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SCHOOL SCHEDULES, PARENTAL LABOR PARTICIPATION AND GENDER SPECIALIZATION: EVIDENCE FROM THE DISMANTLING OF FULL-TIME SCHOOLS

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Abstract

Female labor force participation in developing countries increases with access to affordable childcare. In Mexico, a country where women's labor participation is low even compared to other Latin American countries, a federal program was launched in 2007 to increase the number of hours children spend in school. In this paper, we study the effects of access to Full Time Schools (*Escuelas de Tiempo Completo,* as the program was called in Spanish), a federal program for pre-school, primary, and middle public schools in Mexico that extended the school day from four and a half to eight hours. The program was canceled by the federal government in 2021. We use its cancellation as an exogenous shock that sent children from over 25 thousand schools back to reduced school times to explore its effects on women's participation in the labor market. We explore the differentiated effects of dismantling the program on alternative types of family structures. We pay special attention to the effects on households where the woman is both the main carer and the sole provider, since we can expect that family dynamics will be different since sharing care responsibilities is not an option and the mother cannot stop working and forgo income. We found that the termination of the program had a negative impact on female parents: male parents increase the time they work in a week by 0.66 hours, but mothers from the same cohort reduced their working time per week by 2.05 hours, approximately. In terms of income, we found that for mothers faced a greater negative impact of the termination of the program since they loss, on average, $658 Mexican Pesos, in comparison with male parents that increased their income by $199.46 Mexican Pesos after the termination of the program.

Introduction

In 2023, Claudia Goldin was awarded the Nobel Prize in Economics for her extensive research on gender inequality in the labor market. As the title of her book *Career and Family* suggests, the barriers women face are not only a matter of labor market restrictions but of balancing job and career with marriage and children: "The fundamental problem of women trying to attain the balance of a successful career and a joyful family are time conflicts. Investing in a career often means considerable time input early on, precisely during the years one 'should' be having children" (Goldin, 2021, p. 7). One of the main difficulties for achieving such balance is what has been called the "child penalty": having children affects women's careers disproportionately more than men's. Indeed, their careers evolve "in parallel until the birth of their first child, diverge sharply immediately after childbirth, and do not converge again" (Kleven et al., 2019, pp. 181–182). Policies that reduce the time required to care for young children –such as free or subsidized childcare– have shown to have a positive effect on women inclusion in the labor market (Ferragina, 2020; Morrissey, 2017).

Not all women are affected equally when it comes to gender inequality. Outcomes vary depending on factors such as income, education, family structure, type of work, and location (Ferragina & Magalini, 2023; Lundin et al., 2008). In developing countries, women face even bigger challenges due to more traditional gender norms at the workplace and within households, lack of regulation preventing discrimination, and a large informal sector with precarious jobs. Additionally, there is less availability and accessibility of

childcare services which further limits inclusion in the labor force (see Aguilar-Gomez et al., 2019; Mateo Díaz & Rodriguez-Chamussy, 2016). Moreover, in certain countries, women encounter an additional hurdle: school hours (Contreras & Sepúlveda, 2017). As school hours and work hours do not align (due to the short duration of school time), the inclusion of women in the labor force is restricted not only by the absence of childcare when their children are young but also as they progress through primary and middle school.

One policy that can help reduce gender inequality in the labor market is improving the availability and accessibility of childcare services or extending school hours. Both options provide families with more time to take care of their children. Historically, women have been responsible for childcare, which has limited their ability to work outside the home. By providing more childcare options or longer school hours, women can have more time to work and pursue their careers. In some Latin American countries, policymakers have introduced extended school hours to improve educational outcomes, and this has also had a positive effect on women's labor inclusion. In México, a country where women's labor participation is low even compared to other Latin American countries (Bhalotra & Fernández, 2021), the federal government introduced in 2007 a Full-Time Schools program (*Escuelas de Tiempo Completo,* as the program was called in Spanish). It was a program for pre-school, primary, and middle public schools in Mexico that extended the school day from four and a half to eight hours. Recent work by Padilla Romo and Cabrera Hernández (2019, 2020) has found that the program increased the participation of mothers in the labor market.

The program was canceled by the federal government in February 2022. We use its cancellation as an exogenous shock that sent children from over 25 thousand schools back to reduced school times to study how school schedules affect gender inequalities in the labor market. More importantly, we explore the differentiated effects of dismantling the program on alternative types of family

structures. We pay special attention to the differentiated effects on men and women as well as the effects on households where the woman is both the main carer and the sole provider, since we can expect that family dynamics will be different since sharing care responsibilities is not an option and the mother cannot stop working and forgo income (Tekin, 2007).

The Full Time School Program (FTS) was terminated for all schools on the same date. Therefore, we use a difference-in-differences approach. We estimate the causal effect of the termination using a dose-response strategy, using variation from the timing of the policy termination, and municipalities exposure to the termination due to differences in the distribution of enrolled population before the policy termination took place. Specifically, we compare hours worked and income from work in municipalities with higher enrollment rates to FTS against those in municipalities with lower enrollment rates. The literature studying disenrollment effects of welfare and healthcare benefits (see for example, Argys et al., 2020; Bullinger & Tello-Trillo, 2021) has used similar approaches in a difference in differences setting. As the literature of the effects of childcare on labor incentives suggests, this type of natural experiment provides research with a more sophisticated framework to analyze its effect on employment decisions (Contreras & Sepúlveda, 2017). The analysis uses data on labor participation from the National Survey of Occupation and Employment over the 2016-2022 period for the entire country.

Our results indicate that in the quarter following the termination of FTS, the number of hours worked in treated municipalities increased for fathers and decreased for mothers. Fathers increased their hours worked by 0.66 (1.3% relative to the pre-termination mean), while mothers decreased their hours worked by 2 hours (almost 6% relative to the pre-termination mean). Regarding income from work, in treated municipalities fathers increased their labor income compared to control municipalities, whereas mothers decreased their labor

income: father increased their labor income in 199.46 Mexican Pesos by month (3.3% relative to the pre-termination mean), whereas mothers decrease their labor income in 658.96 Mexican Pesos by month (15% relative to the pre-termination mean). We also find that single mothers, who are household heads, do not change the hours worked. Taking together this evidence, our results suggest that the termination of FTS leads to a gender specialization within families that is consistent with mothers providing unpaid care and fathers providing financial resources to mitigate the reduction in income due to reduced hours worked by mothers. In households with only one primary caregiver, this work specialization is not possible, thus the null results.

Our study aims to add to the existing literature on childcare and women's labor participation by focusing on intermediate factors such as household composition and children's age. In the following sections, we will review the current literature on childcare and mother's labor participation, including the findings related to household composition. We will then discuss the design, operation, effects, and process of dismantling the Full Time Schools Program in Mexico. Next, we will present our data and methodology, followed by our results. In the final sections, we will analyze our findings and their contribution to the literature and conclude with our ideas for future research.

Women’s labor participation, child penalties, and household structure

In most of the world, childcare responsibilities are predominantly the responsibility of women. The time dedicated to caring for their children is time that cannot be used to initiate or pursue market activities (Goldin, 2021; Padilla-Romo & Cabrera-Hernández,

2019; Padilla-Romo et al., 2022). In response, some governments have tried to implement policies aimed at defamiliarizing and defeminizing care, so that households receive support (for instance, paternal licenses or childcare services) to balance the time needs of job and family, but also to rebalance the allocation of responsibilities among men and women (Brewer et al., 2022; Cascio et al., 2015).

There has been a growing interest in studying women's labor force participation, particularly gender inequality driven by motherhood (Kleven et al., 2019). Research shows that access to affordable childcare increases employment rates for women with preschool age children (Baker et al., 2008; Bauernschuster & Schlotter, 2015; Berlinski & Galiani, 2007; Brilli et al., 2016; Calderón, 2014; Carta & Rizzica, 2018). Caring for small children is just one aspect of the job. As children progress to primary and middle school, the time they spend outside of school requires additional attention to their needs, such as supervision, nutrition, homework, and after-school activities. These important care needs must be met as they grow and develop. But taking care of small children is only part of the story: as children grow up of move to primary and middle school, the time they are not at school have care needs (from supervision, alimentation, homework, after school activities, etc.) that need to be fulfilled. This allocation of time has lasting consequences since women remain unemployed for a much more prolonged time than men once out of the labor market to provide care at home (Campos-Vazquez et al., 2022).

Childcare schedules usually cover the nine-to-six working day, so if a parent works full time, their schedules align. In some developing countries, however, elementary and secondary school schedules cover only half of the working day. Evidence from these countries shows positive effects increasing women labor participation, their worked hours, and allowing them to remain at work for longer periods of time when longer school days are in place (Berthelon et al., 2021, 2023; Contreras & Sepúlveda, 2017; Martínez A. &

Perticará, 2017; Padilla-Romo & Cabrera-Hernández, 2019). The same effect is found when after-school programs are implemented (Felfe et al., 2016; Martínez A. & Perticará, 2020).

The impact of extending the school day has been found to vary depending on household structure (Berthelon et al., 2021, 2023; Contreras & Sepúlveda, 2017; Padilla-Romo & Cabrera-Hernández, 2019). In Chile, for instance, Contreras and Sepulveda (2017) found that extending school time had a significant effect on single mothers who did not have younger children, but it did not have a significant effect on married women or those with older and younger children (Contreras & Sepúlveda, 2017). Berthelon, Krueger and Oyarzun (2023) also found positive effects on employment rates in Chile, as well as the number of hours worked by women, and identified that they remained working for longer periods of time. Their results suggest that the policy had a greater effect on women with fewer years of education (Berthelon et al., 2023).

In Mexico, Padilla-Romo and Cabrera Hernandez (2019), studying the effect of the Full-Time School program, found positive effects on the number of hours worked and monthly earnings among mothers with children. The study found the strongest impact on mothers with less education, living in high poverty localities, and having daughters (Padilla-Romo et al., 2022).

According to Aguilar-Gomez et al. (2019), the primary factor explaining women's participation in the labor force in developing countries is the number and age of their children (Aguilar-Gomez et al., 2019). Their study found that with the birth of a child, women in Mexico tend to decrease their labor participation. The child penalties are also imposed on other women in the household, particularly daughters who end up spending more time on unpaid labor compared to sons or fathers (Aguilar-Gomez et al., 2019; Campos-Vazquez et al., 2022).

In Latin America, one way governments have tried to address gender inequalities in care responsibilities and employment is by expanding services, subsidies, and regulations to offer childcare services and extend school hours, so that children can be taken care of outside the household and women can look for employment. Since the beginning of the 21st century, there has been an expansion of social policies that have extended new benefits to previously excluded populations (Arza et al., 2022; Garay, 2016). However, recent governments in Brazil under Bolsonaro (Fleury et al., 2023), Argentina under Milei (Analytica, 2023), and México under López Obrador (Cejudo, Olvera, González, 2024) have dismantled social programs. Among the social programs terminated by the federal government in Mexico is the Full-Time School program, which has canceled the opportunity for mothers of public-school children to look for and keep a job and earn an income. Based on the recent literature and findings from impact assessments, in addition to the impact on children's educational outcomes, we can anticipate that the program will have the opposite effect on efforts to reduce familiarization and feminization of care responsibilities, thus having a negative impact on women's labor inclusion. Moreover, we can expect that the effect on women will vary depending on their household structure.

Full-Time School (FTS) Program creation and dismantling

The Full-Time School Program in Mexico, known as Programa de Escuelas de Tiempo Completo (PETC by its Spanish acronym) began in 2007 as the National Program of Extended Hours in Elementary Schools. It was one of the federal government's programs as part of the education project of the 2007-2012 administration. Its objective was to improve the learning opportunities of students in basic education (preschool[1], elementary and middle schools) and teachers' schools (known as normal schools) by increasing the school day from four and a half to eight hours. The program also promoted extra curriculum activities such as arts, technology, and sports, and offered school meals.

The federal government, through the Ministry of Education, provided a fixed stipend each year for operating expenses and a variable fund based on the number of teachers and students in each school (Cabrera-Hernandez, 2015). The program deployment began with 500 schools in 15 of the 32 states in Mexico in 2007. By 2017, the program reached 25,134 schools nationwide, representing 40% of the program target population (CONEVAL, 2020). In 2018, the program reached over 3.5 million students throughout the 32 states (Santillán Hernández, 2021), mostly from primary (78%), and secondary (12%) schools. The rest of the schools in the program were preschools (9%), and special education (1%). The program aimed at schools attending disadvantaged urban populations, in marginal, indigenous or migrant contexts, rural schools and those that already operate with extended hours or with low educational results.

[1] Contrary to the USA, in Mexico, preschool education starts when children are 3 years old and covers kinder garden age kids.

External evaluations found the program impacted school outcomes, women's labor, and children's nutrition. For instance, some of these studies have found increases in academic outcomes, especially in those located in deprived areas (Luna Bazaldúa & Velázquez Villa, 2019; Padilla-Romo & Cabrera-Hernández, 2019; Pedroza et al., 2021; Santillán Hernández, 2021; Silveyra, 2018; Silveyra et al., 2018). Regarding labor inclusion, Padilla & Cabrera (2019) found that the labor supply increased by 5.5% points and the time worked went up by 1.8 hours per week (Padilla-Romo & Cabrera-Hernández, 2019). An evaluation made by UNICEF in 2017 in the states of Guanajuato, Puebla, and Yucatán found that 65.8% of children in their study received their first meal of the day through the meal service of the FTS program. Despite these results, in February 2022, the Mexican federal government announced the dismantling of the FTS program. The program's dismantling began in 2020 with a budget cut of almost 50%. In 2019, there were 11.5 thousand million pesos allocated to the program, whereas in 2020 only 5.6 thousand million pesos were authorized for the FTS program. By 2021, as part of the new federal budget it was announced that the program would be part of La Escuela Es Nuestra (LEEN) program. And finally, in 2022, the program disappeared in the budget allocation.

As a response to this decision, an NGO[i] started legal actions with the support of a private law firm[ii] to continue with the program[iii]. Besides these legal actions, the Chamber of Deputies formed a Committee in May 2022 to evaluate the decision given the discontent it caused in people. In this forum, the deputies invited academics and civil society organizations, who expressed their opinion on the relevance of the FTS program. This forum concluded in a final report, and FTS was added as part of the program La Escuela es Nuestra (The school is ours or for its acronym in Spanish; LEEN).

However, many experts have expressed concerns about the LEEN program rules and how the program operates since it does not have formal guidelines, transparency or accountability mechanism to support the decision makers (Castañeda-Reyes, 2023). Moreover, the program does not guarantee the families and their students a full-time schedule or the food services as the Full-Time Program did because the government provides the economic resources to the schools and the school committees are the responsible to decide the school projects in which they will invest that budget, including the school's infrastructure and its building maintenance needs (DOF, 2021). The school committees are comprised of parents, teachers, the principal and other school workers.

Data and Sample

The empirical analysis is based on a panel data set composed of all Mexican municipalities over the 2016-2022 period. To form our database, we gathered information from the National Survey of Occupation and Employment (ENOE, an acronym in Spanish) to measure parental labor participation and labor income. This is a quarterly labor force survey produced by the Mexican Statistical Office (INEGI, an acronym in Spanish)2, which includes information and structure like the US Current Population Survey. This survey samples 120,000 dwellings per quarter in both urban and rural municipalities. The treatment variable is constructed using the FTS administrative data and *Estadisticas 911* from the Ministry of Education, obtained through an information request. The administrative dataset contains

[2] First quarter: January-March; second quarter: April-June; third quarter: July-September; fourth quarter: October-December.

the number of schools enrolled in the FTS program. *Estadisticas 911* provides the number of students enrolled in each school, as well as the school location.

Our analytic sample is composed of households with school-age children for elementary school (6 to 11 years old) and middle school (12 to 15 years old). Even though the program includes schools offering preschool education, we exclude families with younger kids because those families could have access to childcare through *Programa de Estancias Infantiles* (PEI, acronym in Spanish), a federal public program that offers subsidized childcare to families without social security. Our main analysis uses both data on parent's head of households and spouses of heads of households. We also restricted our sample to working parents who are 55 years old or younger because those are more likely to work full-time jobs. Based on these criteria, our sample size amounts to 711,302.

Outcomes measure

Hours worked per week. Our main labor outcome is the number of weekly hours worked, obtained from ENOE. In our sample, parents work, on average, 43.4 hours per week. Table 1 shows descriptive statistics for the full sample and for families in the treatment and control municipalities, separately. In that table, we observe differences in hours worked based on gender. Fathers work, on average, 48 hours per week, whereas mothers work, on average, 36.5 hours per week. These differences remain when we divide the sample between treated and control. Similarly, in treated municipalities, mothers work less time than men, 35.7 in comparison with 47.5, respectively.

Table 1. Descriptive Statistics

		Total Sample		Control Group		Treatment Group		Sample size by gender
Variable	Unit/Gender	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	
Work time per week	Hours/Women	36.5	17.4	37.0	17.2	35.7	17.8	282,992
	Hours/Men	47.9	16.1	48.1	15.7	47.5	16.8	428,310
Income	Mexican Pesos/Women	4,526.1	5,247.8	4,567.1	5,326.2	4,442.7	5,083.3	
	Mexican Pesos/Men	6,210.9	6,724.3	6,300.5	6,891.4	6,028.9	6,368.1	
Age	Women	38.4	6.9	38.4	6.9	38.3	6.8	
	Men	39.8	7.2	39.8	7.2	39.8	7.2	
Years of education	Women	10.9	5.0	10.8	4.8	11.1	5.4	
	Men	10.3	5.1	10.4	5.0	10.2	5.2	
Number of children		2.7	1.3	2.7	1.3	2.7	1.3	
Pre-termination enrollment rates				0.06	0.04	0.37	0.13	
	Number of observations	711,291		476,649		234,653		

Note: The table presents the mean and standard error of the variables of our working file across municipalities for the period 2016-2022. The year 2020 is excluded from the sample. The Total Sample includes all the municipalities in our sample, whereas the two other subsamples follow the split we did based on pre-termination coverage levels.

Income from work. Another outcome to analyze is the income earned from work, obtained also from ENOE. On average, parents in our sample have an income of $5,540.6 Mexican pesos monthly. Table 1 shows descriptive statistics for the full sample and for families in the treatment and control municipalities, separately. There are significant differences in income per hour by gender. For instance, fathers' income is $6,210.9, on average, whereas mothers earn, on average, $4,526.1. These differences remain between treated

and controlled municipalities, in both cases, mothers' income per hour is less than men: $4,442.7 and $$4,567.1 pesos, respectively, whereas fathers' income in treated municipalities is $6,028.9 pesos per hour and $6,300.5 pesos in control municipalities.

Treatment measure

FTS enrollment rates. FTS termination was implemented nationwide, at the same time. Thus, our analysis relies on differential intensities of the termination given by the program's baseline/pre-termination coverage levels. We expect municipalities with higher baseline levels of FTS coverage will likely be more impacted by its termination than municipalities with lower baseline coverage levels. We constructed a measure of exposure to the termination using the number of children that belong to the public schools enrolled in the program out of the total number of children enrolled in elementary and middle schools in the municipality. Then, we use this variable to define quartiles. Our treatment variable is an indicator variable that equals one for municipalities more heavily exposed to the program (fourth quartile) and zero otherwise starting in 2021. An analogous indicator variable is constructed for the remaining quartiles. We remove municipalities in quartile 3 from the analysis to avoid the partial exposition of this group to mask estimated treatment effects due to contagion bias. Table 1 shows FTS coverage levels for the fourth quartile (treatment group) and the first and second quartiles (control group). Treated municipalities (those in the fourth quartile) had, on average, 25.8 percent of its public schools enrolled in the FTS program, whereas municipalities in the control group (those in the first and second quartiles) had, on average, a coverage rate of 4 percent.

Empirical Strategy

To estimate the effect of the FTS program termination on parental labor supply, we use a difference-in-differences approach. Because FTS was terminated for all schools on the same date, we cannot use a simple differences-in-difference approach, where we compare treated and untreated municipalities. Instead, we estimate the causal effect of the termination using a dose-response strategy that utilizes variation from the timing of the policy termination, and municipalities' exposure to the termination due to differences in the distribution of the enrolled student population before the policy termination took place. The literature studying disenrollment effects of welfare and health benefits (see for example, Argys et al. 2020; Bullinger and Tello-Trillo 2021) has used similar approaches in a difference in differences setting.

In estimating the effect of FTS' termination, we run Equation 1 using ordinary least squares (OLS):

$$(1)\quad Y_{imt} = \gamma Mother_{imt} + \alpha(Treated_m * FTS\ Termination_t)_{mt} + \beta(Treated_m * FTS\ Termination_t * Mother_{imt})_{imt} + \mathrm{X}_{imt} + \eta_m + \eta_{qt} + \epsilon_{imt}$$

In the model, Y_{imt}, measures our outcomes of interest for individual i in municipality m and year t. The above model includes a set of municipality-fixed effects (η_m), and year-fixed effects (η_{qt}). X_{imt} is a vector of individual-level variables that change across time (age, schooling, and head of household status). *Treated* is an indicator variable that equals one for municipalities in the fourth quartile (based on pre-termination enrollment rates) and zero for municipalities in quartiles one and two. *Termination* is a dummy variable that equals one in 2022 and zero otherwise. α captures the effect of FTS termination for fathers; in other words, it compares

treated municipalities against control municipalities before and after the termination. Given our interest in measuring gender inequalities effects of the termination, the primary coefficient of interest is β, which is the coefficient on the triple interaction $Treated_m * FTS\ Termination_t * Mother_{imt}$. β measures how the effect of the termination changes for mothers. Since hours worked and income from work among mothers in municipalities with higher levels of exposure should be more affected than among fathers, we expect these outcomes to decrease more among mothers relative to fathers, when comparing municipalities with higher levels of FTS exposure against municipalities with lower levels of FTS exposure. In other words, we expect $\beta < 0$.

In a standard difference in differences the following two key identifying assumptions need to be held for this analysis to be able to uncover causal effects. First, our difference-in-difference framework assumes that worked hours per week and income from work would have followed a common trend across all municipalities in the absence of the termination of FTS. Second, a difference-in-difference analysis assumes strict exogeneity, which implies that unmeasured determinants of worked hours per week and income from work are uncorrelated with the entire history of the termination of FTS in the municipality.

One way of assessing the plausibility of the strict exogeneity assumption is through an event study analysis. We use an event study framework to track changes in hours worked and income in the years before and after the program was terminated in each municipality. To do so, we estimate equation 2:

$$(2)\quad Y_{imqt} = \sum_{j=-17}^{-1} \left(\alpha_j (Treated_{mqt} * 1[\mathrm{t = j}])\right) + \sum_{h=1}^{4} \left(\delta_h \left(Treated_{mqt} * 1[t = h]\right)\right) + \mathrm{X}_{imt} + \eta_m + \eta_{qt} + \epsilon_{imqt}$$

In the model, α_j coefficients measure changes in the outcome variable as a response to future policy changes. These coefficients need to be equal to zero as, under the strict exogeneity, future changes due to the program should not affect current outcomes. The δ_h coefficients measure the effects of the policy variable during each post-adoption period. These coefficients tell us whether the termination effects vary across time.

Results

We document treatment effects of the impact of FTS program termination on parental labor participation and income in table 2. Columns 1, and 2 present estimates for our different measures: hours worked and income from work respectively. According to the results in the first column, compared to fathers in municipalities in the first and second quartile, fathers in municipalities with high levels of enrollment in FTS (top quartile), experience an increase of 0.66 number of hours worked (1.3% relative to the pre-termination mean), after the termination of FTS. On the other hand, mothers decreased their hours worked by 2 hours (almost 6% relative to the pre-termination mean). Regarding income from work, in treated municipalities fathers increased their labor income compared to control municipalities, whereas mothers decreased their labor income: father increased their labor income in 199.46 Mexican Pesos by month (3.3% relative to the pre-termination mean), whereas mothers decrease their labor income in 658.96 Mexican Pesos by Month (15% relative to the pre-termination mean).

Table 2. Difference-in-Difference Estimation

	(1) Weekly Hours Worked	(2) Income (Mexican pesos)
(Intercept)	50.98	4,196.14
	[50.736, 51.214]	[4,108.8, 4,283.5]
	t = 418.320	t = 94.158
	p=<0.001	p=<0.001
Mother	-9.948	-1,067.666
	[-10.107, -9.790]	[-1,125.7, -1,009.7]
	t = -122.979	t = -36.089
	p=<0.001	p=<0.001
Age	-0.058	-1.957
	[-0.064, -0.053]	[-3.986, 0.072]
	t = -20.625	t = -1.891
	p=<0.001	p=0.059
Years of education	-0.030	199.055
	[-0.038, -0.022]	[196.202, 201.907]
	t = -7.595	t = 136.773
	p=<0.001	p=<0.001
Number of children	-0.517	-264.322
	[-0.567, -0.467]	[-282.574, -246.070]
	t = -20.289	t = -28.384
	p=<0.001	p=<0.001
Treated Group (Q=4)	-0.865	-190.697
	[-0.952, -0.778]	[-222.419, -158.975]
	t = -19.541	t = 1.663
	p=<0.001	p=0.096
FTS Termination (<=2022)	-1.881	927.38

	[-2.035, -1.728]	[871.413, 983.352]
	t = -24.096	t = 32.476
	p=<0.001	p=<0.001
Treatment × FTS Termination	0.661	199.5
	[0.335, 0.987]	[80.075, 318.856]
	t = 3.969	t = 3.275
	p=<0.001	p=0.001
Treatment × FTS Termination × Mother	-2.050	-658.964
	[-2.485, -1.615]	[-818.124, -499.804]
	t = -9.233	t = -8.115
	p=<0.001	p=<0.001
Num. Obs.	711,302	711,201
R2	0.103	0.049
F	10261.664	4624.058

Event Study

The "no anticipation" assumption means that, before the end of the FTS program, the number of hours worked among the municipalities with higher and lower levels of FTS exposure should not depend on when the program ended. This means that the termination of FTS should not influence either eligible or ineligible households in municipalities with higher and lower levels of FTS exposure before the program ends. The event study graphs show pre-trends and allow us to check if the magnitude of the effect changes over time before the program's termination. To investigate the possibility of differential pre-trends leading to bias in our main difference-

in-difference specifications, we fit event study models that allow the gap between municipalities with higher and lower levels of exposure to FTS to vary in the years before the policy termination. As Figure 1 and Figure two show, there are no pre-trends before the termination of FTS.

Figure 1. Event study – Quartile: Hours worked.

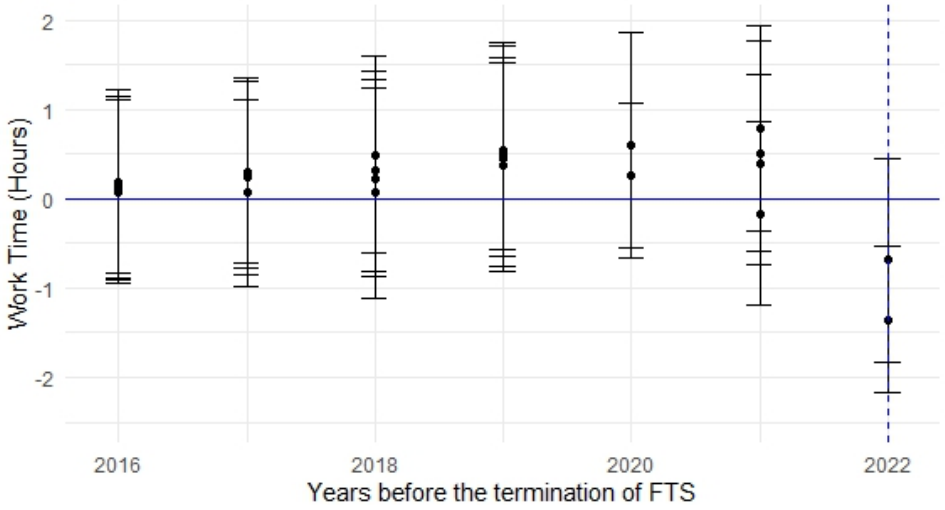
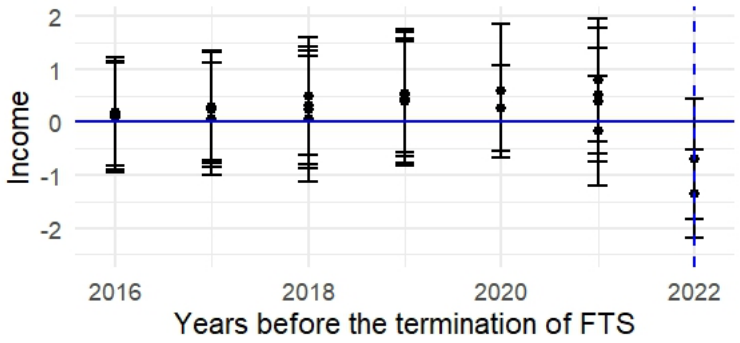


Figure 2. Event Study – Quartile: Income Per Hour



Heterogenous Treatment Effects

In this sample, single mothers worked, on average, 29.8 hours per week. Table 3 shows descriptive statistics for the sample for single mothers, and for those in the treatment and control municipalities, separately. In that table, we observe similar worked time between control and treatment group. Also, their income is almost the same (nearly $5,000 pesos). As Table 3 shows, working hours and income per hour among single mothers are superior to the average of mothers from Table 1. The income among single mothers is also less than men from Table 1.

Table 3. Descriptive Statistics

		Total Sample		Control Group		Treatment Group	
Variable	Unit	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Work time per week	Hours	39.7	16.8	40.1	16.6	38.9	17.3
Income	Mexican Pesos	4,879.8	5,092.2	4,919.2	5,169.3	4,797.3	4,925.9

Distribution variable		0.06 0.04	0.4 0.11
Number of observations	73,341	49,643	23,698

Note: The table presents the mean and standard error of the variables of our working file across municipalities for the period 2016-2022. The year 2020 is excluded from the sample. The Total Sample includes all the municipalities in our sample, whereas the two other subsamples follow the split we did based on pre-termination coverage levels.

We also document treatment effects of the impact of FTS program termination on parental labor participation and income for single female household heads in table 4. Each column presents estimates for our different measures. According to the results in the first column, the termination of the program negatively impacted the treatment group by reducing their weekly working hours by 0.6 hours. However, this result is not statistically significant, but we can determine that the negative effect is worse for those women who were treated by FTS, those who have more children or are older. On average, women worked less hours when the program ended. Single mothers from the municipalities where the FTS program had more presence also reduced the time they work by 1.6 hours less per week.

The income for single mothers was also impacted negatively by the termination of the program. For instance, among those mothers in municipalities with more presence of FTS, the loss of $172 pesos per month when the program ended. Those mothers with more children also received $261.4 less each month. However, those single mothers in the municipalities with high presence of FTS (Q4), their income per hour increase by $720 pesos.

Table 4. Difference-in-Difference Estimation

	(1) Weekly Hours Worked	(2) Income

(Intercept)	44.930	3,768.9
	[44.174, 45.686]	[3544.904, 3992.903]
	t = 116.515	t = 32.978
	p=<0.001	p=<0.001
Working Status (Employed=1)	-21.152	-16.664
	[-21.370, -20.933]	[-17.160, -16.169]
	t = -190.126	t = -65.885
	p=<0.001	p=<0.001
Age	-0.108	2.340
	[-0.126, -0.090]	[-3.005, 7.685]
	t = -11.719	t = 0.858
	p=<0.001	p=0.391
Number of children	-0.160	-261.380
	[-0.256, -0.063]	[-289.857, -232.903]
	t = -3.255	t = -17.990
	p=0.001	p=<0.001
Years of education	-0.001	162.604
	[-0.025, 0.022]	[155.634, 169.574]
	t = -0.089	t = 45.722
	p=0.929	p=<0.001
Treatment Group (Q=4)	-1.147	-172.017
	[-1.424, -0.869]	[-254.233, -89.802]
	t = -8.102	t = -4.101
	p=<0.001	p=<0.001
FTS Termination (<=2022)	-1.641	720.762
	[-2.094, -1.187]	[586.317, 855.206]
	t = -7.089	t = 10.508
	p=<0.001	p=<0.001
Treatment × Termination	-0.608	-141.328
	[-1.406, 0.190]	[-377.955, 95.299]

	t = -1.492	t = -1.171
	p=0.136	p=0.242
Num.Obs.	73,341	73,341
R2	0.005	0.046
F	59.317	1206.840

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Discussion and conclusion

While some countries in Latin America such as Chile have made progress incentivizing female labor participation with the extension of school hours and providing accessible childcare; families in Mexico faced significant challenges after the pandemic, a time of need for many families and children. The burden generated with the end of the FTS program affected women the worst since they must balance their roles as caretakers and workers without an adequate support system in place, especially for single mothers. The FTS program offered advantages that were essential for families. The absence of school schedules that are aligned with parent's full-time work generates gender disparities in the labor force and magnifies the gap in the work participation rate for women.

Throughout this research, we explore the effects of dismantling the Full-time School Program in Mexico and its impact on parent's labor participation. We analyze how the termination of the FTS program negatively impacted the time parents dedicated to their work, as well as the income they perceived per hour, especially women and single mothers. Our findings reveal that the dismantling of full-time schools disproportionately affects women in terms of their ability to participate in the labor force, reducing their employment

opportunities, and risking their chance of maintaining their job or increasing the chances to transfer to informal jobs. We need more research on those terms in order to have a more holistic picture of the impact of the termination of the program.

We aimed to contribute to the literature in three different ways. First, we go beyond the study of preschool or childcare effect, where most of the literature has focused. We consider that by exploring female labor participation with children at school age, we will better assess the real challenges of most families. Second, as far as our knowledge goes, this is one of the first impact studies that analyze the dismantling of a program of this nature. Third, through this paper we look into the household structures and their decisions when they have to confront a shock such as the disappearance of a program that benefits them and allows them to increase their income and quality of life.

However, this research does not analyze the reasons behind the government decision to dismantle the program. We also limit our findings and research to the effects on labor employment and participation. There are more areas to explore such as the differences between households with children of different ages or with more or less number or children. Also, as the evidence has suggested, the presence of other females help mothers to participate in the labor force so including those factors in the study will shine more light about the dynamics of the households.

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[i] Mexicanos Primero is an NGO that focuses on educational issues.
[ii] DLA Piper, a global firm, and Aguilar Barroso Abogados firm.
[iii] The 7th District Judge in Administrative Matters of Mexico City ordered in 2022 a suspension of the policy dismantling decision. Another legal action was granted by The 17th District Judge in Administrative Matters of Mexico City which was introduced by the Democratic Revolutionary Party (PRD by its Spanish acronym).