent fertility

	OLS	Linear IV	IV Probit
	(1)	(2)	(3)
Panel A: 2 or more children, 6 years			
Private Hospital (marginal effect)	0.047***	0.009	0.009
	[0.003]	[0.023]	[0.023]
Mean DV	0.410	0.410	0.410
Observations	307,050	307,050	306,807
	(1)	(2)	(3)
Panel B: 3 or more children, 9 years			
Private Hospital (marginal effect)	0.018***	-0.004	0.002
	[0.002]	[0.016]	[0.017]
Mean DV	0.135	0.135	0.135
Observations	307,050	307,050	305,735
Month-Year FE	X	X	X
Age-Year FE	X	X	X

Note: This table reports estimated marginal effects of delivering at a private hospital on subsequent fertility. Column (1) reports OLS estimates, column (2) reports linear IV estimates, and column (3) and (4) report IV Probit estimates. IV estimates use individual insurance affiliation as the instrument. Mean DV denotes the average of the dependent variable in the estimation sample. Robust standard errors reported in brackets.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

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