

Longer school schedules, child care, and mothers' employment quality: Evidence from a school reform in Chile

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Abstract:

Ample empirical evidence finds that access to childcare increases mothers' labor force participation and employment. We investigate whether increased childcare improves the quality of jobs mother find by estimating the causal effect of a school schedule reform in Chile. Using a panel of individual mothers' employment, we estimate a fixed-effects model that controls for unobserved heterogeneity. We find a positive effect of access to full-day schools on several measures of mothers' job quality, which are correlated to working full-time. We also find small, positive effects on quality of fathers' jobs. Our evidence suggests that the mechanism driving the effect is the reform's implicit subsidy to the cost of child care. We also find that low education mothers benefit most from the reform. Thus, childcare can increase household welfare by improving parents' jobs and can play a role in reducing inequality.

JEL Classification: H41, H52, I25, I28, J13, J16, J18, J22, O15

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1. Introduction

Poverty rates have declined substantially in developing countries during the last 25 years. Since labor is the main source of income among the poor, exiting poverty has been related to improvements in labor market outcomes (Azevedo et al., 2013). The poor have strong attachment to the labor force because in most developing countries, because they often lack social protection programs or face weak safety nets for the unemployed. To assess labor markets in developing countries, therefore, income and the quality of employment are the relevant dimensions that need to be analyzed (ILO, 2014). Job quality has been found to be a relevant factor for exiting poverty in Latin America (Beccaria et al., 2013).

Additionally, women's participation in the labor force plays an important role in household well-being and poverty reduction: recent reductions in poverty and income inequality in Latin America were positively impacted by increases in women's income and labor force participation (LFP) (World Bank 2012). If female employment is a relevant factor in households' welfare, then public policies that foster female employment are relevant for economic development.

One of the most relevant factors that determines women's employment decisions is motherhood, because it is often mothers who delay entry, or decide to exit the labor force, when they have children due to the time-intensive nature of child rearing (Kleven et al., 2018). Lack of family-friendly employment policies were found to explain almost 30 percent of the decrease in U.S. women's labor force participation in the past 25 years (Blau and Kahn, 2013). In contrast, policies that support flexible work schedules have facilitated mothers' entry or re-entry into the labor market after child birth (Chioda, 2016; Del Boca, 2002). Therefore, public policies that help reconcile work and family life can have a positive impact on mothers' employment.

One such policy is child care provision. There is ample empirical evidence in developed and developing countries that greater access to child care increases employment among mothers of pre-school children,¹ and more recently, among mothers of primary school children (Martinez

¹ For instance, Gelbach (2002), Cascio (2009), and Fitzpatrick (2012) find that greater access to public kindergarten in the United States led to increases mothers' labor supply, and Barua (2014) found that these effects can be long lasting in the United States. In developing countries, findings are similar: Berlinski and Galiani (2007) and Berlinski et al (2011) find that in Argentina, the construction of pre-school centers led increases mothers' labor force participation and hours worked. Similarly, Calderon (2014) finds that in Mexico, a large expansion of pre-school centers increased the probability that mothers of pre-school children were employed. Positive effects of childcare on mothers' employment outcomes are also found in Germany, France and China (Bauernschuster and Schlotter, 2015; Givord and Marbot, 2015; Li, 2017, respectively.) In contrast to other countries, the effects of a national and rapid

and Peticara, 2017; Contreras and Sepulveda, 2016; Berthelon, Kruger and Oyarzun, 2017). However, less is known about the effects of access to child care on the quality of the jobs mothers obtain. To the best of our knowledge, this paper is the first to analyze whether an increase in access to child care—proxied by a policy that extended primary school schedules in Chile—affects the quality of jobs that mothers access.

In 1997, Chile initiated a large-scale education reform that increased the number of weekly hours that children spend in school, without extending the school year calendar. The extension of school schedules is effectively a price subsidy for non-family child care, which in turn affects the opportunity cost of mothers' time, and potentially her decisions to work and the number of hours she devotes to the labor market. Such a policy can affect the quality of employment through different channels; for instance, if the policy increases hours worked, this can in turn lead to improved employment quality if desirable job attributes are correlated with full-time jobs. An increase in childcare provision can also affect spouses' (fathers') labor supply and indirectly affect mothers' decisions. Longer school schedules may also facilitate mothers' investments in formal education, thereby improving her employment opportunities and employment quality. Finally, though we cannot observe it directly in the data, increases in child care arrangements may allow mothers to devote more time to job search activities, improving their match with better jobs.² Our results suggest that the policy's main effect is on the opportunity cost of mothers' time, and that an increase in hours worked is facilitating access to full-time, better quality jobs.

In general, few studies have analyzed the effect of public policies on job quality.³ While there is ample empirical evidence on the effects of childcare on mothers' participation and employment, the main contribution of this paper is to extend the analysis and explore whether child care access can lead to better jobs.⁴ We find that it does: using panel data of about 2,650

expansion of pre-school centers in Chile, which began in 2006, has had unclear effects on mothers' labor force participation and employment (Aguirre, 2011, Medrano, 2009, and Encina and Martínez, 2009 find no effects, while Contreras et al., 2012, find a positive effect of the policy). These contradictory findings for Chile could be due to the quality of the child care services provided (Bassi and Urzua, 2010).

² A similar channel has been proposed when assessing the effect of unemployment insurance and job quality (Nekoei and Weber, 2017; Van Ours and Vodopivec, 2008; Acemoglu and Shimer, 2000).

³ An exception is unemployment insurance, which has different effects depending on the context studied: while Van Ours and Vodopivec (2008) found no effects of reductions in unemployment insurance on salary, type of job contract and probability of job loss in Slovenia, Nekoei, Arash, and Weber (2017) found that greater unemployment insurance benefits leads to better firm quality and higher wages in Austria.

⁴ Two general approaches to job quality measurement exist, job characteristics and a quality index. In this paper, we focus on separate characteristics of employment quality to better understand the mechanisms through which the

women in Chile, we estimate a fixed-effects model that controls for individuals' unobserved heterogeneity, which is plausibly important determinant in employment decisions. We construct several variables that measures different dimensions of quality of work and employment conditions that are standard in the literature (UNECE, 2010; Muñoz de Bustillo et al., 2011), and find that greater access to full-day schools has significant and positive effects on mothers' job quality. Our results suggest that if FDS coverage increases by 24 percentage points—equivalent to moving to full FDS coverage from 2015 levels—leads to an increase in wages of 4.7 percent, increases the likelihood of full-time employment by 7.5 percent and of being employed with a contract by 7.3 percent. We also confirm the positive effects of the policy on mothers' labor supply (participation, employment and hours worked) that have been found in previous research for Chile.⁵ Most of the beneficial effects of the policy on job quality are concentrated among lower-educated women. We find no evidence of greater educational investments by mothers as a result of the policy, which suggests that the mechanism through which the policy is operating is its effect on the shadow price of child care and the opportunity cost of mothers' time.

This study contributes to the growing literature and debate about policies that can impact job quality and decent work (Findlay, 2013; ILO, 1999), and to the literature relating motherhood and employment (Kleven et al., 2018). Our findings may have important policy lessons for other countries that are considering or implementing similar policies. In recent years, countries such as Colombia, Brazil, Uruguay, Peru and Germany have implemented policies that increase school hours in at least part of their regions or schools, while in the United States, some states—Colorado, New Mexico, Oregon, and Wyoming (among others)—are reducing the total time that children spend in school (Anderson and Walker, 2015).

This paper is organized as follows: the next section provides a description of the Chilean school system and the FDS reform, implemented since 1997. We discuss our identification strategy and the empirical model in Section 3, followed by a section describing our data and variables. Section 5 presents our results and Section 6 concludes.

reform may be operating. We also estimated the effect of FDS access on a simple index of the 5 job quality characteristics in our data, and we found a positive and significant effect. Result available upon request.

⁵ Previous studies on the effects of the FDS reform on participation and employment decisions include Hernando (2009), Contreras and Sepulveda (2016) and Berthelon, et al. (2017).

2. Institutional framework

2.1. The Chilean school system

During our period of analysis, three types of school exist in the general education system in Chile,⁶ based on school's ability to select students and their funding scheme: (i) *public* schools—administered at the municipal level that are funded by a per-student subsidy from the central government and from (optional) resources allocated by each municipality; (ii) *private subsidized* (or *voucher*) schools, which are privately owned, for-profit organizations that receive the same per-student subsidy from the central government as public schools, but which can charge additional fees to their students;⁷ and (iii) *private* schools that do not receive public funding and are allowed to freely set the fees they charge. Private and private subsidized schools can select students, but public (municipal) schools cannot.⁸

Chile's education system is also characterized by family school choice, referred to as “open enrollment” in other countries. Families' options of publicly funded schools are not restricted to a specific geographic location or district because the per-student subsidy that schools receive is independent of the family's residence. Families can enroll their children in the school of their choice, according to their preferences and financial capacity. Even though school choice is not legally bound to place of residence, empirical evidence reveals that school proximity is an important determinant in parents' choice of school, particularly for children in primary schools (Chumacero, et al., 2011).

2.2 The Full-day School Reform

⁶ Chilean education consists of three cycles: pre-school (pre-kinder and kinder), general education (primary education, 8 years, and secondary education, 4 years), and higher education (universities and technical institutes). Only General education is mandatory, and the Government has the mandate to offer public education from grades 1 through 12 for all. The Government also provides subsidized pre-school and university enrollment to low-income families. The focus of this paper is a reform that extended time in school in general education, so we limit our description to this cycle of education.

⁷ Fee charged to students are regulated, and the government's per-student subsidy is reduced as private fees increase.

⁸ Recent reforms that began in 2018 will gradually change the funding scheme by 2020, and will mostly affect public subsidized (voucher) schools: as of 2018, schools that receive public funds may not charge additional fees and may no longer select students. Schools that wish to continue to charge fees and discriminate students will begin to operate as private schools and will not receive public funds. This reform will be implemented gradually and occurs after our period of analysis.

In 1997 Chile initiated a large-scale education reform that included an increase of instructional time without extending the number of school days during the year. The reform increased the length of daily school schedules and came to be known as the Full Day School (FDS) reform.⁹ It mandated that all primary and secondary schools that receive public funds—public or private subsidized—must offer a full-day program by 2007 and 2010, respectively; the change to full-day schedules could be implemented gradually within a school.¹⁰ In primary schools—the focus of this paper—daily time spent at school increased by about 1.5 to 2 hours, which represents an increase of approximately 35 percent.¹¹ Full-day 1st and 2nd grade is not mandatory, yet the majority of schools offer full-days in these levels.¹² The law did not apply to (fully) private schools, so we exclude them from our analysis.¹³ By increasing the time that children spend in school and the number of hours under adult supervision, the FDS policy was an implicit child care subsidy for school-aged children, which may impact employment outcomes of their mothers. This is a reasonable hypothesis, since mothers of young children in Chile cite lack of child care arrangements as one of the main reasons for not working or seeking employment (Table 1).

The Law set a deadline for FDS implementation, and each school principal could decide the timing of entry into the full-day regime in a decentralized manner. In Chile, school districts are defined at the municipal level, and depending on the funding scheme, school principals can make autonomous decisions. While public schools are under the oversight of municipal authorities, principals in the public system have gained increasing levels of autonomy (Núñez, Weinstein, & Muñoz, 2010); in the private subsidized system, most schools operate without coordinating with each other, as they are single standing schools (Elacqua, et al., 2011).

⁹ The reform is referred to as JEC in Chile, due to the Spanish acronym of its official name, *Jornada Escolar Completa*, approved in law No.19,532.

¹⁰ Schools switching to the FDS regime did not have to change all grade levels to full-day schedules. For instance, it was possible for a primary school to offer FDS for 5th through 8th grades, and not for 3rd and 4th grade. However, if a grade level is full-day, all its classrooms within that grade level have to be offered as FDS. Additionally, all publicly funded schools created after 1997 must initiate operations as full-day schools.

¹¹ For most schools, this meant changing from a system of half-day shifts, to one continuous full-day schedule. A typical half-day schedule is from 8:00 a.m. until 1:30 p.m., while a typical full-day schedule runs from 8:00 a.m. until 3:30 p.m. In Chile, the Ministry of Education requires that schools comply with a minimum number of pedagogical hours per subject, which allows schools to determine their daily schedules independently and in flexible ways so they can fulfill this requirement. However, in our data we have no systematic information regarding actual school schedules (opening and closing times) at the school level.

¹² Even though 1st and 2nd grade FDS is not mandatory, 60% of schools offered full-day schedules in 2015, and the trend in coverage of these two grades is similar to the one observed for the mandatory levels.

¹³ During the period of analysis, less than 8 percent of primary school enrollment in Chile is in fully private schools.

In order to implement longer schedules, schools ascribing to the FDS regime received funds from the Ministry of Education (MINEDUC) to cover additional costs. The per-student subsidy was 40% higher for students in full-day schools, and schools could apply for infrastructure funds from MINEDUC to finance construction of new buildings. When faced with excess demand for infrastructure funds, MINEDUC prioritized schools according to several criteria, one of them being the socio-economic or educational vulnerability of the school's students.^{14,15} In section 3 below, we discuss the role of this feature of the policy in our identification strategy.

Figure 1 reveals the gradual trend towards FDS for primary school enrollment. Only after 9 years did school enrollment in FDS schools surpass enrollment in half-day school schedules, and by 2015—18 years after the reform was implemented—FDS coverage had reached only 68 percent of total primary school enrollment. The first two years of the reform, schools with excess capacity (mostly in rural areas) entered the program, because they had relatively low switch costs; in the following years, schools entered the program gradually. By the first year of our analysis, just over 50% of primary schools had ascribed to full-day schedules.

Due to the decentralized nature of decisions by school principals, the FDS program was taken up at different rates across Chilean administrative regions and municipalities (see section 3). Table 2 reports the average share of primary schools that were under a full-day regime in Chile's administrative Regions.¹⁶ Several features of the policy immediately stand out. First, there has been a sustained increase in full day school coverage in all regions. Second, there is large variability in reform take-up across regions; third, there is an inverse relationship between enrollment and FDS implementation. The Metropolitan Region (XIII Region), where Santiago is located, was home to 36 percent of Chilean primary school students in 1997, yet there the reform

¹⁴ The law indicates that the Ministry of Education will grant schools authorization to operate under the full-day regime and also, through special competitive programs, will provide funds to schools that require additional resources to implement the FDS schedule. The Law also states that in granting both authorizations and funds the Ministry might use one or more of the following four selection criteria: a) Socio-economic or educational vulnerability of the school's students; b) Amount of resources requested on a per-student basis; c) Quality of the proposal with regard to technical, pedagogical, economic and social specifications; and d) Percentage of total requested funding that would be covered by the school's own administration.

¹⁵ To our knowledge there is no publicly available data regarding schools' application for permits and/or funds. There is also no public information on the decision-making process regarding the allocation of funds by the Ministry.

¹⁶ Currently Chile has 16 administrative regions. In 1997, at the beginning of the reform, there were 13 regions. Two new regions were created in 2007 and one in 2017. Throughout the analysis we use the more disaggregated regional structure of 15 administrative regions existing at the end of our sample (2015).

was slowest—with 56 percent take-up—mainly because schools in this predominantly urban area face physical space constraints or higher costs of expansion of their infrastructure. The fastest implementation occurred in the less populated regions, with a larger share of rural areas and smaller urban centers.

Given that there are more than 330 municipalities in Chile, in Table 3 and Figure 2 we report the fraction of all 334 municipalities in the country that fall within different ranges of FDS implementation. As expected, we observe an increase over time in the share of municipalities reaching high levels of coverage, and a decrease in the number of municipalities with low coverage levels. More importantly, for our empirical strategy, it also shows that there is a wide variation of FDS implementation levels at any given year, particularly for the years in which we compute our estimates. This feature can also be seen in Figure 3, which presents a map of the depth of FDS implementation across municipalities in 2002, 2004, 2006 2009 and 2015 (the year in which our labor market data is available). These descriptions reveal that the reform’s phase-in had significant temporal and geographic variation, and our empirical strategy takes advantage of the quasi-experimental nature of the reform’s implementation.

3. Identification Strategy and estimation

We estimate a reduced-form, panel data model of mothers’ labor force participation and employment outcomes, controlling for individual fixed effects. The fixed effect allow us to control for time-invariant, individual characteristics, including unobservable traits that may jointly affect women’s employment, fertility preferences, choice of residency, and choice of school. In our fixed-effects model, therefore, the effect of access to longer school schedules on job quality is identified through exogenous, within-individual changes in FDS access.

Identification in our model depends on the quasi-experimental nature of the policy implementation—i.e., that FDS implementation was not correlated to women’s employment outcomes. As indicated previously, given the dynamics of the Chilean school system—which are the results of the aggregation of highly independent school decisions—we believe that this assumption is reasonable. Additionally, Berthelon et al. (2017) shows that there is no evidence that FDS was implemented in response to changes in local female labor markets. Additionally,

our estimations control for pre-existing trends in female employment rates and for other municipal socioeconomic characteristics that could potentially affect mothers' labor outcomes.

We restrict our sample to women that were potentially affected by the FDS policy, i.e., mothers of pre-school and primary school children, because they are concerned with child care (see Table 1). Women in our sample are not necessarily affected by the FDS policy in every year they are surveyed; for instance, before their youngest child is of primary school age. To more precisely identify the effect of FDS access on mothers' employment outcomes, we interact FDS availability in a given year with a dummy variable that equals one if a mothers' youngest child is of primary school age that year.

The empirical model we estimate is the following:

$$Q_{imrt} = \theta FDS_{mrt} + \gamma(FDS_{mrt} \times PSAge_{imrt}) + X_{imrt}\beta + M_{mt}\mu + \alpha_i + \tau_{rt} + \delta_t D_{mr} + \epsilon_{imrt} \quad (1)$$

where the dependent variable Q_{imrt} represents an indicator of labor force participation or job quality (variables are described below in section 4) for woman i living in municipality m and region r in year t . The policy variable of interest, FDS_{mrt} , measures the share of full-day primary schools in municipality m and region r in year t .¹⁷ $PSAge_{imrt}$ is a dummy variable that equals 1 if the youngest child is aged 6-13 in year t . The effect of the FDS policy is θ when the youngest child is in pre-school (aged 0-5 years) and $\theta + \gamma$ when the youngest child is in primary school. If the channel through which the policy affects mothers' employment is through an implicit child care subsidy for primary school children, then we would expect that FDS access does not affect mothers before their child is in primary school, i.e., $\theta = 0$. Our parameter of interest is γ , as it captures the marginal effect of the policy on mothers when they are most affected by the policy; we report this estimate in our results. Identification in equation (1) comes from the interaction of exogenous variation in municipal FDS availability and exogenous timing of age of mothers' youngest child, which determines the timing of policy exposure.¹⁸

¹⁷ Our data also allows us to measure total enrollment under FDS. However, we believe that parents' choice is affected by the availability of FDS schools rather than the aggregated municipality enrollment because parents observe the proximity of an FDS school, but not aggregated enrollment. Nonetheless, we also estimated our models with and FDS measure that uses total enrollment at the municipal level. Results are similar to the ones reported here and are available upon request.

¹⁸ A possible threat to this identification strategy would be increased fertility as a result of the policy. We estimated regressions of fertility on FDS access and individual and local characteristics, and find no effect of the FDS policy on fertility.

We also control for time-varying individual characteristics in vector X_{imrt} , and municipality-level characteristics, including time-varying labor market conditions, in vector M_{mrt} . We include an individual-level fixed effect, α_i , which allows us to control for individual unobserved heterogeneity, and region-time fixed effects, τ_{rt} , to control for regional trends. We control for pre-existing trends in the labor market by interacting year fixed effects (δ_t), with a dummy variable that defines a municipality as “low” LFP if its LFP rate in 2000 was below the median (D_{mr}). These interaction terms cleanse the estimated FDS effect of any differences in female labor force participation trends that may have been in place before the first EPS survey (2002). Finally, ϵ_{imrt} is an idiosyncratic error term.

Threats to identification

In the Chilean education system, parents are not geographically limited in their choice of school, so that FDS availability in the municipality of residence does not necessarily reflect parents’ choice set. However, previous research in Chile has shown that most children of primary school age attend schools in their municipality (Chumacero et al. 2011, Schneider et al. 2006).¹⁹ Furthermore, an aggregated measure of FDS access is exogenous to families’ residence, so long as families are not deciding where to live based on access to FDS schools. Berthelon et al. (2017) provides evidence that mothers’ migration decisions are uncorrelated with access to FDS schools, and therefore availability of FDS schools at the municipal level should be exogenous to family decisions.

Another concern to identification is the non-random nature of FDS funds allocation, and more specifically, that it could have been correlated with mothers’ employment outcomes. As indicated above, schools adopting the policy could apply to the Ministry of Education for infrastructure funds, which were targeted to more vulnerable schools, potentially biasing its effects. For example, if priority schools that were positively discriminated in funds allocation—i.e., schools with higher poverty levels—had less labor force participation by mothers, or mothers had lower quality jobs, then the effect of the FDS policy may be capturing spurious correlation between mothers’ employment and the policy. We address this possibility in several ways: first,

¹⁹ Approximately 11% of 4th grade students went to school in a municipality different from their place of residence in 2009 (SIMCE questionnaires, *Agencia de Calidad de la Educación*).

we include a control for pre-existing trends in municipal female labor force participation rates, and by including municipality characteristics—such as poverty rates, female participation rates, average income, etc.—as control variables in all regressions.²⁰ Furthermore, as discussed above, the decentralized nature of decisions in the Chilean school system that make it likely that the FDS decisions followed a quasi-experimental design.

4. Data and variables

Our main source of information is Chile's Social Protection Survey, which we denominate as EPS for its Spanish acronym.²¹ The EPS has several rounds available (2002, 2004, 2006, 2009 and 2015) and collects detailed information of respondents' current labor status, job characteristics, as well as other socio-economic variables of the respondent and household members.²² From this data source we obtain individual information for our dependent variables on labor supply and job quality (Q_{imt}) and mothers' socio-economic characteristics (X_{imrt}). From the EPS data we are able to construct an unbalanced panel of about 2,650 women that were surveyed in at least two of the years that the instrument was fielded. Technical reports by the agency that collected the data suggest that attrition was not systematically correlated to observable characteristics (MITRAB, 2016); we also compared characteristics of individuals that persist in the panel with those that dropout and find that they are similar.²³

We construct several measures of job quality and formality that are widely accepted in the existing literature: hourly wage (in logs);²⁴ categorical variables for whether the job is full-time; presence of a contract; whether the job is open-ended; whether the worker is self-employed or a business owner; whether the job is unionized; and categorical variables for size of the firm where the woman works: small (less than 10 employees), medium (between 10 and 199 employees), and

²⁰ As a robustness check, we also estimated regressions controlling for municipality measures of job quality and the main results did not change.

²¹ The survey's name is *Encuesta de Protección Social*.

²² Another round of the survey was conducted in 2012, however, the Ministry of Labor has deemed it "incomplete", and does not recommend its use. Therefore, we have decided not to include it in our analysis. Ministerio del Trabajo y Previsión Social, URL: <https://www.previsionsocial.gob.cl/sps/biblioteca/encuesta-de-proteccion-social/bases-de-datos-eps>.

²³ We compared individuals' education, sex, employment outcomes in the first year of the sample, and community characteristics for those who persist and find that some variables are statistically significant but economically insignificant.

²⁴ Hourly wages are expressed in Chilean pesos of 2015.

large firms (200 or more employees).²⁵ We also construct three measures of labor supply—participation, employment, and weekly hours worked—to compare our results to previous evaluations of the effects of the FDS reform on participation.²⁶

We include measures of women’s individual characteristics that may affect her decision to participate in the labor market as well as her employment outcomes: years of education, age and age squared as proxies for experience, and family demographics (number of children that are of pre-school, primary and secondary-school or university age). The individual fixed effects of our estimates control for unobservable characteristics—such as work or fertility preferences—that are related to her decision to enter the labor force and the type of jobs she prefers.

To construct a measure of FDS access at the municipal level we used administrative data from the Ministry of Education.²⁷ As previously discussed, one feature of the FDS program is that it does not require implementation at all grade-levels simultaneously (or in any specific order). It only requires that if a school implements it in a specific grade-level, all students in that grade-level have to be included. In this context, we defined a school as full-day if at least half of the primary school grade-levels that the school offers were functioning as FDS (some schools do not offer all 8 grade-levels). We then aggregate this information at the municipal level to construct the share of FDS schools in a municipality that operate as FDS in a given year.^{28, 29}

Finally, Chile’s national Household Surveys (CASENs) provided time-varying municipal-level variables (vectors M_{mrt} and D_{mr}): average adult educational attainment; poverty rate; percentage of rural population; female and male labor force participation rates; female and male employment rates.

²⁵ Data on firm size is not available in ELPI 2015, therefore estimates for these variables include data for the 2002-2009 period.

²⁶ Contreras and Sepulveda (2016) and Berthelon et al. (2017).

²⁷ We obtained the data through the Open Data platform at the Ministry of Education website. <http://datosabiertos.mineduc.cl>

²⁸ Although full-day schedules are not mandatory for 1st and 2nd grade, we include them in our measure of access to FDS schools on the premise that parents choose a school where they expect their child to attend for several years. Furthermore, since most primary school enrollment is in grades 3 through 8, access to FDS in 1st through 8th grades is strongly correlates with FDS access in 3rd through 8th grades (simple correlation = 0.99).

²⁹ We would like to estimate regressions that test whether mothers anticipated future levels of FDS coverage. However, in the first year of our data, the reform had already been in place for several years (average coverage was 42%), so that the approach is not feasible. Contreras and Sepulveda (2016) were able to analyze this question given the nature of their data, and they found that women’s employment decisions did not anticipate the reform.

We restrict our sample to women that were potentially affected by the FDS policy, i.e., mothers of pre-school and primary school children, because they are concerned with child care in those age groups (see Table 1). We define the sample based on the age of the youngest child to reflect the household's demand for mothers' time in child-rearing. Though the FDS policy applies only to primary school students, we include mothers when their youngest child is aged 0 to 5 if she is surveyed when the child reaches primary school. Our sample, therefore, includes mothers whose youngest child was of primary school age (between 6 and 13 years) in any of the survey years. We exclude from the panel women whose youngest child is aged 14 years or older when surveyed because at this age childcare is no longer a concern. We also exclude women who were never mothers during the survey period. We are able to observe women's trajectories in the labor market over (up to) a 14-year period. Thus, women in our sample are not necessarily affected by the FDS policy in every year they are surveyed; for instance, before their youngest child is of school age (younger than 6) or after the youngest child is in secondary school (older than 13).

Table 4 reports summary statistics of all variables in our sample, for each year and the period's average. Approximately 74 percent of mothers participated in the labor force during the period,³⁰ 63 percent were employed, and they worked an average of 27 hours per week.³¹ It is interesting to point out that even though in 2005 the legal working week was reduced from 48 to 44 hours the average number of hours worked increased between 2004 and 2006. This is consistent with a larger fraction of women working in full-time jobs, and may be due to increased access to full day schools. About 54 percent of mothers have full-time employment, 44 percent have a formal contractual arrangement; 50 percent have a permanent job (either with or without contract), 12 percent are self-employed or own their business, and 11 percent belong to a union. Lastly, over the whole period 25 percent of women declare having worked in a small firm, 25 percent in medium-size firms and 16 percent in large firms.

Regarding our policy variable of interest, the mothers in our sample live in municipalities where on average 57 percent of primary schools are defined as FDS schools. Coverage increased

³⁰ The observed difference (decrease) between 2002 and 2004 is due to the fact that in 2002, the population contributing to the country's pension system (working women) was over-sampled. Later rounds of the survey are representative of the whole population.

³¹ This includes mothers that do not work because we are interested in analyzing how the policy affects participation and the quality of employment mothers can access. Conditional on being employed, mothers work 42 hours per week, slightly below the legal 44-hour work week.

during the 2002-2015 period: average access to FDS schools increased from 42 to 76 percent. Also, in our sample, mother's average age is almost 38 years, the average education attainment is 10.5 years, and the average poverty rate in their municipalities of residence is 17 percent.

5. Results

We estimate equation (2) for each of our job quality and labor supply variables. Table 5 presents our baseline results of the effects of FDS access. We find that increases in access to FDS schools increased mothers' labor force participation and employment (columns 1 and 2), which is similar to the earlier research assessing the effects of the policy (Contreras and Sepulveda, 2016; Berthelon et al., 2017). This is reaffirming evidence of the policy's effect, because our data set and empirical model are different from earlier studies.³² In contrast to results in Contreras and Sepulveda (2016), we find a large and positive effect of FDS access on hours worked by mothers: our point estimate indicates that if the all schools in an average municipality become full-day schools (the FDS variable goes from 0 to 1, or 100 percentage points), then mothers of primary school children will work 8 additional hours per week (column 3). To put this result in relevant context, instead of considering a movement from zero to full implementation, we consider an increase of about 24 percentage points in our FDS variable, which is equivalent to reaching full implementation at the national level from the 2015 level. An increase access to full-day schools would lead to a predicted increase in weekly hours worked of 2.1 hours, or 7.7 percent.³³

Columns 4 to 12 of Table 5 report our results of the estimated effect of FDS access on employment quality. We also find that greater access to FDS schools had a positive effect on several quality indicators: increasing FDS coverage by 24 percentage points would lead to a predicted increase of 4.7 percent in mothers' hourly wage. Additionally, the same increase in FDS coverage would increase the likelihood of full-time employment by 7.5 percent, and of being employed with a formal contract by 7.3 percent. We don't find any statistically significant effect of the policy on the likelihood of having an open-ended contract, being self-employed or

³² In particular, Contreras and Sepulveda (2016) used repeated rounds of CASEN household surveys and identified the effect of the policy comparing mothers of 8-14 year old children to mothers of 6-7 year olds. Berthelon et al. used ELPI data until 2009 and focused their research question on the effects of FDS on women's labor supply.

³³ The marginal effect reported for women with children in primary school is estimated relative to the average weekly hours that women worked, and is obtained by multiplying the point estimate (8.393) by 0.244 and dividing by the average of the dependent variable (26.75).

owning a business, being unionized, nor on firm size measures of quality.

Our main results suggest that greater access to the childcare provided by the FDS policy in primary schools not only facilitates mothers' entry into the work force and greater hours supplied to the labor market—i.e., the extensive and intensive labor supply margins—but that the policy also allows these mothers to enter into better quality jobs. Mothers with children in primary school are able to find higher-paying jobs, and they are more likely to hold jobs that have a higher degree of formality (contract). One potential explanation, consistent with our results, is that if children are spending more hours in school, mothers are able to obtain more full-time jobs at a lower cost than previously, because the extended hours under adult care that schools provide lowers the cost of taking full-time positions. Since the labor market is very rigid in Chile and part-time employment is uncommon (Rau, 2010), availability of full-day schools reduces the need for childcare arrangements outside schools, and extends the feasible set of jobs that mothers can access, in particular, full-time jobs. As our results also reveal, women with children in primary school are more likely to be working in full-time jobs when access to FDS increases. Therefore, our results point out towards a mechanism through which the policy lowers the cost of child care, facilitates an increase in hours worked and accessing full-time jobs, which are associated with higher wages and more formal contractual relationships.

Does FDS provide childcare?

To explore whether the policy affects mothers' employment outcomes through an implicit subsidy to the cost of child care, we estimated equation (2) for groups that would respond differently to access to childcare: women and men without children of primary school age (i.e., either mothers or fathers of older children or those who are not parents) and fathers.

The availability of full-day primary schools should not affect women without children because they do not benefit from schools' longer schedules. Also, in general, we do not expect large effects for men, because women are the primary care-takers of children in Chile and men have stronger labor force attachment than women. However, it is possible that fathers' labor market outcomes change in response to the policy, because mother's employment in better jobs can facilitate more leisure among men, or because women's employment could increase the need for fathers' time dedicated to household and child-rearing activities.

Results for these three groups—women and men without children, and fathers—are found in Panels A, B and C of Table 6.³⁴ Panels A and B reveal that in general, the FDS policy did not affect labor supply or employment quality of women or men that never had children during the years of the EPS panel. These results suggest that the policy is affecting the implicit cost of childcare, because no effects are found among women or men that were not affected by the policy.³⁵

Greater access to FDS did affect fathers' employment; it increased fathers' employment with an open-ended contract, and reduced the probability of working in a large firms or being in a union. The first effect is considered an improvement in job quality, whereas the second ones are less clear. These results indicate that the policy had some beneficial effects on fathers, which suggests that they are also sensitive to changing access to childcare. This is consistent with a context of changing norms regarding gender roles and child rearing activities; however, our data does not allow us to analyze more deeply the potential mechanisms behind this result.

FDS policy and childcare expansion in Chile

Chilean governments began expanding public access to childcare in 2006, which has increased access to publicly funded daycare for lower-income children aged 3 months through 4 years of age. One potential concern of this expansion is that its effect on mothers' employment outcomes may be confounded with the effects of the FDS policy. In order to control for this possibility, we estimate model (2) including a categorical variable that is equal to one if the woman has child of preschool age after 2005. This variable intends to control for the potential effect that expansion of childcare facilities has on labor market outcomes for women with children in that age group. Results reported in Table 7, show that the overall effect of the FDS

³⁴ For simplicity we report results for our variable of interest. Tables with all control variables are available upon request.

³⁵ We also estimated regressions in Table 6 for mothers with and without older children and other adults (including a partner) in the household. If FDS provides childcare, then mothers living in households where other family members can take care of younger children should be less affected by the policy. We confirm this hypothesis and find that the results of the policy are present only among mothers without other adults or older children present in the household. Results available upon request.

policy on mothers with children of primary school age is basically unchanged, indicating that our results for the FDS policy are not driven by increasing access to preschool programs.³⁶

Heterogenous effects of the FDS Reform

We study whether effects of the policy were different for some groups of mothers. First, we study whether the effects vary with the income level of the mother. We proxied for a woman's permanent income with her education level in the first year she was interviewed, defining two groups: low education mothers are those who had completed 12 or fewer years of schooling (equivalent to a high school degree or less), and high education mothers are those who had completed 13 years of schooling or more (equivalent to having ever completed at least one year of university or college education). We present results for low vs. high education mothers in Panels A and B of Table 8, respectively. Henceforth, we will compare the marginal effects of the policy, by calculating marginal effects following the methodology described in previously.

We find that the marginal effects of the policy differ depending on the educational level of the mother. Reaching full implementation of the policy, i.e. an increase of 24 percentage points in access to FDS schools, increases labor force participation by 4.3 percent among women with low education and by 9 percent among women with high education levels. The policy has a similar impact on employment and hours worked among both groups: the marginal effect of an increase in FDS of 24 percentage points leads to an increase of 7 percent in the likelihood of employment, and an 8 percent increase in hours worked, among low and high education women.

We found that the benefits of the FDS policy on quality of employment are found among low education mothers: greater access to FDS schools increases the likelihood of having a full-time job and having a contract, but only among low education mothers. The point estimates for the high education group are positive, but they are not statistically significant. In addition, among the lower education group, we find a higher likelihood of working in a larger firm, which is consistent with finding a full-time job with a formal contract. For the high education group, increased FDS access increases mothers' work as an employee and less likely to work as self-employed or as employer. Overall, it appears, that most of the positive effects of the policy on

³⁶ We also estimated the regressions in Table 7 excluding mothers when they were affected by the national child care policy; point estimates and significance do not change. Results are available upon request.

employment quality are concentrated among mothers with lower levels of initial education. This is a relevant finding as it suggests that the policy could have positive effects in terms of reducing inequalities in the labor market.

We are also interested on how the policy interacts with the household structure, and study if the effects vary depending on whether women are married or cohabitate (i.e., they have a partner). Ex ante, we expect that the effect of the policy be stronger in women with a partner because single women (i.e., without a partner) are probably more attached to the labor market, so that the reduction in childcare costs that the policy offers would be relatively smaller for them. Our results are reported in Table 9 and they reveal that, as expected, women without a partner are generally not affected in their labor market outcomes. The exception is that an increased access to FDS schools reduces the likelihood of being self-employed or of being employer. This is an interesting finding, as again, it is consistent with women now being able to make more compatible their job schedules as employees with schooling schedules of their children in primary schools.

In turn, for married/cohabitating mothers of children in primary schools, the effects are stronger and similar to our baseline estimates. Increasing access to full-day schools increases their labor force participation, their employment, hours worked and the likelihood of finding a full-time job.

FDS Reform and Maternal Investments in Education

The FDS reform may also affect job quality through an indirect channel: mothers' investments in education. By subsidizing the cost of childcare, the FDS reform could affect mothers' decisions regarding their educational investments, because the policy lowers the cost of investing in education for mothers of children affected by the policy. Mothers may defer entering the job market and enroll in educational institutions, since their child is under (subsidized) formal child care arrangement for most of the day. In turn, greater investments in education can facilitate access to jobs of better quality once mothers enter the labor market.

Our data allows us to analyze the effect of the FDS policy on two measures of formal education: an indicator variable that captures whether the mother currently (at the time of the survey) attends to an education establishment (primary, secondary or tertiary), and years of

education completed. Results are reported in Table 10. For both measures, we find that the FDS policy did not affect maternal decisions regarding formal education.

6. Conclusions

The present study analyzes the effect of access to child care on mothers' labor supply and quality of employment. We analyze a national school reform in Chile that extended the school day from half to full day schedules, and study the impact on mothers that were most affected by the policy: those whose youngest child was of primary school-age in at least one of the years she was interviewed. Our identification strategy relies both on the exogenous changes in availability of full-day primary schools across time, and on whether the mother's youngest child was in primary school in a given year. We confirmed the quasi-experimental implementation of the policy across time and municipalities during the 2002-2015 period, or that it was at least not affected by mothers' employment outcomes.

Our estimates indicate that mothers responded to increases in access to FDS schools by increasing their labor supply. Increases of FDS access of 24 percentage points would lead to increases in mothers' LFP and employment of about 7 percent, a sizable effect. Mothers would also increase the hours worked per week by 8 percent as a response to the policy. We also find that mothers not only work more, but they work in better jobs as a response to the policy: they earn higher wages, and they are more likely to hold jobs that are full-time, that have a contract, and that are permanent. Many of the benefits in terms of employment quality are concentrated among lower-educated mothers.

We explore different mechanisms through which the policy may affect employment quality, and find that the most likely mechanism is through the implicit child care subsidy provided by the FDS reform, and the self-reported demand for formal child care expressed by inactive mothers. We do not find an effect of the policy on mothers' human capital investments nor on men's wages; however, we did find that the policy had smaller benefits on fathers' job quality as well, which suggests that both parents benefit when access to child care improves.

Our results contribute to the literature by finding that policies that expand child care for school-aged children may have positive effects on the quality of jobs that mothers are able to access, due to the implicit child care subsidy provided by longer school schedules. Mothers

plausibly have more time to engage in a more successful job search, and the options of jobs to which they can apply is amplified, particularly those full-time jobs which are associated with other better-quality dimensions

These findings are novel and complement our understanding of how child care affects mothers' labor supply and job quality. They suggest that longer school schedules not only benefit children themselves, but that they also affect other family members. Additionally, by increasing mothers' employment quality, access to child care plays an important role in reducing within-household gender inequality (through higher maternal incomes), and income inequality in general because the policy has greater benefits among poorer, lower educated women. Finally, access to schools with longer schedules, by improving household incomes, leads to an increase in overall family welfare.

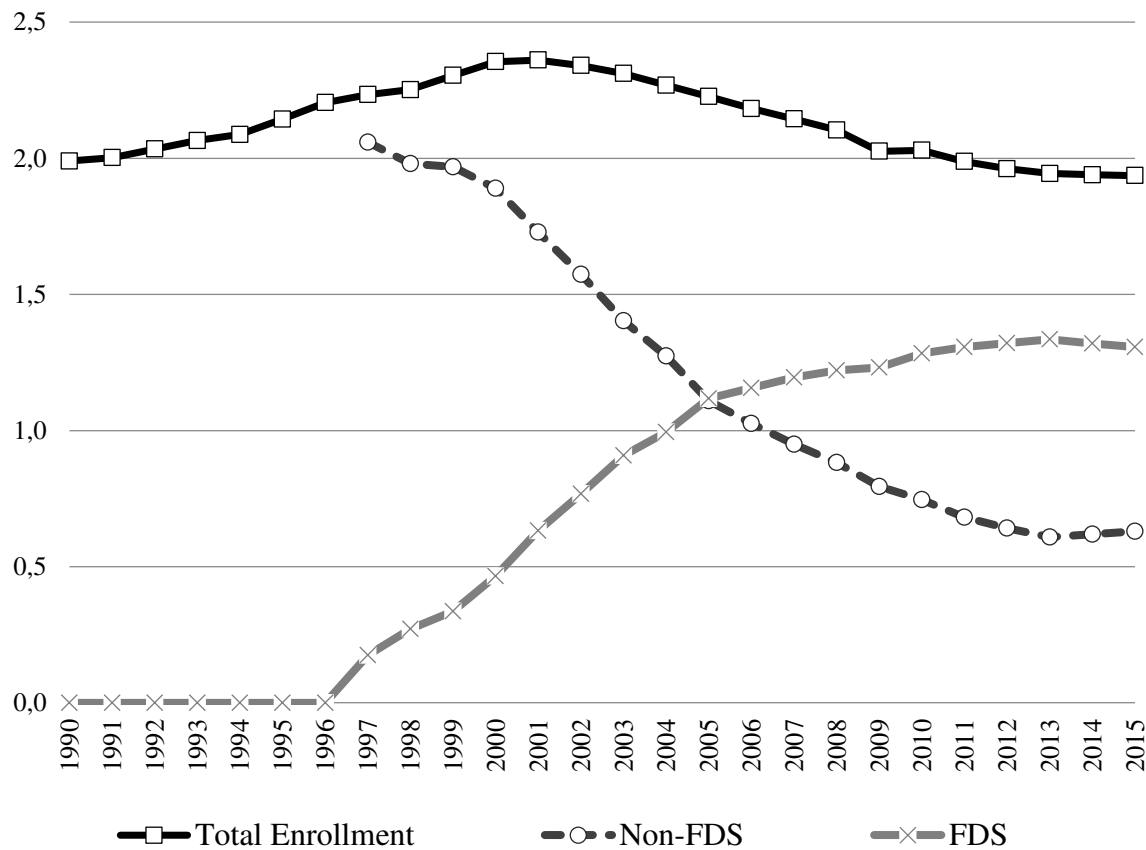
References

- Acemoglu, D. & Shimer, R., 2000. Productivity gains from unemployment insurance. *European Economic Review*, 44(7), pp. 1195-1224.
- Aguirre, J., 2011. If you build it they will come: Evidence of the impact of a large expansion of childcare centers over attendance and maternal labor supply. Master's thesis, Pontificia Universidad Católica de Chile.
- Anderson, D.M., Walker, M.B., 2015. Does Shortening the School Week Impact Student Performance? Evidence from the Four-Day School Week. *Education Finance and Policy* 2015 10:3, 314-349.
- Azevedo, J. P., Inchauste, G., Olivieri, S., Saavedra, J., & Winkler, H. (2013). Is Labor Income Responsible for Poverty Reduction? A Decomposition Approach. *World Bank Policy Research Working Paper*, 6414(April).
- Barua, R. "Intertemporal substitution in maternal labor supply: Evidence using state school entrance age laws." *Labour Economics*, 31, 2014, 129-140.
- Bauernschuster, S. and Schlotter, M., 2015. Public child care and mothers' labor supply— Evidence from two quasi-experiments. *Journal of Public Economics*, 123, pp.1-16.
- Berlinski, S., S. Galiani, P. Mc Ewan. "Preschool and maternal labor market outcomes: evidence from a regression discontinuity." *Economic Development and Cultural Change*, 59(2), 2011, 313-344.
- Berlinski S., S. Galiani. "The effect of a large expansion of pre-primary school facilities on preschool attendance and maternal employment. *Labour Economics*, 14(3), 2007, 665–80.
- Berthelon, M., Kruger, D. & Oyarzún, M., 2017. The effects of longer school days on mother's labor force participation. Mimeo, Universidad Adolfo Ibañez.
- Blau, F. D., & Kahn, L. M. (2013). Female labor supply: Why is the United States falling behind? *The American Economic Review*, 103(3), 251-256.
- Calderón, G. (2014). The Effects of Child Care Provision in Mexico.
- Calderon, G., 2012. What is Good for the Goose is Good for the Gander: The Effects of Child Care Provision in Mexico. pp. 1-73.
- Cascio, E.U., 2009. Maternal labor supply and the introduction of kindergartens into American public schools. *Journal of Human resources*, 44(1), pp.140-170.
- Chioda, L., 2016. Work and family: Latin American and Caribbean women in search of a new balance. The World Bank.
- Chumacero, R., Gómez, D. & Paredes, R., 2011. I would walk 500 miles (if it paid): vouchers and school choice in Chile. *Economics of Education Review*, 30(5), pp. 1103-14.

- Contreras, D., & Sepúlveda, P. (2016). Effect of lengthening the school day on mother's labor supply. *The World Bank Economic Review*, lhw003.
- Contreras, D., Puentes, E., Bravo, D. 2012. Female labor supply and child care supply in Chile. *Serie de Documentos de Trabajo*, SDT 370.
- Del Boca, D., 2002. The effect of child care and part time opportunities on participation and fertility decisions in Italy. *Journal of Population Economics*, 15(3), pp. 549-573.
- Elacqua, G., Contreras, D., Salazar, F. & Santos, H., 2011. The effectiveness of private school franchises in Chile's national voucher program. *School Effectiveness and School Improvement*, 22(3), pp. 1-42.
- Encina, J., Martínez, C. 2009. Efecto de una mayor cobertura de salas cuna en la participación laboral femenina: evidencia de Chile. *Serie de Documentos de Trabajo*, SDT 303.
- Findlay, P., Kalleberg, A. & Warhurst, C., 2013. The Challenge of Job Quality. *Human Relations*, 66(4), pp. 441-451.
- Fitzpatrick, M. D. 2012. "Revising our thinking about the relationship between maternal labor supply and preschool." *The Journal of Human Resources*, 47(3), 583-612. doi: 10.3368/jhr.47.3.583
- Gelbach, J.B., 2002. Public schooling for young children and maternal labor supply. *American Economic Review*, 92(1), pp.307-322.
- Givord, P. and Marbot, C., 2015. Does the cost of child care affect female labor market participation? An evaluation of a French reform of childcare subsidies. *Labour Economics*, 36, pp.99-111.
- Hernando, A., 2009. Female Labor Participation and Childcare in Chile: A Natural Experiment. *Documento de trabajo*, Escuela de Gobierno Universidad Adolfo Ibáñez..
- ILO, 1999. Decent Work. Report of the Director General to the 87th Session of the International Labour Conference, Geneva: s.n.
- Kleven, H., Landais, C., & Egholt Sogaard, J. (2018). Children and gender inequality: evidence from Denmark. *National Bureau of Economic Research*, workin pap.
- Li, Y., 2017. The effects of formal and informal child care on the Mother's labor supply— Evidence from urban China. *China Economic Review*, 44, pp.227-240.
- Martínez, C., & Perticará, M. (2017). Childcare effects on maternal employment: Evidence from Chile. *Journal of Development Economics*, 126, 127-137.
- Medrano, P. 2009. Public Day Care and Female Labor Force Participation: Evidence from Chile. *University of Chile. Serie de Documentos de Trabajo*, SDT 306.
- MITRAB – Ministerio del Trabajo y Previsión Social. 2016. Diseño Muestral y Factores de Expansión de la VI Ronda EPS.

- Muñoz de Bustillo, R. M., Fernández-Macías, E., Esteve, F., & Antón, J. I. (2011). E pluribus unum? A critical survey of job quality indicators. *Socio-Economic Review*, 9(3), 447-475.
- Nekoei, Arash, and Andrea Weber. 2017. "Does Extending Unemployment Benefits Improve Job Quality?" *American Economic Review*, 107 (2): 527-61.
- Núñez, I., Weinstein, J. & Muñoz, G., 2010. ¿Posición olvidada? Una mirada desde la normativa a la historia de la dirección escolar en Chile. *Psicoperspectivas*, 9(2), pp. 53-81.
- Poverty, D. O. F., In, P. P., & America, L. (2011). *Economic P O L I C Y Market and Public Policies in*, (March), 1–56.
- Schneider, M., G. Elacqua, and J. Buckley. "School choice in Chile: Is it class or the classroom?" *Journal of Policy Analysis and Management*, 25, 2006, 577–601. doi:10.1002/pam.20192
- Tomás Rau, B. (2010). El trabajo a tiempo parcial en Chile. *Economía Chilena*, 13(1), 39–59.
- UNECE, 2010 (ed.): *Measuring Quality of Employment, Country Pilot Reports*. Geneva: UNECE.
- Urzúa, S. (2010). *Marina Bassi Educación en Chile : El Desafío está en la Calidad*.
- Van Ours, J. & Vodopivec, M., 2008. Does reducing unemployment insurance generosity reduce job match quality?. *Journal of Public Economics*, 92(3), pp. 684-695.

Figure 1
 Primary school enrollment 1990-2015
 By length of school day
 (millions of students)



Source: Authors' calculations using School Directory/Administrative JEC data (MINEDUC).

Figure 2
 Distribution of Municipal Share of Primary schools under FDS regime, 1997-2015
 (Selected years)

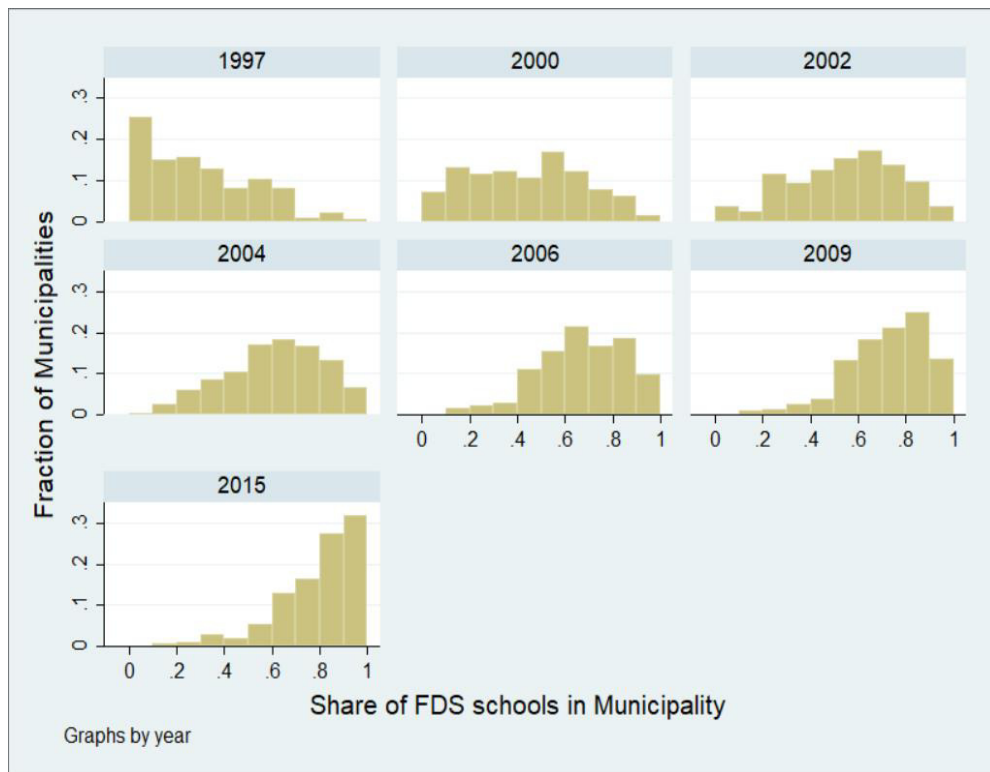
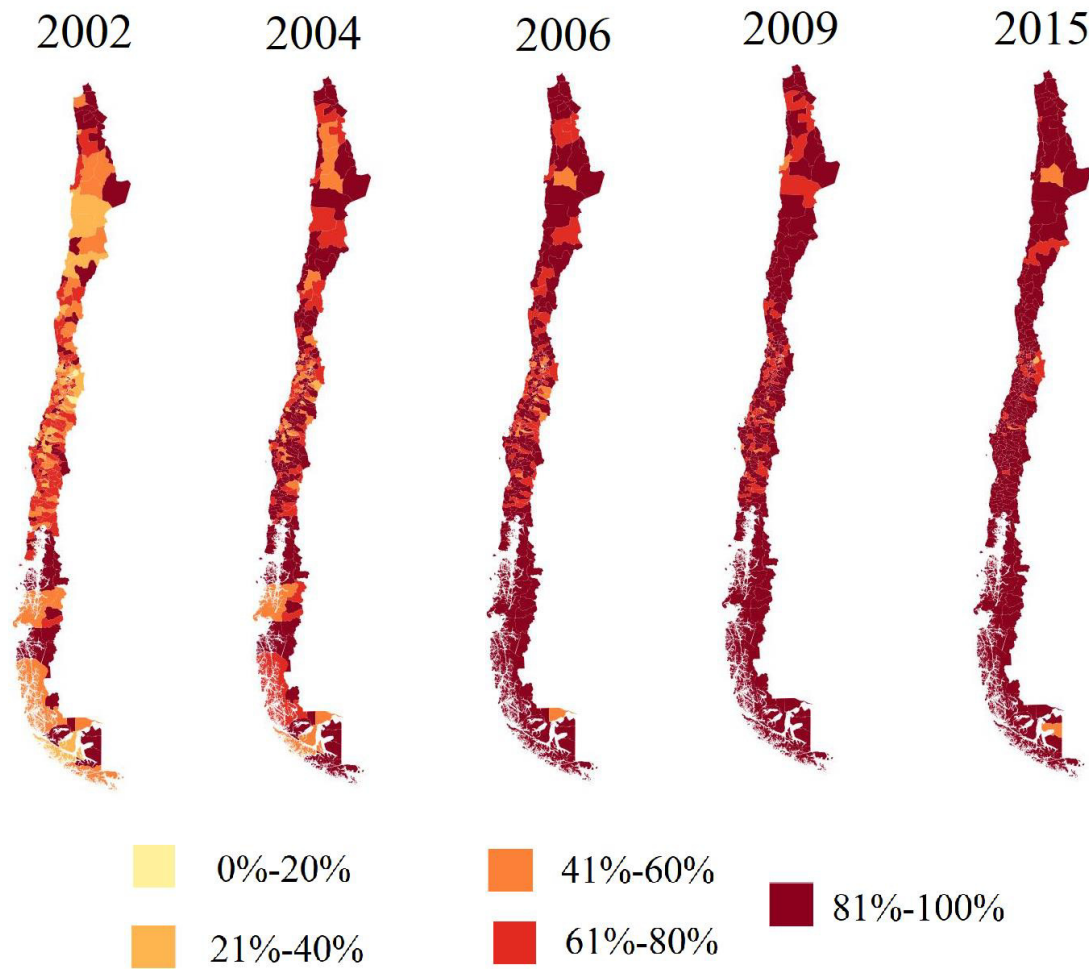


Figure 3
Geographic Evolution of Municipal Share of Primary schools under FDS regime, 2002-2015



Source: Authors' estimates based on School Directory/Administrative JEC data (MINEDUC).

Table 1. Main reason mothers do not participate in labor force

Reason	<u>Mother whose youngest child is of:</u>		
	Pre-school age	Primary school age	Secondary school age
Household chores	49%	63%	67%
Lack of childcare	42%	22%	6%
Not interested	1%	1%	3%
Other reasons	7%	14%	24%
Total	100%	100%	100%

Source: Authors' calculations using CASEN 2015. Includes mothers aged 25-55 years who are inactive in the labor force. Pre-school age: 0-5 years; primary school age: 6-12 years; secondary school age: 13-18 years.

Table 2. Percentage of primary schools under FDS regime by Region (1997-2015)

Region	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Primary Enrollment in 1997 (% total)
I	36	45	50	64	63	71	71	68	73	74	79	77	77	75	76	78	82	82	82	1.5
II	33	36	36	40	47	53	57	58	62	65	64	67	68	70	71	71	71	71	71	3.2
III	38	43	48	55	55	57	63	67	70	75	74	76	79	78	79	79	81	81	81	1.9
IV	40	44	47	51	57	61	67	69	72	74	76	77	78	81	83	84	85	85	85	4.1
V	21	30	35	42	51	57	64	65	68	68	71	74	72	75	75	76	75	75	74	5.5
VI	22	29	33	39	45	53	58	62	66	68	71	72	75	77	80	81	83	82	82	10.0
VII	30	36	39	41	47	54	58	62	64	67	72	75	78	79	82	85	86	86	85	6.4
VIII	27	32	36	42	49	54	57	59	62	66	68	70	71	72	74	76	79	79	79	13.1
IX	41	47	51	56	59	62	64	66	69	70	73	75	78	81	84	87	89	87	87	6.2
X	49	61	63	67	69	71	73	75	77	78	80	81	82	83	86	89	93	93	93	4.8
XI	29	38	42	47	50	54	67	66	72	74	76	77	77	78	78	80	80	79	79	0.7
XII	25	27	37	45	47	55	60	69	71	74	83	85	86	86	87	87	87	82	82	1.0
XIII	6	10	12	18	23	26	32	37	43	45	47	50	51	53	55	56	57	56	56	35.5
XIV	36	42	45	47	55	56	60	62	65	69	70	72	74	76	79	83	85	84	85	4.9
XV	60	68	70	71	72	82	81	83	89	89	91	92	92	93	94	93	94	90	91	1.3
Total	29	35	39	44	49	54	58	61	64	67	69	71	73	74	77	79	80	80	80	100

Source: Authors' calculations from administrative data, Ministry of Education. Share of schools with at least 50 percent of all their grade levels under the FDS regime. Includes schools that receive public funds (municipal and voucher schools, represent 92% of total enrollment nationwide). Primary enrollment shares by region are shown only for 1997 as they remain relatively constant across the period. Years shadowed are those included in our estimates.

Santiago, the capital city, is located in the XIII region.

Table 3. Distribution of FDS share at municipal level (1997-2015).

FDS share at municipal level	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
0-9	25.5	16.6	12.0	7.1	4.6	3.7	1.8	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-19	15.1	15.4	15.1	13.2	7.4	2.5	2.5	2.5	1.8	1.5	1.2	0.9	0.9	0.6	0.6	0.6	0.6	0.6	0.6
20-29	15.7	13.2	12.6	11.7	11.7	11.7	6.8	6.2	2.2	2.2	2.2	1.8	1.2	1.2	0.6	0.6	0.6	0.6	0.9
30-39	12.9	13.2	12.6	12.3	10.5	9.5	9.5	8.6	5.8	3.1	2.5	2.2	2.5	2.2	2.5	2.5	2.5	3.1	2.8
40-49	8.3	11.7	11.7	10.8	12.0	12.6	12.3	10.5	10.5	11.1	9.8	6.2	4.0	2.8	1.8	1.5	1.5	1.8	1.8
50-59	10.5	12.6	14.2	16.9	18.2	15.4	17.5	16.9	19.4	15.4	13.2	14.8	13.3	12.0	8.9	7.7	5.8	4.9	5.5
60-69	8.3	8.0	10.2	12.3	15.4	17.2	17.2	18.5	18.2	21.5	20.0	18.5	18.2	16.6	16.3	14.8	11.7	13.5	12.9
70-79	0.9	5.5	6.8	8.0	10.5	13.8	14.2	16.6	17.8	16.6	17.8	19.1	21.3	20.9	20.6	15.1	15.7	16.0	16.3
80-89	2.2	3.1	4.0	6.2	7.1	9.8	12.9	13.2	15.4	18.8	21.5	24.3	25.0	27.1	26.2	28.6	26.8	27.4	27.4
90-100	0.6	0.6	0.9	1.5	2.8	3.7	5.2	6.8	8.6	9.8	11.7	12.3	13.6	16.6	22.5	28.6	34.8	32.0	31.7

Source: Authors' calculations using administrative data, Ministry of Education. In every year there are 325 municipalities. Includes schools that receive public funds (municipal and voucher schools, represent 92% of total enrollment nationwide). Schools were considered as FDS when at least 50 percent of all their grade levels are under the FDS regime. Years shadowed are those included in estimates.

Table 4. Summary statistics: mean and standard deviations (2002-2015)

Variable	2002		2004		2006		2009		2015		Average 2002-2015	
	n= 1488		n=1585		n=1912		n=1498		n=459		n=6942	
	Mean	Sd.	Mean	Sd.	Mean	Sd.	Mean	Sd.	Mean	Sd.	Mean	Sd.
Labor Market Outcomes												
LFP	0.83	0.37	0.66	0.47	0.73	0.44	0.77	0.42	0.69	0.46	0.74	0.44
Employment	0.71	0.45	0.54	0.50	0.61	0.49	0.68	0.47	0.65	0.48	0.63	0.48
Weekly hours worked	31.84	22.83	23.58	23.96	25.24	23.74	27.43	22.03	25.27	21.27	26.75	23.26
Wage (CL\$/hour)	1303	1460	1344	1131	1745	3754	1770	1528	2209	1901	1596	2305
Full-Time Job	0.64	0.48	0.47	0.50	0.50	0.50	0.56	0.50	0.52	0.50	0.54	0.50
Contractual status	0.52	0.50	0.37	0.48	0.40	0.49	0.48	0.50	0.44	0.50	0.44	0.50
Job is Permanent	0.58	0.49	0.39	0.49	0.45	0.50	0.57	0.50	0.54	0.50	0.50	0.50
Self-employed/Employer	0.11	0.31	0.07	0.26	0.13	0.33	0.16	0.37	0.15	0.36	0.12	0.33
Union	0.11	0.31	0.07	0.25	0.09	0.29	0.15	0.36	0.13	0.34	0.11	0.31
Small firm (≤ 9 empl.)	0.33	0.47	0.23	0.42	0.25	0.43	0.20	0.40	-	-	0.25	0.43
Medium firm (10-199 empl.)	0.30	0.46	0.18	0.39	0.22	0.41	0.18	0.39	-	-	0.22	0.42
Large firm (≥ 200 empl.)	0.23	0.42	0.14	0.34	0.15	0.35	0.14	0.35	-	-	0.16	0.37
Full-Day Schooling												
Municipal share of FDS schools	0.42	0.20	0.53	0.20	0.60	0.16	0.69	0.16	0.76	0.13	0.57	0.21
Individual and household variables												
Years of schooling	10.55	3.64	10.34	3.62	10.46	3.45	10.47	3.35	11.41	3.81	10.52	3.54
Age	35.80	7.28	36.58	7.51	37.66	7.26	38.74	6.89	42.36	6.07	37.56	7.36
Child aged 0-5 in the household	0.53	0.66	0.43	0.58	0.33	0.52	0.29	0.52	0.16	0.41	0.38	0.57
Child aged 6-13 in the household	1.02	0.74	1.08	0.72	1.11	0.67	1.11	0.62	1.11	0.56	1.09	0.68
Child aged 14-18 in the household	0.35	0.59	0.42	0.65	0.43	0.65	0.45	0.64	0.48	0.64	0.42	0.63
Child aged 18+ in the household	0.18	0.50	0.29	0.63	0.40	0.76	0.47	0.81	0.44	0.71	0.35	0.70

Table 4 (continued). Summary statistics: mean and standard deviations (2002-2015)

Variable	2002		2004		2006		2009		2015		Average 2002-2015	
	n= 1488		n=1585		n=1912		n=1498		n=459		n=6942	
	Mean	Sd.	Mean	Sd.	Mean	Sd.	Mean	Sd.	Mean	Sd.	Mean	Sd.
Municipal variables												
Average school attainment	9.68	1.17	9.69	1.17	9.92	1.15	10.04	1.09	10.89	0.86	9.91	1.17
Poverty rate	0.21	0.07	0.19	0.07	0.14	0.06	0.17	0.07	0.12	0.06	0.17	0.07
Fraction of rural population	0.18	0.23	0.20	0.24	0.14	0.22	0.15	0.22	0.10	0.13	0.16	0.22
Female employment rate	0.88	0.04	0.88	0.04	0.90	0.04	0.87	0.04	0.91	0.03	0.89	0.04
Male employment rate	0.92	0.03	0.93	0.02	0.94	0.03	0.91	0.03	0.93	0.03	0.92	0.03

Source: Individual variables are constructed from EPS panel (2002-2015) surveys; full-day schooling variable was constructed using administrative data from the Ministry of Education; municipal variables come from CASEN surveys. Sample includes women who had primary school-aged children when they were surveyed. Share of FDS schools at municipality level is the fraction of schools with 50 percent of their grade levels under the FDS regime. Hourly wages are expressed in Chilean pesos of 2015.

Table 5. Effect of full-day schedules on quality of mothers' employment (2002-2015)

VARIABLES	Labor Supply			Employment Quality								
	LFP	Employment	Hours	Wage	Full-Time	Contract	Permanent	Self-Emp./ Employer	Union	Small Firm	Medium Firm	Large Firm
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Youngest Child in Primary School x Fraction FDS schools in municipality	0.153*** (0.0488)	0.180*** (0.0572)	8.393*** (2.627)	0.818* (0.467)	0.165*** (0.0597)	0.131* (0.0705)	0.0139 (0.0686)	-0.0690 (0.0422)	-0.0150 (0.0371)	0.0412 (0.0516)	0.0529 (0.0644)	0.0701 (0.0486)
Youngest Child in Primary School	-0.0429 (0.0464)	-0.0913** (0.0434)	-3.770 (2.276)	-0.340 (0.344)	-0.0667 (0.0504)	-0.0291 (0.0537)	0.0113 (0.0549)	0.0354 (0.0301)	0.0549** (0.0234)	-0.0231 (0.0381)	-0.0477 (0.0486)	-0.0189 (0.0373)
Fraction of FDS schools	-0.0512 (0.103)	-0.108 (0.107)	1.171 (5.044)	-0.546 (0.794)	0.0248 (0.113)	-0.203** (0.101)	-0.144 (0.105)	0.167** (0.0834)	0.210*** (0.0750)	-0.180* (0.105)	0.0716 (0.139)	-0.123 (0.0885)
Years of Education	0.00372 (0.00225)	0.00581** (0.00277)	0.174 (0.152)	0.0494** (0.0192)	0.00512 (0.00324)	0.00528* (0.00310)	0.00678** (0.00321)	-0.000857 (0.00208)	0.00134 (0.00161)	0.000907 (0.00265)	0.00559* (0.00319)	0.000745 (0.00251)
Age	0.00290 (0.0140)	0.00808 (0.0128)	-0.0264 (0.537)	0.201** (0.0858)	0.00200 (0.0118)	0.0145 (0.0130)	0.0232 (0.0146)	-0.000234 (0.00920)	0.0189** (0.00906)	-0.0197 (0.0158)	-0.00437 (0.0112)	-0.00270 (0.0124)
Age squared	-0.000164 (0.000146)	-0.000202 (0.000127)	-0.00619 (0.00586)	-0.00282*** (0.000879)	-9.35e-05 (0.000135)	-0.000333** (0.000143)	-0.000342** (0.000134)	3.37e-05 (9.34e-05)	-0.000252** (0.000106)	0.000117 (0.000152)	4.03e-05 (0.000123)	-3.37e-05 (0.000150)
Child aged 0-5 in househ.	-0.0312 (0.0269)	-0.0825*** (0.0261)	-3.542*** (1.344)	-0.483*** (0.168)	-0.0587** (0.0293)	-0.0474* (0.0239)	-0.0674*** (0.0252)	-0.0142 (0.0174)	0.0313* (0.0177)	-0.0477* (0.0276)	-0.0541* (0.0291)	0.0123 (0.0178)
Child aged 6-13 in househ.	-0.0423** (0.0166)	-0.0444** (0.0174)	-1.840** (0.920)	-0.356*** (0.118)	-0.0537*** (0.0179)	-0.0649*** (0.0142)	-0.0618*** (0.0164)	0.0157 (0.0128)	-0.0176* (0.0102)	-0.0168 (0.0203)	-0.0394** (0.0189)	-0.00508 (0.0137)
Child aged 14-18 in househ.	0.00692 (0.0155)	0.00794 (0.0164)	0.0871 (0.709)	-0.0170 (0.103)	-0.00557 (0.0167)	-0.0263 (0.0177)	-0.0174 (0.0166)	0.0230* (0.0120)	-0.00847 (0.0108)	0.0107 (0.0170)	-0.0102 (0.0172)	0.00331 (0.0136)
Child aged 18+ in househ.	-0.0148 (0.0163)	-0.00614 (0.0166)	-0.529 (0.701)	-0.146 (0.111)	-0.0289 (0.0180)	-0.0164 (0.0171)	-0.00968 (0.0172)	0.0110 (0.0140)	-0.0127 (0.0124)	0.00166 (0.0198)	-0.0152 (0.0194)	0.00584 (0.0135)

Table 5 (continued). Effect of full-day schedules on quality of mothers' employment (2002-2015)

VARIABLES	Labor Supply			Employment Quality								
	LFP	Employment	Hours	Wage	Full-Time	Contract	Permanent	Self-Emp./ Employer	Union	Small Firm	Medium Firm	Large Firm
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Munic. Ave. School Attain.	-0.0175 (0.0227)	-0.0325 (0.0241)	0.906 (1.171)	-0.0432 (0.180)	0.0148 (0.0267)	-0.0384* (0.0224)	-0.00701 (0.0300)	0.0146 (0.0167)	-0.00677 (0.0180)	0.0145 (0.0251)	-0.0214 (0.0224)	-0.0290 (0.0230)
Munic. Poverty rate	-0.162 (0.166)	-0.0642 (0.184)	-4.403 (8.616)	-0.639 (1.510)	-0.223 (0.195)	-0.287 (0.200)	-0.279 (0.178)	-0.0162 (0.147)	-0.228* (0.130)	-0.299 (0.203)	0.196 (0.193)	-0.215 (0.189)
Munic. rate of Rural Pop.	0.0688 (0.304)	-0.224 (0.439)	-1.583 (19.33)	-0.229 (3.064)	-0.124 (0.415)	-0.236 (0.471)	0.168 (0.305)	0.0858 (0.220)	-0.160 (0.152)	0.434 (0.337)	-0.643** (0.296)	-0.576*** (0.200)
Munic. rate Female Employ.	0.0380 (0.197)	0.0344 (0.185)	6.689 (8.534)	0.967 (1.533)	0.160 (0.184)	0.255 (0.205)	0.217 (0.166)	0.0386 (0.150)	0.0790 (0.112)	-0.175 (0.175)	0.0216 (0.178)	0.455*** (0.156)
Munic. rate Male Employ.	-0.343 (0.303)	-0.485 (0.304)	-23.90 (15.20)	-3.898 (2.468)	-0.328 (0.334)	-0.221 (0.283)	-0.293 (0.375)	0.229 (0.253)	-0.454* (0.247)	-0.896** (0.342)	-0.213 (0.305)	-0.412 (0.306)
Munic. rate Female LFP	0.216 (0.232)	0.488** (0.212)	8.859 (10.48)	2.415 (1.651)	0.304 (0.235)	-0.0239 (0.208)	-0.0407 (0.244)	0.417** (0.187)	-0.171 (0.173)	0.614** (0.236)	0.181 (0.215)	-0.342* (0.200)
Munic. rate Male LFP	0.391* (0.227)	0.0504 (0.256)	-13.64 (11.58)	0.819 (1.910)	-0.428 (0.264)	0.101 (0.270)	-0.121 (0.268)	-0.0194 (0.189)	-0.132 (0.194)	0.757*** (0.250)	0.165 (0.219)	-0.224 (0.241)
Constant	1.013* (0.516)	1.258** (0.513)	54.30** (24.68)	2.838 (4.726)	0.932 (0.577)	0.888 (0.551)	0.536 (0.560)	-0.545 (0.421)	0.286 (0.380)	0.963 (0.581)	0.651 (0.505)	1.078** (0.502)
Observations	6,942	6,942	6,942	6,942	6,942	6,942	6,942	6,942	6,942	6,483	6,483	6,483
R-squared	0.047	0.059	0.05	0.059	0.046	0.049	0.067	0.039	0.051	0.048	0.039	0.03
Num. of women in panel	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,620	2,620	2,620
Mean of Dependent Var.	0.743	0.634	26.75	4.249	0.539	0.44	0.497	0.12	0.105	0.253	0.221	0.162

Data from EPS survey, years 2002, 2004, 2006, 2009 and 2015. Sample includes women who had primary school-aged children when they were surveyed. Share of FDS schools is the fraction of schools with 50 percent of their grade levels under the FDS regime. Robust standard errors, clustered at the municipal level, in parentheses. ***, **, * reflect statistical significance at 1%, 5% and 10% levels, respectively. Not shown: region-year fixed-effects, interactions between a categorical variable for municipal female labor force participation rate in 2000 and year fixed-effects, and individual fixed-effects.

Table 6. Effect of full-day schedules on quality of mothers' employment: women and men without children, and fathers (2002-2015)

VARIABLES	Labor Supply				Employment Quality							
	LFP (1)	Employment (2)	Hours (3)	Wage (4)	Full- Time (5)	Contract (6)	Permanent (7)	Self-Emp. - Employer (8)	Union (9)	Small Firm (10)	Medium Firm (11)	Large Firm (12)
A. Women without children												
Fraction FDS schools in municipality	-0.0889 (0.114)	0.177 (0.130)	10.26 (6.836)	1.600 (1.031)	0.147 (0.128)	0.188* (0.109)	0.0825 (0.146)	0.0591 (0.141)	0.0911 (0.0878)	0.187 (0.149)	0.108 (0.136)	0.0541 (0.120)
Observations	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,750	2,750	2,750	2,974
R-squared	0.110	0.081	0.086	0.076	0.101	0.093	0.100	0.048	0.061	0.056	0.048	0.050
Num. of women in panel	926	926	926	926	926	926	926	926	925	925	925	926
Mean of Dependent Variable	0.733	0.663	28.57	4.479	0.577	0.488	0.567	0.113	0.249	0.156	0.0952	0.275
B. Men without children												
Fraction FDS schools in municipality	0.0589 (0.0844)	0.0243 (0.0859)	0.901 (5.159)	-0.481 (0.763)	0.0384 (0.112)	0.0373 (0.0957)	-0.0773 (0.123)	0.168 (0.106)	0.158** (0.0701)	0.0117 (0.110)	-0.214 (0.144)	0.0660 (0.123)
Observations	5,230	5,230	5,230	5,230	5,230	5,230	5,230	5,230	5,230	4,836	4,836	4,836
R-squared	0.071	0.056	0.053	0.048	0.052	0.047	0.080	0.029	0.043	0.063	0.044	0.029
Num. of women in panel	1,566	1,566	1,566	1,566	1,566	1,566	1,566	1,566	1,566	1,563	1,563	1,563
Mean of Dependent Variable	0.881	0.815	36.38	5.471	0.737	0.520	0.620	0.253	0.114	0.340	0.311	0.203
C. Fathers with children of primary school age												
Youngest Child in Primary School x Fraction FDS schools in municipality	-0.00962 (0.0185)	-0.0326 (0.0249)	-2.299 (1.816)	-0.358 (0.265)	-0.0457 (0.0376)	0.0661 (0.0448)	0.109*** (0.0388)	-0.0628 (0.0454)	-0.101** (0.0458)	0.00524 (0.0609)	0.0152 (0.0576)	-0.125** (0.0566)
Observations	7,469	7,469	7,469	7,469	7,469	7,469	7,469	7,469	7,469	7,049	7,049	7,049
R-squared	0.020	0.021	0.049	0.033	0.035	0.051	0.054	0.030	0.051	0.053	0.054	0.046
Num. of men in panel	2,635	2,635	2,635	2,635	2,635	2,635	2,635	2,635	2,635	2,583	2,583	2,583
Mean of Dependent Variable	0.984	0.959	46.21	6.723	0.914	0.687	0.797	0.289	0.178	0.366	0.418	0.275

Data from EPS survey, years 2002, 2004, 2006, 2009 and 2015. Panels A and B include women or men who did not have primary school-aged children when they were surveyed; panel C includes fathers of children that were in primary school at least one year during the panel. Share of FDS schools is the fraction of schools with 50 percent of their grade levels under the FDS regime. Robust standard errors, clustered at the municipal level, in parentheses. ***, **, * reflect statistical significance at 1%, 5% and 10% levels, respectively. Variables not shown: youngest child in primary school, fraction of FDS schools in municipality, mother's years of education, mother's age and age squared, presence of children aged 0-5, 6-13, 14-18 and 18+ in household, municipal average school attainment, municipal rates of poverty, rural population, female and male employment, female and male labor force participation, region-year fixed-effects, interactions between a categorical variable for municipal female labor force participation rate in 2000 and year fixed-effects, and individual fixed-effects.

Table 7. Effect of full-day schedules on quality of mothers' employment and daycare policies (2002-2015) – Controlling for national daycare policy

VARIABLES	Labor Supply				Employment Quality							
	LFP	Employ- ment	Hours	Wage	Full- Time	Contract	Permanent	Self-Emp./ Employer	Union	Small Firm	Medium Firm	Large Firm
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Youngest Child in Primary School x Fraction FDS schools in municipality	0.149*** (0.0485)	0.179*** (0.0555)	8.637*** (2.617)	0.831* (0.445)	0.173*** (0.0600)	0.125* (0.0685)	0.00610 (0.0692)	-0.0663 (0.0409)	-0.0189 (0.0373)	0.0348 (0.0509)	0.0518 (0.0644)	0.0700 (0.0490)
Daycare policy	-0.0114 (0.0232)	-0.00404 (0.0257)	0.610 (1.108)	0.0314 (0.188)	0.0213 (0.0245)	-0.0151 (0.0229)	-0.0196 (0.0248)	0.00674 (0.0179)	-0.00964 (0.0180)	-0.0241 (0.0282)	-0.00448 (0.0266)	-0.000295 (0.0223)
Observations	6,942	6,942	6,942	6,942	6,942	6,942	6,942	6,942	6,942	6,483	6,483	6,483
R-squared	0.047	0.059	0.050	0.059	0.046	0.049	0.067	0.039	0.051	0.048	0.039	0.030
Num. of women in panel	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,620	2,620	2,620
Mean of Dependent Var.	0.743	0.634	26.75	4.249	0.539	0.440	0.497	0.120	0.105	0.253	0.221	0.162

Data from EPS survey, years 2002, 2004, 2006, 2009 and 2015. Sample includes women who had primary school-aged children when they were surveyed. Share of FDS schools is the fraction of schools with 50 percent of their grade levels under the FDS regime. Daycare policy is a categorical variable that is equal to one if the woman has child of preschool age after 2005. Robust standard errors, clustered at the municipal level, in parentheses. ***, **, * reflect statistical significance at 1%, 5% and 10% levels, respectively. Variables not shown: youngest child in primary school, fraction of FDS schools in municipality, mother's years of education, mother's age and age squared, presence of children aged 0-5, 6-13, 14-18 and 18+ in household, municipal average school attainment, municipal rates of poverty, rural population, female and male employment, female and male labor force participation, region-year fixed-effects, interactions between a categorical variable for municipal female labor force participation rate in 2000 and year fixed-effects, and individual fixed-effects.

Table 8. Effect of full-day schedules on quality of mothers' employment: women by education level (2002-2015)

VARIABLES	Labor Supply			Employment Quality								
	LFP (1)	Employment (2)	Hours (3)	Wage (4)	Full- Time (5)	Contract (6)	Permanent (7)	Self-Emp./ Employer (8)	Union (9)	Small Firm (10)	Medium Firm (11)	Large Firm (12)
A. Low-education mothers												
Youngest Child in Primary School x Fraction FDS schools in municipality	0.127** (0.0582)	0.169*** (0.0628)	8.198*** (2.911)	0.631 (0.460)	0.164** (0.0709)	0.129* (0.0732)	0.0112 (0.0741)	-0.0506 (0.0480)	-0.00786 (0.0427)	0.0444 (0.0623)	0.000808 (0.0721)	0.0985* (0.0557)
Observations	5,631	5,631	5,631	5,631	5,631	5,631	5,631	5,631	5,631	5,273	5,273	5,273
R-squared	0.059	0.072	0.058	0.069	0.049	0.059	0.078	0.042	0.052	0.052	0.041	0.028
Num. of women in panel	2,289	2,289	2,289	2,289	2,289	2,289	2,289	2,289	2,289	2,248	2,248	2,248
Mean of Dependent Var.	0.714	0.595	25.07	3.885	0.496	0.39	0.443	0.121	0.0815	0.264	0.189	0.136
B. High-education mothers												
Youngest Child in Primary School x Fraction FDS schools in municipality	0.324*** (0.118)	0.220** (0.110)	11.30** (5.356)	1.197 (1.277)	0.179 (0.114)	0.187 (0.124)	0.0418 (0.152)	-0.192** (0.0904)	-0.196 (0.126)	-0.0957 (0.121)	0.143 (0.140)	0.0945 (0.165)
Observations	1,275	1,275	1,275	1,275	1,275	1,275	1,275	1,275	1,275	1,176	1,176	1,176
R-squared	0.103	0.124	0.139	0.127	0.137	0.142	0.162	0.162	0.173	0.130	0.118	0.149
Num. of men in panel	643	643	643	643	643	643	643	643	643	604	604	604
Mean of Dependent Var.	0.876	0.808	34.42	5.907	0.735	0.665	0.741	0.118	0.212	0.202	0.370	0.281

Data from EPS survey, years 2002, 2004, 2006, 2009 and 2015. Sample includes women who had primary school-aged children when they were surveyed. Share of FDS schools is the fraction of schools with 50 percent of their grade levels under the FDS regime. Robust standard errors, clustered at the municipal level, in parentheses. ***, **, * reflect statistical significance at 1%, 5% and 10% levels, respectively. Variables not shown: youngest child in primary school, fraction of FDS schools in municipality, mother's years of education, mother's age and age squared, presence of children aged 0-5, 6-13, 14-18 and 18+ in household, municipal average school attainment, municipal rates of poverty, rural population, female and male employment, female and male labor force participation, region-year fixed-effects, interactions between a categorical variable for municipal female labor force participation rate in 2000 and year fixed-effects, and individual fixed-effects.

Table 9. Effect of full-day schedules on quality of mothers' employment: household structure (2002-2015)

VARIABLES	Labor Supply				Employment Quality							
	LFP (1)	Employment (2)	Hours (3)	Wage (4)	Full- Time (5)	Contract (6)	Permanent (7)	Self-Emp./ Employer (8)	Union (9)	Small Firm (10)	Medium Firm (11)	Large Firm (12)
A. Women with a Partner/Husband												
Youngest Child in Primary School x Fraction FDS schools in municipality	0.207*** (0.0656)	0.148** (0.0656)	9.128*** (3.274)	0.962 (0.599)	0.160** (0.0794)	0.0735 (0.0684)	-0.0312 (0.0657)	-0.0301 (0.0562)	-0.0618 (0.0477)	0.170*** (0.0621)	0.0104 (0.0809)	0.00844 (0.0639)
Observations	4,744	4,744	4,744	4,744	4,744	4,744	4,744	4,744	4,744	4,467	4,467	4,467
R-squared	0.062	0.064	0.061	0.066	0.055	0.071	0.069	0.049	0.060	0.049	0.045	0.035
Num. of women in panel	2,017	2,017	2,017	2,017	2,017	2,017	2,017	2,017	2,017	1,983	1,983	1,983
Mean of Dependent Var.	0.676	0.558	23.63	3.742	0.477	0.389	0.444	0.109	0.0991	0.217	0.202	0.138
B. Women without a Partner/Husband												
Youngest Child in Primary School x Fraction FDS schools in municipality	-0.0164 (0.0724)	0.125 (0.140)	-3.426 (6.342)	0.00582 (0.990)	0.00332 (0.171)	0.0449 (0.152)	-0.0869 (0.125)	-0.179* (0.105)	-0.0103 (0.0837)	-0.110 (0.110)	0.00975 (0.183)	0.115 (0.103)
Observations	2,013	2,013	2,013	2,013	2,013	2,013	2,013	2,013	2,013	2,013	2,013	2,013
R-squared	0.041	0.103	0.084	0.088	0.083	0.086	0.122	0.083	0.097	0.103	0.079	0.075
Num. of men in panel	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064
Mean of Dependent Var.	0.893	0.798	33.68	5.307	0.678	0.557	0.606	0.137	0.117	0.331	0.264	0.216

Data from EPS survey, years 2002, 2004, 2006, 2009 and 2015. Sample includes women who had primary school-aged children when they were surveyed. Share of FDS schools is the fraction of schools with 50 percent of their grade levels under the FDS regime. Robust standard errors, clustered at the municipal level, in parentheses. ***, **, * reflect statistical significance at 1%, 5% and 10% levels, respectively. Variables not shown: youngest child in primary school, fraction of FDS schools in municipality, mother's years of education, mother's age and age squared, presence of children aged 0-5, 6-13, 14-18 and 18+ in household, municipal average school attainment, municipal rates of poverty, rural population, female and male employment, female and male labor force participation, region-year fixed-effects, interactions between a categorical variable for municipal female labor force participation rate in 2000 and year fixed-effects, and individual fixed-effects.

Table 10. Effect of full-day schedules on mothers' educational decisions (2002-2015)

VARIABLES	Dependent variable:	
	Years of Education Completed (1)	Attends Education Establishment (2)
Youngest Child in Primary School x Fraction FDS schools in municipality	0.0343 (0.288)	-0.0179 (0.0323)
Observations	6,942	6,941
R-squared	0.068	0.032
Num. of women in panel	2,652	2,652

Data from EPS survey, years 2002, 2004, 2006, 2009 and 2015. Sample includes women who had primary school-aged children when they were surveyed. Share of FDS schools is the fraction of schools with 50 percent of their grade levels under the FDS regime. Robust standard errors, clustered at the municipal level, in parentheses. ***, **, * reflect statistical significance at 1%, 5% and 10% levels, respectively. Variables not shown: youngest child in primary school, fraction of FDS schools in municipality, mother's years of education, mother's age and age squared, presence of children aged 0-5, 6-13, 14-18 and 18+ in household, municipal average school attainment, municipal rates of poverty, rural population, female and male employment, female and male labor force participation, region-year fixed-effects, interactions between a categorical variable for municipal female labor force participation rate in 2000 and year fixed-effects, and individual fixed-effects.