

Do women want to work more or more regularly?

Evidence from a natural experiment*

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Abstract

This paper studies women's employment decisions when institutions limit their chances of having a regular working schedule. Since 1972, French children in kindergarten and primary school had no school on Wednesday. In 2013, a reform reallocates some classes to Wednesday morning. A descriptive analysis of the pre-reform period suggests that women value flexibility when children demand it. Importantly, we observe that women's decision to stay at home on Wednesday hinges on the interplay between the cost of flexibility associated with their occupation, their bargaining power at work, and their role in the household. Next, we take advantage of the 2013 reform to obtain the first estimate of women's elasticity to the value of flexibility. To measure mothers' response we exploit variation in the implementation of this policy over time and across the age of the youngest child. Our results show that, although mothers do not increase their total weekly hours of work, they do take advantage of the fall in the value of flexibility to close 1/3 of their initial gap in the probability of working on Wednesday with respect to the control group. This response is driven by mothers who are more rewarded for a regular presence at work, but also by those who have a stronger bargaining power.

JEL codes: H52, J13, J16, J22.

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1 Introduction

Since the introduction of compulsory primary education in 1882, French children had a full day off in the middle of the week. This was first allocated to Thursday and from 1972 onwards to Wednesday. While other aspects of the school calendar have changed over the last decades, the break on Wednesday has always been maintained. In the meantime, women labour force participation in France has constantly increased to attain nowadays one of the highest level across OECD countries (OECD 2016b). Yet, as displayed in figure 1, the Multinational Time Use Survey (Gershuny and Fisher 2013) tells us that, while women with children in the UK, Germany and Spain distribute their working time equally along the week, French mothers work significantly less time on Wednesday than on the other working days of the week. On the contrary French fathers and women without children have a regular working schedule.

An increasing number of studies suggest that as women's labor force participation rates increase, their wage elasticity may fall down to approach men's one (Cascio 2009, Fitzpatrick 2010, Gelbach 2002, Goldin 2006, Havnes and Mogstad 2011). At the same time, several papers show that women value flexibility at work more than men (Filer 1985, Goldin and Katz 2011, Flabbi and Moro 2012, Wiswall and Zafar 2016, Mas and Pallais 2016). Goldin (2014) and Goldin and Katz (2016) further argue that this quest for flexibility can be costly, especially in those occupations where the continuous presence at work and the availability to work long hours is particularly rewarded.

In this paper we exploit the peculiarity of the French school schedule to show that women do value flexibility when their children demand it. However, we also observe that the possibility to attain a flexible working schedule hinges on the interplay between the cost that this imposes at work, the bargaining power that women have vis-à-vis their employer, and the role they have in the household.

Next, we take advantage of a recent reform of the school schedule to obtain the first estimate of women's elasticity to the value of flexibility, and to test whether women are indeed becoming less sensitive to changes in their own wages. Since 2008, children in kindergarten and primary school had 24 hours of classes per week, split over only four days. In January

2013, the French government decided to reduce the length of the instruction time per day and add an extra half day of classes on Wednesday morning, in order to lighten the daily workload of children, while maintaining invariant the total amount of weekly teaching hours. Moreover, in order to compensate for the shortening of each school day, the government introduced three optional hours of extra-curricular activities, at almost no additional cost for families.

On the one hand, we use the reorganization of the teaching time and, in particular, the introduction of classes on Wednesday morning, to estimate women's elasticity to the value of flexibility and to study how this varies along its cost curve. On the other hand, we exploit the implicit wage subsidy delivered by this reform via the introduction of the extracurricular activities to obtain a new estimate of women's own wage elasticity in a context of high female labor force participation.

To analyze mothers' employment decisions we choose to focus on mothers whose youngest child is of primary school age and compare them to mothers whose youngest child is slightly older. To carry out this study we use the quarterly data of the French Labor Force Survey from 2009 to 2015. Moreover, to identify which occupations reward more a regular and prolonged presence at work, potentially imposing a higher cost of flexibility, we exploit the O*NET classification of occupations. This online platform, created by the United States Ministry of Labor, regroups jobs on the basis of the skills used and activities performed at work. Following Goldin (2014), we classify occupations as imposing a high or a low cost of flexibility, by focusing on elements such as the degree of time pressure, the organization of the work schedule, and the importance of interpersonal relationships with co-workers.

In a descriptive analysis of the pre-reform period, we show that considering the interplay between the cost of flexibility associated to women's occupation, their bargaining power at work, and the role they have in the household is crucial to understand women's behavior. Before 2013, more than 40 percent of women with children in primary school age stay at home on Wednesday, in comparison with only 30 percent of those with older children. This proportion is larger among women with a higher bargaining power at work - proxied either by the level of education or by their job position - despite the fact that these women tend to be the

ones facing the higher cost of flexibility. Yet, the probability of staying at home on Wednesday decreases as mothers potentially assume the role of primary earner in the household.

Next, comparing the evolution of employment decisions of mothers with primary school aged children to that of mothers with children aged twelve to fourteen, in a difference-in-difference framework, we show that mothers do react to the 2013 reform. Although this intervention does not boost labor force participation or total weekly hours of treated mothers, their probability of working on Wednesday rises by more than three percentage points. In other words, the reform allows treated mothers to close $1/3$ of the pre-existing gap with control mothers, and $1/6$ of the initial gender gap on this margin. Taken together, these findings imply that treated mothers reorganize their working time in accordance to their children's new school schedule, but that they do not react to the implicit wage subsidy this reform provides. In accordance with the insights delivered by the descriptive analysis, these results are driven by mothers facing the higher cost of flexibility, but also by those having more bargaining power at work. In addition, our estimates bring suggestive evidence that mothers who are the primary earner in the household are particularly sensitive to the relaxation of institutional constraints.

To complete our analysis, we also study fathers' reaction to the reform and find no evidence that this intervention affects their employment decisions. On the one hand, this result supports the findings of the recent strand of the literature establishing the importance of cultural norms as determinants of gender identity and women's employment decisions (Fernandez, Fogli, and Olivetti 2004, Fortin 2005, Bertrand 2011, Fernandez 2011, Kleven, Landais, and Sogaard 2015). On the other hand, it shows that, precisely because a strict division of roles persists within the household even in a context of high female labor force participation, limiting institutional constraints can help modify these cultural beliefs.

Overall, our findings have several policy implications. First, they prove that, even in advanced economies, where female participation in the labor market is high, in the presence of institutional constraints, women do value flexible work arrangements. Secondly, they suggest that the interplay between household characteristics, women's bargaining power and the cost imposed by flexibility influence both their behavior in the presence of institutional constraints,

and their reaction when these constraints are relaxed. Finally, the fact that mothers do not react to the implicit wage subsidy offered by the 2013 reform provides some support to the hypothesis that women's wage elasticity might indeed be weaker in countries with high female labor market participation rates. However, it might also indicate that three additional hours of childcare are not enough to generate a substitution of work for leisure.

The paper proceeds as follows. Section 2 gives a detailed description of the French primary school system and how this has been affected by the 2013 reform. Section 3 describes the data used to conduct this analysis. Section 4 introduces the descriptive analysis, the identification strategy, the main results and robustness checks. Section 5 analyzes potential channels and consequences of these results. Section 6 concludes.

2 The French primary school system

The French educational system is divided into three stages: elementary education, for children aged six to eleven; secondary education – in turn divided into middle school (*collège*) and high school (*lycée*) – and tertiary education. Education is compulsory since the age of six till sixteen. However, parents can send their children to free public pre-kindergarten (*école pre-maternelle*) already when they are two, or to kindergarten (*école maternelle*) at the age of three. By now, 23 percent of two-years old children and 95 percent of children aged three to five attend this pre-school stage (Goux and Maurin 2010). Public primary schools are financed by municipalities. The private sector comprises mainly religious schools and enrolls fourteen percent of all primary school pupils.

With respect to the structure of the school calendar, France has always been one of the countries with the longest period of holidays, longest number of hours per year, and longest school day, in primary school.

Since the introduction of compulsory primary education in 1882 (*Loi Ferry*) until the end of the 1960s, children spend five full days at school, with a break on Thursday and Sunday, for a total of 30 hours per week. In 1969, Saturday afternoon is abolished, and three years

later, in 1972, the break in the middle of the week is advanced from Thursday to Wednesday, and two hours of physical activities are added to the school week.

It is only with the development of the chronobiology in the 1980s that an intense debate on the optimal structure of the school schedule spreads out. Experts of this discipline point out that primary school children need more frequent holidays and a shorter day at school. As a consequence, the Jospin Law restructures the school year in 36 weeks over five periods, and reduces by one hour the weekly schedule. Moreover, in 1991, a ministerial decree gives municipalities the possibilities to adopt a four-days schedule. Only a few choose this possibility. In 1995 it is the Ministry of education that relaunches this option by selecting a pool of pilot schools to experiment the four-days school week. From that moment, several municipalities start to consider this option. Finally, in 2008, under an harsh debate, the four-days schedule is extended to all primary schools in France and weekly hours are reduced from 26 to 24. Nonetheless, in 2013, under the pressure of chronobiologists, the Minister of Education reintroduces the four-and-half days school week.

In particular, with the 2013 reform, the school day is shortened by 45 minutes; in order to maintain invariant the total amount of weekly hours, an half day is added, mainly on Wednesday morning, and exceptionally on Saturday; and municipalities are invited to provide free extra-curriculum activities for children, for a total of three weekly hours; these should compensate for the reduction of the daily instruction time. Importantly, municipalities are given the possibility to implement the new schedule either in the year 2013-14 or in 2014-15. 20 percent of them chose to do it in 2013; the rest adopts the new system only in 2014. Moreover, each municipality can chose how to allocate the extracurricular activities, whether to concentrate them on two days a week or spread them along the week. Regarding private schools, these have the freedom to chose whether to implement the 2013 reform or not at all, and, by the end of the academic year 2014-2015, fifteen percent of them, comprising 13.5 percent of French pupils attending a private school, adopt the new schedule.¹

¹ In our data we cannot tell whether a family sends their child to a public or a private school. We can only observe the aggregate proportions of students enrolled in public and private schools every year and these remain stable over the years of implementation of the reform. In other words, it does not seem that some families are moving their children from one type of school to the other because of the reform. Overall, this

Finally, it is important to notice that both the 2008 and 2013 reforms affect only kindergarten and primary school children. In middle and secondary school, pupils have at least 24 hours and a half of classes per week, spread over five days, and this schedule has not modified for a long time.

3 Data description

Our study relies on the use of several databases. First, we use the 2009-2014 waves of the French Labor Force Survey (*Enquête Emploi en Continu*) or FLFS. This data set collects information on work-related statistics with quarterly interviews to a representative sample of the French population. From the FLFS we extract data on women's age, level of education, marital status, present and past labor market status, income, and the structure of the household in which they reside. Crucially, we exploit the information on the municipality of residence, the number of children women have, and their age.

Secondly, in order to identify the timing of the implementation of the 2013 reform across municipalities, we exploit the EnrySCO database. This is an administrative data set that has been created by the French Ministry of Education and provides a precise description of the weekly teaching schedule for each school, in each municipality.

Finally, to better investigate the mechanisms that drive women's response to the reform, we exploit the United States Department of Labor Occupational Information Network, or O*NET. This database, available online, classifies occupations on the base of the activities performed and skills used at work. There are eight broad categories: abilities, interests, knowledge, skills, work activities, work context, work style, and work values. Following Goldin (2014), we focus on the categories of work activities and work context, which comprise several aspects of the work environment that can help us understand women's reaction to the reform, as further explained in the next section.

implies that our estimates might be slightly downward-biased as around twelve percent of families in our sample are not affected by the reform (corresponding to the 87 percent of the fourteen percent of children attending private schools.)

4 Empirical analysis

4.1 Pre-reform period

Table 2.1 describes the characteristics of French mothers aged between 18 and 55 and interviewed in the Labour Force Survey before the introduction of the 2013 reform. We regroup them along the age of their youngest child. Three considerations are worth mentioning. First, mothers of younger children tend not only to be younger but also more likely to hold a college degree, which is consistent with the well-documented increasing trend in female education attainment common to many OECD countries (OECD 2016a). This suggests that looking at incentives, constraints and choices of highly educated women is particularly relevant to predict the behavior of future generations. Secondly, mothers' labor force participation is strongly correlated with their children's age and, in particular, we can see that it increases discontinuously as soon as their youngest child starts attending primary school. Third, conditional on participation, we can see that the probability of working part-time decreases as the youngest child ages and the average number of hours and days increases accordingly. Importantly, the figures regarding the proportion of mothers who are working on Wednesday provide additional insights. More than 40 percent of working mothers whose youngest child is in kindergarten or primary school do not work on Wednesday, and this proportion decreases by almost ten percentage points as soon as the youngest child enrolls in middle school. This suggests that the institutional constraint imposed by children school schedule appears to bind for a large fraction of women. Or, in other words, flexibility should be particularly important for a large proportion of women.

Understanding who are these mothers matters not only because it helps shed light on the factors shaping women's behavior, but also because this choice is likely to affect their children development as well.

From now on we mainly focus on mothers whose youngest child is in primary school, as it appears uncontroversial to compare their behavior to that of mothers with slightly older children. Table 2.1 tells us indeed that, except for the allocation of their working time along

the week, their behavior in terms of educational, marriage and employment decisions closely resembles that of mothers whose youngest child is in middle school. Concerning mothers with children in kindergarten age instead, table 2.1 clearly shows that their participation rate to the labor market, as well as several observable characteristics, differ substantially from that of mothers with older children. This suggests that the incentives driving their decisions might differ as well. For instance, mothers with children between two and three in France are entitled to receive specific childcare subsidies that are withdrawn as children enter in primary school. In addition, kindergarten is not compulsory and only 30 percent of families whose youngest child is two years old actually make use of this service (Goux and Maurin 2010). For all these reasons, we prefer to exclude mothers with children aged two to five from our analysis.²

With this descriptive analysis we mainly want to investigate how educational, marriage and employment decisions interact with the time mothers dedicate to their children, in the spirit of Chiappori, Iyigun, and Weiss (2009) and Hurder (2013). To do so, we introduce Goldin's measure of the cost of flexibility, to start analyzing how women deal with it in a context, such as the French one, where flexibility appears to be particularly important. To construct this measure, we follow Goldin and exploit the O*NET database. Specifically, we classify occupations on the basis of five characteristics, namely: time pressure, which uses the question "How often does this job require the worker to meet strict deadlines"; frequency of decision making, referring to the incidence with which a worker is required to make decisions that affect other people, the financial resources, and/or the image and reputation of the organization; structured versus unstructured work, representing the extent to which the job is structured for the worker, rather than allowing her to determine tasks, priorities, and goals; contact with others, referring to the extent the job requires the worker to be in contact with others (face-to-face, by telephone, or otherwise) in order to perform it; establishing and maintaining interpersonal relationships, representing the importance of developing constructive and cooperative working relationships with others, and maintaining them over time. The

² For these same reasons, we decide to exclude them as well from the regression analysis studying the impact of the 2013 reform. However, in table 2.17 in the appendix we show that our results do not change substantially when we include them in the treatment group.

importance of each of these aspects in every occupation is measured by a score ranging from zero to 100. Our measure of the cost of flexibility is the average of the standardized scores of these five characteristics. In particular, we regroup women's occupations in two groups, depending on whether the average score is below or above the median for the entire sample. Regarding the correlation of this classification with the standard one referring to managerial, intermediary, elementary and other types of occupations, it is important to notice that, overall in our studied sample, while 75 percent of women occupying managerial positions are likely to bear a high cost of flexibility, less than 25 percent of women bearing a high cost of flexibility work in managerial occupations. This points to the importance of analyzing heterogeneous behaviors separately across either type of classification, as further confirmed by the following tables.

Table 2.2 shows how educational decisions of mothers with children in primary school age correlate with fertility, marriage and occupational outcomes. Interestingly, mothers holding at least a college degree are not only more likely than the lower educated to be in an intermediate or managerial position, but they are especially likely to work in a profession characterized by a high cost of flexibility. Moreover, a clear pattern of assortative mating emerges from this table, as mothers with at least a college degree are more than four times more likely to have a partner with at least a college degree than lower educated mothers.

To explore even more in depth these relationships, in tables 2.3 and 2.4 and in their corresponding graphs 2 and 3, we look at the interplay between household composition and mothers' employment decisions, conditional on education level, potential cost of flexibility sustained by the woman at work, and type of occupation held. Table 2.3 refers to mothers with children of primary school age and table 2.4 to those with older children. In both tables we consider two types of households, namely those in which the woman has at most the same level of education than her partner, and those in which the woman is more educated than her partner.

Comparing tables 2.3 and 2.4 raises the following relevant points. Within the group of women with children of primary school age, those with a college degree are significantly less

likely to work on Wednesday than lower educated mothers. Yet, they work more hours in total during the week. This suggests that, despite being more likely to face a high cost of flexibility, highly educated women are the ones who are able to negotiate with their employer a working schedule that reflects their children school time. However, not all highly educated women can afford to dedicate their Wednesday to their children. Mothers with a college degree having a lower educated partner are more likely to work on Wednesday than other highly educated women, suggesting either the presence of an income motive or a reversed division of roles in this type of household.³ This pattern is even more pronounced for mothers in managerial positions, for whom the cost of flexibility might overcome its value. Most of these differences decrease in magnitude and lose significance for mothers of older children.⁴

Overall, this first part of the empirical analysis clearly suggests that women do value flexibility when children demand it. However, it also shows that achieving flexibility relates to the interplay of different factors, such as the cost that this may impose at work, women's bargaining power at work, and their role in the household.

4.2 The impact of the 2013 reform

To further study how the 2013 reform affects mother employment decisions, we adopt a difference-in-difference strategy. We define a woman as being treated if her youngest child is affected by this intervention. Next, as in the descriptive analysis, we choose to compare mothers whose youngest child is between six and eleven, with those whose youngest child is between twelve and fourteen – corresponding to the age-interval of middle school pupils. The graphical analysis of pre-treatment trends in the labor supply measures we have chosen, displayed in figure 4,⁵ supports this choice, as the employment decisions of the treatment and

³ Interestingly, this seems to contradict the recent contribution of Bertrand, Kamenica, and Pan (2015) suggesting, among other things, that the gender gap in non-market work is larger if the wife earns more than the husband.

⁴ Importantly, in the appendix, table 2.16 we also report these figures for the sample of mothers whose youngest child is between twelve and eighteen to show that the absence of statistical significance for mothers of older children does not depend on the size of the sample considered.

⁵ This figure shows trends in selective outcomes, notably the probability of working on Wednesday and the number of days worked per week. Figure 7 in the appendix reports the evolution of the other outcomes we study, that is labor force participation and hours worked per week.

control group exhibit a comparable evolution.

Even though the evolution of several labor supply measures is similar among mothers with children in kindergarten and those with older children, we decide to exclude the former from the treatment group for the same reasons explained in the previous paragraph. Their baseline characteristics are indeed too different from those of our control group to assume that absent the reform they would respond to the same type of incentives.

Next, in the main regressions we consider both mothers living in municipalities that implement the reform in 2013 and those living in municipalities that postpone its introduction to 2014.⁶

On the basis of these choices, we run the following specification on mothers aged 18 to 55, interviewed between 2009 and 2015, and whose youngest child is between six and fourteen years old:

$$\begin{aligned}
 Y_{icmt} = & \gamma_m + \delta_t + \pi * X_{icmt} + \alpha * Yst_Child_btw_6_11_c \\
 & + \beta * Yst_Child_btw_6_11 * Post_Sep_2013_{ct} + u_{icmt}
 \end{aligned} \tag{1}$$

Here i stand for each interviewed woman, c for the age of the youngest child, m for the municipality of residence and t for the wave in which the woman is interviewed. Y_{icmt} represents the outcome considered. These comprise labor force participation, the choice of working part-time or full-time, hours worked per week, days worked per week, and the decision to work

⁶ In principle, to identify the effect of the reform, we could exploit the variation over time and across municipalities in the implementation of the reform. In this way, we would compare mothers whose youngest child is in the affected age-range and live in municipalities that introduced the reform in 2013, with the same group of mothers who live in municipalities that postponed the implementation of the reform to 2014. However, we prefer not to adopt this strategy for two reasons. First, the comparison of the pre-trends in labor supply measures for these two groups of mothers – figure 8 – reveals that their dynamics seem to diverge before the implementation of the reform. Therefore, it is hard to claim that, absent the reform, the evolution of labor supply would have been the same across these groups. This concern is also confirmed by a formal test on the parallel trend assumption. In a regression model that compares the evolution of labor supply for these two groups of mothers, we include a battery of dummies taking value one for mothers "treated in 2013", in the three waves before September 2013. A test on their joint significance leads us to reject the null for all the outcomes considered. Secondly, by adopting this strategy we would be able to study only the impact of the reform in his first year of implementation, given that from 2014 onward, all municipalities adopt the new schedule. As it might take some time for its effect to manifest, we think that considering only its short-run impact would considerably limit the objectives of our analysis.

on each specific day of the week.⁷ The vector X_{icmt} includes all the individual variables that can affect women’s labor supply decisions. These include age, age squared, level of education, number of children, marital status, and presence of other members in the household; α measures the impact of having the youngest child in primary school age. $\text{Post_Sep_2013}_{ct}$ is a dummy equal to one starting from September 2013 for those mothers living in municipalities that introduced the reform in 2013, and from September 2014 for mothers living in municipalities that postponed the implementation to 2014. The main coefficient of interest is β that should capture any deviation from a parallel evolution in the outcome of interest between the treatment and the control group, due to the implementation of the new schedule in primary school. In all regressions we also include municipality of residence, γ_m , and wave of interview fixed effects, δ_t . Finally, in all specifications, standard errors are clustered at the municipality level to account for any correlation of the outcomes for women residing in the same municipality.

Tables 2.5 and 2.6 show the main results. As expected, the 2013 reform does not trigger any response at the extensive margin – table 2.5, column 1. Point estimates in table 2.5, column 2 and 3, suggest that, after the implementation of the reform, treated mothers are less likely to work part-time and tend to work more hours. However, these coefficients are not precisely estimated. In contrast, column 4 indicates that the reform has a significant impact on the number of days worked per week, as treated mothers work on average one fourth of a day more, from a pre-reform level of slightly more than four days and half. In table 2.6, we can see that, accordingly, their probability of working on Wednesday increases by roughly three percentage points, significant at one percent significance-level. Reassuringly, with the exception of Saturday, their likelihood of working on each other day of the week does not change with respect to the pre-reform period, in comparison with control mothers.⁸ The fact

⁷ To measure these outcomes we construct, respectively: a dummy equal to one if the woman belongs to the active population; a dummy equal to one if the woman works part-time, a continuous variable indicating the number of hours worked on average per week, one measuring the number of days worked per week, and a dummy equal to one if the woman works on a specific day of the week.

⁸ It has to be noticed that, in the FLFS, the decision to work on each days of the week is measured only from 2013 onward. However, the fact that the reform also has a significant impact on the number of days worked per week shows that the effect on the probability of working on Wednesday does not merely depend on the span of time over which the outcomes are observed.

that we find a negative effect of the reform on the probability of working on Saturday simply suggests that some of the few mothers who, prior to the reform, were working on Saturday - probably to compensate for their absence on Wednesday - take advantage of the reorganization of the school schedule to allocate their Saturday hours to Wednesday.

4.3 Robustness checks

For the difference-in-difference strategy to accurately identify the effect of interest, we need to assume that, in the absence of the reform, the evolution of mothers' labor supply would have been the same for the treated and control group (parallel-trend assumption). In other words, we should check that our estimates are not capturing the effect of other factors that affect treated and control mothers in a different way at the same time as the reform takes place.

To support this assumption, besides the visual inspection of the pre-treatment trends in labor supply measures, we can conduct a series of robustness checks. We start in table 2.7. As the variable measuring the number of days worked per week is available for the entire sample period, we can check the impact of a series of placebo reforms on this outcome. In the first column of table 2.7 we report the baseline result. In the second one, we exclude from the sample the post-treatment period and we pretend that the reform was implemented at the beginning of 2013. In the third column, we consider the period spanning between 2009 and 2011 and look at the effect of a placebo reform introduced in January 2011. Finally, in the last column, we restrict the sample to comprise only women interviewed between 2009 and 2010 and we pretend that the reform took place in January 2011. Reassuringly, none of these placebo reforms appears to have a significant effect, suggesting that in our main regression we are not simply capturing the impact of factors that systematically affect treated and control mothers differently.

Next, in tables 2.8, 2.9, 2.10 and 2.11, we change the size of the treatment and control group to show that our results are not sensitive to the definition we adopted. This robustness check can be performed both on the outcome measuring the number of days worked per week, as on the one concerning decision to work on Wednesday. In tables 2.8 and 2.10, we can see

that restricting the treatment group does not alter substantially the magnitude of the effect, and the impact of the reform remains significant in almost all columns, for both outcomes. Tables 2.9 and 2.11 further show that, for both outcomes, restricting or expanding the control group does not affect either the magnitude or the significance of the reform coefficients.

In addition, figures 5 and 6 provide a graphical analysis of the treatment dynamics. In particular, they show the coefficients of the leads and lags in the treatment, estimated with this regression:

$$\begin{aligned}
Y_{icmt} = & \gamma_m + \delta_t + \pi * X_{icmt} + \alpha * Yst_Child_btw_6_11_c \\
& + \sum_{k \geq t-j} \beta_k * Yst_Child_btw_6_11 * Leads_Lags_{ck} + u_{icmt}
\end{aligned} \tag{2}$$

where j takes value 4 when the outcome is the number of days worked per week, and value 2 when it represents the decision to work on Wednesday. The first thing to be noticed is that the coefficients on the leads are jointly insignificant, in both regressions, with a corresponding p -value of 0.843 when the outcome is the number of days worked per week and 0.274 when this is the decision to work on Wednesday. Moreover, these regressions allow us to implicitly perform an additional placebo test. In the first year of implementation of the reform, this should not have any impact on mothers living in municipalities that postponed its introduction in 2014. As these represent 80 percent of our sample, when we look at the impact of the reform on both groups of municipalities at the same time, this is exactly what we observe. None of the coefficients capturing the impact from September 2013 to August 2014 turns out significant in the two regressions, while, in a previous version of this paper, we showed that the reform did have an impact on mothers living in municipalities implementing the reform in 2013.⁹

Finally, in table 2.12 we show that the impact of the reform on both outcomes is not driven either by mothers living in municipalities that introduce the reform in 2013 or by those living in municipalities that postpone the implementation to 2014. The effect is comparable across both groups of municipalities.

⁹ These results are available upon request.

Overall, these tests seem to corroborate the validity of our identification strategy.

5 Mechanisms behind the main results

5.1 Cost of flexibility and bargaining power

The main peculiarity of the 2013 intervention is that, by making children’s school schedule more regular, it actually decreases the value of flexibility for their mothers. This allows us to test for the first time Goldin’s theory. According to it, we should expect that mothers who are potentially bearing a higher cost of choosing a flexible working schedule should be especially interested in regularizing it once its value drops. Table 2.13 does provide supporting evidence for it. Although the coefficients for the two subgroups in the first two columns of panel A are not statistically different from each other, the impact of the reform seems to be driven by mothers facing a higher cost of flexibility. However, the other panels of table 2.13 suggest that, in order to obtain a reorganization of their own working schedule, women also need to have some bargaining power at the workplace. The point estimates for the impact of the reform on the number of days worked per week and the decision to work on Wednesday are indeed larger, even if not always statistically different from the reference group, for women working in managerial occupations, those with more years of tenure, and highly educated women. These groups of women appear even more likely to increase their overall hours of work, as shown in columns (3) and (4) of panel B, C, D. Finally, in table 2.14 we test whether mothers’ response is also influenced by their role in the household, as the descriptive statistics from the pre-reform period were suggesting. Although none of the coefficients turns out to be significant in this table, highly educated women seem to have a higher elasticity with respect to the value of flexibility when they are more educated than their partner, and therefore, potentially, the primary earner in the household. Interestingly, this pattern is not visible for women without a college degree, suggesting once again that it is the interplay between women’s bargaining power at work, the cost of flexibility associated to their occupation, and their role in the household that shape mothers’ response. To conclude the heterogeneity analysis, it is important to add

that we do not find any clear evidence of a differential effect by mother's age, number of children, or depending on whether she works in the public or the private sector. However, we do find that women in temporary contracts take advantage of this reform to increase their working hours and make their schedule more regular, probably to signal their willingness of working hard to their employer.¹⁰

5.2 Impact on fathers

In principle this reform might affect the employment decisions of both parents. Therefore, to identify all the implications of this intervention, we also analyze fathers' response. As shown in table 2.15, we find no evidence that men's employment decisions are influenced by a change in their children's school schedule. This result is to be considered together with the fact that, among parents in employment, 76 percent of fathers worked on Wednesday before the introduction of this reform, against 56 percent of mothers. These numbers show that even in a country in which a high proportion of women participate in the labor market, a strict division of roles persists within households with children, and that institutional constraints bind only for women. As a consequence, removing barriers to work for women might play the double role of enhancing the attachment to the labor market, and of contributing to change gender norms.

6 Discussion and conclusion

This paper studies women's employment decisions in a context where institutions limit their chances of having a regular working schedule. We analyze this setting to show that women do value flexibility when children demand it. Moreover, we observe that the possibility to attain a flexible working schedule hinges on the interplay between the cost of flexibility associated to women's occupation, their bargaining power at work, and their role in the household.

Next, we exploit the relaxation of institutional constraints to provide the first estimate of

¹⁰ All these results are available upon request.

women's elasticity to the value of flexibility, and to test whether women's own wage elasticity is low in a country characterized by high women's labor force participation. On the one hand, we provide evidence that mothers take advantage of a fall in the value of flexibility to regularize their working schedule, especially if they have the bargaining power to do so, and the regular presence at work is particularly rewarded in their occupation. On the other hand, we show that treated mothers do not increase total weekly hours of work in response to the implicit wage subsidy that comes together with the relaxation of institutional constraints. This may confirm that women's wage elasticity might indeed be weaker in countries with high female labor market participation rates, as an increasing number of studies suggest. However, we do not exclude that the wage subsidy implicit in the reform might simply be insufficient to trigger a substitution effect of work for leisure. Moreover, the fact that some municipalities chose to concentrate the extracurricular activities in a few days, rather than spread them along the week, might prevent mothers from taking advantage of them. Finally, at least in the first years of implementation, mothers might perceive the new extracurricular activities to be of low quality, when compared to the alternative after-school-care options. If this were the case, their response might change as their perception or the actual quality of the new service offered improves.

To conclude, three considerations are worth mentioning. First, were data available on this dimension, it would be interesting to analyze the role played by women's perception on the quality of the new extra-curricular activities. Some mothers might indeed decide not to take advantage of this new service if they perceive it to be of low quality (Fitzpatrick 2010). Overtime, this perception, as well as the actual quality of this form of childcare might increase, pushing women to rely on it and eventually increase their labor supply. Secondly, even if we do not find evidence for this with the data at hand, it is possible that a more regular working schedule will eventually affect the career path of mothers, by allowing them to perform more tasks and occupations, and by expanding their chances of receiving on-the-job training and promotions (Landers, Rebitzer, and Taylor 1996). Third, so far we are only considering how institutional constraints affect mothers' labor supply. However, the sudden

availability of a larger pool of female employees willing to adopt a regular working schedule might also affect their co-workers and firms' decisions regarding the overall organization of the work environment. Upon the release of the appropriate data, it will be clearly important to study all these responses.

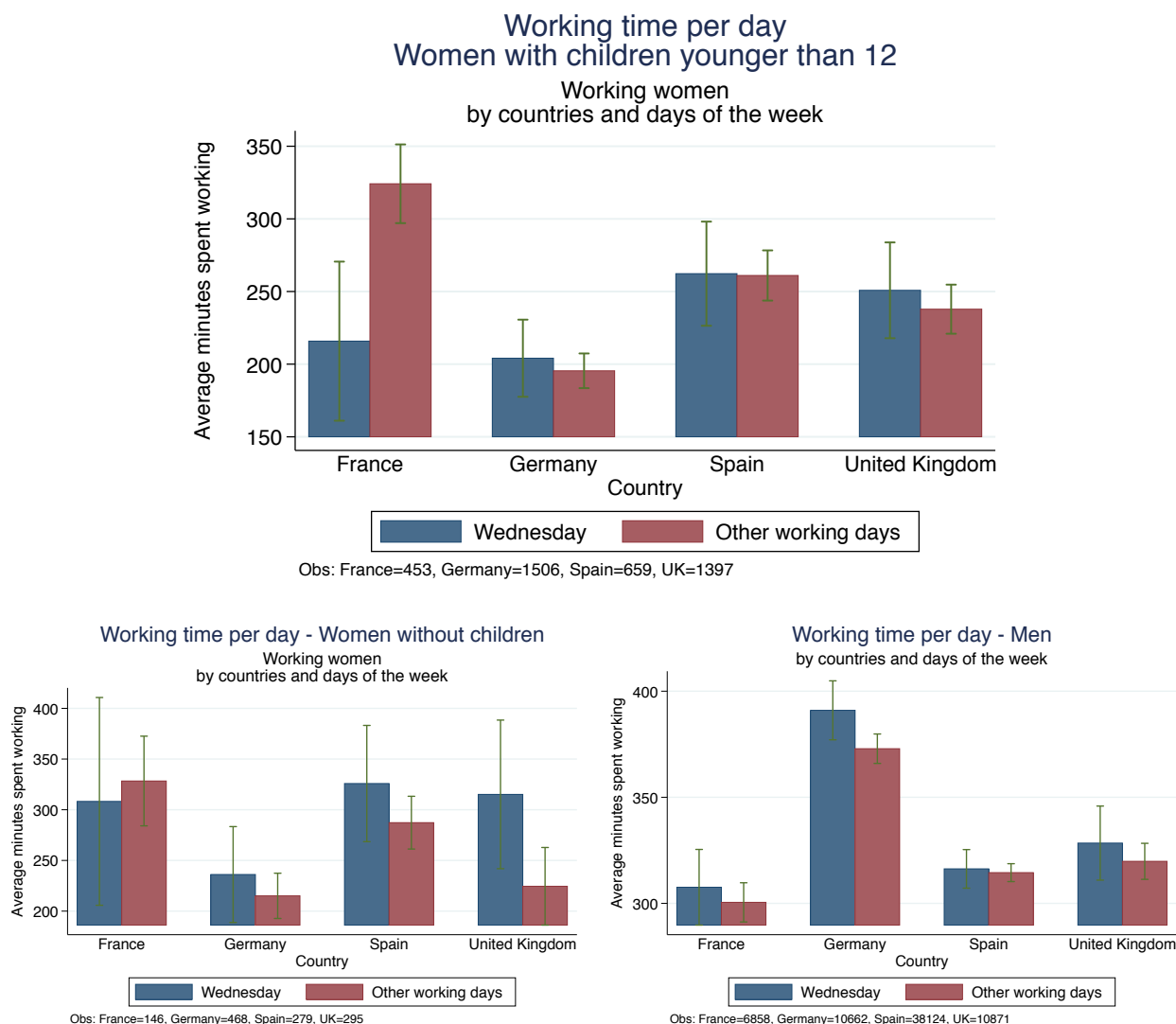
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7 Tables and Figures

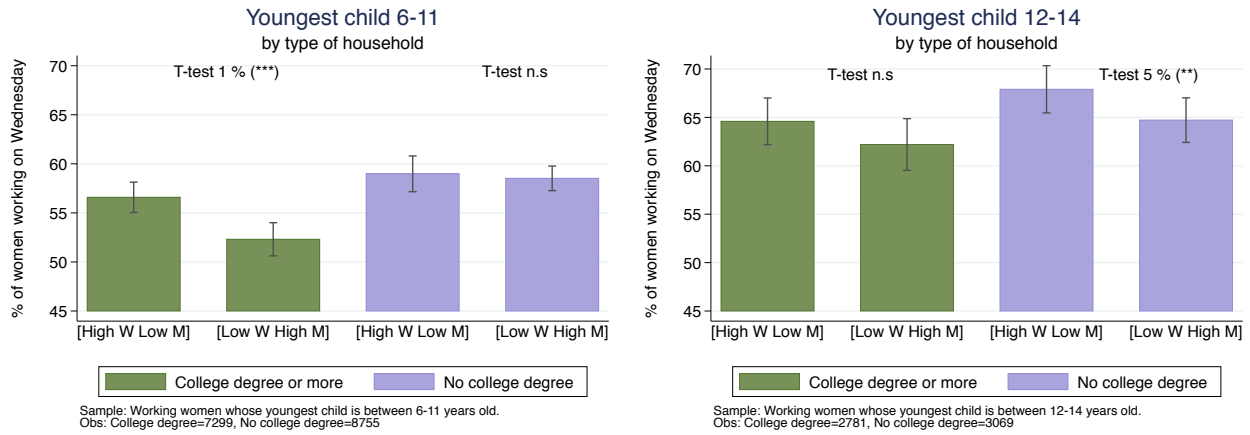
Figure 1: Time Use across European countries



Source: Multinomial Time Use Study, 1991-2010 averages.

Note: the figures report bar graphs representing the average number of minutes spent at work by, respectively, mothers with children younger than 12 years old, women without children and men, in France, Germany, Spain, and the United Kingdom. Working time includes paid work, paid work at home, second job, and travel to/from work. To highlight the peculiarity of the French case, we show separately the working time declared for Wednesday from that reported for the other days of the week. The graph is constructed using the 1991-2010 averages of the Multinational Time Use Survey. Finally, we report 95 percent-confidence intervals obtained from the estimation of a regression of the outcome of interest on the treated category, with standard errors clustered at the country level.

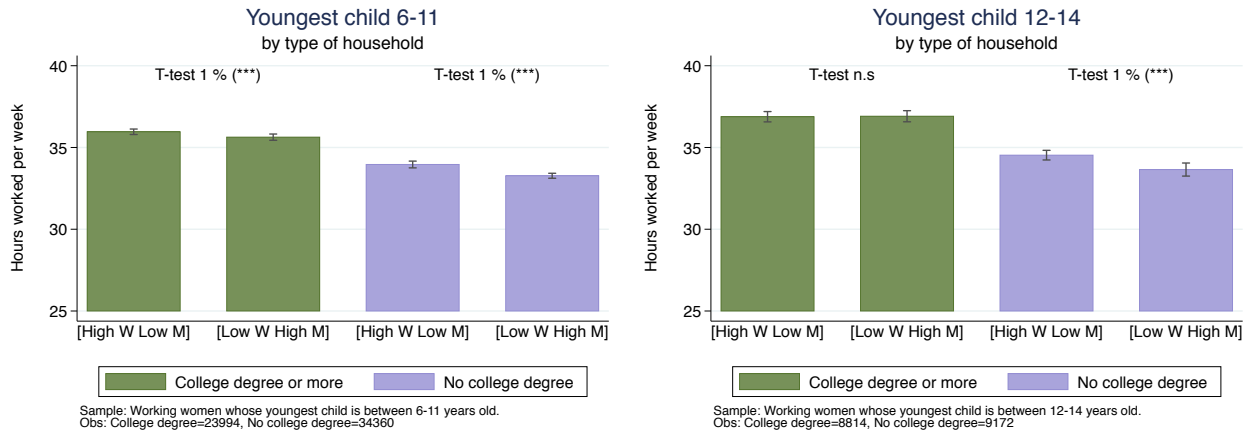
Figure 2: Pre-reform period
Proportion of women working on Wednesday by type of household



Source: French Labor force Survey 2009-2014.

Note: the figures report bar graphs representing the percentage of women working on Wednesday among mothers whose youngest child is between six and eleven, on the left, and mothers whose youngest child is between twelve and fourteen on the right. In each graph, we consider separately women with at least a college degree from those without college degree. Within each of these two groups, we compare women whose educational level is strictly higher than their partner's one, labelled "High M Low M", with women whose educational level is at most equal to their partner's one, called "Low W High M". All figures refer to the pre-reform period and are further displayed in tables 2.3 and 2.4. On each bar we report 95 percent-confidence intervals. Finally, for each educational level, we indicate the results of T-tests for the difference in means between the two types of household.

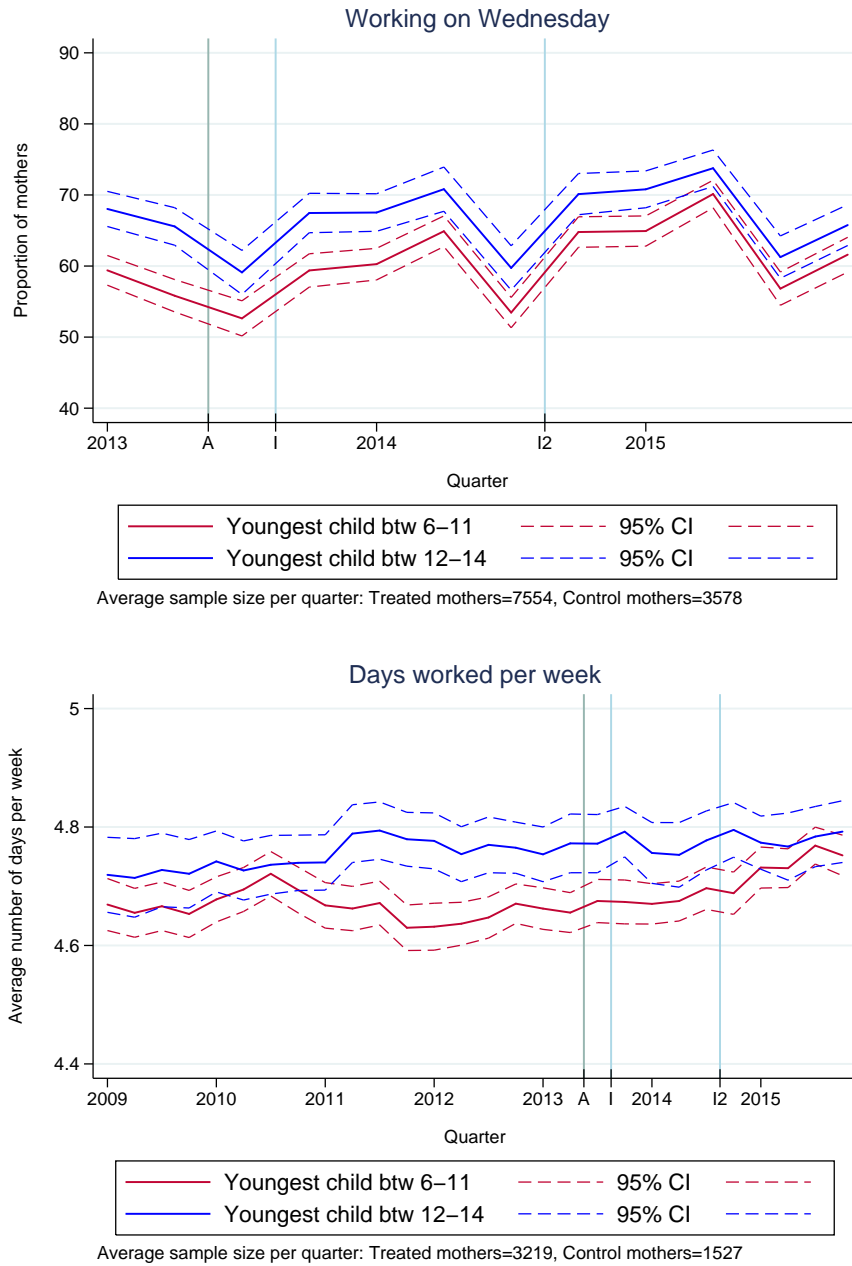
Figure 3: Pre-reform period
Hours worked per week by type of household



Source: French Labor force Survey 2009-2014.

Note: the figures report bar graphs representing the average number of hours worked per week among mothers whose youngest child is between six and eleven, on the left, and mothers whose youngest child is between twelve and fourteen on the right. In each graph, we consider separately women with at least a college degree from those without college degree. Within each of these two groups, we compare women whose educational level is strictly higher than their partner's one, labelled "High M Low M", with women whose educational level is at most equal to their partner's one, called "Low W High M". All figures refer to the pre-reform period and are further displayed in tables 2.3 and 2.4. On each bar we report 95 percent-confidence intervals. Finally, for each educational level, we indicate the results of T-tests for the difference in means between the two types of household.

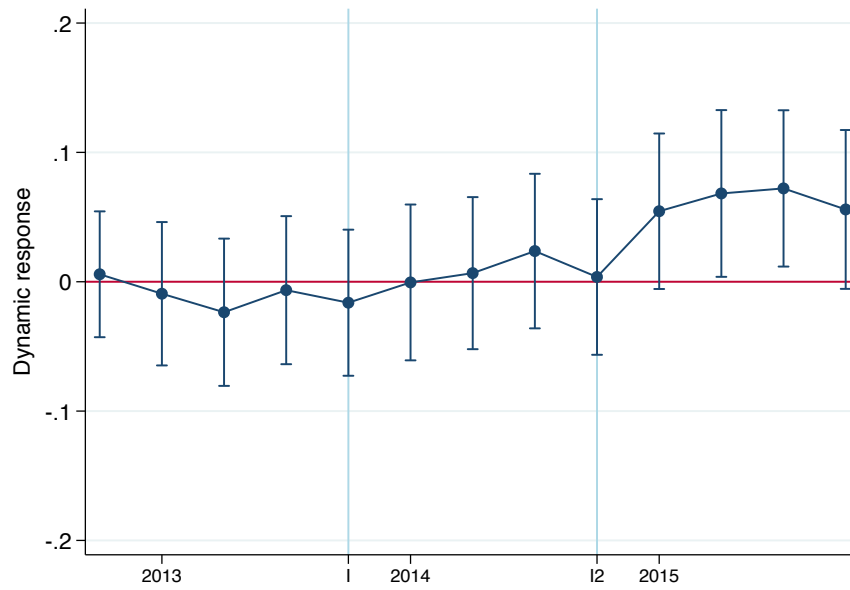
Figure 4: Trends in mothers' labor supply measures by age of the youngest child



Source: French Labor Force Survey 2009-2015.

Note: the graphs show the evolution of different measures of labor supply over the period 2009-2015. The sample is restricted to mothers whose youngest child is between the age of six and fourteen. We represent in red treated mothers, that is those whose youngest child is between six and eleven years old. Mothers whose youngest child is in middle school age, or control mothers, are represented in blue. The vertical bar named "A" corresponds to April 2013, when municipalities announce in which year they will introduce the reform. The bar called "I" corresponds to September 2013, when 20 percent of municipalities implement the reform. The bar labelled "I2" corresponds to September 2014, when the rest of of municipalities implement the reform.

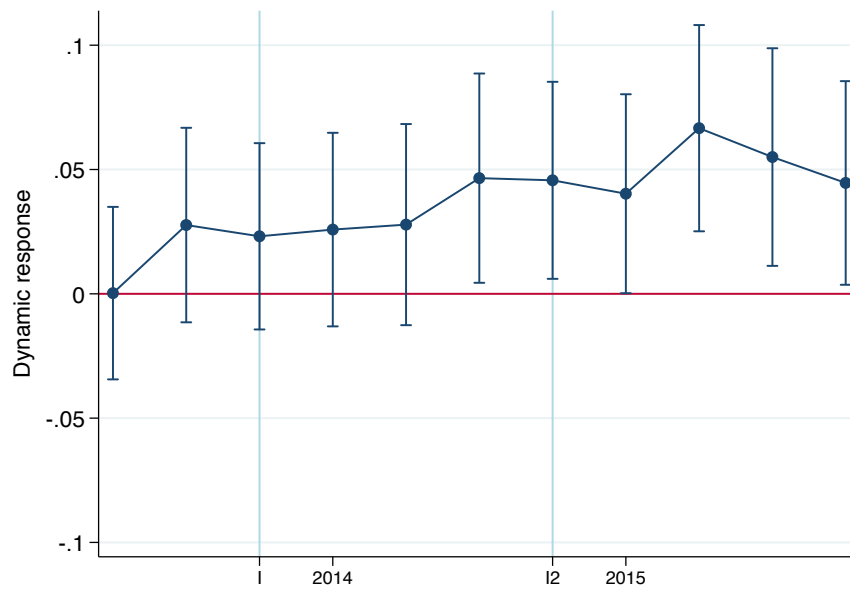
Figure 5: **Dynamic response to the reform**



Source: French Labor Force Survey 2009-2015.

Note: in this graph we report the dynamic response to the reform concerning the days worked per week. The coefficients are obtained from the estimation of regression 2 on the years 2013-2015. We also report 95-percent confidence intervals. The estimation sample includes all mothers whose youngest child is between six and fourteen. The implementation dates I and I2 correspond to, respectively, the last quarter of 2013 and the last quarter of 2014.

Figure 6: Dynamic response to the reform



Source: French Labor Force Survey 2009-2015.

Note: in this graph we report the dynamic response to the reform concerning the decision to work on Wednesday. The coefficients are obtained from the estimation of regression 2 on the years 2013-2015. We also report 95-percent confidence intervals. The estimation sample includes all mothers whose youngest child is between six and fourteen. The implementation dates I and I2 correspond to, respectively, the last quarter of 2013 and the last quarter of 2014.

Table 2.1: **Descriptive statistics of mothers' characteristics by age of the youngest child**

	Youngest child aged between				
	0-1	2-5	6-11	12-14	15-18
Age	31.2 (5.3)	34.7 (5.5)	40.5 (5.3)	44.8 (4.6)	47 (4.2)
Married	0.92 (0.27)	0.87 (0.33)	0.81 (0.39)	0.79 (0.41)	0.79 (0.41)
Immigrant	0.16 (0.37)	0.15 (0.35)	0.12 (0.32)	0.11 (0.31)	0.11 (0.31)
College degree or more	0.42 (0.49)	0.40 (0.49)	0.35 (0.48)	0.29 (0.45)	0.26 (0.44)
No college degree	0.57 (0.49)	0.59 (0.49)	0.65 (0.48)	0.70 (0.46)	0.73 (0.44)
Number of children	1.9 (1.02)	2.0 (0.93)	1.9 (0.79)	1.5 (0.59)	1.1 (0.32)
Labor Force participation	0.63 (0.48)	0.79 (0.41)	0.86 (0.35)	0.87 (0.34)	0.85 (0.35)
Part-time work	0.36 (0.48)	0.37 (0.48)	0.36 (0.48)	0.34 (0.47)	0.31 (0.46)
Hours worked per week	34.1 (9.5)	33.9 (10.2)	34.4 (10.9)	34.9 (11.3)	35.1 (11.4)
Days worked per week	4.6 (0.91)	4.6 (0.81)	4.7 (0.90)	4.8 (0.89)	4.8 (0.90)
Working on Wednesday	0.49 (0.50)	0.55 (0.50)	0.57 (0.49)	0.65 (0.48)	0.68 (0.47)

Source: French Labor Force Survey 2009-2015.

Note: the table presents summary statistics for mothers' characteristics, computed for each age-interval of their youngest child. The studied sample comprises all French mothers aged between 18 and 55 and interviewed in the FLFS before the implementation of the reform.

Table 2.2: Career outcomes and family characteristics by mother's educational level

	No college degree	College degree or more
Managerial and professional occupations	0.03	0.30
Intermediary occupations	0.14	0.44
Elementary occupations	0.63	0.21
High cost of flexibility	0.32	0.68
Public Sector	0.24	0.38
Permanent contracts	0.46	0.47
Tenure ≤ 1 year	0.08	0.06
Tenure 1-5 years	0.21	0.19
Tenure ≥ 5 years	0.72	0.75
Single	0.11	0.07
Partner with college degree or more	0.11	0.48
Partner without college degree	0.66	0.35
1 child	0.31	0.26
2 children	0.48	0.55
3 children or more	0.20	0.20

Source: French Labor Force Survey 2009-2015.

Note: this table shows the career outcomes and family structures of mothers whose youngest child is in primary school, conditional on their level of education. Note that among occupational outcomes, the residual category comprises farmers and blue collar workers. Next, with low and high cost of flexibility, we refer to the composite score we assign to occupations depending on the importance of certain aspects for these professions, as defined by the O*NET online platform. In detail, the score is an average of the standardized scores given to five factors, namely time pressure, frequency of decision making, structured versus unstructured work, contact with others, establishing and maintaining interpersonal relationships. A detailed description of these characteristics and the score assigned to them is given in section 5. We regroup women's occupations in two groups, depending on whether the average score is below or above the median for the entire sample.

Table 2.3: Descriptive statistics by type of household - Youngest child between 6-11

	Low W High M	N	High W Low M	N	P-value T-test
College degree or more					
Days worked per week	4.49	11,193	4.62	12,756	0.00
Hours worked per week	35.63	11,214	35.96	12,780	0.01
Work on Wednesday	52.31	3,355	56.59	3,944	0.00
Part-time	36.66	11,247	30.26	12,817	0.00
No college degree					
Days worked per week	4.70	23,550	4.74	10,473	0.00
Hours worked per week	33.27	23,828	33.96	10,532	0.00
Work on Wednesday	58.52	5,959	58.98	2,796	0.68
Part-time	40.58	24,095	36.58	10,618	0.00
High cost of flexibility					
Days worked per week	4.62	3,685	4.60	3,318	0.24
Hours worked per week	35.72	3,685	35.71	3,318	0.97
Work on Wednesday	51.97	3,685	55.30	3,318	0.01
Part-time	31.11	3,700	27.60	3,330	0.00
Low cost of flexibility					
Days worked per week	4.68	4,550	4.73	2,781	0.04
Hours worked per week	33.46	4,551	35.14	2,781	0.00
Work on Wednesday	60.03	4,551	59.94	2,781	0.94
Part-time	44.59	4,609	37.54	2,800	0.00
Managerial occupations					
Days worked per week	4.57	5,098	4.74	3,161	0.00
Hours worked per week	37.24	5,100	39.25	3,163	0.00
Work on Wednesday	54.72	1,387	60.33	978	0.01
Part-time	33.89	5,114	21.25	3,167	0.00
Other occupations					
Days worked per week	4.65	29,656	4.66	20,075	0.13
Hours worked per week	33.47	29,953	34.40	20,156	0.00
Work on Wednesday	56.56	7,928	57.12	5,762	0.52
Part-time	40.26	30,243	34.99	20,281	0.00

Source: French Labor Force Survey 2009-2014.

Note: this table reports pre-reform statistics regarding several measures of labor supply for mothers whose youngest child is between six and eleven. For each category considered, being this education level, cost of flexibility at work or type of occupation held, we consider separately women whose educational level is strictly higher than their partner's one, labelled "High M Low M", and women whose educational level is at most equal to their partner's one, called "Low W High M". In the last column of the table, for each outcome considered, we report the p-value of the T-tests for the difference in means between the two types of household.

Table 2.4: Descriptive statistics by type of household - Youngest child between 12-14

	Low W High M	N	High W Low M	N	P-value T-test
College degree or more					
Days worked per week	4.60	4,198	4.69	4,608	0.00
Hours worked per week	36.91	4,202	36.88	4,612	0.92
Work on Wednesday	62.20	1,270	64.59	1,511	0.19
Part-time	33.47	4,213	27.13	4,641	0.00
No college degree					
Days worked per week	4.78	12,308	4.80	5,352	0.23
Hours worked per week	33.65	12,404	34.53	5,386	0.00
Work on Wednesday	64.72	3,336	67.90	1,411	0.04
Part-time	40.04	12,509	35.79	5,423	0.00
High cost of flexibility					
Days worked per week	4.68	1,653	4.75	1,329	0.04
Hours worked per week	35.95	1,653	36.45	1,329	0.14
Work on Wednesday	62.43	1,653	63.43	1,280	0.57
Part-time	33.23	1,658	25.39	1,335	0.00
Low cost of flexibility					
Days worked per week	4.78	2,438	4.86	1,268	0.02
Hours worked per week	33.94	2,438	35.49	1,268	0.00
Work on Wednesday	65.42	2,438	68.77	1,268	0.04
Part-time	40.80	2,461	37.73	1,280	0.07
Managerial occupations					
Days worked per week	4.73	2,185	4.78	1,345	0.07
Hours worked per week	39.41	2,186	39.58	1,345	0.64
Work on Wednesday	65.92	584	66.08	454	0.96
Part-time	26.99	2,190	20.46	1,345	0.07
Other occupations					
Days worked per week	4.74	14,327	4.74	8,616	0.53
Hours worked per week	33.73	14,426	35.00	8,654	0.00
Work on Wednesday	63.76	4,023	66.21	2,468	0.05
Part-time	40.11	14,539	33.57	8,717	0.00

Source: French Labor Force Survey 2009-2014.

Note: this table reports pre-reform statistics regarding several measures of labor supply for mothers whose youngest child is between twelve and fourteen. For each category considered, being this education level, cost of flexibility at work or type of occupation held, we consider separately women whose educational level is strictly higher than their partner's one, labelled "High M Low M", and women whose educational level is at most equal to their partner's one, called "Low W High M". In the last column of the table, for each outcome considered, we report the p-value of the T-tests for the difference in means between the two types of household.

Table 2.5: Labor supply response to the reform - Youngest child between 6 and 11

	(1) Labor force participation	(2) Part-time	(3) Hours worked per week	(4) Days worked per week
Treatment	0.003 (0.006)	-0.015 (0.010)	0.180 (0.228)	0.047** (0.019)
Ygst child btw 6-11	-0.015*** (0.004)	0.035*** (0.007)	-0.794*** (0.156)	-0.093*** (0.012)
Observations	168979	132809	132809	132809
R^2	0.165	0.153	0.161	0.145
F	34.45	19.86	23.03	10.13
Pre-treatment means	78.27	37.48	34.03	4.61

Source: French Labor Force Survey 2009-2015.

Note: this table shows the coefficients capturing the effect of the reform, obtained from the estimation of regression 1. The different columns refer to the outcome considered, being respectively labor force participation, column 1, the decision to work part-time, column 2, number of hours worked per week, column 3, and number of days worked per week, column 4. All regressions include age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household. The estimation sample comprises all mothers whose youngest child is between six and fourteen years old. In column 2, 3, 4, and 5 we only consider mothers who are employed at the time of the interview.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2.6: Labor supply response to the reform - Days of the week - Youngest child between 6 and 11

	(1) Monday	(2) Tuesday	(3) Wednesday	(4) Thursday	(5) Friday	(6) Saturday	(7) Sunday
Treatment	-0.005 (0.009)	-0.001 (0.008)	0.027*** (0.009)	-0.003 (0.008)	-0.001 (0.008)	-0.017** (0.008)	-0.003 (0.005)
Ygst child btw 6-11	-0.000 (0.008)	-0.007 (0.007)	-0.067*** (0.000)	-0.008 (0.007)	-0.006 (0.007)	-0.004 (0.008)	-0.002 (0.005)
Observations	56456	56456	56456	56456	56456	56456	56456
R^2	0.088	0.084	0.102	0.090	0.088	0.133	0.081
F	22.03	29.71	20.63	23.74	23.29	16.65	4.83
Pre-treatment means	69.97	76.91	57.29	74.06	74.18	20.66	7.61

Source: French Labor Force Survey 2013-2015.

Note: this table shows the coefficients capturing the effect of the reform, obtained from the estimation of regression 1. The different columns refer to the outcome considered, corresponding to probability of working each day of the week. All regressions include age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household. The estimation sample comprises all mothers whose youngest child is between six and fourteen years old who are employed at the time of the interview. As the French Labor Force Survey starts including questions on the allocation of working time along the week only in 2013, the sample considered here only comprises women interviewed between 2013 and 2015.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2.7: Days worked per week - Placebo reforms

	Baseline	Placebo Jan 2013	Placebo Jan 2011	Placebo Mars 2010
Treatment	0.047** (0.019)			
Placebo reform		-0.016 (0.025)	0.026 (0.021)	0.033 (0.028)
Observations	132809	90839	61028	35744
R^2	0.145	0.1862	0.2317	0.2707
F	10.13	10.45	10.20	8.59
Sample	2009-2015	2009-Sept 2013	2009-2011	2009-2010

Source: French Labor Force Survey 2009-2015.

Note: this table shows the impact of a series of placebo reforms on the number of days worked per week, for mothers whose youngest child is between six and eleven. The first column reports the impact of the 2013 reform. In the second column, we exclude from the sample the post-treatment period and we pretend that the reform was implemented at the beginning of 2013. In the third column, we consider the period spanning between 2009 and 2011 and look at the effect of a placebo reform introduced in January 2011. Finally, in the last column, we restrict the sample to comprise only women interviewed between 2009 and 2010 and we pretend that the reform took place in January 2011.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2.8: **Decision to work on Wednesday - Changing the definition of the treated groups**

	6-14	7-14	8-14	9-14	10-14
Treated group 6-11	0.026*** (0.009)				
Treated group 7-11		0.025*** (0.010)			
Treated group 8-11			0.023** (0.010)		
Treated group 9-11				0.020* (0.010)	
Treated group 10-11					0.026* (0.011)
Observations	56456	49819	43452	37130	30870
R^2	0.105	0.114	0.125	0.138	0.153
F	26.25	22.87	19.58	17.37	13.56

Source: French Labor Force Survey 2009-2015.

Note: this table shows the coefficients capturing the effect of the reform on the probability of working on Wednesday. They are obtained from the estimation of regression 1. The first column reports the coefficient of the main specification, where the estimation sample comprises all mothers whose youngest child is between 6 and 14 years old. From column 2 onward, we progressively restrict the control group. All regressions include age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household.

*** p<0.01, ** p<0.05, * p<0.1.

Table 2.9: **Decision to work on Wednesday - Changing the definition of the control groups**

	6-13	6-14	6-15	6-16	6-17
Treatment vs 12-13	0.020* (0.011)				
Treatment vs 12-14		0.027*** (0.009)			
Treatment vs 12-15			0.029*** (0.009)		
Treatment vs 12-16				0.027*** (0.009)	
Treatment vs 12-17					0.031*** (0.009)
Observations	50308	56456	62264	67971	73236
R^2	0.121	0.114	0.110	0.104	0.101
F	18.90	21.58	25.47	27.96	30.92

Source: French Labor Force Survey 2009-2015.

Note: this table shows the coefficients capturing the effect of the reform on the decision to work on Wednesday. They are obtained from the estimation of regression 1. The first column reports the coefficient of the main specification, where the estimation sample comprises all mothers whose youngest child is between six and fourteen years old. From column 2 onward, we progressively enlarge the control group. All regressions include age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2.10: Days worked per week - Changing the definition of the treated groups

	6-14	7-14	8-14	9-14	10-14
Treated group 6-11	0.047** (0.019)				
Treated group 7-11		0.056*** (0.020)			
Treated group 8-11			0.056*** (0.021)		
Treated group 9-11				0.054** (0.023)	
Treated group 10-11					0.041 (0.027)
Observations	132809	117093	101743	86879	72194
R^2	0.145	0.154	0.168	0.185	0.205
F	10.13	9.372	7.887	6.244	4.938

Source: French Labor Force Survey 2009-2015.

Note: this table shows the coefficients capturing the effect of the reform on the number of days worked per week. They are obtained from the estimation of regression 1. The first column reports the coefficient of the main specification, where the estimation sample comprises all mothers whose youngest child is between 6 and 14 years old. From column 2 onward, we progressively restrict the treatment group. All regressions include age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2.11: Days worked per week - Changing the definition of the control groups

	6-13	6-14	6-15	6-16	6-17
Treatment vs 12-13	0.041** (0.0223)				
Treatment vs 12-14		0.047** (0.019)			
Treatment vs 12-15			0.055*** (0.0197)		
Treatment vs 12-16				0.054*** (0.0192)	
Treatment vs 12-17					0.057*** (0.0189)
Observations	118646	132809	146232	159120	168089
R^2	0.152	0.145	0.137	0.129	0.125
F	8.800	10.13	10.91	11.97	12.37

Source: French Labor Force Survey 2009-2015.

Note: this table shows the coefficients capturing the effect of the reform on the number of days worked per week. They are obtained from the estimation of regression 1. The first column reports the coefficient of the main specification, where the estimation sample comprises all mothers whose youngest child is between six and fourteen years old. From column 2 onward, we progressively enlarge the control group. All regressions include age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household.

*** p<0.01, ** p<0.05, * p<0.1.

Table 2.12: **Impact of the reform by group of municipalities**

	Days worked per week			Working on Wednesday		
	(1)	(2)	(3)	(4)	(5)	(6)
	All municipalities	2013 municipalities	2014 municipalities	All municipalities	2013 municipalities	2014 municipalities
Treatment	0.047** (0.021)	0.073* (0.038)	0.058** (0.026)	0.027*** (0.004)	0.043* (0.022)	0.035*** (0.012)
Observations	132809	29523	103286	56456	12322	44134
R^2	0.145	0.112	0.154	0.102	0.061	0.108
F	10.13	3.067	10.19	20.63	7.06	20.97

Source: French Labor Force Survey 2009-2015.

Note: this table shows the impact of the reform on the number of days worked per week and on the decision to work on Wednesday, for mothers whose youngest child is between six and eleven. Columns (1) and (4) report the baseline results for all municipalities. Columns (2) and (5) display the impact of the reform on mothers living in municipalities that implement it in Septembre 2013. Columns (3) and (6) show the effect of this intervention on mothers living in municipalities that postponed its introduction to September 2014.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2.13: Labor supply response to the reform by subgroup

	Days worked per week	Working on Wednesday	Hours worked per week	Part-time
Panel A. Cost of flexibility				
Treatment*(Low cost of flexibility)	0.029 (0.028)	0.020 (0.012)	0.017 (0.341)	-0.020 (0.014)
Treatment*(High cost of flexibility)	0.065** (0.027)	0.040*** (0.012)	0.220 (0.322)	0.008 (0.014)
Pre-treatment mean	4.55	51.90	35.11	33.26
Observations	115,305	49,107	115,305	115,305
Panel B. Occupations				
Treatment*(Non managerial occupations)	0.037* (0.020)	0.025** (0.009)	0.104 (0.241)	-0.008 (0.011)
Treatment*(Managerial occupations)	0.107** (0.037)	0.035* (0.019)	0.779 (0.484)	-0.051*** (0.020)
Pre-treatment mean	4.59	56.07	38.01	29.02
Observations	132,809	56,456	132,809	132,809
Panel C. Tenure				
Treatment*(Tenure<= 5years)	0.026 (0.027)	0.010 (0.013)	-0.461 (0.326)	0.011 (0.014)
Treatment*(Tenure> 5years)	0.058*** (0.021)	0.035*** (0.010)	0.456 (0.240)	-0.026** (0.011)
Pre-treatment mean	4.59	52.70	34.81	35.74
Observations	132,809	56,456	132,809	132,809
Panel D. Educational level				
Treatment*(No college degree)	0.023 (0.023)	0.019** (0.011)	-0.141 (0.273)	-0.006 (0.012)
Treatment*(College degree)	0.066*** (0.025)	0.035*** (0.012)	0.515* (0.303)	-0.023* (0.013)
Pre-treatment mean	4.50	52.56	35.30	34.88
Observations	132,809	56,456	132,809	132,809

Source: French Labor Force Survey 2009-2015.

Note: the table reports the impact of the reform on labor supply decisions of different subgroups. To conduct this analysis, we choose to estimate a regression on the entire sample in which all regressors are interacted with the subgroup considered, except for municipality fixed effects. Otherwise, all regressions include the standard covariates, namely age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household. For each subgroup, we present the coefficient of the treatment and the coefficient of the treatment interacted with the subgroup considered. Finally, we provide the pre-treatment mean of each outcome for the second subgroup considered in each panel. The analysis by cost of flexibility can only be conducted from 2013 onwards.

*** p<0.01, ** p<0.05, * p<0.1.

Table 2.14: Labor supply response to the reform by subgroup

	Days worked per week	Working on Wednesday	Hours worked per week	Part-time
Panel A. High Cost of flexibility				
Treatment*(Low W High M)	-0.010 (0.050)	0.006 (0.021)	-0.619 (0.561)	0.053** (0.025)
Treatment*(High W Low M)	0.083 (0.051)	0.017 (0.023)	0.671 (0.502)	-0.024 (0.028)
Pre-treatment mean	4.55	51.90	35.11	33.26
Observations	19,502	19,502	19,502	19,502
Panel B. Low Cost of flexibility				
Treatment*(Low W High M)	0.042 (0.046)	0.030 (0.019)	0.825 (0.575)	-0.053** (0.023)
Treatment*(High W Low M)	0.065 (0.057)	0.030 (0.025)	-0.269 (0.800)	0.026 (0.034)
Pre-treatment mean	4.59	56.07	38.01	29.02
Observations	20,821	20,821	20,821	20,821
Panel C. College degree or more				
Treatment*(Low W High M)	-0.004 (0.050)	0.009 (0.026)	0.144 (0.609)	-0.007 (0.025)
Treatment*(High W Low M)	0.054 (0.044)	0.011 (0.021)	0.296 (0.482)	-0.022 (0.024)
Pre-treatment mean	4.59	52.70	34.81	35.74
Observations	42833	20157	42833	42833
Panel D. No college degree				
Treatment*(Low W High M)	0.005 (0.036)	0.031* (0.018)	-0.281 (0.441)	0.016 (0.019)
Treatment*(High W Low M)	0.044 (0.051)	0.026 (0.026)	0.471 (0.602)	-0.036 (0.027)
Pre-treatment mean	4.50	52.56	35.30	34.88
Observations	63434	25255	63434	63434

Source: French Labor Force Survey 2009-2015.

Note: the table reports the impact of the reform on labor supply decisions of different subgroups, depending on the relative level of education of the couple in the household. In panel A, the estimation sample is restricted to mothers with a high cost of flexibility. Panel B only considers mothers with a low cost of flexibility. In panel C the estimation sample only comprises mothers with at least a college degree, and in panel D it is restricted to those without college degree. To conduct this analysis, we choose to estimate a regression on each of these sub-samples, and to interact all regressors, except for municipality fixed effects, with a dummy called "High W Low M" and equal to one if mother's level of education is strictly higher than her partner's one. Otherwise, all regressions include the dummy "High W Low M" by itself, and the standard covariates, namely age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household. In each panel, we present the coefficient of the treatment for the baseline category and the coefficient of the treatment interacted with the dummy "High W Low M".

*** p<0.01, ** p<0.05, * p<0.1.

Table 2.15: Fathers' labor supply response to the reform - Youngest child between 6 and 11

	(1) Labor force participation	(2) Part-time	(3) Hours worked per week per week	(4) Days worked per week	(5) Work on Wednesday
Treatment	-0.008 (0.005)	-0.001 (0.004)	-0.207 (0.255)	-0.013 (0.015)	-0.001 (0.010)
Ygst child btw 6-11	-0.0016 (0.004)	0.0007*** (0.002)	-0.516*** (0.177)	-0.015 (0.010)	-0.013* (0.015)
Observations	134000	12171	12171	12171	51810
R^2	0.115	0.132	0.194	0.163	0.099
F	6.772	3.625	14.17	2.857	21.06
Pre-treatment means	95.81	4.12	42.07	5.05	77.66

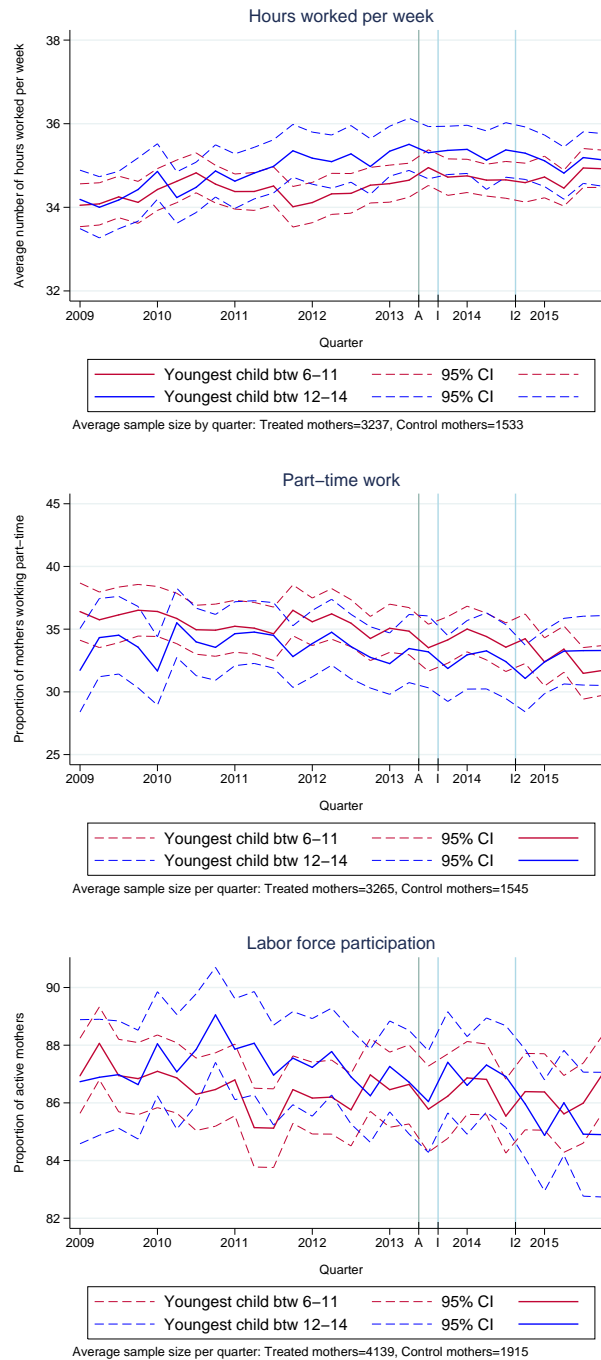
Source: French Labor Force Survey 2009-2015.

Note: this table shows the coefficients capturing the effect of the reform, obtained from the estimation of regression 1 on fathers. The different columns refer to the outcome considered, being, respectively, labor force participation, column 1, the decision to work part-time, column 2, number of hours worked per week, column 3, number of days worked per week, column 4 and decision to work on Wednesday, column 5. All regressions include age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household. The estimation sample comprises all fathers whose youngest child is between six and fourteen years old. In column 2, 3, 4, and 5 we consider only fathers who are employed at the time of the interview.

*** p<0.01, ** p<0.05, * p<0.1.

8 Appendix

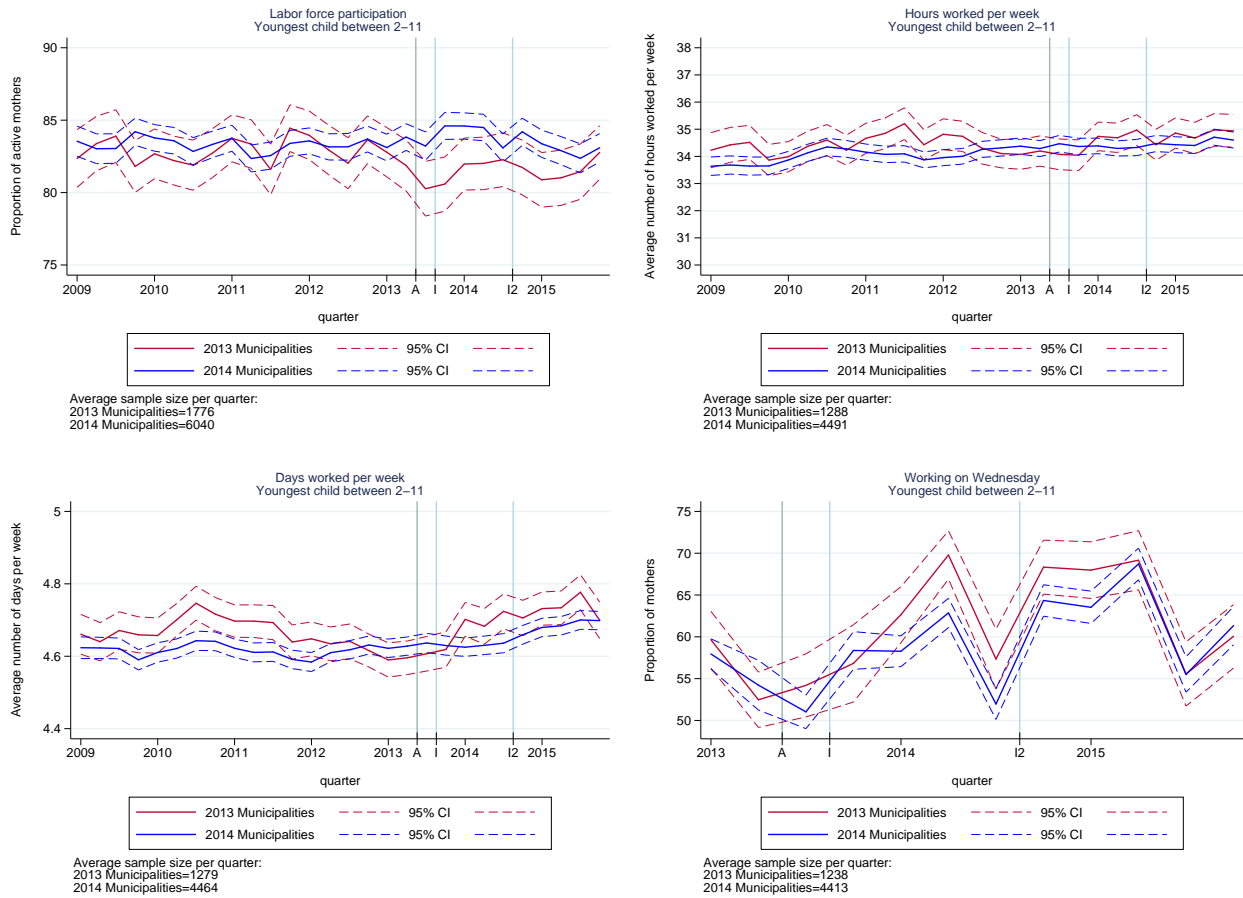
Figure 7: Trends in mothers' labor supply measures by age of the youngest child



Source: French Labor Force Survey 2009-2015.

Note: the graphs show the evolution of different measures of labor supply over the period 2009-2015. The sample is restricted to mothers whose youngest child is between the age of six and fourteen. We represent in red treated mothers, that is those whose youngest child is between six and eleven years old. Mothers whose youngest child is in middle school age, or control mothers, are represented in blue. The vertical bar labelled "A" corresponds to April 2013, when municipalities announce in which year they will introduce the reform. The bar called "I" corresponds to September 2013, when 20 percent of municipalities implement the reform. The bar named "I2" corresponds to September 2014, when the rest of municipalities implement the reform.

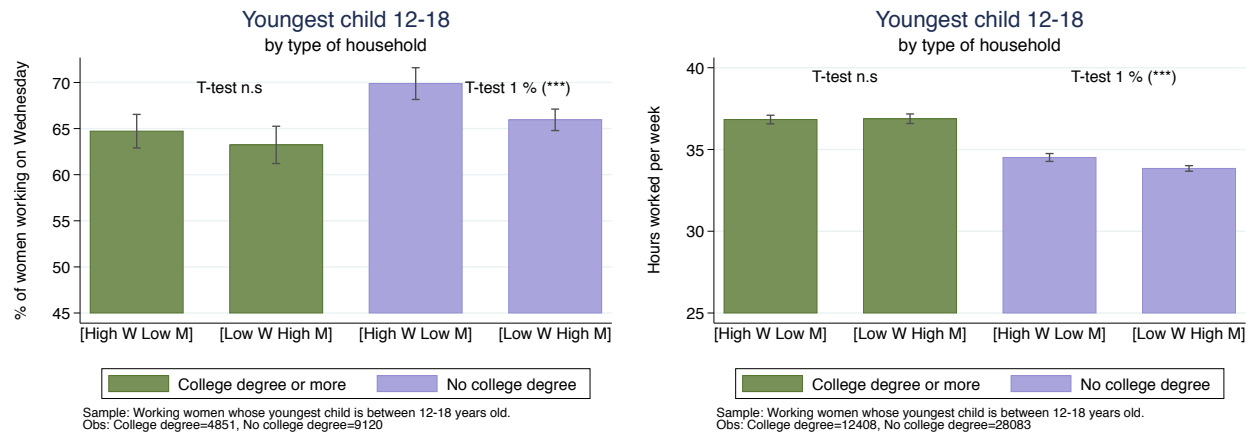
Figure 8: Trends in mothers' labor supply measures across different municipalities



Source: French Labor Force Survey 2009-2015.

Note: the graphs show the evolution of three labor supply measures between 2009 and 2015, for mothers whose youngest child is between two and eleven years old. We compare mothers living in municipalities that introduce the reform in 2013, in red, to those living in municipalities that postpone the implementation of the reform to 2014, in blue. The labor supply measures we consider are labor force participation, the number of hours worked per week, the number of days worked per week and the decision to work on Wednesday. The vertical bar labelled "A" corresponds to April 2013, when municipalities announce in which year they will introduce the reform. The bar called "I" corresponds to September 2013, when 20 percent of municipalities implement the reform. The bar named "I2" corresponds to September 2014, when the rest of municipalities implement the reform.

Figure 9: Pre-reform period - Women's employment decisions by type of household - Youngest child between 12-18



Source: French Labor force Survey 2009-2014.

Note: the figures report bar graphs representing the percentage of women working on Wednesday and the average number of hours worked per week among mothers whose youngest child is between twelve and eighteen. In each graph, we consider separately women with at least a college degree from those without college degree. Within each of these two groups, we compare women whose educational level is strictly higher than their partner's one, labelled "High M Low M", with women whose educational level is at most equal to their partner's one, called "Low W High M". All figures refer to the pre-reform period and are further displayed in table 2.16. On each bar we report 95 percent-confidence intervals. Finally, for each educational level, we indicate the results of T-tests for the difference in means between the two types of household.

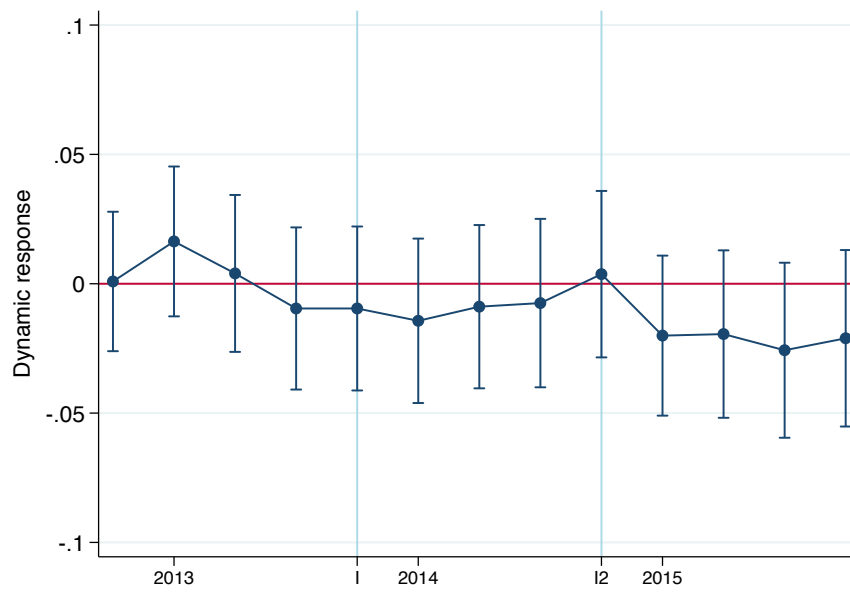
Figure 10: **Dynamic response to the reform**



Source: French Labor Force Survey 2009-2015.

Note: in this graph we report the dynamic response to the reform concerning the hours worked per week. The coefficients are obtained from the estimation of regression 2 on the years 2013-2015. We also report 95-percent confidence intervals. The estimation sample includes all mothers whose youngest child is between six and fourteen. The implementation dates I and I2 correspond to, respectively, the last quarter of 2013 and the last quarter of 2014.

Figure 11: **Dynamic response to the reform**



Source: French Labor Force Survey 2009-2015.

Note: in this graph we report the dynamic response to the reform concerning the decision to work part-time. The coefficients are obtained from the estimation of regression 2 on the years 2013-2015. We also report 95-percent confidence intervals. The estimation sample includes all mothers whose youngest child is between six and fourteen. The implementation dates I and I2 correspond to, respectively, the last quarter of 2013 and the last quarter of 2014.

Table 2.16: **Descriptive statistics by type of household - Youngest child between 12-18**

	Low W High M	N	High W Low M	N	P-value T-test
College degree or more					
Days worked per week	4.58	5,915	4.68	6,475	0.00
Hours worked per week	36.88	5,920	36.83	6,488	0.83
Work on Wednesday	63.23	2,192	64.72	2,659	0.28
Part-time	32.77	5,933	26.21	6,516	0.00
No college degree					
Days worked per week	4.79	19,511	4.81	8,364	0.03
Hours worked per week	33.84	19,666	34.51	8,417	0.00
Work on Wednesday	65.95	6,388	69.88	2,732	0.00
Part-time	38.31	19,840	33.97	8,470	0.00
High cost of flexibility					
Days worked per week	4.69	3,028	4.78	2,439	0.00
Hours worked per week	36.30	3,028	36.91	2,439	0.02
Work on Wednesday	64.89	3,028	64.66	2,439	0.86
Part-time	32.74	3,042	23.60	2,445	0.00
Low cost of flexibility					
Days worked per week	4.76	4,510	4.89	2,337	0.00
Hours worked per week	33.64	4,511	35.70	2,337	0.00
Work on Wednesday	66.13	4,511	70.52	2,337	0.00
Part-time	40.17	4,556	34.44	2,355	0.00
Managerial occupations					
Days worked per week	4.72	3,685	4.78	2,387	0.00
Hours worked per week	39.44	3,687	39.71	2,388	0.34
Work on Wednesday	67.22	1,092	67.55	795	0.88
Part-time	25.70	3,693	19.14	2,393	0.00
Other occupations					
Days worked per week	4.74	26,014	4.76	15,192	0.02
Hours worked per week	33.86	26,172	34.95	15,257	0.00
Work on Wednesday	64.98	7,490	67.30	4,596	0.01
Part-time	38.56	26,388	32.34	15,349	0.00

Source: French Labor Force Survey 2009-2014.

Note: this table reports pre-reform statistics regarding several measures of labor supply for mothers whose youngest child is between twelve and eighteen. For each category considered, being this education level, cost of flexibility at work or type of occupation held, we consider separately women whose educational level is strictly higher than their partner's one, labelled "High M Low M", and women whose educational level is at most equal to their partner's one, called "Low W High M". In the last column of the table, for each outcome considered, we report the p-value of the T-tests for the difference in means between the two types of household.

Table 2.17: Labor supply response to the reform - Youngest child between 2 and 11

	(1) Labor force participation	(2) Part-time	(3) Hours worked per week	(4) Days worked per week	(5) Working on Wednesday
Treatment	0.006 (0.005)	-0.000 (0.008)	-0.066 (0.186)	0.020 (0.015)	0.0259*** (0.008)
Ygst child btw 2-11	-0.015*** (0.004)	0.033*** (0.006)	-0.776*** (0.145)	-0.095*** (0.011)	-0.0666*** (0.008)
Observations	308443	221298	221298	221298	93698
R^2	0.205	0.113	0.122	0.108	0.082
F	129.7	35.17	36.39	24.05	51.46

Source: French Labor Force Survey 2009-2015.

Note: this table shows the coefficients capturing the effect of the reform, obtained from the estimation of regression

1. The different columns refer to the outcome considered, being, respectively, labor force participation, column 1, the decision to work part-time, column 2, number of hours per week, column 3, number of days worked per week, column 4, and decision to work on Wednesday, column 5. All regressions include age and age square, marital status, number of children, a dummy for immigration status, municipality and wave fixed effects, dummies for the level of education, and a dummy for the presence of other members in the household. The estimation sample comprises all mothers whose youngest child is between two and fourteen years old. In column 2, 3, 4, and 5 we only consider mothers who are employed at the time of the interview.

*** p<0.01, ** p<0.05, * p<0.1.