

DISCUSSION PAPER SERIES

IZA DP No. 17625

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# The Impact of Parental Job Security on Children's Health

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## ABSTRACT

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# The Impact of Parental Job Security on Children's Health\*

Dual labor markets are characterized by a group of workers with permanent jobs and a stable income source and another group with short-term contracts who suffer from income uncertainty and employment volatility. These differences in job security translate into several spheres of these workers' lives, with potential implications for families' well-being. This paper analyzes the causal effect of parental job security on children's health. To address endogeneity, we exploit a reform that incentivized secure labor contracts for young (under 30) and female workers in Spain by reducing payroll taxes paid by employers. Using data from several waves of the Spanish National Health Survey and combining Instrumental Variables and Differences-in-Differences methods, we find that having a secure labor contract increases the probability that children are in good or very good health by 20%. We also document some mechanisms, such as reductions in children's accidents, increases in the frequency of physical activity, and a more protein-intensive diet.

**JEL Classification:** I14, I12, J41

**Keywords:** job security, children's health

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# 1 Introduction

Dual labor markets are detrimental to the career progression of workers with unstable labor market conditions, and job instability damages workers' health (García-Pérez, Marinescu, and Vall Castellò [2019] and Caroli and Godard [2016]). In this paper, we go one step further and provide the first causal evidence that job security has positive effects on the health of the children of affected workers. Our results are particularly important in light of the large literature that shows that children's health determines children's well-being and persists into adulthood (Currie and Stabile [2003], Palloni [2006], and Palloni, Milesi, White, and Turner [2009]).

Previous literature has focused on the impact of job security on workers' health. Bratberg and Monstad [2015] exploit a natural experiment in which some Norwegian municipalities were affected by a financial shock. They find that the financial shock reduced municipality workers' sickness absence, which they attribute to the deterioration in job security. Caroli and Godard [2016] explores the effect of perceived job insecurity on individual-level health outcomes using European data. They instrument perceived job security by country-specific employment protection legislation interacted with industry-specific dismissal rates. They conclude that job insecurity significantly increases the probability of individuals suffering from skin problems and headaches or eyestrain but does not affect depression or anxiety. Reichert and Tauchmann [2017] estimate the effects of company-level workforce reductions on private-sector workers in Germany. Results from their individual-level fixed-effects models suggest that the fear of job loss, measured by workforce reductions, negatively affects employee mental health. Johnston, Shields, and Suziedelyte [2020] find that increases in perceived job security induced by increases in world commodity prices significantly and substantively improve the mental health of workers in the industries producing those commodities but have no effect on physical health. Unlike previous literature, we are interested in the second-generation effects of job security, so we focus on the impact of a secure labor contract on children's health.

Our paper is also related to the literature on the impact of parental employment and income on children’s health. Schaller and Zerpa [2019] find that paternal job loss is harmful to children’s physical and mental health. This effect is stronger for children in low socioeconomic status families. Martínez-Jiménez [2023] shows that parental nonemployment increases the chances of worse health later in life. Regarding income, studies focusing on the United States, Canada, the United Kingdom, and Germany find a strong gradient between parental income and subjective child health (Reinhold and Jürges [2012]).

We develop the analysis in the context of Spain, which is particularly interesting because of a dual labor market where two types of contracts with very different levels of job security co-exist. In this setting, we exploit a change in the legislation that provides exogenous variation in the use of secure labor contracts to estimate the causal effect of job security on health. We use the introduction of an incentive to hire permanent workers with specific (non-manipulable) characteristics as an instrument for having a secure labor contract. In 2006, the Spanish government approved a new piece of legislation that introduced reductions in the payroll tax paid by employers who hire workers under open-ended rather than fixed-term contracts for female workers, workers under 30 or over 45. We first show that the reform effectively fostered secure labor contracts for young and female workers. Therefore, we use the reform as an instrument to uncover the effects of job stability on children’s health.

We use data from the Spanish National Health Survey (SNHS) for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. The SNHS contains all the information to estimate our model: self-assessed health and mental health of children and their parents, parents’ type of contract, and family demographic characteristics. We use a sample of contracted workers with ages that range from 16 to 65 and their children.<sup>1</sup>

Our results show that having a parent with a secure labor contract has positive and

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<sup>1</sup>The publicly available version of this dataset is downloadable from the Ministry of Health website at: <https://www.mscbs.gob.es/estadisticas/microdatos.do>.

sizeable effects on health. In particular, having a secure contract, as opposed to a fixed-term contract, implies an increase in the probability that the child is in good health by 20%. The effect is stronger for children below the age of eight. We also document a positive effect of parental job security on girls' mental health (18.5%). After exploring a wide variety of mechanisms, we conclude that reductions in children's accidents (possibly due to increased parental vigilance), increases in the frequency of physical activity, and a more protein-intense diet may be behind the estimated effect.

Our paper contributes in several dimensions to the previous literature. First, we show that the labor market reform implemented in 2006 by the Spanish government was effective in fostering permanent employment. Second, it provides new evidence on the intergenerational effects of job security (as proxied by the type of contract) on the next generation of individuals. Therefore, it goes one step further than previous papers documenting the causal effects of job security on workers' outcomes. For instance, long-term contracts have been found to impact productivity positively (Dolado, Ortigueira, and Stucchi [2016]), commitment to work (Domfeh, Hunsaker, and KOREA [2020]), and job satisfaction (De Cuyper, De Witte, Kinnunen, and Nätti [2010]). Furthermore, they have been shown to generate long-term career gains in terms of employment and labor income (García-Pérez, Marinescu, and Vall Castellò [2019]). From a health perspective, job insecurity has traditionally been considered a work stressor in the literature (Ashford, Lee, and Bobko [1989]). Thus, job security positively correlates with many physical well-being and mental health outcomes (see Cheng and Chan [2008]; Sverke, Hellgren, and Näswall [2002]). Accordingly, several studies have related job stability to reductions in headaches, infections, or heart diseases; improvements in mental health indicators like life satisfaction and reductions in anxiety or depression symptoms; and social habits and needs such as medication consumption and the frequency of medical consultations (De Witte, Vander Elst, and De Cuyper [2015]). Finally, we also depart from previous literature in that we use an objective measure of job security based on labor contracts rather than perceived job security.

## 1.1 Mechanisms

In this section, we explain that parental job security significantly influences children's health outcomes through various interconnected channels. One of the primary ways job security impacts children's well-being is by improving the parents' health, mainly by reducing physical and mental health risks. De Witte, Vander Elst, and De Cuyper [2015] highlight that job stability contributes to better adult health outcomes, particularly in terms of lower stress levels and reduced risk of chronic conditions. Job security is associated with a decrease in the incidence of infections in adults, which could otherwise be transmitted to children at home, thus indirectly improving children's health by preventing the spread of illnesses within the family.

First, job security reduces occurrences of psychological distress, such as anxiety, depression, and headaches, in workers. These mental health improvements can result in higher-quality interactions with children, as parents may experience less emotional strain and have a greater capacity to focus on their children's needs. For instance, secure employment may lead to more attentive parenting, which could reduce the likelihood of accidents at home by fostering greater awareness and caution in day-to-day activities. Parents less burdened by job insecurity are more likely to provide consistent and attentive care, benefiting children's safety and emotional well-being.

Second, job security increases the frequency of workers' medical visits, which could result in improved medical care for children when family members share healthcare resources. The healthcare system often operates on a complementary basis, where one family member's health improvements or checkups can positively affect the others, mainly if preventive care is part of the family's routine (e.g., regular checkups, immunizations, etc.).

Third, job security ensures a predictable and stable income flow, which can profoundly affect family habits. Families with job security are more likely to adopt healthier lifestyle

practices, such as ensuring sufficient sleep, engaging in regular physical activity, maintaining a balanced diet, and prioritizing medical care. These habits are often associated with lower rates of chronic illness and better overall health, which can contribute directly to children's health within the family. For instance, regular health checkups and preventive care address current health issues and help avoid future health complications, ensuring that children grow up in an environment where their health is consistently monitored and maintained.

In summary, parental job security improves parents' physical and mental health outcomes, contributing to a healthier family dynamic. Children benefit from both direct and indirect improvements in health behaviors and environmental conditions. The cascading effect of job stability on health-related family decisions and behaviors demonstrates its pivotal role in fostering better health outcomes for children.

The remainder of this paper is organized as follows. Section 2 presents the data and institutional background. Section 3 describes our methodology and Section 4 presents our results. Section 5 discusses the heterogeneity of the effects and explores potential mechanisms. We conclude in Section 6.

## **2 Data and Institutional Framework**

The Spanish labor market is dual. There are two types of labor contracts: temporary and permanent. Temporary contracts are characterized by a predetermined duration (up to a maximum of three years) and negligible firing costs. In contrast, permanent contract workers face an infinite horizon and are entitled to high severance pay in case of dismissal. Permanent contracts are often associated with better working conditions, including higher wages. Bentolila and Dolado [1994] attribute this difference to the higher proportion of permanent workers participating in the wage bargaining process. Oliver and Sard [2019] find that observable characteristics explain most of the wage gap be-



tween temporary and permanent workers.

The duality of the Spanish labor market causes a high labor turnover (García-Pérez, Marinescu, and Vall Castellò [2019]) and employment volatility (Felgueroso, García-Pérez, Jansen, and Troncoso Ponce [2017]), which are stronger in those occupations and sectors most affected by temporary employment. Furthermore, temporary workers receive significantly less training than permanent employees (Felgueroso, García-Pérez, Jansen, and Troncoso Ponce [2017]) and suffer lifetime losses in terms of number of days worked (García-Pérez, Marinescu, and Vall Castellò [2019]).

At the end of 2005, one-third of contracted workers had a temporary contract. The proportion of temporary workers reached 65% for workers under 25 and 38% for women. Moreover, the unemployment rate reached 8.8%. Unemployment was higher among females (11.6%) and individuals under 25 (18.6%). The government implemented a reform to reduce the incidence of temporary contracts while incentivizing employment. The reform subsidized the conversion of temporary contracts into permanent contracts for females and young workers. We use this reform as a source of exogenous variation to study the impact of job security on children's health.

In this study, we use the 2003 – 2004, 2006 – 2007, 2009, 2011, 2014, 2017, and 2020 editions of the Spanish National Health Survey (SNHS). The SNHS is a representative survey of the Spanish population. It is administered by the Ministry of Health and Consumption and designed by the Spanish National Statistics Institute. The sampling of the data follows a three-stage stratified design. The units for the first stage are the census sections. The units for the second stage are family households. Finally, an adult (16 or older) fills out the questionnaire within each household.

The SNHS is a repeated cross-section. This implies that we observe parents' gender, age, and labor contracts at different times depending on whether parents were interviewed before, during, or after the labor market reform. To estimate the impact of parents'

labor contracts on children's health, we leverage the exogenous variation introduced by the reform. This variation arises because some parents were eligible for secure labor contracts' subsidies because they were female or young when the reform was in place while others were not, and we observe eligible and non-eligible parents before, during, and after the reform. By exploiting whether parents were eligible for the subsidy when it was in place and their interview time, we ensure that our estimates are driven by the reform-induced changes in labor contracts, providing a robust basis for identifying causal effects.

The SNHS includes a wide variety of information about Spanish residents' health and socio-economic conditions and contains separate sections for adults and children. For this work, we restrict our attention to the children samples of the 2003 – 2004, 2006 – 2007, 2011, and 2017 editions of the SNHS. We do not use waves before 2003 because they do not include information on the type of labor contract. We do not use the 2009, 2014, and 2020 waves in our main specification because they do not contain information on children.

We firstly restrict our sample to 16 to 65 adults who are parents and for whom the children questionnaire is available. The total number of children whose parents meet these restrictions is 24,568. Secondly, we restrict the sample to salaried workers, leaving us with approximately 66% of the children's sample (16,311). From these, 16,279 observations provide consistent information on children's general health and 16,720 on mental health. Therefore, these observations constitute our final estimation sample.

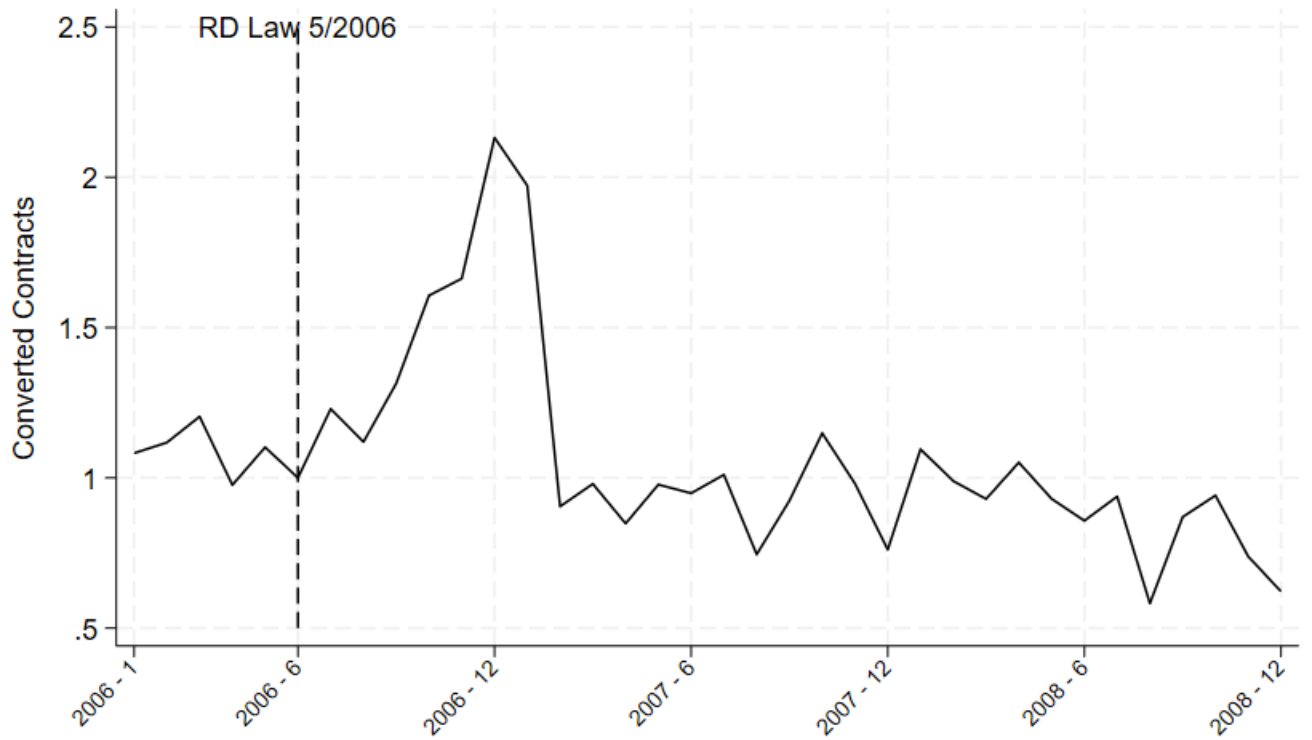
Table 8 in the Appendix shows the descriptive statistics of the variables included in our regressions. They refer to the sample used in our estimations, composed of all children with contracted parents. 90% of the children in our sample are in good or very good health. Out of the parents who completed the survey, 68% have a secure labor contract. Slightly more than half of adult respondents (54%) are female. 70% of the observations belong to the post-reform period. Only 12% of male parents are young as defined by the reform (below 30 years of age). The average parent is 39 years old. Slightly more than half of the children are male. Their average age is slightly above seven. The proportion

of parents with primary, secondary, high-school, and university-educated parents are 21, 30, 24, and 24, respectively.

We describe the variables we use to explore the mechanisms behind the estimated effect of job security on children's health in Table 9 of the Appendix. Parents in good health represent 80% of the sample, and those with good mental health are 91%. Regarding children, almost one-fourth of them do not sleep enough hours, 38% have visited the emergency room in the last year, 12% have private health insurance, and 10% of children have been to any doctor the previous year. Children's weight is such that 4% of them are underweight, 11% are overweight or obese, and 26% have any weight problem. Regarding children's habits, 72% of our sample practice sport, only 31% eat vegetables and fruit daily, 80% eat meat at least three times a week, and two-thirds of our children eat sweets daily. Finally, 36% of children have consumed any medication during the last two weeks (16% having consumed drugs to treat cold, flu or throat, 15% having consumed drugs to treat pain or fever, and 5% have taken antibiotics).

For identification, we exploit the exogenous variation in the probability of having a secure labor contract induced by Law 43/2006, implemented on June 30, 2006. The law reduced the payroll tax paid by employers who hire workers under open-ended rather than fixed-term contracts for female workers and workers under 30. We show that the reform effectively fostered secure labor contracts for young and female workers using data from the Public Service of State Employment (SEPE) for the period 2006-2008 included. Figure 1 displays the evolution of the number of secure labor contracts relative to the number of these contracts in June 2006 of women and young workers affected by the reform and middle-aged males who are unaffected by the reform. The relative number of newly signed secure contracts becomes higher for the affected group only after the reform and stays higher for all years after that. The magnitude of the changes is similar to Figure 3 in Bentolila, Dolado, and Jimeno [2008]. In both graphs, the ratio between the December 2006 and June 2006 values is slightly above two.

Figure 1: Number of Secure Labour Contracts



Notes: The graph depicts the relative number of temporary contracts converted to secure labor contracts in Spain for all workers. Reference: June 2006. Monthly data is unavailable before the 1<sup>st</sup> quarter 2006.

Source: Public Service of State Employment (SEPE), Spain — Own Elaboration.

### 3 Methodology

Our identification strategy exploits the exogenous increase in the use of secure labor contracts induced by a legal reform. We first perform a preliminary analysis using administrative data to show that the reform effectively fostered secure labor contracts. We run the following regression on data about the number of secure and insecure labor contracts signed each month:

$$\text{Log}(\text{Contracts})_{T,t} = \alpha_0 + \alpha_1 * \text{Treated}_T * \text{Post}_t + \alpha_2 * \text{Treated}_T + \delta_t + \epsilon_{T,t} \quad (1)$$

where the dependent variable is the logarithm of the number of contracts of type  $T$  signed in month  $t$  where  $T$  can be either secure or insecure, and  $t$  goes from 2006 to 2008 included.  $\text{Treated}$  equals one for secure labor contracts, and  $\text{Post}$  equals one for all months after the reform. Finally,  $\delta$  is a vector of month fixed effects, and  $\epsilon$  is the error term. We focus on the estimate of  $\alpha_1$  and interpret that this parameter's positive and significant value indicates that the reform effectively fostered secure labor contracts.

We then show that the reform effectively fostered secure labor markets for the targeted groups (women and young individuals) using the same database as in our main specification, the Spanish National Health Survey. We estimate this in an event study fashion when we interact each of the pre-treatment and post-treatment years with a binary indicator for the targeted groups as follows:

$$\begin{aligned} \text{Secure}_{i,t} = & \gamma_0 + \sum_{j=2003}^{2004} \lambda_j * \text{Year}_{j=t} * \text{Treated}_i + \sum_{j=2007}^{2017} \gamma_j * \text{Year}_{j=t} * \text{Treated}_i + \\ & \rho_2 \text{Treated}_i + \rho_3 \text{Female}_i + \rho_4 D(\text{Age})_i + \rho_5 D(\text{Time})_t + \delta X_{i,t} + \epsilon_{i,t} \end{aligned} \quad (2)$$

where the dependent variable equals one if individual  $i$  holds a secure labor contract at time  $t$ ,  $\text{Treated}$  is an indicator for individuals affected by the reform (women and young individuals),  $\text{Female}$  equals one for females,  $D(\text{Age})$  is a vector of age dummies,  $D(\text{Time})$  are time fixed effects, and  $X$  is a vector of individual characteristics. Finally,  $\epsilon$  is the error

term that is two-way clustered at the province and parent's age levels.

Finally, we move to our main objective of estimating the impact of parental labor contracts on children's health. We estimate a regression where we express children's health as a function of the type of labor contract of the parent and several controls. The estimated equation is as follows:

$$\begin{aligned} Child\ Health_{i,t} = & \beta_0 + \beta_1 Secure_{i,t} + \beta_2 Female_{i,t} + \beta_3 D(Age)_{i,t} + \beta_4 D(Year)_t + \\ & + \beta_5 D(Education)_{i,t} + \beta_6 D(Region)_{i,t} + v_{i,t} \end{aligned} \quad (3)$$

where *Child Health* equals one if child *i* surveyed at time *t* is in good or very good health, *Secure* is a dummy equal to one if the worker has a secure labor contract, and *Female* is a female indicator. *D(Age)*, *D(Year)*, *D(Education)*, and *D(Region)* are age, year, education level, and region fixed effects, respectively. Finally, *v* is the error term, which we cluster at the province and parent's age levels.

We cannot interpret the coefficient  $\beta_1$  as a causal effect if we estimate Equation 3 by OLS. First, workers with sick children may make an extra effort to find secure contracts. Second, unobserved parents' characteristics, like personality traits, can simultaneously affect children's health and the probability of holding a secure labor contract. For this reason, we estimate Equation 3 using an instrumental variable approach based on the introduction of incentives to convert insecure into secure labor contracts for women and men under 30. In the first stage, we estimate the probability of holding a secure labor contract as a function of the interaction of being a mother or a father under 30 at the time the permanent contract subsidy implemented on June 30th, 2006, stayed in place, and all the controls:

$$\begin{aligned} Secure_{i,t} = & \alpha_0 + \alpha_1 Female/Young_{i,t} * Post_t + \alpha_2 Female_{i,t} + \alpha_3 D(Age)_{i,t} + \\ & + \alpha_4 D(Year)_t + \alpha_5 D(Education)_{i,t} + \alpha_6 D(Region)_{i,t} + v_{i,t} \end{aligned} \quad (4)$$

where the variable *Female/Young* is equal to one if the individual's gender and age when the contract conversion subsidy was in place made her/him eligible for the subsidy. *Post* is a dummy for any period after the implementation of the reform. Hence, our instrument is the interaction of eligibility for a permanent contract subsidy while the subsidy was in place and being interviewed during or after the reform. If the F-statistic associated with the coefficients  $\alpha_1$  and  $\alpha_2$  is above 10, we conclude that our instruments are strong enough to be valid and interpret  $\beta_1$  estimated by instrumental variables as a consistent measure of the causal effect of parents' secure contracts on children's health. We use sample weights in all specifications to address the possibility that the reform affected the survey response rate.

## 4 Results

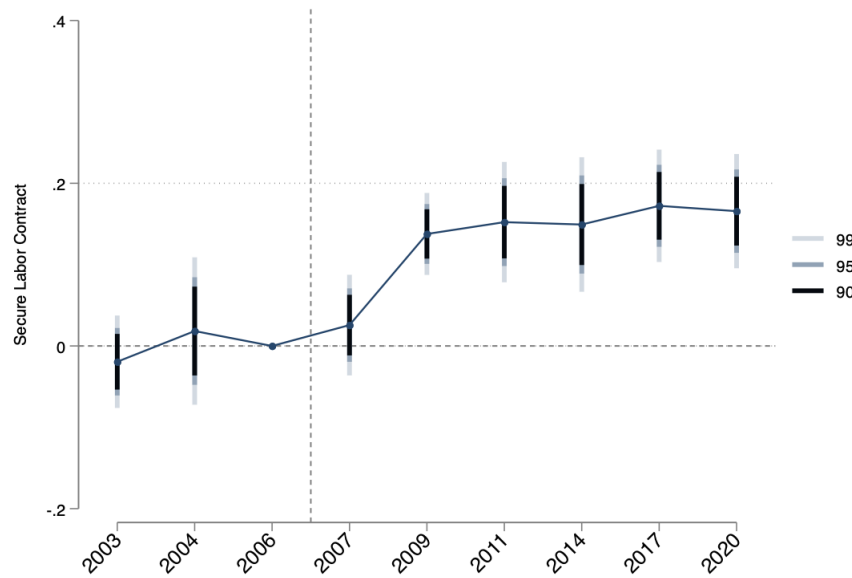
We first estimate the impact of the 2006 labor reform using administrative data as in Equation (1). The coefficient  $\alpha_1$  equals 0.12, and it is significant at the 1% level. Hence, the reform has increased the number of secure contracts offered to women and young individuals by 12%.

The results of estimating the consequences of the labor reform for the use of the different types of contracts of the different subpopulation groups in our estimation sample are presented in Figure 2. Each dot corresponds to the difference in the probability of holding a secure labor contract between treated and untreated individuals. We observe that before the reform, there were no statistically significant differences in the probability of holding a secure labor contract. Immediately after the reform, a positive difference emerged. Given that permanent contracts are absorbing states, this difference remains high, significant, and stable after 2007.<sup>2</sup>

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<sup>2</sup>In Figure 2, we show all years for which the information on adults' labor contracts and demographic characteristics is available. This also includes years in which there is no information on children. We show the same figure for the years in which children's information is available in the Appendix. See Figure 3.

Figure 2: First-Stage: The impact of the 2006 Labor Reform on Job Security



*Notes:* Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2009, 2011, 2014, 2017, and 2020. For editions 2009, 2014, and 2020, for which no information on children is available, every adult living with a minor (<14 y.o.) is considered a parent. Coefficients correspond to the estimation of the first stage (equation 1) of our empirical strategy, where the dependent variable is a dummy for having a permanent labor contract, and the treatment is a dummy for being female or young. Standard errors are clustered at the province and parent’s age levels. The legend refers to confidence intervals.



Table 1: First-Stage: The impact of the Placebo 2004 Labor Reform on Job Security

|                     | Good Health      | Mental Health    |
|---------------------|------------------|------------------|
| <i>First-Stage:</i> |                  |                  |
| Treated*Post        | 0.033<br>(0.024) | 0.032<br>(0.024) |
| Pre-Reform Mean     | 0.89             | 0.99             |
| % Impact            | 83.88            | 3.19             |
| F-Statistic         | 1.91             | 1.83             |
| Obs.                | 8000             | 7989             |

*Notes:* Data is from the Spanish National Health Survey for the editions 2003/04 and 2006. Coefficients correspond to the estimation of the first-stage (equation 1) of our empirical strategy, where the dependent variable is a dummy for having a permanent labor contract and the treatment is a dummy for being female or young. Bootstrapped clustered standard errors at the province and parent's age levels.

Our first stage can be interpreted as a Difference-in-Difference estimator. Therefore, the underlying assumption behind our identification strategy is that the evolution of the probability of holding a permanent contract for treated parents would have been parallel to that of the likelihood of holding a permanent contract of control parents in the absence of the reform. The dots in Figure 2, representing differences in the proportion of parents with permanent contracts between the treated and control groups, are statistically indistinguishable from zero before the reform. This constitutes evidence in favor of our parallel trends assumption.

The validity of our identification strategy relies on the assumption that there are no factors other than changes in the labor contract legislation that affect treated individuals differently from control individuals at the time of the reform. We performed a placebo test restricting the sample to the pre-treatment period and pretending that the reform happened in 2004, two years before it actually did. As you can see in Table 1, we find no effect of this placebo reform. This reassures us that the changes in labor contracts that identify our effect of interest are due to the 2006 labor market reform.

We present the estimates of the causal effect of parental job security on children's overall health and mental health in Table 2. The first two columns show the results for overall

health: first, the conditional correlation between secure labor contracts and health, and then, the causal estimates. A secure labor contract increases the probability of children being in good health by 0.18, slightly more than half a standard deviation. Our estimate of the effect of job security on children’s mental health is positive but not significant at conventional levels. This may be due to the lack of variation in the mental health measure in our data. Overall health results align with Caroli and Godard [2016] while those on mental health are consistent with LaMontagne, Too, Punnett, and Milner [2021].

Table 2: The impact of Parental Job Security on Children’s Health

|                        | Good Health      |                     | Mental Health     |                     |
|------------------------|------------------|---------------------|-------------------|---------------------|
|                        | OLS              | IV                  | OLS               | IV                  |
| Secure Labour Contract | 0.008<br>(0.008) | 0.163*<br>(0.069)   | -0.002<br>(0.004) | 0.047<br>(0.062)    |
| <i>First-Stage:</i>    |                  |                     |                   |                     |
| Treated*Post           |                  | 0.090***<br>(0.012) |                   | 0.091***<br>(0.013) |
| Pre-Reform Mean        | 0.89             | 0.89                | 0.99              | 0.99                |
| % Impact               | 0.96             | 18.36               | -0.25             | 4.78                |
| F-Statistic            |                  | 52.82               |                   | 52.07               |
| Obs.                   | 16176            | 16178               | 16151             | 16153               |

*Notes:* Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are dummies for children in good or very good general health (Cols. 1, 2) and children in good mental health (Cols. 3, 4). All regressions include time and region fixed effects. Individual characteristics include dummies for children’s age, gender, and their interaction, parents’ age, gender, and education. The instrument is the interaction of eligible individual (female or under 30) and post-treatment. Standard errors are clustered at the province and parent’s age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Spain was hit by a severe financial crisis from 2008 to 2014. This crisis disproportionately destroyed temporary contracts and may have inhibited conversions of temporary to secure labor contracts. The economic crises starting in 2008 may be why the reform effectively promoted conversions of temporary labor contracts to secure contracts only in the short term (Bentolila, Dolado, and Jimeno [2012]). Our identification strategy uses this temporary shock to the flow of conversions of temporary into permanent contracts as an exogenous variation for the stock of secure labor contracts in subsequent years. Reassuringly, our first stage shows that the reform was effective despite the unfavorable

macroeconomic scenario. Still, we replicated our first stage, excluding from our sample those individuals residing in the regions most affected by the crisis. Table 10 in the Appendix shows that our first stage is strong also in this case. We also replicated our baseline regressions controlling for the regional quarterly unemployment rate. Table 11 in the Appendix shows that our estimates of the effect of parental job security on children's health remain arguably unchanged. We thus conclude that the economic crisis is not the primary driver of our results. However, we acknowledge that our results must be interpreted in the context of an intense ongoing financial crisis.

## 5 Heterogeneity and Mechanisms

In this section, we first study whether the effect of secure labor contracts on children's health changes with the children's characteristics: gender and age. Columns 1-4 of Table 3 show the estimated effects on overall health and mental health by gender, while columns 5-8 show separate estimates for children seven or below and those over seven (the median in our sample). We find a positive and significant effect of parental job security on daughters' mental health. The youngest children lead the effect of parental job security on overall health.

Previous literature has documented different impacts of job security on adults' health. Hence, we test whether job security affects parents' health in our sample. Results in Table 12 of the Appendix show some evidence of positive effects for the one-to-five health index but no effects for the good health indicator. The coefficient for mental health is positive but imprecisely estimated. Therefore, we conclude that there is some evidence of a positive effect of job security on adults' health.

We next explore several mechanisms that may explain the positive effect of job security on children's health. Parents with secure jobs may pay more attention to their children and avoid accidents. They may also have the resources to seek medical care for their children. Column 1 of Table 13 in the Appendix provides evidence favoring the first

Table 3: Heterogeneity of the Effect of Job Security on Children’s Health by Children’s Gender and Age

|                                     | Good Health         |                    | Mental Health       |                    | Good Health         |                     | Mental Health       |                     |
|-------------------------------------|---------------------|--------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|
|                                     | Males               | Females            | Males               | Females            | ≤ 7 y.o.            | > 7 y.o.            | ≤ 7 y.o.            | > 7 y.o.            |
| Secure Labour Contract              | 0.124<br>(0.145)    | 0.217<br>(0.230)   | -0.074<br>(0.109)   | 0.174**<br>(0.089) | 0.465***<br>(0.123) | -0.221*<br>(0.105)  | 0.025<br>(0.063)    | -0.006<br>(0.104)   |
| <i>First-Stage:</i><br>Treated*Post | 0.093***<br>(0.022) | 0.086**<br>(0.027) | 0.094***<br>(0.022) | 0.086**<br>(0.028) | 0.100***<br>(0.024) | 0.080***<br>(0.017) | 0.100***<br>(0.024) | 0.080***<br>(0.016) |
| Pre-Reform Mean                     | 0.88                | 0.89               | 0.99                | 1.00               | 0.85                | 0.91                | 0.99                | 0.99                |
| % Impact                            | 14.1                | 24.3               | -7.4                | 17.5               | 54.5                | -24.3               | 2.6                 | -0.6                |
| F-Statistic                         | 17.47               | 9.98               | 17.78               | 9.59               | 17.79               | 23.36               | 17.45               | 24.10               |
| Obs.                                | 8376                | 7802               | 8361                | 7792               | 8131                | 8047                | 8120                | 8033                |

*Notes:* Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are dummies for children in good or very good general health (Cols. 1, 2, 5, 6) and children in good mental health (Cols. 3, 4, 7, 8). All regressions include time and region fixed effects. Individual characteristics include dummies for children’s age, gender, and their interaction, parents’ age, gender, and education. The instrument is the interaction of eligible individuals (female or under 30) and post-treatment. The sample has been restricted to sons (Cols. 1, 3) and daughters (Cols. 2, 4), under eight (Cols. 5, 7), and over seven (Cols. 6, 8) year-old children. Standard errors are clustered at the province and parent’s age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

hypothesis. In particular, children whose parents have secure labor contracts are  $-0.3$  points less likely to have had an accident in the last month. We find no evidence that holding a secure labor contract makes a difference in the healthcare-seeking behavior of parents.

According to the World Health Organization, obesity is a high-risk factor for diseases such as cardiovascular diseases, diabetes, musculoskeletal disorders, and some cancers.<sup>3</sup> Hence, weight problems may partly explain the estimated effect of job security on children’s health. We test this hypothesis and show the corresponding results in Table 14 of the Appendix. We find no evidence that weight problems are a mechanism for the estimated effect.

Parental job security may be associated with healthier family habits, which may improve children’s health. In Table 4, we show the results of exploring whether sleeping

<sup>3</sup>For complete information, see <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>.

hours, sports practice, and diet can be mechanisms behind the effect of job security on children’s health. Secure labor contracts make children more likely to practice sports (0.35) and eat meat at least three times a week (0.38). Both findings are consistent with the higher purchasing power of individuals with secure labor contracts.

Table 4: The effect of Parental Job Security on Children’s Sleep, Sport and Dietary Habits

|                                     | Sleep             |                     | Sport            |                     | Vegetables & Fruit |                     | Meat              |                     | Sweets            |                     |
|-------------------------------------|-------------------|---------------------|------------------|---------------------|--------------------|---------------------|-------------------|---------------------|-------------------|---------------------|
|                                     | OLS               | IV                  | OLS              | IV                  | OLS                | IV                  | OLS               | IV                  | OLS               | IV                  |
| Secure Labour Contract              | -0.012<br>(0.010) | -0.049<br>(0.162)   | 0.029<br>(0.016) | 0.296<br>(0.147)    | 0.007<br>(0.007)   | -0.251<br>(0.330)   | 0.022*<br>(0.010) | 0.401***<br>(0.100) | -0.018<br>(0.010) | -0.265<br>(0.168)   |
| <i>First-Stage:</i><br>Treated*Post |                   | 0.090***<br>(0.012) |                  | 0.090***<br>(0.013) |                    | 0.085***<br>(0.010) |                   | 0.085***<br>(0.011) |                   | 0.085***<br>(0.010) |
| Pre-Reform Mean                     | 0.24              | 0.24                | 0.69             | 0.69                | 0.24               | 0.24                | 0.82              | 0.82                | 0.66              | 0.66                |
| % Impact                            | -5.1              | -20.2               | 4.3              | 43.2                | 2.9                | -103.1              | 2.6               | 49.2                | -2.8              | -40.3               |
| F-Statistic                         |                   | 52.82               |                  | 45.45               |                    | 67.31               |                   | 63.81               |                   | 66.67               |
| Obs.                                | 16176             | 16178               | 13106            | 13107               | 15065              | 15067               | 15068             | 15070               | 15068             | 15070               |

*Notes:* Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are dummies that stand for not having enough hours of sleep (Cols. 1, 2), practicing any sport (Cols. 3, 4), eating vegetables and fruits every day (Cols. 5, 6), eating meat at least three times a week (Cols. 7, 8), and eating sweets every day (Cols. 9, 10). All regressions include time and region fixed effects. Individual characteristics include dummies for children’s age, gender, and their interaction, parents’ age, gender, and education. The instrument is the interaction of eligible individual (female or under 30) and post-treatment. Standard errors are clustered at the province and parent’s age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Children’s health may be better when parents can afford suitable medication. Therefore, we explore the impact of job security on children’s medication consumption by substituting children’s health with medication consumption as the dependent variable in Equation (3). Results in Table 15 of the Appendix show positive but insignificant coefficients for the impact of job security on the consumption of medication in general and medication against cold, flu, sore throat, pain, and fever.

Children’s health may respond to the job security of both parents. Unfortunately, our data does not contain information on the labor contracts of adult household members other than the survey respondents. Hence, we cannot estimate an instrumental variable regression where the endogenous variable is the number of parents with secure labor contracts. Instead, we can estimate the reduced form version of the instrumental variable

estimation by performing an OLS regression of children’s health on the interaction of the number of treated parents and a post-treatment dummy. The result of such an exercise is displayed in Table 5. To offer a reference point, column 1 presents the reduced form version of our main estimates with the regressor of interest equal to one if the respondent parent is treated and interviewed in the post-treatment period. Column 2 presents the reduced form version of the new regression where treated equals 0, 1, or 2, depending on the number of treated parents. The coefficient is 2.7 times higher in the latter specification than in our baseline regression.

Table 5: The impact of Parental Entitlement to the Secure Labor Contract Subsidy on Children’s Health

|                | Our specification            | Alternative Specification                               |
|----------------|------------------------------|---------------------------------------------------------|
| Treated * Post | 0.015*<br>(0.007)            | 0.040**<br>(0.019)                                      |
| Treatment      | Reference i’s treated or not | $\hat{N}^{\Delta}$ of treated individuals in the couple |
| Obs.           | 16176                        | 16176                                                   |

*Notes:* Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are dummies for children in good or very good general health (Cols. 1, 2) and children in good mental health (Cols. 3, 4). All regressions include time and region-fixed effects. Individual characteristics include dummies for children’s age, gender, and their interaction, as well as parents’ age, gender, and education. The regressor of interest is the interaction of the eligible parent dummy or the number of eligible parents variable with the post-treatment dummy. Standard errors are clustered at the province and parent’s age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

The improvement in job security induced by the reform may have increased fertility. A raise in the number of children may partly explain our estimated effects of job security on children’s health. We address this possibility in two steps: First, we analyze whether our data supports the hypothesis that the reform increased fertility. Second, we check whether the changes in the sample composition induced by potential increases in fertility can explain our estimates.

In our first step, we study the impact of a secure contract on the probability of having a child. As shown in Table 6, the effect is positive but not statistically significant. Hence, the reform may have increased fertility, but we don’t have statistical power to estimate

the effect precisely. In our second step, we restrict our sample to children born before 2006, i.e., pre-existing children for which compositional effects can't apply. As shown in Table 7, our estimates using this subsample are statistically indistinguishable from those using the full sample. This indicates that compositional changes in terms of an increase in the number of children do not determine our estimates.

Table 6: The impact of Parental Job Security on the Probability of Having a Child

|                                     | Prob. Having Child after 2006 |                     |
|-------------------------------------|-------------------------------|---------------------|
|                                     | OLS                           | IV                  |
| Secure Labour Contract              | 0.014<br>(0.010)              | 0.135<br>(0.187)    |
| <i>First-Stage:</i><br>Treated*Post |                               | 0.090***<br>(0.012) |
| Pre-Reform Mean                     | 0.04                          | 0.04                |
| % Impact                            | 33.3                          | 313.7               |
| F-Statistic                         |                               | 52.82               |
| Obs.                                | 16176                         | 16178               |

*Notes:* Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. The dependent variable is a dummy for the probability of having a child. All regressions include time and region-fixed effects. Individual characteristics include dummies for children's age, gender, and their interaction, as well as parents' age, gender, and education. The instrument is the interaction of eligible individuals (males under 30) and post-treatment. Standard errors are clustered at the province and parent's age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

## 6 Discussion

Secure labor contracts affect workers' effort (Dolado and Stucchi [2008]), increase workers' satisfaction Booth, Francesconi, and Frank [2002], foster family formation decisions (De la Rica and Iza [2005]), increase workers' training (Booth, Francesconi, and Frank [2002]), among others. In this paper, we explore an additional implication of the type of labor contract: its effect on children's health and mental health.

Table 7: The impact of Parental Job Security on Children’s Health. Only children born after 2006

|                                     | Good Health         |                     | Mental Health       |                     |
|-------------------------------------|---------------------|---------------------|---------------------|---------------------|
|                                     | All kids            | Borned before 2006  | All kids            | Borned before 2006  |
| Secure Labour Contract              | 0.163*<br>(0.069)   | 0.150<br>(0.087)    | 0.047<br>(0.062)    | 0.038<br>(0.083)    |
| <i>First-Stage:</i><br>Treated*Post | 0.090***<br>(0.012) | 0.073***<br>(0.014) | 0.091***<br>(0.013) | 0.074***<br>(0.014) |
| Pre-Reform Mean                     | 0.89                | 0.89                | 0.99                | 0.99                |
| % Impact                            | 18.4                | 16.9                | 4.8                 | 3.9                 |
| F-Statistic                         | 52.82               | 27.28               | 52.07               | 27.19               |
| Obs.                                | 16178               | 12130               | 16153               | 12116               |

*Notes:* Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are dummies for children in good or very good general health (Cols. 1, 2) and children in good mental health (Cols. 3, 4). All regressions include time and region-fixed effects. Individual characteristics include dummies for children’s age, gender, and their interaction, as well as parents’ age, gender, and education. The instrument is the interaction of eligible individuals (males under 30) and post-treatment. Standard errors are clustered at the province and parent’s age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

We focus on the Spanish case and use a reform that cuts payroll taxes paid by employers who hire workers with specific demographic characteristics under secure labor contracts. We use data on health outcomes, labor contracts, and demographic characteristics of workers and their children before and after the reform. We are the first to find a positive effect of the 2006 Spanish reform on the use of permanent contracts (see Bentolila, Dolado, and Jimeno [2012]). The exogenous change in the probability of having a secure labor contract induced by the reform allows us to estimate the causal effect of secure labor contracts on health and mental health.

We find that secure labor contracts have sizeable and significant positive effects on children’s health. The effect is stronger for children below the age of eight. Besides, we document the positive effect of parental job security on girls’ mental health. We also show that reductions in children’s accidents (possibly due to increased parental vigilance), increases in the frequency of physical activity, and a more protein-intense diet may be behind the estimated effect. Policymakers designing labor contracts should consider this additional benefit of secure labor contracts. Moreover, designers of the public health sys-



tem should consider the fragility of insecure labor contracts when estimating their budget needs.

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## A Appendix

Table 8: Descriptive Statistics

| Variable                     | Mean  | Std. Dev. | Min. | Max. |
|------------------------------|-------|-----------|------|------|
| <b>Children's Info</b>       |       |           |      |      |
| <i>Outcomes</i>              |       |           |      |      |
| Good Health (Yes = 1)        | 0.90  | 0.30      | 0    | 1    |
| Good Mental Health (Yes = 1) | 0.98  | 0.14      | 0    | 1    |
| <i>Characteristicss</i>      |       |           |      |      |
| Gender (Male = 1)            | 0.52  | 0.50      | 0    | 1    |
| Age                          | 7.44  | 4.63      | 0    | 15   |
| <b>Parent's Info</b>         |       |           |      |      |
| <i>Treatment</i>             |       |           |      |      |
| Secure Labour Contract       | 0.69  | 0.46      | 0    | 1    |
| Treated                      | 0.63  | 0.48      | 0    | 1    |
| Post-Policy                  | 0.70  | 0.46      | 0    | 1    |
| <i>Characteristicss</i>      |       |           |      |      |
| Age                          | 39.10 | 7.47      | 16   | 65   |
| Age (Young = 1)              | 0.22  | 0.42      | 0    | 1    |
| Gender (Female = 1)          | 0.54  | 0.50      | 0    | 1    |
| Primary School Grad          | 0.21  | 0.41      | 0    | 1    |
| Secondary School Grad        | 0.30  | 0.46      | 0    | 1    |
| High-School Grad             | 0.25  | 0.43      | 0    | 1    |
| University Grad              | 0.24  | 0.43      | 0    | 1    |

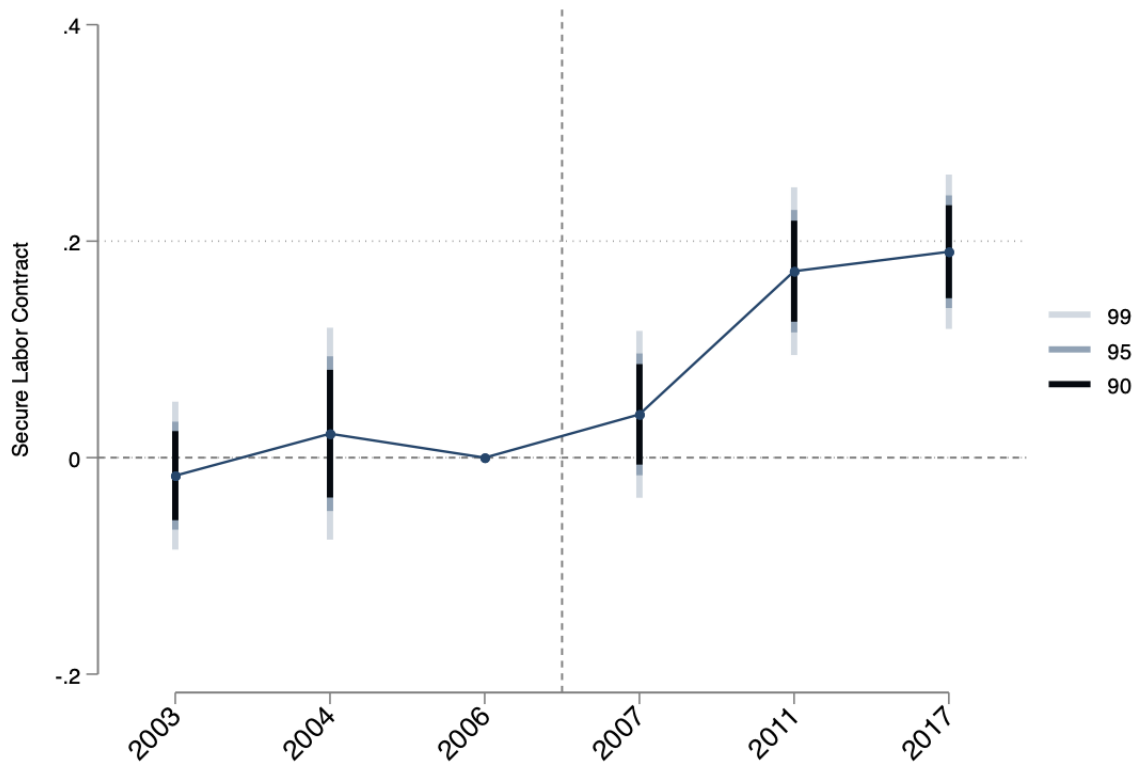
*Notes:* Data is from Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. This table presents averages, standard deviations, and minimum and maximum values for the sample included in the main estimation. The total number of observations is 16,279.

Table 9: Descriptive Statistics

| Variable                                 | Mean | SD   | Min | Max |
|------------------------------------------|------|------|-----|-----|
| <b>Parent's Outcomes</b>                 |      |      |     |     |
| Good Health (Yes = 1)                    | 0.80 | 0.40 | 0   | 1   |
| Good Mental Health (Yes = 1)             | 0.99 | 0.11 | 0   | 1   |
| <b>Children's Outcomes</b>               |      |      |     |     |
| Accident (Yes=1)                         | 0.11 | 0.31 | 0   | 1   |
| <i>Sleep and Health Access</i>           |      |      |     |     |
| Sleep (Not enough hours=1)               | 0.24 | 0.43 | 0   | 1   |
| Emergency Room (Yes=1)                   | 0.38 | 0.49 | 0   | 1   |
| Private Health Insurance                 | 0.12 | 0.33 | 0   | 1   |
| Help-Seeking Behaviour                   | 0.11 | 0.31 | 0   | 1   |
| <i>Weight</i>                            |      |      |     |     |
| Underweight                              | 0.04 | 0.19 | 0   | 1   |
| Overweight                               | 0.11 | 0.32 | 0   | 1   |
| Obesity                                  | 0.10 | 0.30 | 0   | 1   |
| Weight Problem                           | 0.25 | 0.43 | 0   | 1   |
| <i>Sport and Dietary habits</i>          |      |      |     |     |
| Sport (Yes=1)                            | 0.72 | 0.45 | 0   | 1   |
| Daily vegetables and fruit (Yes=1)       | 0.31 | 0.46 | 0   | 1   |
| Meat at least three times a week (Yes=1) | 0.80 | 0.40 | 0   | 1   |
| Daily Sweets (Yes=1)                     | 0.67 | 0.47 | 0   | 1   |
| <i>Consumption of Medication</i>         |      |      |     |     |
| General Consumption                      | 0.36 | 0.48 | 0   | 1   |
| Flu, Cold and Throat Medication          | 0.16 | 0.37 | 0   | 1   |
| Pain and Fever Medication                | 0.15 | 0.36 | 0   | 1   |
| Antibiotics                              | 0.05 | 0.21 | 0   | 1   |

Notes: Data is from Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. This table presents averages, standard deviations, and minimum and maximum values for the sample included in the main estimation. Underweight, Overweight, and Obesity are dummies equal to one for children whose BMI is below the fifth percentile, between the 85th and the 95th percentiles, or above the 95th percentile, respectively. The total number of observations is 16,279.

Figure 3: First-Stage: The impact of the 2006 Labor Reform on Job Security



Notes: Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Coefficients correspond to the estimation of the first stage (equation 1), where the dependent variable is a dummy for having a permanent labor contract, and the treatment is a dummy for being female or young. Standard errors are clustered at the province and parent's age levels.

Table 10: First-Stage: The impact of the 2006 Labor Reform on Job Security Excluding the Regions Most affected by the 2008's Economic Crisis

|                     | 1                   | 2                   | 3                   | 4                   | 5                   |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <i>First-Stage:</i> |                     |                     |                     |                     |                     |
| Treated*Post        | 0.092***<br>(0.016) | 0.090***<br>(0.020) | 0.094***<br>(0.023) | 0.091***<br>(0.024) | 0.117***<br>(0.017) |
| Cast. La Mancha     | NO                  | NO                  | NO                  | NO                  | NO                  |
| Andalusia           | YES                 | NO                  | NO                  | NO                  | NO                  |
| Murcia              | YES                 | YES                 | NO                  | NO                  | NO                  |
| Valencia            | YES                 | YES                 | YES                 | NO                  | NO                  |
| Catalonia           | YES                 | YES                 | YES                 | YES                 | NO                  |
| Pre-Reform Mean     | 0.89                | 0.89                | 0.88                | 0.88                | 0.88                |
| % Impact            | 18.57               | 18.51               | 11.04               | 2.30                | 3.47                |
| F-Statistic         | 31.71               | 21.24               | 17.50               | 14.58               | 46.97               |
| Obs.                | 15500               | 13766               | 12750               | 11622               | 10144               |

Notes: Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Coefficients correspond to the estimation of the first stage (equation 1) of our empirical strategy, where the dependent variable is a dummy for having a permanent labor contract, and the treatment is a dummy for being female or young. Standard errors are clustered at the province and parent's age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table 11: The impact of Parental Job Security on Children's Health Controlling for Regional Unemployment Rate

|                        | Good Health      |                     | Mental Health     |                     |
|------------------------|------------------|---------------------|-------------------|---------------------|
|                        | OLS              | IV                  | OLS               | IV                  |
| Secure Labour Contract | 0.009<br>(0.008) | 0.168*<br>(0.073)   | -0.003<br>(0.004) | 0.044<br>(0.064)    |
| <i>First-Stage:</i>    |                  |                     |                   |                     |
| Treated*Post           |                  | 0.089***<br>(0.012) |                   | 0.089***<br>(0.012) |
| Pre-Reform Mean        | 0.89             | 0.89                | 0.99              | 0.99                |
| % Impact               | 0.97             | 18.96               | -0.27             | 4.48                |
| F-Statistic            |                  | 52.31               |                   | 51.60               |
| Obs.                   | 16176            | 16178               | 16151             | 16153               |

Notes: Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are dummies for children in good or very good general health (Cols. 1, 2) and children in good mental health (Cols. 3, 4). All regressions include time and region-fixed effects. Individual characteristics include dummies for children's age, gender, and their interaction, as well as parents' age, gender, and education. The instrument is the interaction of eligible individuals (female or under 30) and post-treatment. Standard errors are clustered at the province and parent's age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .



Table 12: The effect of Job Security on Adult's Health

|                                     | Good Health         |                     | Mental Health     |                     |
|-------------------------------------|---------------------|---------------------|-------------------|---------------------|
|                                     | OLS                 | IV                  | OLS               | IV                  |
| Secure Labour Contract              | 0.055***<br>(0.004) | -0.051<br>(0.143)   | -0.002<br>(0.003) | -0.035<br>(0.057)   |
| <i>First-Stage:</i><br>Treated*Post |                     | 0.090***<br>(0.012) |                   | 0.091***<br>(0.013) |
| Pre-Reform Mean                     | 0.79                | 0.79                | 0.99              | 0.99                |
| % Impact                            | 6.9                 | -6.5                | -0.2              | -3.5                |
| F-Statistic                         |                     | 52.82               |                   | 53.28               |
| Obs.                                | 16176               | 16178               | 16157             | 16159               |

*Notes:* Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are one-to-five health indices (Cols. 1,2), dummies for parent in good or very good general health (Cols. 3, 4), and indicators for parent in good mental health (Cols. 5, 6). All regressions include time and region fixed effects. Individual characteristics include dummies for children's age, gender, and their interaction, parents' age, gender, and education. The instrument is the interaction of eligible individual (female or under 30) and post-treatment. Standard errors are clustered at the province and parent's age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table 13: The effect of Parental Job Security on Children's Accidents and Health Access

|                                     | Accidents        |                     | Emergency Room    |                     | Private Insurance   |                     | Doctor Visit      |                     |
|-------------------------------------|------------------|---------------------|-------------------|---------------------|---------------------|---------------------|-------------------|---------------------|
|                                     | OLS              | IV                  | OLS               | IV                  | OLS                 | IV                  | OLS               | IV                  |
| Secure Labour Contract              | 0.010<br>(0.010) | -0.321**<br>(0.134) | -0.007<br>(0.012) | 0.210<br>(0.222)    | 0.049***<br>(0.003) | -0.083<br>(0.071)   | -0.003<br>(0.007) | 0.115<br>(0.240)    |
| <i>First-Stage:</i><br>Treated*Post |                  | 0.090***<br>(0.012) |                   | 0.090***<br>(0.012) |                     | 0.133***<br>(0.023) |                   | 0.090***<br>(0.012) |
| Pre-Reform Mean                     | 0.11             | 0.11                | 0.36              | 0.36                | 0.10                | 0.10                | 0.11              | 0.11                |
| % Impact                            | 8.8              | -281.0              | -2.1              | 58.1                | 51.1                | -86.2               | -2.4              | 99.8                |
| F-Statistic                         |                  | 52.82               |                   | 52.82               |                     | 32.74               |                   | 52.82               |
| Obs.                                | 16176            | 16178               | 16176             | 16178               | 12844               | 12846               | 16176             | 16178               |

*Notes:* Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are dummies that stand for children having had an accident in the previous 12 months (Cols. 1, 2), children having been to the emergency room (Cols. 3, 4), children having private insurance (Cols. 5, 6), and children having spent 12 months or more since the last visit to the doctor (Col. 7, 8). All regressions include time and region fixed effects. Individual characteristics include dummies for children's age, gender, and their interaction, parents' age, gender, and education. The instrument is the interaction of eligible individual (female or under 30) and post-treatment. Standard errors are clustered at the province and parent's age levels. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table 14: The effect of Parental Job Security on Children’s Weight

|                                     | Underweight      |                     | Overweight         |                     | Obesity          |                     | Weight Problem    |                     |
|-------------------------------------|------------------|---------------------|--------------------|---------------------|------------------|---------------------|-------------------|---------------------|
|                                     | OLS              | IV                  | OLS                | IV                  | OLS              | IV                  | OLS               | IV                  |
| Secure Labour Contract              | 0.002<br>(0.005) | 0.090<br>(0.105)    | -0.015*<br>(0.005) | -0.099<br>(0.220)   | 0.002<br>(0.006) | 0.031<br>(0.181)    | -0.011<br>(0.006) | 0.023<br>(0.328)    |
| <i>First-Stage:</i><br>Treated*Post |                  | 0.098***<br>(0.015) |                    | 0.098***<br>(0.015) |                  | 0.098***<br>(0.015) |                   | 0.098***<br>(0.015) |
| Pre-Reform Mean                     | 0.03             | 0.03                | 0.11               | 0.11                | 0.10             | 0.10                | 0.23              | 0.23                |
| % Impact                            | 5.9              | 294.9               | -13.5              | -91.4               | 2.4              | 32.2                | -4.5              | 9.6                 |
| F-Statistic                         |                  | 42.73               |                    | 42.73               |                  | 42.73               |                   | 42.73               |
| Obs.                                | 11813            | 11815               | 11813              | 11815               | 11813            | 11815               | 11813             | 11815               |

Notes: Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are dummies for children being underweight (Cols. 1, 2), overweight (Cols. 3, 4), obese (Cols. 5, 6), or one of the three (Cols. 7, 8). Underweight, Overweight, and Obesity are dummies equal to one for children whose BMI is below the fifth percentile, between the 85th and the 95th percentiles, or above the 95th percentile, respectively. All regressions include time and region fixed effects. Individual characteristics include dummies for children’s age, gender, and their interaction, parents’ age, gender, education, nationality, and civil status. The instrument is the interaction of eligible individual (female or under 30) and post-treatment. Standard errors are clustered at the province and parent’s age levels. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10.

Table 15: The effect of Parental Job Security on Children’s Consumption of Medication

|                                     | Overall          |                     | Cold, flu, Throat |                     | Pain, Fever       |                     | Antibiotics       |                     |
|-------------------------------------|------------------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|---------------------|
|                                     | OLS              | IV                  | OLS               | IV                  | OLS               | IV                  | OLS               | IV                  |
| Secure Labour Contract              | 0.013<br>(0.017) | 0.491*<br>(0.249)   | 0.007<br>(0.013)  | 0.124<br>(0.243)    | -0.001<br>(0.006) | 0.397<br>(0.196)    | 0.009*<br>(0.003) | -0.034<br>(0.086)   |
| <i>First-Stage:</i><br>Treated*Post |                  | 0.090***<br>(0.012) |                   | 0.091***<br>(0.012) |                   | 0.090***<br>(0.012) |                   | 0.091***<br>(0.012) |
| Pre-Reform Mean                     | 0.36             | 0.36                | 0.15              | 0.15                | 0.13              | 0.13                | 0.05              | 0.05                |
| % Impact                            | 3.6              | 138.3               | 4.4               | 82.7                | -0.7              | 294.9               | 18.8              | -67.0               |
| F-Statistic                         |                  | 52.82               |                   | 56.94               |                   | 52.89               |                   | 56.37               |
| Obs.                                | 16176            | 16178               | 16155             | 16157               | 16175             | 16177               | 16148             | 16150               |

Notes: Data is from the Spanish National Health Survey for editions 2003 – 2004, 2006 – 2007, 2011, and 2017. Dependent variables are dummies that stand for children having consumed any medication during the last two weeks (Cols. 1, 2), having consumed medications to treat cold, flu, or throat (Cols. 3, 4), having consumed medications to treat pain or fever (Cols. 5, 6), having taken antibiotics (Cols. 7, 8). All regressions include time and region fixed effects. Individual characteristics include dummies for children’s age, gender, and their interaction, parents’ age, gender, education, nationality, and civil status. The instrument is the interaction of eligible individual (female or under 30) and post-treatment. Standard errors are clustered at the province and parent’s age levels. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10.