Do women want to work more or more regularly? Evidence from a natural experiment*

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Abstract

This paper provides causal evidence that women's quest for temporal flexibility is especially costly in high-skilled occupations. Since 1972, French children had no school on Wednesday. In 2013, a reform reallocated some classes to Wednesday morning. Exploiting variation in the implementation of this reform over time and across the age of the youngest child, we show that, once institutional constraints are relaxed, mothers are more likely to work full-time and on Wednesday. By signaling their availability to work long and regular hours, high-skilled mothers also experience an increase in hourly wages corresponding to 30% of the pre-reform gap with the control group.

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 labor 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 women value temporal 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 explain why the gender wage gap is larger precisely in those occupations where the continuous presence at work and the availability to work long hours is particularly rewarded.

In this paper we take advantage of a recent reform of the school schedule in France to show that women ask for flexibility only when their children demand it. Next, we provide evidence that high-skilled mothers do get rewarded for adopting a long and regular working schedule.

Since 2008, French 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.

We use the reorganization of the teaching time and, in particular, the introduction of

classes on Wednesday morning, to study how mothers' demand for flexibility evolves when institutional constraints on a regular working schedule are relaxed. Next, we exploit the introduction of the extracurricular activities to analyze women's response to this implicit wage subsidy. Finally, we assess whether mothers get rewarded when they increase their availability to work long and regular hours.

To conduct this analysis we choose to focus on mothers whose youngest child is of primary school age and compare them, with a difference-in-difference strategy, to mothers whose youngest child is twelve to fourteen years old. To carry out this study we use the quarterly data of the French Labor Force Survey from 2009 to 2016.

Our analysis provides the following findings. First, treated mothers take advantage of the 2013 reform to adopt a regular working schedule. In the pre-reform period more than 40 percent of women with children in primary school age stayed at home on Wednesday, compared to only 35 percent of those with older children.[1] With the introduction of the reform, their probability of working on Wednesday raises by three percentage points with respect to mothers in the control group. In other words, the reform allows treated mothers to close 40 percent of the pre-existing gap with mothers of older children, with their response getting larger over time. This result speaks to the studies on gender differences in preferences for flexibility, by showing that this taste for flexibility is tightly linked to the presence of children and to the traditional division of roles in the household.[2] Moreover, it is worth noticing that the increased presence at work on Wednesday is in part explained by a substitution of Wednesday for Saturday work. This second piece of evidence adds to the experimental evidence provided by Mas and Pallais (2016) on workers' willingness to pay to avoid working during the weekend, and more in general to the growing evidence on the importance of leisure complementarities in explaining individuals' labor supply choices (Georges-Kot, Goux, and Maurin 2017, Goux, Maurin, and Petrongolo 2014).

[1] Notice that the probability of working on any other day of the week does not differ between treated and control mothers in the pre-reform period.

[2] In this respect, this paper is also closely related to the recent study by Blundell, Pistaferri, and Saporta-Eksten (2017) highlithing the importance of children in shaping couples' preferences over consumption and leisure.

Secondly, the reorganization of the teaching time, coupled with the introduction of three hours of extracurricular activities, allows treated mothers, and especially the highly educated, to progessively shift from part-time to full-time contracts and catch up with the control group in terms of hours worked per week. This result stands in contrast with the evidence suggesting that women's own wage elasticity decreases as female labor force participation raises (Cascio 2009, Fitzpatrick 2010, Gelbach 2002, Goldin 2006, Havnes and Mogstad 2011).

Even more importantly perhaps, we find that working longer and continuous hours is especially rewarding for high-skilled mothers. If the increase in weekly hours triggers a rise of net monthly earnings for all mothers, highly-educated women also see their hourly wage increasing by up to 2 percent, with respect to the control group.[3] Moreover, point estimates, although not significant, suggest that this same result holds for mothers working in managerial and professional occupations. This finding provides causal evidence for Goldin's claim that women's quest for flexibility can entail wage penalizations in high-skilled occupations, where workers have no close substitutes and a regular interaction with clients and colleagues is particularly valuable to the firm. Notice that, with the notable exception of Cortes and Pan (2016) who study context of the United States, this is the only paper providing evidence that flexibility is especially costly in high-skilled occupations.

Finally, to complete our analysis, we also study fathers' labor supply decisions in this context. The LFS data confirm that in the pre-reform period fathers' probability of working on Wednesday did not differ from that of the other days of the week. Accordingly, we find no evidence that the 2013 reform affect their labor supply decisions, which is in line with 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).

Overall, these findings have a clear policy implication. While both the structure of jobs and pays and traditional gender norms evolve slowly, governments should keep on reducing institutional constraints to women's regular work, even in countries with high rates of female

[3] Although the results are not statistically different between high and low-skilled mothers, the point estimates are insignificant and practically zero for the latter.

labor force participation.

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 contains three subsections. Section 3.1 describes the data used to conduct this analysis. Section 3.2 presents a descriptive analysis of the pre-reform period. Section 3.3 focuses on the impact of the reform and discusses the identification strategy, the main results and robustness checks. Section 4 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.

Importantly, since the introduction of compulsory primary education in 1882 (*Loi Ferry*) French children had a full day off in the middle of the week. 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. And this is precisely the rationale for the 2013 reform. In detail, this intervention shortens the school day by an average of 45 minutes and, to maintain invariant the total amount of weekly hours, it adds half a day, mainly on Wednesday morning, and exceptionally on Saturday. Moreover, to compensate for the reduction in the daily instruction time, the government urges municipalities to provide free extra-curriculum activities for children, for a total of three weekly hours. Importantly, precisely because of this organizational burden, the government also gives municipalities the 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.[4] 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.[5]

3 Empirical analysis

3.1 Data description

To study this setting and the consequences of the 2013 reform, we make use of two main databases. First, we use the 2009-2016 waves of the French Labor Force Survey (*Enquête Emploi en Continu*). This data set collects information on work-related statistics with quarterly

[4] Each municipality can also chose how to allocate the extracurricular activities, whether to concentrate them on two days a week or spread them along the week. Unfortunately, disaggregated data by municipality on the allocation of extracurricular activities are not available.

[5] It is also worth mentioning that private schools 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, only fifteen percent of them, comprising 13.5 percent of French pupils attending a private school, adopt the new schedule. Although in our data we cannot tell whether a family sends their child to a public or a private school, we check that the aggregate proportions of students enrolled in public and private schools every year remains 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. If anything, this 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.)

interviews to a representative sample of the French population. From the Labor Force Survey we extract data on respondents' age, level of education, marital status, 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 respondents have, and their age.

Secondly, 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.

In the main analysis, we focus on the sample of mothers aged 18 to 55 whose youngest child is between 6 and 14, for a total of 193,614 observations. In a series of robustness checks, we also include mothers whose youngest child is 2 years old up to those whose youngest child is 17. To study fathers' labor supply decisions, we consider men aged 18 to 55, whose youngest child is between 6 and 14, for a total of 154,036 observations.

We construct the main outcomes of interest as follows. To measure labor force participation, we use a dummy equal to one if the woman belongs to the active population; we measure part-time work using a dummy equal to one if the woman works part-time; we use a continuous variable indicating the number of hours worked on average per week, and one measuring the number of days worked per week; next, we construct a series of dummies equal to one if the woman works on each specific day of the week. Finally, to measure earnings, we consider net monthly wages, and net hourly wages. To construct this last variable, we divide the net monthly wage, which is directly available in the Labor Force Survey, by hours worked per month, computed as four times hours per week.

3.2 Pre-reform period

Table 2.1 describes the characteristics of French mothers aged between 18 and 55 and interviewed in the Labor Force Survey before the introduction of the 2013 reform. We regroup them along the age of their youngest child.

A few preliminary 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.

However, what appears especially striking in this table is the large gap in the proportion of mothers who are working on Wednesday as the youngest child goes from primary to middle school. 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. Besides, such pattern does not emerge at all when looking at the probability of working on another day of the week such as Thursday. These figures are consistent with the evidence provided by the Multinomial Time Use Survey. As shown in figure 2, they are also in line with the results of a survey on childcare arrangements for Wednesday directed to families with children aged 0-6. There, up to 70 percent of respondents declare that parents themselves are taking care of their children when they do not have school on Wednesday.

And what these figures clearly show is that the institutional constraint imposed by children's school schedule appears to bind for a large fraction of women. Or, in other words, that a large proportion of working mothers needs a flexible working schedule in the pre-reform period.

To get more insight on who actually adopts such a schedule, 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.[6]

When we break down the previous figures by mothers' characteristics, we can see that women were coping in different ways with the institutional constraint imposed by children's school schedule, depending on their level of education, their occupation, sector, and employer's characteristics.

In particular, in table 2.2, we can see that, before the reform, despite working significantly more hours per week, highly educated women whose youngest child is in primary school are significantly less likely to work on Wednesday than low educated mothers - with such difference being reduced for mothers whose youngest child is in middle school (table 2.3). These figures are clearly consistent with the hypothesis that high-skilled parents face higher childcare costs. Yet, they also suggest that bargaining power plays a crucial role in the ability of workers to negotiate a flexible working schedule with their employer - which is consistent with the evidence provided by Katz and Krueger (2016) that the recent growth in freelance and contract work largely excludes the low-wage sector.

Besides, it is worth noticing that women occupying managerial positions are more likely to work on Wednesday, and work more hours than the average highly educated mother whose youngest child is in primary school. To us, this suggests that mothers working in this type of occupations, despite having the bargaining power for doing so, might perceive that being absent from work one entire day, in the middle of the week, might be too costly both for the firm, in terms of productivity, and for the woman herself, in terms of career progress.

Finally, it is remarkable to see that, contrary to what suggested by Bertrand, Kamenica,

[6] Concerning mothers with children in kindergarten age instead, table 2.1 clearly shows that their participation rate in 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. For these same reasons, we decide to exclude them as well from the regression analysis studying the impact of the 2013 reform. However, our results do not change substantially when we include them in the treatment group.

and Pan (2015) for the United States, in France couples in which the woman is more educated than her partner seem more likely to specialize according to their comparative advantages. In households in which the youngest child is in primary school, wherever the mother is more likely to be the breadwinner - as her level of education is higher than that of her husband - she is more likely to work on Wednesday than in those couples in which the woman has the same or a lower level of education than her partner. Besides, as shown in figure 3 this seems to be the case only in couples with a highly educated mother. Instead, in couples where the woman has at most a high school degree, mothers' probability of working on Wednesday does not seem to vary with her role in the household.

Overall, this descriptive analysis of the pre-reform period suggests that women ask for flexibility when children demand it. However, it also shows that the possibility of adopting a flexible schedule relates to the interplay of different factors, among which women's bargaining power at work and the career cost of flexibility may play an important role.

3.3 The impact of the 2013 reform

To study how the 2013 reform affects mothers' 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,[7] supports this choice, as the employment decisions of the treatment and 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

[7] This figure shows trends in selective outcomes, notably the probability of working on Wednesday, the number of days worked per week, the probability of working part-time and monthly wages. Figure 6 in the appendix reports the evolution of the other outcomes we study, that is labor force participation and hours worked per week.

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.[8]

On the basis of these choices, we run the following specification on mothers aged 18 to 55, interviewed between 2009 and 2016, 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, the decision to work on each specific day of the week, the logarithm of monthly wages, or the logarithm of hourly wages. 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

[8] 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 – the graphs are available upon request – 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.

having the youngest child in primary school age. 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.

The main results of our analysis are summarized in tables 2.4, 2.5, 2.6 and 2.8

First, the reorganization of the teaching time, coupled with the introduction of three hours of extracurricular activities, leads treated mothers to adopt a longer and more regular working schedule. In particular, column 2 of table 2.4 shows that, following the implementation of the reform, the probability of working part-time decreases by 2 percentage points for treated mothers compared to the control group, or 5 percent with respect to the pre-reform mean. Notice, instead, that the reform does not trigger any response at the extensive margin – table 2.4, column 1 – which should not be surprising given that already 86 percent of treated mothers are active. Besides, the last column of table 2.4 tells us that, following the introduction of the reform, treated mothers also augment the number of days they work per week, by halving the pre-reform gap with the control group on this margin. In table 2.5, we can see that this increase in the number of days worked per week corresponds to a three-percentage-points rise in the probability that treated mothers work on Wednesday, 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.[9] The negative effect of the reform on the probability of working on Saturday, although only marginally significant, suggests that some mothers who,

[9] It has to be noticed that, in the French Labor Force Survey, 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 this outcome is observed.

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. Interestingly, this result points towards a distaste for weekend work, which is line with the recent evidence proposed by Mas and Pallais (2016) on workers' positive willingness to pay to avoid working in the weekend.

The second main insight we get from the analysis of this reform is reported in tables 2.6 and 2.8. As shown in column 2 of table 2.6, by increasing their working hours, treated mothers obtain a mechanical increase in their monthly salary. On average, however, their hourly wage does not change, suggesting that there exists a simple linear relationship between earnings and hours.

Table 2.8 tells us something more, though. First, the rise in hours worked reported in table 2.4 is completely driven by high-skilled mothers. Secondly, this group of mothers, who on average were already working full-time before the reform, do experience a two percent increase in their (logarihtm of) hourly wages - with the coefficient in column 2 of table 2.8 being significant at ten percent but not statistically different from that on low-skilled mothers. This same result holds for mothers who work in managerial and professional occupations, although in this case the point estimates for the log hourly wage are not significant - nor statistically different from the estimates on mothers working in other occupations. Overall, these results provide causal evidence for Goldin's claim that the availability to work long and regular hours appears to be particularly rewarding in certain occupations. Or, in other words, that women's quest for flexibility is particularly costly in those occupations where a worker is less likely to have close substitutes, and where regular contacts with clients and colleagues are especially valuable to the firm.[10]

[10] Importantly, we analyzed other dimensions of heterogeneity as well, but no striking difference emerged along them. In particular, we studied whether the response to the reform differs between mothers working in the private sector and those employed in the public sector, by firm size, number of children, role of mothers in the household. All these results are available upon request. We also considered the possibility that the response differs depending on the distance to the employer's premises, and found that this is not the case. Yet, we have to acknowledge that our measure of distance is not too accurate, as we can only calculate it for respondents residing and working in two different municipalities. For instance, we cannot compute it for mothers residing and working in big cities like Paris, where commuting time might be an important factor affecting the planning of the working schedule. Hence, these results should be considered with a grain of salt.

3.4 Robustness checks

To validate our results we run the following robustness checks. First, we verify that the parallel-assumption hold in our context. In other words, we check that, absent the reform, the evolution of mothers' labor supply would have been the same for the treated and control group. Secondly, we prove that our results are not driven by the mechanical impact of the reform on teachers. Third, we show that our findings are robust to variations in the definition of the control group.

To support the validity of the parallel trend assumption, besides the visual inspection of the pre-treatment trends in labor supply measures, we first analyze the dynamic impact of the reform, and then estimate the impact of a battery of placebo reforms on the main outcomes of interest. Figure 5 provides a graphical analysis of the treatment dynamics. In particular, it shows the coefficients of the leads and lags in the treatment, estimated with this regression:

$$\begin{aligned} Y_{icmt} &= \gamma_m + \delta_t + \pi * X_{icmt} + \alpha * Yst\_Child\_btw\_6\_11_c \\ &+ \sum_k \beta_k * Yst\_Child\_btw\_6\_11 * Leads\_Lags_{ck} + u_{icmt} \end{aligned} \tag{2}$$

where k goes from -2 when the outcome is the decision to work on Wednesday, and from -4 for all the other outcomes. The first thing to be noticed is that the coefficients on the leads are always insignificant. This strongly suggests that we are truly identifying the impact of the reform, rather than picking the effect of other elements that were affecting the treatment and control groups differently already before the introduction of this intervention. In addition, this analysis rules out significant anticipation effects. Besides, notice that these regressions allow us to implicitly perform a 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.[11]

In tables 2.10, and 2.11 we further estimate the impact of several placebo reforms, by pretending that the government intervention took place before its actual introduction, and excluding the "treatment period" from the estimation sample. Reassuringly, none of these placebo reforms appears to have a significant effect on the outcomes of interest, suggesting that in our main regression we are not simply capturing the impact of factors that systematically affect treated and control mothers differently.[12]

Next, in tables 2.6, and 2.7, we show that our results do not change when excluding teachers from the estimation sample. With the exception of the outcome measuring hours worked per week, all the other results remain significant. Notice also that the impact of the reform on log hourly wages becomes marginally significant for the entire sample as well. Finally, in tables 2.12, 2.13 and 2.14 we change the size of the control group to show that our results are not sensitive to the definition we adopted. As we can see, restricting or expanding the control group does not affect either the magnitude or the significance of the reform coefficients.

Overall, this battery of robustness checks seem to strongly support the validity of our identification strategy.

3.5 Impact on fathers

In principle, the institutional constraints imposed by children's school schedule in France might affect the employment decisions of both parents. Yet, as suggested already by the Multinational Time Use Survey data, the Labor Force Survey confirms that, before the reform, fathers were working on Wednesday as much as the other days of the week. In particular, 76 percent of fathers were working on Wednesday, exactly as in the other days of the week, when only 56 percent of mothers were doing so. As a consequence, it should not be surprising to see that the reform does not have any impact on fathers' employment decisions, s shown

[11] These results are available upon request.

[12] Notice that we cannot run these robustness checks on the outcome measuring the decision to work on Wednesday, given that the question concerning labor supply at daily frequency is not available in the Labor Force Survey before 2013.

in table 2.15. These results 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. Therefore, 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.

4 Discussion and conclusion

This paper studies women's employment decisions in a context where 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. This setting allows us to study which factors influence women's demand for flexibility, and test whether this quest for flexibility contributes to explain why the gender wage gap is larger in high-skilled occupations.

To conduct this analysis we use a difference-in-difference strategy and compare mothers whose youngest child is of primary school age to mothers whose youngest child is twelve to fourteen years old.

We find that women's demand for temporal flexibility is strictly linked to the presence of children, institutional constraints and traditional gender norms. Once institutional constraints, mothers tend to adopt a long and regular working schedule. In particular, they are less likely to work part-time and more likely to work on Wednedsay.

Moreover, we show that high-skilled mothers experience an increase in their hourly wages when signalling their availability to work long and regular hours. In other words, women's quest for flexibility appears to be especially costly in high-skilled occupations.

We believe that these results bring important contributions to three stands of the literature on gender and family economics. First, by linking women's demand for flexibility to the presence of children, we complement the recent studies reporting gender differences in preferences for flexibility (Filer 1985, Goldin and Katz 2011, Flabbi and Moro 2012, Wiswall and Zafar

2016, Mas and Pallais 2016). Secondly, by showing that mothers tend to substitute weekend shifts for Wednesday work, when given the possibility to do so, we contribute to the scarce but growing evidence on the importance of leisure complementarities in explaining individuals' labor supply choices (Georges-Kot, Goux, and Maurin 2017, Goux, Maurin, and Petrongolo 2014, Mas and Pallais 2016). Finally, our findings that high-skilled women get rewarded for working longer and continuous hours provide causal evidence that women's quest for flexibility can entail wage penalizations especially in those occupations where workers have no close substitutes and a regular interaction with clients and colleagues is particularly valuable to the firm. Since Goldin (2014) first documented that the gender wage gap tend to be larger in occupations exhibiting high returns to overwork, only Cortes and Pan (2016) established a causal link in this relationship. In particular, in their paper, they show that low-skilled immigration leads to a reduction in a city's gender gap in overwork, as well as in the gender pay gap in occupations that disproportionately reward longer hours of work. We complement this result, by showing that relaxing institutional constraints not only increases mothers' ability to work more and more regularly, but also results in wage increases for mothers working in high-skilled occupations.

To conclude, two considerations are worth mentioning. First, so far we do not find evidence that the reform increases mothers' likelihood to work in high-skilled occupations, or managerial positions, where a regular presence at work might be particularly rewarded. Nor we find that the reform boosts women's fertility, which could happen if women perceived that this reform lowers the career cost of children. Yet, these effects might take some time to materialize. Clearly, we will keep on monitoring these potential long-term effects of the reform. Secondly, 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 certainly important to study all these responses.

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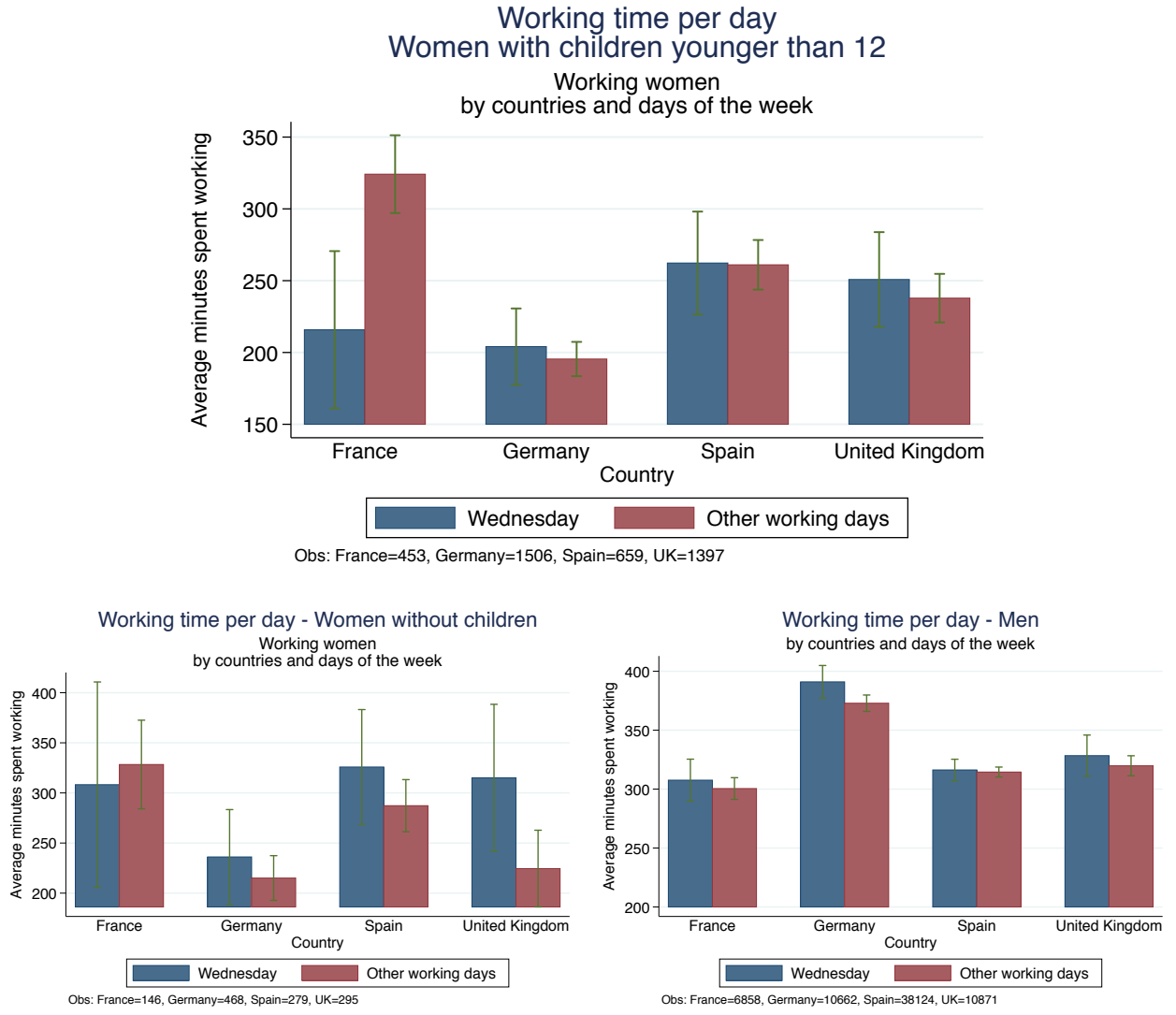
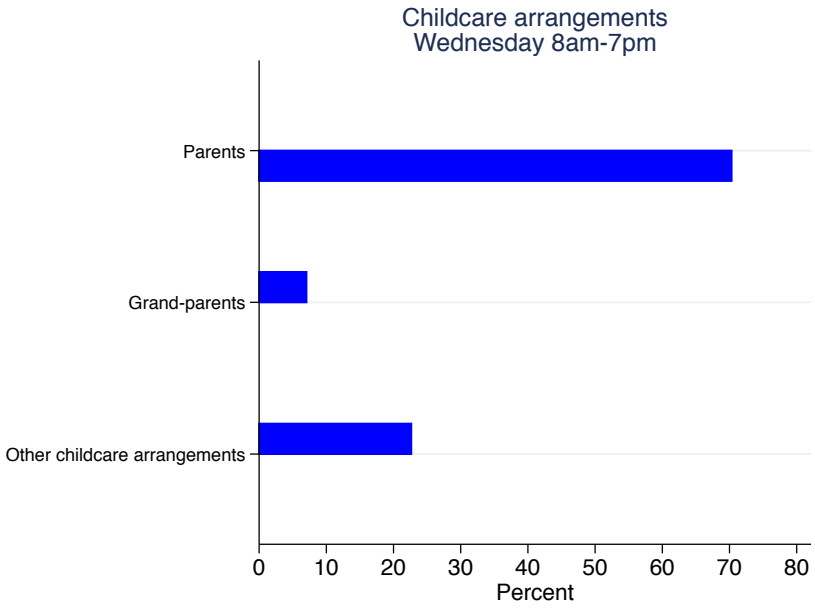
5 Tables and Figures

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.

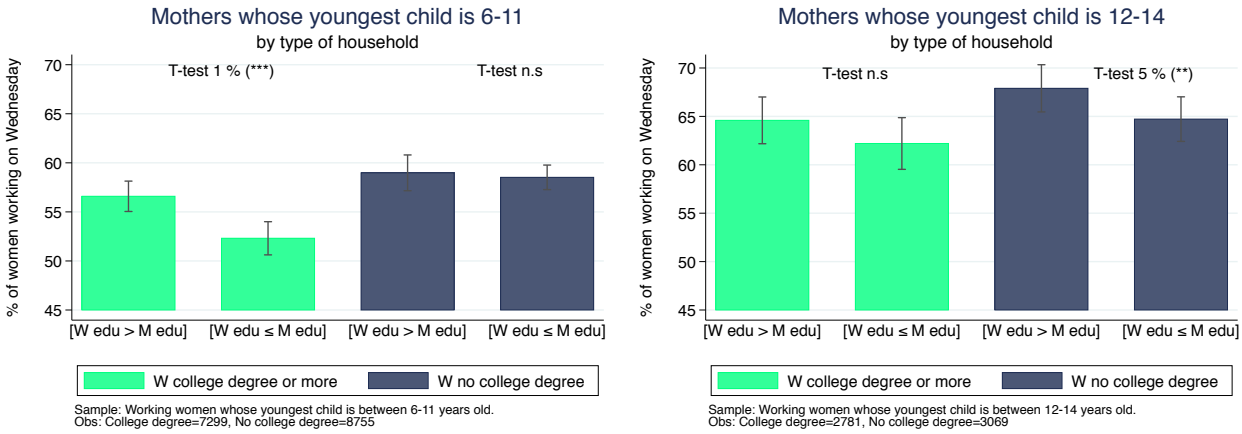
Figure 2: **Childcare arrangements for children between 0 and 6 - 2002/2013**



Source: CNAF survey on childcare arrangements.
Note: the figure shows which childcare arrangements families adopt to take care of their children when they are not in school on Wednesday prior to the introduction of the reform. The sample comprises 8461 parents with children aged 0 to 6 interviewed in 2002, 2007 and 2013 - prior to the introduction of the reform.

Figure 3: **Pre-reform period**

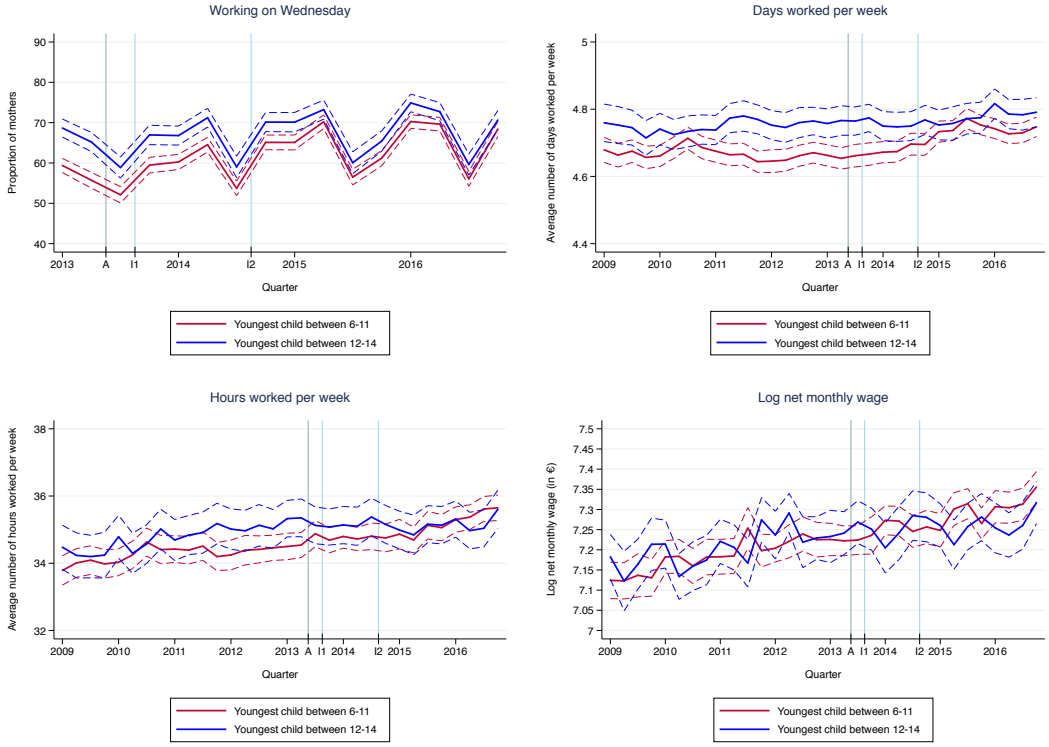
Proportion of women working on Wednesday by type of household



Source: French Labor force Survey 2009-2013.

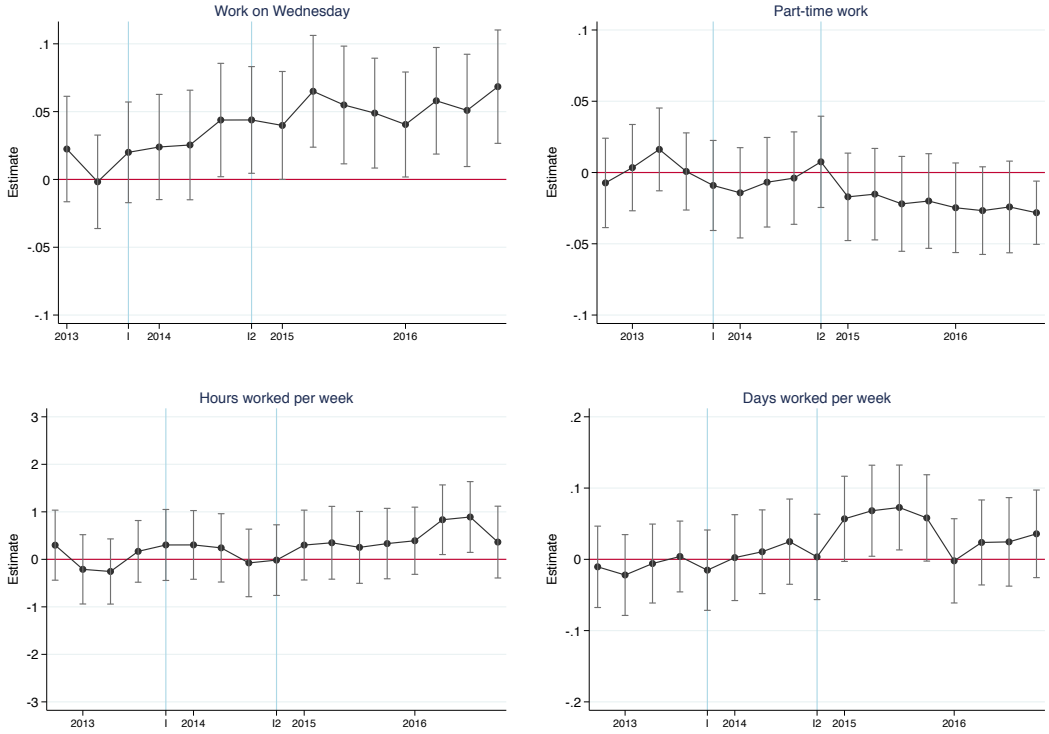
Note: the figures report bar graphs representing the percentage of women working on Wednesday among mothers whose youngest child is between six and eleven, on the left, and mothers whose youngest child is between twelve and fourteen on the right. In each graph, we consider separately women with at least 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 . 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 2009-2016.
Note: the graphs show the evolution of different measures of labor supply over the period 2009-2016. 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 2009-2016.
Note: in this graph we report the dynamic response to the reform concerning the decision to work on Wednesday, the probability of working part-time, the hours worked per week and the days worked per week. The coefficients are obtained from the estimation of regression 2 on the years 2013-2016. 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	31.21	34.68	40.56	44.71	46.92
	(5.26)	(5.47)	(5.26)	(4.58)	(4.21)
Married	0.92	0.87	0.81	0.79	0.79
	(0.27)	(0.33)	(0.39)	(0.40)	(0.41)
Immigrant	0.16	0.15	0.12	0.11	0.11
	(0.37)	(0.35)	(0.32)	(0.31)	(0.31)
College degree or more	0.43	0.40	0.35	0.29	0.26
	(0.49)	(0.49)	(0.48)	(0.45)	(0.44)
No college degree	0.57	0.59	0.65	0.70	0.73
	(0.49)	(0.49)	(0.48)	(0.46)	(0.44)
Number of children	1.93	2.02	1.95	1.52	1.11
	(1.02)	(0.93)	(0.79)	(0.59)	(0.32)
Labor Force participation	0.63	0.79	0.86	0.87	0.85
	(0.48)	(0.41)	(0.35)	(0.34)	(0.35)
Hours worked per week	34.09	33.87	34.38	34.88	35.09
	(9.57)	(10.21)	(10.89)	(11.33)	(11.42)
Part-time work	0.36	0.37	0.36	0.34	0.31
	(0.48)	(0.48)	(0.48)	(0.47)	(0.46)
Worked days	4.57	4.59	4.67	4.75	4.77
	(0.91)	(0.91)	(0.90)	(0.89)	(0.90)
Work on Wednesday	0.49	0.55	0.57	0.65	0.68
	(0.50)	(0.50)	(0.49)	(0.48)	(0.47)
Work on Thursday	0.60	0.71	0.74	0.75	0.74
	(0.49)	(0.45)	(0.44)	(0.43)	(0.44)
Work on Saturday	0.18	0.20	0.20	0.20	0.20
	(0.38)	(0.40)	(0.40)	(0.40)	(0.40)
Monthly wage (in €)	1595	1559	1578	1617	1618
	(865)	(900)	(1011)	(1071)	(943)
N	53,326	82,354	92,437	42,342	33,963

Source: French Labor Force Survey 2009-2013.

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: **Descriptive statistics - Youngest child between 6-11**

	No college degree	*N*	College degree or more	*N*	P-value T-test
Days worked per week	4.72	42,936	4.57	28,784	0.00
Hours worked per week	33.34	42,936	35.95	28,784	0.00
Work on Wednesday	58.83	11,011	55.29	8,646	0.00
Work on Saturday	25.13	11,014	14.98	8,650	0.00
Part-time	38.49	42,936	31.38	28,784	0.00
Monthly wage	1,271	14,033	2,051	9,075	0.00
	Non managerial occupations	*N*	Managerial occupations	*N*	P-value T-test
Days worked per week	4.66	61,787	4.65	9,933	0.24
Hours worked per week	33.76	61,787	38.29	9,933	0.00
Work on Wednesday	57.29	16,898	57.15	2,759	0.89
Work on Saturday	22.38	16,898	10.22	2,759	0.89
Part-time	37.05	61,787	26.87	9,933	0.00
Monthly wage	1,386	19,986	2,807	3,111	0.00
	Low W High M	*N*	High W Low M	*N*	P-value T-test
Days worked per week	4.63	34,753	4.67	23,235	0.00
Hours worked per week	34.04	34,753	35.06	23,235	0.00
Work on Wednesday	56.29	9,313	57.58	6,739	0.00
Work on Saturday	21.06	9,313	19.85	6,739	0.00
Part-time	19.31	34,753	35.03	23,235	0.00
Monthly wage	1,544	11,018	1,660	7,414	0.00
	Firm size ≤ 20	*N*	Firm size >20	*N*	P-value T-test
Days worked per week	4.74	14,123	4.64	57,627	0.00
Hours worked per week	34.70	14,123	34.31	57,627	0.00
Work on Wednesday	57.99	4,282	57.09	15,382	0.00
Work on Saturday	25.21	4,282	19.40	15,382	0.00
Part-time	34.86	14,123	35.83	57,627	0.00
Monthly wage	1,509	4,308	1,593	18,800	0.00
	Public sector	*N*	Private sector	*N*	P-value T-test
Days worked per week	4.49	19,642	4.67	45,986	0.00
Hours worked per week	34.38	19,642	33.38	45,986	0.00
Work on Wednesday	48.86	5,366	59.59	12,551	0.00
Work on Saturday	12.44	5,366	19.62	12,551	0.00
Part-time	35.00	19,642	37.57	45,986	0.00
Monthly wage	1,693	6,823	1,527	16,193	0.00

Source: French Labor Force Survey 2009-2013.

Note: this table reports pre-reform statistics regarding several measures of labor supply for mothers whose youngest child is between six and eleven. 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 groups.

Table 2.3: **Descriptive statistics - Youngest child between 12-14**

	No college degree	*N*	College degree or more	*N*	P-value T-test
Days worked per week	4.79	22,777	4.67	11,051	0.00
Hours worked per week	33.82	22,777	37.09	11,051	0.06
Work on Wednesday	65.68	6,116	63.81	3,443	0.00
Work on Saturday	24.38	6,116	14.36	3,443	0.00
Part-time	37.17	22,777	27.00	11,051	0.00
Monthly wage	1,323	7,396	2,249	3,443	0.00
	Non managerial occupations	*N*	Managerial occupations	*N*	P-value T-test
Days worked per week	4.74	29,334	4.77	4,494	0.03
Hours worked per week	34.16	29,334	39.64	4,494	0.00
Work on Wednesday	64.70	8,288	66.95	1,271	0.11
Work on Saturday	22.26	8,627	10,93	1,270	0.00
Part-time	35.67	29,334	21.94	4,494	0.00
Monthly wage	1,417	9,444	2,976	1,389	0.00
	Low W High M	*N*	High W Low M	*N*	P-value T-test
Days worked per week	4,73	16,511	4,74	9,960	0.00
Hours worked per week	38.27	16,511	31.60	9,960	0.00
Work on Wednesday	64.03	4,606	66.18	2,921	0.00
Work on Saturday	21.44	4,606	19.88	2,921	0.00
Part-time	38.27	16,511	31.60	9,960	0.00
Monthly wage	1,559	5,225	1,734	3,161	0.00
	Firm size ≤ 20	*N*	Firm size >20	*N*	P-value T-test
Days worked per week	4.82	6,745	4.73	27,100	0.00
Hours worked per week	35.23	6,745	33.51	27,100	0.00
Work on Wednesday	66.99	2,105	64.47	7,458	0.00
Work on Saturday	27.58	2,105	18.84	7,458	0.00
Part-time	35.23	6,745	33.51	27,100	0.00
Monthly wage	1,538	2,309	1,635	8,800	0.00
	Public sector	*N*	Private sector	*N*	P-value T-test
Days worked per week	4.63	9,323	4.72	21,636	0.00
Hours worked per week	34.97	9,323	33.60	21,636	0.00
Work on Wednesday	56.16	2,692	67.80	6,106	0.00
Work on Saturday	13.40	2,692	19.50	6,106	0.00
Part-time	30.50	9,323	37.04	21,636	0.00
Monthly wage	1,774	7,556	1,544	3,249	0.00

Source: French Labor Force Survey 2009-2013.

Note: this table reports pre-reform statistics regarding several measures of labor supply for mothers whose youngest child is between twelve and fourteen. 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 groups.

Table 2.4: **Labor supply response to the reform**

	(1) Labor force participation	(2) Part-time	(3) Hours worked per week	(4) Days worked per week
Treatment	0.00628	-0.0194**	0.344*	0.0401**
	(0.00552)	(0.00916)	(0.208)	(0.0178)
Youngest child between 6-11	-0.0144***	0.0351***	-0.775***	-0.0940***
	(0.00380)	(0.00642)	(0.152)	(0.0115)
Observations	193614	152052	152052	152052
R^2	0.162	0.143	0.149	0.131
F	38.92	20.77	23.81	10.04
Pre-treatment means	0.858	0.356	34.39	4.666

Source: French Labor Force Survey 2009-2016.

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 2.5: **Labor supply response to the reform - Days of the week**

	(1) Monday	(2) Tuesday	(3) Wednesday	(4) Thursday	(5) Friday	(6) Saturday	(7) Sunday
Treatment	-0.00196	0.000698	0.0328***	0.000935	0.00229	-0.0147*	-0.00273
	(0.00792)	(0.00692)	(0.00882)	(0.00716)	(0.00719)	(0.00768)	(0.00491)
Ygst child btw 6-11	-0.000755	-0.00865	-0.0677***	-0.00965	-0.00837	-0.00214	-0.00243
	(0.00695)	(0.00603)	(0.00829)	(0.00607)	(0.00630)	(0.00716)	(0.00465)
Observations	75684	75684	75684	75684	75684	75684	75684
R^2	0.079	0.086	0.090	0.085	0.082	0.115	0.098
F	23.49	45.93	32.02	37.31	36.67	19.42	5.030
Pre-treatment means	0.700	0.769	0.573	0.741	0.742	0.207	0.0761

Source: French Labor Force Survey 2013-2016.

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 2016.

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

Table 2.6: **Wage response to the reform**

	(1) Hours worked per week	(2) Log net monthly wage	(3) Log net hourly wage
Treatment	0.344*	0.0272**	0.0122
	(0.208)	(0.0106)	(0.00788)
Youngest child between 6-11	-0.775***	-0.00903	0.0139**
	(0.152)	(0.00744)	(0.00550)
Observations	152052	49230	49230
R^2	0.149	0.329	0.319
F	23.81	131.9	119.4
Pre-treatment means	34.39	1578.0	11.77

Source: French Labor Force Survey 2009-2016.

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 2.7: **Wage response to the reform - excluding teachers**

	(1) Hours worked per week	(2) Log net monthly wage	(3) Log net hourly wage
Treatment	0.260	0.0283***	0.0137*
	(0.0179)	(0.0110)	(0.00822)
Youngest child between 6-11	-0.740***	-0.0104	0.0126**
	(0.157)	(0.00783)	(0.00575)
Observations	143176	46245	46245
R^2	0.156	0.336	0.323
F	23.30	118.3	109.0
Pre-treatment mean	34.46	1567.9	11.65

Source: French Labor Force Survey 2009-2016.

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 net monthly wage, column 1, and its log, column 2, and hourly wage, column 3, and its log, 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 who are employed at the time of the interview and who are not teachers.

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

Table 2.8: **Labor supply response to the reform by subgroup**

	Working on Wednesday		**Hours worked per week**		**Log Hourly Wage**	
	Estimate	Pre-treatment mean	Estimate	Pre-treatment mean	Estimate	Pre-treatment mean (in €)
Panel A. Educational level						
No college degree	0.0262**	0.588	0.0121	33.34	0.0072	9.53
	(0.0112)		(0.2747)		(0.0117)	
College degree or more	0.0390***	0.553	0.7977**	35.95	0.0251*	14.26
	(0.0137)		(0.3288)		(0.0136)	
P-value difference	0.464		0.069		0.360	
N	75,684		152,052		49,230	
Panel B. Type of occupations						
Non managerial occupations	0.0324***	0.573	0.1636	33.76	0.0078	10.26
	(0.009)		(0.2275)		(0.0079)	
Managerial occupations	0.0324	0.571	1.3437**	38.29	0.0266	18.32
	(0.0234)		(0.5956)		(0.0209)	
P-value difference	0.999		0.070		0.385	
N	75,511		151,879		49,182	

Source: French Labor Force Survey 2009-2016.

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 subgroups 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. We also checked that the effect of the treatment was statistically different across the subgroups considered. For each subgroup, we present the coefficient of the treatment interacted with the subgroup considered, as well was the P-value of difference of the impact of the treatment across the two subgroups. Finally, we provide the pre-treatment mean of each outcome for the each subgroup considered in each panel.

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

Table 2.9: **Labor supply response to the reform by subgroup - high skilled mothers excluding teachers**

	Working on Wednesday	Hours worked per week	Log hourly Wage
No college degree	0.026**	-0.019	0.005
	(0.011)	(0.273)	(0.016)
College degree or more	0.034**	0.748**	0.033**
	(0.013)	(0.325)	(0.016)
P-value difference	0.67	0.08	0.14
Observations	71,013	143,176	46,245

Source: French Labor Force Survey 2009-2016.

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 the probability of working on Wednesday, column 1, and the hours worked per week, column 2, and the log hourly wage, column 3. 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 with at least a college degree whose youngest child is between six and fourteen years old who are employed at the time of the interview and who are not teachers.

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

Table 2.10: **Working part-time - Placebo reforms**

	Working part-time					
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment Sept 2013	-0.0194**					
	(0.00916)					
Placebo reform Jan 2013		0.00533				
		(0.0129)				
Placebo reform Jan 2012			0.00163			
			(0.0119)			
Placebo reform March 11				-0.00142		
				(0.0119)		
Placebo reform Oct 2012					-0.00265	
					(0.0123)	
Placebo reform March 2010						-0.00443
						(0.0139)
Observations	152052	90852	90852	90852	90852	90852
R^2	0.143	0.186	0.186	0.186	0.186	0.186

Source: French Labor Force Survey 2009-2016.

Note: this table shows the impact of a series of placebo reforms on the probability of working part-time, 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 and fourth columns, we consider the period spanning between 2009 and 2011 and look at the effect of a placebo reform introduced in March 2011 and October 2012. 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 March 2010.

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

Table 2.11: **Days worked per week - Placebo reforms**

	Days worked per week					
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment Sept 2013	0.0401**					
	(0.0178)					
Placebo reform Jan 2013		-0.0149				
		(0.0248)				
Placebo reform Jan 2012			-0.0102			
			(0.0227)			
Placebo reform March 11				-0.0351		
				(0.0230)		
Placebo reform Oct 2012					-0.0319	
					(0.0234)	
Placebo reform March 2010						-0.00933
						(0.0259)
Observations	152052	90852	90852	90852	90852	90852
R^2	0.131	0.186	0.186	0.186	0.186	0.186

Source: French Labor Force Survey 2009-2016.

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 and fourth columns, we consider the period spanning between 2009 and 2011 and look at the effect of a placebo reform introduced in March 2011 and October 2012. 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 March 2010.

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

Table 2.12: **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	0.0263***				
	(0.010)				
Treatment vs 12-14		0.0328***			
		(0.009)			
Treatment vs 12-15			0.036***		
			(0.008)		
Treatment vs 12-16				0.034***	
				(0.008)	
Treatment vs 12-17					0.035***
					(0.008)
Observations	67404	75684	83465	91097	98179
Adjusted R^2	0.095	0.090	0.085	0.081	0.079

Source: French Labor Force Survey 2009-2016.

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 2.13: **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	0.0352*				
	(0.0189)				
Treatment vs 12-14		0.0401**			
		(0.0178)			
Treatment vs 12-15			0.0495***		
			(0.0167)		
Treatment vs 12-16				0.0492***	
				(0.0160)	
Treatment vs 12-17					0.0517***
					(0.0155)
Observations	135755	152052	167449	182265	193051
R^2	0.138	0.131	0.123	0.116	0.112

Source: French Labor Force Survey 2009-2016.

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 2.14: **Working part-time - Changing the definition of the control group**

	6-13	6-14	6-15	6-16	6-17
Treatment vs 12-13	-0.0140				
	(0.00971)				
Treatment vs 12-14		-0.0194**			
		(0.00916)			
Treatment vs 12-15			-0.0224***		
			(0.00861)		
Treatment vs 12-16				-0.0192**	
				(0.00824)	
Treatment vs 12-17					-0.0192**
					(0.00810)
Observations	135755	152052	167449	182265	193051
R^2	0.151	0.143	0.137	0.130	0.126

Source: French Labor Force Survey 2009-2016.

Note: this table shows the coefficients capturing the effect of the reform on the decision to work part-time. 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 2.15: **Fathers' labor supply response to the reform**

	(1) Labor force participation	(2) Part-time	(3) Hours worked per week	(4) Days worked per week	(5) Work on Wednesday
Treatment	-0.00591	-0.00244	0.0327	0.00501	0.00595
	(0.00380)	(0.00382)	(0.218)	(0.0134)	(0.00669)
Youngest child between 6-11	-0.00400	0.00757***	-0.530***	-0.0126	-0.0204***
	(0.00257)	(0.00245)	(0.158)	(0.00957)	(0.00613)
Observations	154036	139369	139369	139369	69360
R^2	0.100	0.110	0.167	0.136	0.083
F	11.78	4.312	14.30	2.280	35.66
Pre-treatment means	0.960	0.0350	42.63	5.079	0.779

Source: French Labor Force Survey 2009-2016.

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.

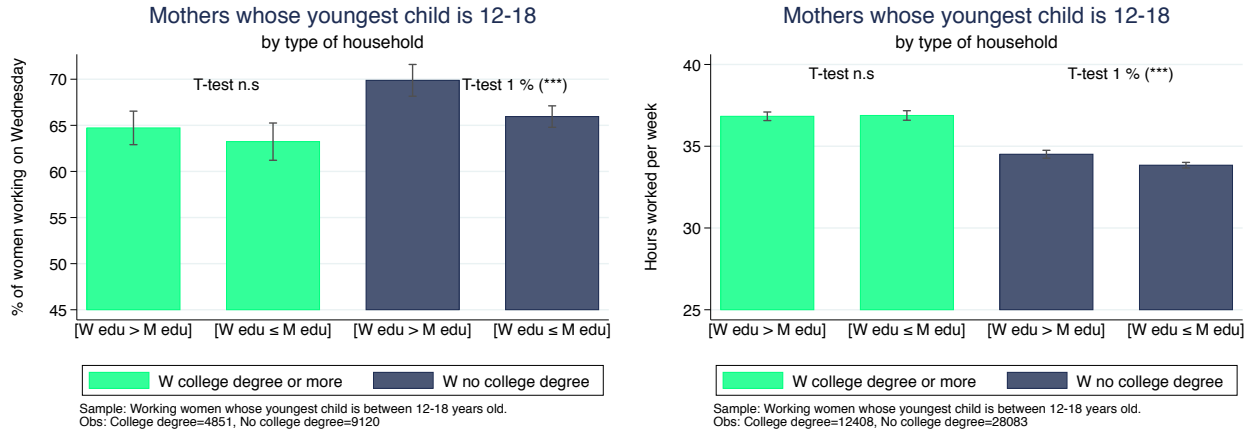
*** p<0.01, ** p<0.05, * p<0.1.

6 Appendix

Figure 6: **Trends in mothers' labor supply measures by age of the youngest child**

Source: French Labor Force Survey 2009-2016.
Note: the graphs show the evolution of different measures of labor supply over the period 2009-2016. 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 7: **Pre-reform period - Women's employment decisions by type of household - Youngest child between 12-18**



Source: French Labor force Survey 2009-2013.
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. 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.