Making Leave Easier:
Better Compensation and Daddy-Only Entitlements[*]

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Abstract

In 2006, Quebec enacted a landmark reform to paid parental leave that greatly improved the generosity of entitlements and established a father's non-transferable right to paid leave. Using data from the Employment Insurance Coverage Survey and employing a difference-in-differences setup, I find that the reform was associated with a striking rise in fathers' participation: an increase of 52 percentage points in fathers' participation rates and an increase in fathers' leave duration by 3 weeks. Further, there is evidence of an intra-household flypaper effect via the labeling of leave as 'daddy-only', i.e., the allocation of leave within a household appears to be influenced by the framing of legal rights even when they do not bind. The reform was associated with an increase of 11 percentage points in mothers' participation rates, and the duration of the average maternity leave increased by over half a month under the new program. I find no change in mothers' exit rates from the labor market on average but do find an increase in the probability of returning to the pre-birth employer if her husband took leave. The reform was also associated with a reduction in the average income loss experienced by households in the month following the birth.

JEL Classification: J13, J22, J16, J18, J53, I38

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1 Introduction

Job-protected parental leave mandates are a common public provision in developed countries, with the aim of promoting the welfare of infants and parents. They vary considerably internationally - they tend to be long, universal and generously compensated in European countries, whereas they are short, restricted and unpaid in most of the United States.[1] The central aim of maternity leave is to allow mothers to fully recover from childbirth and to form a bond with their babies. Other rationales for providing parental leave include maintaining a productive economy by retaining female workers, sustaining birth rates, decreasing unemployment and relieving some of the parenting deficit that is growing alongside the increasing incidence of dual-earner parents with long working hours (Haas, 1992; Wilkinson and Radley, 1997).

In countries that have well-established provisions for paid leave, the recent trend in policy-making has been towards increasing the generosity of entitlements (Öun, 2010). For example, a reform to the paid parental leave program in Quebec, which is the subject of this study, aimed to improve access and feasibility of leave for a majority of men and women. This was likely in response to the criticisms of the older Employment Insurance (EI) system that it offered weak and gendered coverage, and that it was inaccessible to that share of the population that is more likely to have non-standard employment (Vosko, 2000). Often, workers who undertake part-time, casual, seasonal or temporary employment, or who work for several employers or are self-employed are less likely to meet the eligibility criteria for paid parental leave programs. Moreover, they are also more likely to have limited financial resources, making it infeasible to take leave that is poorly compensated, especially at a crucial time such as the birth of a child which entails many expenses. Accordingly, there have been moves towards not only relaxing eligibility criteria so that more people qualify for paid leave but also making benefits more generous such that they offer a viable substitute for regular pay.

As the single breadwinner model increasingly gives way to the dual-earner household, another increasingly common objective of parental leave reforms is to promote gender equality. There has been a trend in policy-making, beginning in Scandinavia but now catching on in other countries, towards promoting equality by modifying the traditional division of labor so that both financial and household responsibilities are fairly shared by women and men.[2] One such strategy is to encourage fathers to take more parental leave. Such a strategy aims to increases fathers' contact with and care for their infants, train them as primary caregivers, reduce work-family frictions by labeling working men as fathers in the workplace, and offer a more supportive home environment for working mothers by reducing the burden of childcare and domestic work that falls on them. These policies aim to strengthen the ties of fathers to their family and simultaneously the ties of mothers to working life. Fathers' participation in parental leave programs has thus become a notable area of policy debate in many OECD countries (Moss and O'Brien, 2006).

In this study, I explore the effects of a landmark reform to parental leave benefits in Quebec which both

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[1]By state mandate, pregnancy- and childbirth-related leave are available to eligible employees in California, Colorado (for public employees), Hawaii, New Jersey, New York, and Rhode Island via Temporary Disability Insurance. Further, California, New Jersey and Rhode Island have established Paid Family Leave Programs to augment their existing TDI Programs

[2]The first country to introduce an explicit period of leave reserved for only fathers' use, i.e., a 'Daddy quota', was Norway. The belief that paternity leave can promote these changes in gender dynamics is expressed in a series of white papers Likestilling og Likelønn (http://www.regjeringen.no/nb/dep/bld/pressesenter/pressemeldinger/2010/likestilling-for-likelonn.html?id=626450, accessed 10/05/2012.http://www.regjeringen.no/nb/dep/bld/dok/regpubl/stmeld/2010-2011/meld-st-6-20102011/10.html?id=625781 accessed 10/05/2012.) and Reformerad Föräldraförsäkring Kärlek, Omvardnad, Trygghet (http://www.regeringen.se/sb/d/5140/a/49766 - accessed 10/05/2012)

increased the generosity of leave entitlements and introduced 'daddy-only' leave. From 2001 to 2005, eligible employees in all provinces could claim parental leave benefits through the Employment Insurance (EI) Program. In 2006, Quebec left the national Employment Insurance system and established the Regime Quebecois D'assurance Parentale or the Quebec Parental Insurance Plan (QPIP). The new program lowered the eligibility criteria so that many more parents could qualify, increased the income replacement rate offered by benefits, raised the earnings ceiling that benefits could be claimed on, offered flexibility through more leave options, and established a father's individual non-transferable right to leave (Doucet et al., 2010). Using this quasi-experimental setup, I explore five main questions. First, how did the leave-taking behavior of fathers and mothers respond to such an increase in generosity? Second, from a policy design perspective, did it matter how the legal rights to benefits were distributed within the household? Third, what were the effects on mothers' employment rates and employer continuity? Fourth, did the effects of the reform differ for parents who may be vulnerable to additional pressures surrounding the issue of leave-taking, such as parents from low-income households or first-time parents? Fifth, did the program reduce the loss of income typically experienced by a household following the birth of a child?

I employ data on claims for parental leave benefits from the Employment Insurance Coverage survey from 2002 to 2010 and my strategy is rooted in exploiting variation in paid leave entitlements across Canadian provinces and over time. The results are striking: I find that the 2006 reform to parental leave in Quebec was associated with a dramatic rise in fathers' participation: an increase of 52 percentage points in fathers' participation rates and an increase in leave duration of over 3 weeks. Further, there is suggestive evidence of an intra-household flypaper effect via the labeling of leave as 'daddy-only', i.e., that benefits seem to 'stick' to the father due to the label even though the quota does not bind. I find strong effects of the program on mothers' participation in paid leave also: the reform was associated with an increase of 11 percentage points in mothers' participation rates and the duration of the average maternity leave increased by over half a month. Though I find no change in mothers' exit rates from the labor market, I do find a large program effect on employer continuity amongst mothers whose husbands also take leave. The reform was also associated with a reduction in the average income loss experienced by households in the month following the birth of over $200.

This study contributes to a large literature on how parents' leave-taking behavior responds to the structure of benefit entitlements and a smaller literature on how households' decision-making may be influenced by the distribution of legal rights within them. The reform in Quebec offers an attractive basis for inference not only due to the existence of a natural control group in the form of the other provinces but also due to the orthogonality of the changes in benefit entitlements to unobserved individual characteristics. This study is the first to conduct a detailed examination of this policy episode while examining a long span of data, exploiting variation across provinces and across time, controlling for individual characteristics and province trends, and conducting detailed regression analyses in order to identify causal relationships.[3] Further, this paper is the first in the literature to evaluate the impact of a 'use it or lose it' Daddy quota on fathers' leave-taking using a difference-in-difference technique with a natural control group. This is also the first

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[3]Marshall (2008) conducts a basic study of fathers' claim rates but the analysis only examines data up to one year after the reform occurred, looks at overall patterns by comparing averages in Quebec to averages in other provinces, does not control for any individual characteristics or province trends, and does not conduct any statistical tests of significance. This paper improves upon this analysis by considering a longer span of data, exploiting variation across provinces and across time, controlling for individual characteristics and province trends, and conducting regression analyses in order to evaluate statistical significance. Moreover, this paper considers a wider scope, evaluating the existence of a labeling effect, considering labor-market outcomes for mothers, and exploring how the effects of the reform may have differed for members of particularly vulnerable groups.

study to offer causal evidence of an intra-household flypaper effect, that the framing of legal rights withing such benefit schemes may be important in determining take-up.

2 Background

2.1 Policy Environment

In every Canadian province, at least a full year of job-guaranteed parental leave is available to every parent who has worked 52 weeks or more with their current employer.[4] Further, eligible parents can claim parental leave benefits, thus converting some of this leave into paid leave. The Employment Insurance (EI) Program, which all Canadian provinces used from 2001 through 2005, offers maternity benefits which mothers can take in the weeks immediately succeeding the birth, and some parental benefits that mothers and fathers must decide how to share between them. Most provinces continue to subscribe to the EI Program, except for the province of Quebec. On the 1st of January 2006, Quebec introduced the Regime Quebecois D'assurance Parentale or the Quebec Parental Insurance Plan (QPIP), to which employees contribute and claim benefits from instead of the traditional EI system. The details of the Employment Insurance plan, currently offered to residents of other provinces, and the QPIP Basic and Special plans, currently offered to residents of Quebec, are given by Table 1.

Table 1: Details of Paid Parental Leave Programs in Canada in 2006

	Employment Insurance	**QPIP Basic Plan**	**QPIP Special Plan**
Eligibility	600 hours of insurable employment	$2000 of insurable earnings	$2000 of insurable earnings
Basic Replacement Rate	55%	70% for all maternity, & paternity leave, first seven weeks of parental leave and 55% thereafter	75%
Max insurable earnings	$39,000	$57,000	$57,000
Waiting Period	2 weeks	None	None
Duration	Total 50 weeks: 15 weeks maternity leave 35 weeks parental leave no paternity leave	Total 55 weeks: 18 weeks maternity leave 32 weeks parental leave 5 weeks paternity leave	Total 40 weeks: 15 weeks maternity leave 25 weeks parental leave 3 weeks paternity leave

Source: Table constructed by author using information from the Digest of Benefit Entitlement Principles, available at http://www.servicecanada.gc.ca/eng/ei/

For features which may change on a yearly basis, such as the amount of maximum insurable earnings, figures provided are for 2006.

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[4]In Quebec, the duration of job-guaranteed leave is 52 continuous weeks but is available up to 70 weeks after the birth of the child. However, the period of paid leave can only be taken in the 52 weeks after the birth of the child.

QPIP's features were designed to offer an improvement over the older EI system by easing some of the common barriers that parents previously faced to taking leave, namely, inflexibility, ineligibility, financial feasibility, and gendered attitudes. First, the QPIP system was designed to be more flexible, offering parents a choice between the Basic Plan or a Special plan that offers higher benefits for a shorter duration, thereby letting parents select the combination of benefit amount and duration which best suited their needs. Second, the reform lowered the eligibility criteria, thereby improving coverage and making leave possible for more parents by easing access to income replacement. The EI system requires a claimant to have worked 600 hours of insurable employment in order to be eligible to receive benefits, making it difficult for workers from seasonal, temporary, part-time or otherwise non-standard employment, who tend disproportionately to be low-income mothers, to qualify. In comparison, the QPIP system uses an earnings-based threshold which is easier to meet, such that any claimant who has at least $2000 CAD of insurable earnings can qualify. Third, QPIP offers more generous compensation for foregone income. By both increasing the maximum replacement rate from 55% to 70%, and simultaneously raising the ceiling of maximum insurable earnings on which one can claim (from $39,000 to $57,000 in 2006), QPIP ensures that a greater portion of foregone wage income can be recovered via benefits while on parental leave. The structure of benefits using the replacement rates and earnings ceilings of the EI program and Basic QPIP scheme are compared in Figure 1 below.
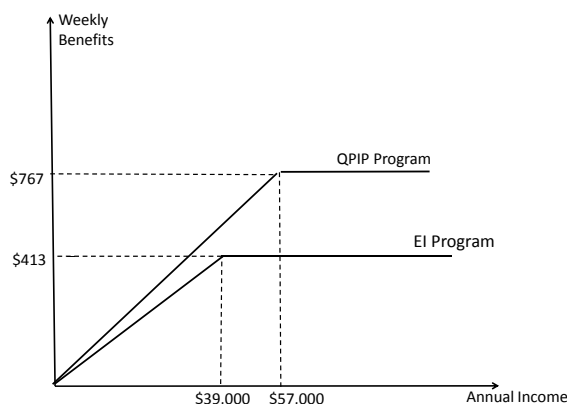

Figure 1: Benefits as a function of Income in the EI and QPIP Programs

QPIP also offers the nation's first of its kind 'daddy quota', whereby 5 weeks of leave (or 3 weeks under the Special Plan) are set aside for the father and cannot be transferred to the mother. This quota was designed to combat fathers' unwillingness to take leave, correct gendered workplace attitudes, and remove the need for fathers to negotiate with spouses who may be unwilling to share parental leave. This important feature of the reform stands in stark contrast to the EI Program where fathers enjoy no individual right to paternity leave and may only access paid leave through shared parental leave. More generally, QPIP changed several restrictions on the distribution of parental leave benefits. To begin with, QPIP abolished the 2-week waiting period for benefits that EI claimants are subject to. Under QPIP, the amount of gender-neutral leave to be shared between parents was reduced and some weeks were reallocated to individual non-transferable leave for each parent. The net result was that mothers retained access to the same amount of potential leave as before, 50 weeks, but a larger share now came through maternity leave rather than gender-neutral parental leave. Fathers gained access to more leave than they had earlier, 37 possible weeks under QPIP versus 35

possible weeks under the EI Program. Note that QPIP increased the total amount of leave available to a family, from 50 weeks to 55 weeks, so the total family leave increased by the amount equivalent to the 'daddy-only' weeks. If a mother consumed all 50 weeks of the family's leave under the counter-factual, it was not necessary for her to reduce her own consumption of leave in order for the father to utilize his quota. Therefore, it did not become necessary for the fathers to increase their consumption in order to maintain the previous amount of family leave, only to maximize the new amount of total family leave.

2.2 Theoretical Considerations

2.2.1 Better Compensation

To consider how the changes to the amount of benefits may have influenced parents' leave participation decisions we can consider a simple model of the maximization problem faced by a parent over the one-year period of job-protection that is offered in Canada. The representative parent has utility $U(Y, L)$ over two normal goods: real income, Y, and weeks of Leave, L. They face two constraints. First, a time constraint, whereby weeks of employment, E, and weeks of leave, L, must add up to the 52 consecutive weeks of job-guaranteed leave a parent is eligible for, such that

$$L + E = 52. \tag{1}$$

Second, a Goods constraint: where real income is the sum of wage income, wE, and income from benefits, BL, such that

$$Y = wE + BL. \tag{2}$$

In addition, a representative father faces the additional constraint that only 35 weeks of the total 52 weeks of job-protection can be paid leave, such that for fathers:

$$BL = \begin{cases} 35b \text{ if } L > 35 \\ bL \text{ if } L < 35, \end{cases} \tag{3}$$

where b is the weekly benefits and L is the number of weeks of leave taken.

Combining equations (1) and (2) the above constraints results in the familiar full-income constraint:

$$Y + (w - b)L = 52w. \tag{4}$$

(4) is the parent's budget constraint, which requires that the explicit real income, Y, and the implicit cost of taking leave,$(w - b)L$, equal the parent's total potential earnings over the year, $52w$.

To consider the possible effects of the move from the EI Program to QPIP, let us consider how the reform altered the budget constraint faced by low-income (earning wage W_L) versus high-income(earning wage W_H) mothers and fathers, as shown in Figures 1-4.
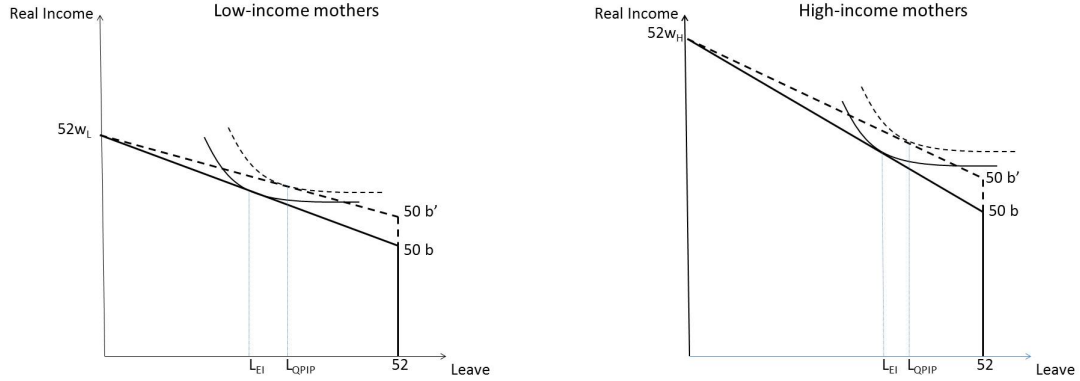
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Figure 2: Changes in Budget Constraints for low- and high-income mothers

For all mothers, the increased generosity of benefits from b to b', changes the slope of the budget constraint, by altering the relative price of $(w - b)$. Since leave is a normal good we expect positive income and substitution effects from this reduction in price, so the improved generosity of benefits should have resulted in an unambiguous increase in the consumption of leave. This increase in leave consumption should be evident in not only participation rates of parents but also in the duration of leave for leave-takers. Further, although benefits are calculated as a percentage amount, they are subject to a maximum ceiling, therefore a parent earning high wages, w_H, faces a larger wage-benefit differential than a parent earning low wages, w_L. Therefore it is also reasonable to expect that low-income parents will start out with lower leave consumption but since they face a smaller wage-benefit differential, the marginal reduction in the price of leave due to QPIP is larger, and their response to the new program should be stronger.
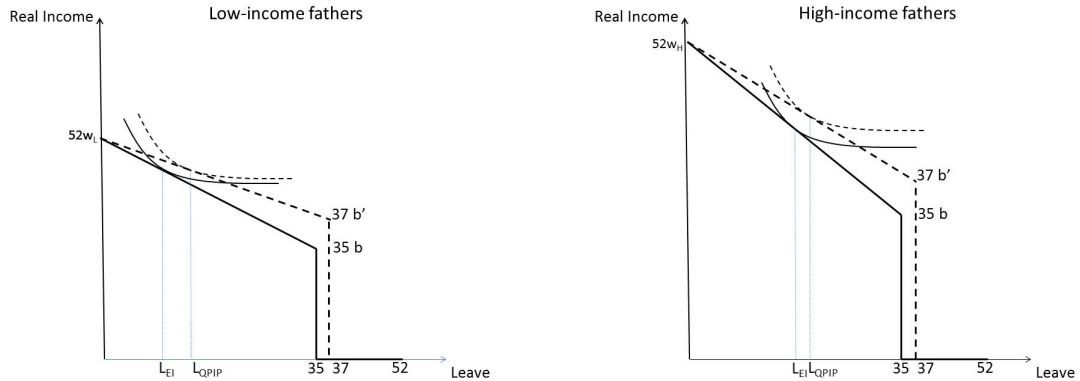

Figure 3: Changes in Budget Constraints for low- and high-income fathers

Figure 3 shows the budget constraints of low- and high-income fathers. Similar to mothers, fathers experienced an increase in the amount of financial compensation, from b to b', under the QPIP program compared to the EI Program. In addition, fathers also gained access to 2 more potential weeks of leave under QPIP, so the portion of their budget constraint corresponding to paid leave shifted out from 35 to 37 weeks of leave. Once again, paid leave is considered a normal good such that fathers should respond to the improved benefit amounts and additional weeks of compensation (essentially a reduction in the price of extended leave) by increasing their consumption of it. As in the case of mothers, the marginal increase in benefit amount

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is greater for low-income fathers who should increase their consumption by more than higher-earning fathers.

2.2.2 Daddy-only Entitlements

The effect of the reservation of 'daddy-only' weeks on the household's optimization problem requires careful evaluation. Under a unitary model of household decision-making if the family's objective is to maximize total time with the baby and it always consumes the total amount of leave available then the daddy quota would induce fathers' participation by making it necessary for maximization that fathers consume their reserved leave. Thus the introduction of the quota could make the difference between a father participating or not participating if, under the counter-factual, his wife consumed the total amount of leave allocated to the family, i.e. 50 weeks of paid leave plus the mandatory 2-week waiting period. However, Figure 4 shows the distribution of leave (both paid and unpaid) in Quebec in the period before the reform; it is clear that although there was bunching at the cap of 52 weeks a significant portion of mothers were not consuming all the paid leave available to the household.
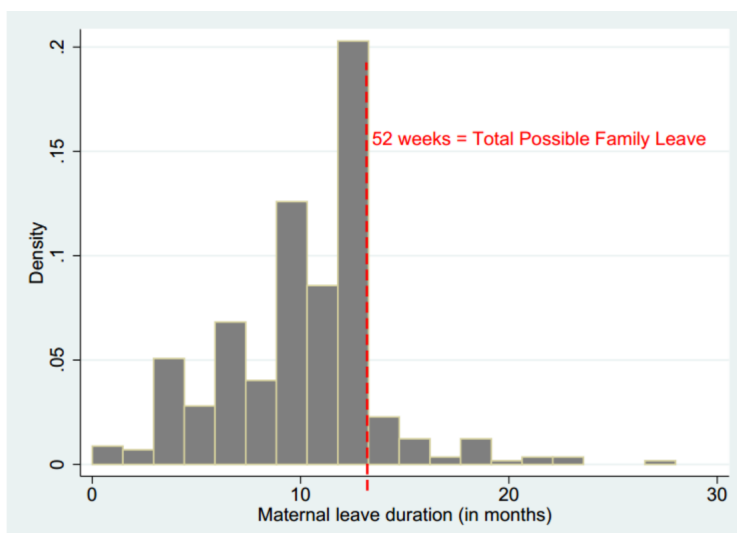

Figure 4: The Distribution of Maternal Leave Duration in Quebec Pre-reform (2002-2004)

Figure 5 shows the cumulative density function of mothers' leave duration in Quebec and the Other Provinces in the pre-reform period (2002-2004). While the EI system was in place nationwide, Quebecois mothers were actually less likely to take leaves of 10, 11 or 12 months, than mothers in other provinces. However, in all provinces, more than 60% of mothers consumed 11 months or less of leave, essentially leaving at least a month of paid leave that fathers could have consumed. Since under the EI Program the first 2 weeks of leave were unpaid due to the 2-week waiting period, in these 60% of households there was at least 1.5 months of paid leave that was being left on the table, that was always available for fathers to utilize. Further, since the survey question asks for all leave taken, this is a conservative estimate of the leave that was available to the father, since it is possible some of the reported mothers' weeks were taken as unpaid job-protected leave or other forms of paid leave such as sick or vacation leave. In the case of the majority of families then, who were not consuming at the cap pre-reform, the newly imposed constraint of the daddy quota should not have been binding. Accordingly, any increase in total family leave under QPIP should have been considered an ordinary extension of leave since the new weeks were essentially fungible. Thus, we should expect no effect

of the daddy quota on the relative proportion of family leave consumed by husbands.
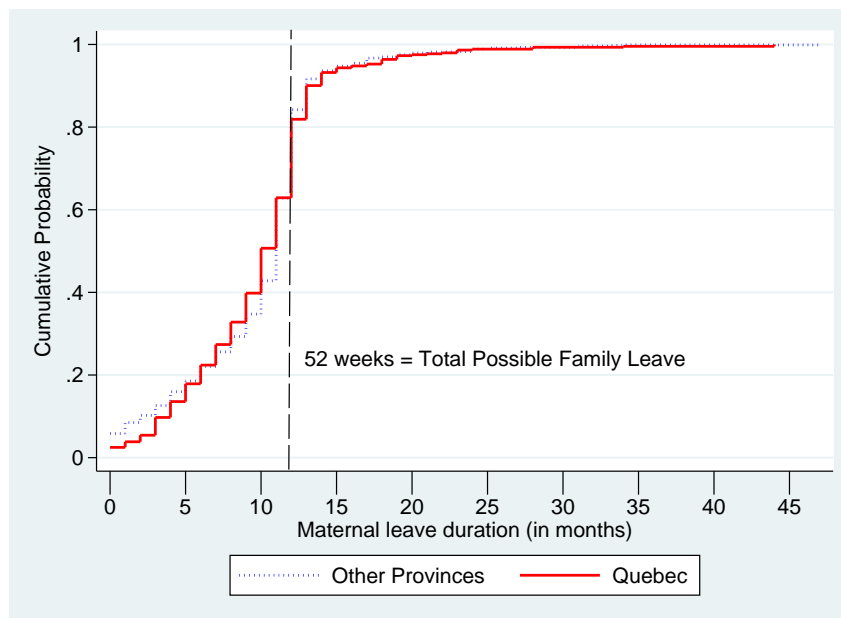

Figure 5: The Cumulative Density Function of Maternal Leave Duration in Quebec and Other Provinces Pre-reform (2002-2004)

It is also interesting to consider possible interaction effects between parents' leave-taking. When a family consumes at the cap, leave participation from one parent necessarily reduces the participation of the other spouse. Even when not at the cap, increased leave participation from one spouse may have a dulling effect on the response of their partner, e.g. a mother could cut her leave short and return to work earlier if her husband steps in to care for the baby. On the other hand, mothers may be inclined to take leave simultaneously with their husbands, to offer support and training in their new care-giving role. It is not clear ex-ante which effect will dominate, and such interaction effects are considered in the regression analyses.

2.3 Motivation and Previous Research

This paper seeks to answer five questions about the impact of the 2006 Quebec reform, which introduced more generous parental leave benefits and established a daddy quota. First, how does the leave-taking behavior of fathers and mothers respond to this reform? Second, from a policy design perspective, does it matter how we allocate the legal rights to benefits within the household, i.e., does an intra-household fly-paper effect exist between spouses, whereby benefits 'stick' to the household member they land on? Third, were there any effects on mothers' labor market outcomes such as employment and job continuity? Fourth, did the effects of the reform differ for parents who may be who may be vulnerable to additional pressures surrounding the issue of leave-taking, such as low-income parents or first-time parents? Fifth, what was the program effect on the loss of income typically experienced by a household following the birth of a child?

The research on fathers' leave participation is motivated by the potential welfare consequences for fathers, mothers and children. Advocates of paternity-leave argue that it helps new fathers accommodate the demands of parenting, promote greater involvement and attachment with their offspring, and diminish the proportion of childcare responsibilities that falls on the mothers. Fathers' use of parental leave has a positive

association with fathers' participation in childcare and their satisfaction with contact with their children (L. and C.P., 2008). To the extent that paternity leave facilitate men's involvement in the care of their children, such policies have positive consequences for child well-being since numerous studies show that fathers' involvement is positively associated with children's social, emotional, physical, and cognitive development (Allen and Daly (2007) provide an extensive summary). Further, there is evidence to suggest that fathers who take parental leave are more involved in childcare and housework even after the leave period ends (Tanaka and Waldfogel, 2007; Nepomnyaschy and Waldfogel, 2007; Patnaik, 2012). Fathers' leave-taking can also have positive effects on their wives' careers. The evidence suggests that when the amount of leave reserved for fathers increases, mothers return to work faster, even controlling for the statutory length of maternity leave (Pylkkänen and Smith, 2003). Since fathers' leave-taking is associated with greater involvement later in the household, this may relieve mothers of some domestic responsibilities, freeing up time and resources to dedicate to their own careers. Lastly, as fathers increase their leave participation, women could face less statistical discrimination in employer's hiring and training decisions, as they increasingly will not be the only ones taking time away from paid work to care for children (Haas, 1992).

Despite the multitude of reasons that fathers' leave participation may be beneficial to fathers, mothers and children, research has shown that participation rates of fathers remain much lower than that of mothers (Bruning and Plantenga). Since fathers are more likely to be full-time full-year workers in standard employment than mothers, ineligibility is less likely to be a barrier to their leave participation.[5] However, since the father is often the higher-earning parent, the issue of financial compensation plays a significant role in their decision to take leave, and studies have consistently showed that the loss of earnings via foregone wages while on leave is an important factor in fathers' decisions to take parental leave (Beckmann, 2001; Zhelyazkova, 2013). It is also common for fathers to cite workplace attitudes as an obstacle to utilizing leave even when they are entitled to it, out of fear it could damage their careers (Bygren and Duvander, 2006). Social and psychological factors may also play a role: it is possible men display a lower taste for childcare than women, that social gender constructs push men to see themselves as the primary breadwinner who must prioritize paid work, and that they are rarely exposed to role models in the form of men who care for infants. In addition, some women may have a greater taste for childcare, and desire to spend more time with the baby and thus be unwilling to share leave with their spouse (Seward, 2006).

Previous research has confirmed that reforms which ease these barriers to leave are successful in encouraging fathers' leave-taking. Fathers' leave take-up is higher in countries with generous compensation rates (Moss and O'Brien, 2006) and is especially low in countries like the US where leave is unpaid (Han et al., 2009). Findings show that fathers' use of statutory leave is greatest when high income replacement (50 percent or more of earnings) is combined with extended duration (more than fourteen days) (O'Brien, 2009). When only gender-neutral shared parental leave is offered to parents it often becomes de-facto maternity leave, whereas establishing a period of father-only leave not only brings the issue of father participation to the forefront of peoples minds, but also helps fathers get past organizational constraints to leave-taking and bargaining with spouses who are unwilling to share leave.

Several studies have shown that fathers are more likely to utilize leave when a daddy quota is in place

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[5]This is the case in countries where eligibility is linked to the individual workers' status, as it is in all provinces of Canada. In some nations, such as Norway, eligibility is derived through the mothers' employment status, such that if she does not qualify for benefits then the father cannot qualify either.

(Bruning and Plantenga; Haas and Rostgaard, 2011). However, these studies provide reviews or cross-country comparisons which may be subject to endogeneity bias. Further, these studies exploit reforms in Nordic and Scandinavian countries where the redistribution from gender-neutral leave to a daddy quota meant that often the total amount of family leave was reduced if the father did not participate. This design, combined with the high proportion of mothers who exhausted the family's total leave prior to the reforms in these countries, means that the positive effect of the daddy quota on fathers' take up may have stemmed simply from the introduction of a binding constraint. This paper exploits exogenous variation in policy with a credible control group in the form of other Canadian provinces, and offers a causal estimate of the effect of a daddy-quota. This paper is also the first to directly explore whether the 'daddy-only' label could matter even if the constraint does not bind, i.e., whether there may be a fly-paper effect within the household such that benefits appear to stick to the household member they land on, even when they are effectively fungible[6]

Considerable research has been conducted on the association between leave provisions and the leave-taking behavior and labor market outcomes of mothers. For a full review of the literature please see Rossin, Ruhm Waldfogel (2012). This literature is motivated by the positive association between maternal leave-taking and child and self-reported mental and physical health outcomes (Ruhm, 2000; Lindberg, 1996; Baker and Milligan, 2007; Berger, 2005; Chatterji and Markowitz, 2008) as well as the debate surrounding the effect of maternity leave on mothers' long-term labor market outcomes. An expansion of leave tends to increase employment continuity over the birth event (Waldfogel, 1998; Baker and Milligan, 2005). An expansion in paid leave, either through a reduction of eligibility criteria, an increase in duration, or in the level of financial compensation, likely results in some women delaying their return to work (Rönsen and Sundström, 1996; II, 2003; Ondrich, 2003). Baker and Milligan (2007) investigated the extension of the Canadian Employment Insurance program in 2001 and confirmed that the extension in leave mandates to 52 weeks increased the period of time before mothers return to work post-birth by about 2.73 weeks. Not only do leave mandates increase the relative employment rate of young mothers in the first few years of a childs life (Ruhm, 1998), but also there is evidence that parental leave programs lead to increased job retention (Waldfogel, 1998; Berger and Waldfogel, 2004; Baker and Milligan, 2005, 2008). Greater job continuity offers potential advantages: retention of good matches, utilization of job-specific skills, reduced need for signaling due to a clear record of productivity, longer tenure, and higher wages in the long term. Existing evidence for the US and several European countries suggests that maternity leave coverage leads to wage gains to women (Klerman and Leibowitz, 1995; Ruhm, 1998; Waldfogel, 1998). Evaluating the long-term labor market consequences of the Quebec reform is then important not only for the sake of the mothers' welfare, but also from a political economy perspective- the high tax burden of the parental benefits program would seem more justifiable if it led to higher wages and higher tax revenues in the long run.[7]

Since a key rationale for expanding coverage under the QPIP Program was to increase economic equality,

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[6]A small number of studies have provided evidence of such an intra-household flypaper effect that stem from educational fee reforms (Shi 2012), school feeding programs (Jacoby, 2002) or child benefits (Kooreman, 2000), but they all examine the reallocation of expenditures in response to directives aimed at children. This paper provides the first evidence of an intra-household flypaper effect in the allocation of benefit consumption between husband and wife stemming from a labeling effect.

[7]The Conseil de gestion de lassurance parentale, had estimated the initial cost of the QPIP at 1,080 million CAD and expected that 70% of its funding would come from the employment insurance premium rebate from the federal program. However as of 2009 the value of the federal rebate now amounts to just 53% of the QPIPs total cost. The architects of QPIP also underestimated the extent to which fathers would respond to the new program. They had expected to pay 55 million CAD of paternity benefits during the plans first year, but the dramatic response from fathers meant that they spent 88 million CAD on paternity benefits in 2006, and have spent more every year since (2010 Report by IEDM -available at http://www.iedm.org/33500-analysis-of-the-quebec-parental-insurance-plan)

it is imperative to assess whether it succeeded in remedying some of these inequalities. Given the benefits of parental leave-taking for not only early child development but also parents' labor market outcomes, any inequalities in access and usage of parental leave across income classes may further exacerbate inequalities in health, education and quality of life outcomes for children. Since low-income families face more limited financial resources, parents from these families may not be able to afford even small reductions in take-home earnings occasioned by taking parental leave. Therefore their leave participation is likely to be more sensitive to an increase in generosity of benefits. Moreover, low-income or poorly-educated women are more likely to have part-time or temporary jobs or otherwise have weaker ties to the labor market; this makes them less likely to be eligible for benefits, or less likely to work for employers who are cooperative and supportive about extended family leave. Lastly, determining whether the program effects differed by income groups has implications for the allocative efficiency. Since benefit programs can be regressive in terms of eligibility, with higher-income parents being more likely to qualify and to receive higher benefit amounts (up to a cap), changes in the composition of leave participants may offer greater or lesser justification for such a generous extension of paid leave, which entails high public expenditures.[8]

It is also interesting to explore whether the program effects differed for parents having their first child for several reasons. First-time parents may be vulnerable to more financial pressures due to expenditures from fixed costs of children, and in the case of higher parity births, gendered household roles may be reinforced with mothers less likely to be in paid employment and fathers less likely to take time away from work. Other factors behind a differential first child effect are the novelty of a first birth and a potential association with age: younger fathers are likely to have lower income and savings, but are also less likely to be constrained by traditional attitudes about sharing family care and taking leave (Beaujot and Liu, 2005). There is evidence that fathers are more likely to take leave for the first time for their first child than for children born later (Whitehouse, 2007) and that fathers who use their rights to parental leave want to develop a close relationship with their children (Brandth and Kvande, 1998) and so should want to take more leave if they have more children in the future. It is thus interesting to consider the impact of the policy reform on first-time fathers since they have just had their gateway child.

Lastly, it is interesting to consider the effect of the program on the loss of income typically experienced by a household following the birth of a child as a measure of family welfare. While the higher benefits of the QPIP program naturally should have led to a lower income loss ceteris paribus, the changed composition of leave-takers along gender and income dimensions means that we cannot assume the program reduced the average household's income loss 'all else equal'. Therefore, it is relevant to ascertain whether the program did in fact lead to a reduction in the average income loss experienced by a household after the birth of a child, and whether these effects were different for low-income parents, first-time parents and fathers, who face the highest financial disincentives to taking leave.

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[8]Dahl et al. (2013) find that an extension in paid leave in Norway did not crowd out unpaid leave, had no effects on wages or tax payments or children's outcomes, and was regressive in that eligibility and benefit amounts increased along the income distribution, such that the increased leave benefits resulted in a pure leisure transfer to lower- and higher-income families. As a result, the large increases in public spending on maternity leave implied a considerable increase in taxes, at a cost to economic efficiency.

3 Research Data & Design

I use data from Statistics Canada's Employment Insurance Coverage Survey (EICS) to analyze the effect of the 2006 reform to paid parental leave on parents' participation rates, mothers' labor market outcomes, and household income loss in the month following the birth. The target population for this survey is a subset of the target population for the Labor Force Survey (LFS), and comprises unemployed individuals (as defined by the Labour Force Survey) and other individuals who, given their recent status in the labor market, could potentially be eligible for employment insurance. Mothers of infants less than one year old, who I will focus on in this study, fall into this last category, since they could potentially be eligible for benefits via maternity or parental leave. [9]

The Employment Insurance Coverage Survey is conducted annually, and this study focuses on mothers in a nine-year window framing the 2006 policy reform, from 2002 to 2010. Specifically, I use data from 2002-2005 as the pre-reform period, and 2006-2010 as the post-reform period. I exclude data from 2001 and earlier because there were nation-wide reforms to the length of both job-protected and paid parental leave in late 2000, and also because Quebec extended its publicly subsidized childcare to children aged 0 to 1 in 2001. There is one notable exclusion from the sample. I exclude mothers who report themselves as unattached individuals or single parents for three reasons. First, given the more limited financial resources of single parents, they are likely to respond differently to changes in the generosity of benefits than their partnered counterparts. Second, since they have no partner to share the gender-neutral parental leave with, there is no consideration of allocation decisions, which is an important component of this analysis. Third, there is concern that their behavior may be influenced by other policy changes which occurred in that period, such as enhancements of the National Child Benefit which particularly targeted lower-income single parents. Small sample sizes preclude a separate analysis of single mothers and I therefore restrict myself to mothers who identify themselves as part of a couple.

The primary sample comprises pooled cross-sections of observations, resulting in a total of 9,484 observations of mothers aged 18-50 who identify as part of a couple and have a child under one year old. Roughly 42% of the observations occurred before the reform. Approximately one-fifth of the observations are from Quebec, while the rest of the observations come from the control group which comprises the five largest other provinces, i.e. Ontario, Alberta, British Columbia, Atlantic Region, and Manitoba and Sakatchewan, where the EI system remained in place over the entire period of the analysis. The survey content is rich in information about the proportion of mothers who received benefits, the duration and amounts of those benefits, the way in which these parental benefits were shared between couples, the timing and circumstances related to mothers decisions to return to the workplace, and household incomes and changes in income after the birth. One limitation of the Employment Insurance Coverage Survey is that since the target respondents are mothers, our only information about fathers is via mothers' reports of their spouse's behavior and characteristics. Fortunately, the survey asks respondents about whether their spouses leave participation and duration as well as his education and income and other personal characteristics.

The outcomes regarding participation rates are measured by indicators taking value 1 if the respondent (or

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[9]Specifically excluded from coverage are residents of the Yukon, Northwest Territories and Nunavut, persons living on Indian Reserves, full-time members of the Canadian Armed Forces and inmates of institutions. These groups together represent an exclusion of approximately 2% of the population aged 15 or over.

her spouse) has claimed or plans to claim maternity/parental/paternity benefits through the EI or QPIP system. Parent's leave duration is measured by mothers' reports of total actual or planned leave taken by her and her spouse. There are two important things to note about our measure of mothers' leave duration. First, the survey asks new mothers about the duration of all leave (not specifically paid parental leave) taken. Hence, it could also capture any unpaid leave or paid sick or vacation leave mothers take in lieu of paid parental leave. However, given the generous paid parental leave available and lack of stigma to maternal leave-taking, this is unlikely to have been the case except for mothers who used it as a means to supplement the paid parental leave which they had exhausted. Second, it is important to note that the EICS surveys both mothers who are currently on leave at the time of the survey and mothers who have already returned to work. Mothers who are still on leave at the time of survey offer responses about their planned leave duration while mothers who have returned to work report their completed leave duration. Though there is the concern that mothers still on leave may report planned duration that is either shorter or longer than the actual length of leave they end up taking, there is a strong data-motivated rationale for not excluding these mothers. Since the EICS only covers mothers who have an infant under a year old, limiting our sample to mothers who have already returned to work would lead to a systematic over-representation of mothers who took short to medium term leaves, and skew the distribution of leave durations to the left. Consequently, I treat duration of leave to be length of completed leave for those who have returned, and length of planned leave for mothers still on leave. Simultaneous leave-taking is measured by an indicator for a mother reporting she and her spouse claimed parental benefits at the same time. Next, mothers' exit rates are measured by an indicator taking value 1 if the respondent answered that she does not plan to return to the workforce.[10] Mothers' job continuity is measured by an indicator taking a value of 1 if the respondent has returned or plans to return to her pre-birth employer when her leave ends. Lastly, the income loss of a household corresponds to the amount of income change reported by a mother who reports a decrease in income in the month following the birth of a child.

Table 2 presents summary statistics for both the full and restricted samples, along with the differences-in-means across the treatment and control groups. There are three notable differences in covariates across groups which could cause concern. First, the average age of new parents in Quebec grew by slightly more than parents in other provinces over this decade. Since older mothers are likely to earn higher wages and are less likely to live with their parents and face different income and care constraints. However, the difference reported for our sample is under one year and not economically significant. Second, the proportion of the sample that are immigrants also grew more in Quebec than it did in other provinces. Lastly, the education levels of new parents rose more in Quebec than it did in other provinces, with a higher proportion of college attendance and lower proportion of new parents who only received a high school degree or less. Since higher education is correlated with both higher wages and more gender-egalitarian beliefs, this is difference in covariates is worthy of note [11]. To account for these compositional changes in the sample, all regression analyses control for personal covariates such as age, education and immigrant status.

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[10]Since the nature of the survey question about leave duration refers to all leave and not just paid leave, we do not have an accurate duration for mothers who do not plan to return to work are not able to answer the duration of 'leave' they took since this leave is presumed to be indefinite.

[11]Studies have found higher participation rates in parental leave among fathers married to more educated and older partners (Geisler, 2011; Sundström and Duvander, 2002)

Table 2: Summary statistics

Variables	(1)	(2)	(3)	(4)	(5)
	Mean	Mean	Mean	Mean	Difference
	Other Provinces	Other Provinces	Quebec	Quebec	in means
	2002-2005	2006-2010	2002-2005	2006-2010	across groups
Outcomes					
Sample Size					
Fathers' participation rate	0.092	0.0.107	0.217	0.750	**0.52**
Fathers' Leave Duration (weeks)	1.158	1.439	2.031	5.47	**3.16**
Mothers' participation rate	0.640	0.644	0.714	0.813	**0.096**
Mothers' Leave Duration (months)	10.122	10.483	10.531	11.37	**0.479**
Mothers' exit rates	0.175	0.186	0.090	0.106	0.005
Mothers' Employer Continuity rate	0.877	0.892	0.883	0.890	-0.008
Household Income Loss	554.101	800.444	391.0807	280.419	**-257.00**
in month after birth (CAD)					
Personal and Household Characteristics					
Age of mother	30.388	30.518	29.403	30.384	**0.853**
Age of Spouse	32.981	33.019	32.199	32.742	**0.504**
Immigrant	0.232	0.215	0.117	0.182	**0.081**
Family Size	3.826	3.855	3.737	3.77	0.011
Number of children aged 0-1	1.012	1.018	1.010	1.015	0.0000
Number of children aged 1-5	0.535	0.577	0.501	0.531	-0.012
Number of children aged 6-17	0.254	0.261	0.212	0.256	0.037
Mother has high school degree or less	0.255	0.216	0.1739	0.164	0.029
Mother has some college	0.408	0.414	0.5245	0.461	**-0.070**
Mother has college degree	0.334	0.369	0.300	0.375	0.038
Father has high school degree or less	0.274	0.256	0.243	0.181	**-0.045**
Father has some college	0.416	0.420	0.505	0.503	-0.006
Father has college degree	0.283	0.300	0.244	0.307	**0.046**

Notes:

1. The Sample is from the Employment Insurance coverage survey from 2002-2010 and comprises mothers aged 18-50 with a partner/spouse in the household and a child under one year old.

2. Differences presented in bold are significant at the 5% level.

To analyze the impact of the 2006 reform to parental leave benefits in Quebec I exploit variation in the structure of benefits across provinces and time. I estimate several difference-in-difference models where the treatment group includes mothers in Quebec before and after the reform was implemented, and the control group includes mothers from the other 5 Canadian provinces observed for the same time period. Data from survey years 2006 and later is considered post-treatment. I estimate several specifications: (i) the basic D-in-D model, to explore the effect of the reform on the treated, and (ii) a D-in-D model which explores heterogeneous program effects for low-income and first-time parents.

The basic difference-in-difference regression equation takes the form:

$$Y_{it} = \alpha + \beta Quebec * Post_{i,t} + \theta Post_{i,t} + \phi Z_i + \lambda P_{it} + \chi T_i + \epsilon_{it}, \tag{5}$$

where $Y_{i,t}$ represents the outcome of mother i in year t. I study the following outcomes: whether the parent claims parental leave benefits, the duration of their actual or planned leave, whether the mother plans to quit the workforce after her leave ends, whether she plans to return to her pre-birth employer, and the income loss reported for the month following the birth of her child. The term $Quebec * Post_{i,t}$ takes the value of 1 if the mother i lives in Quebec in any post-reform year, i.e. after 2005, and otherwise takes the value 0. $Post_{i,t}$ is an indicator variable taking the value 1 if the time t is greater than 2006, i.e., if the observation occurred after the reform occurred. The coefficient θ represents the change in the value of the outcome that is shared by all provinces. The coefficient β therefore represents the DD estimate of primary interest as it captures the change in the value of the outcome post-reform that is unique to Quebec. Under the assumption that no other policy changes were enacted to affect it, β can be thought to represent the program effect that can be attributed to the introduction of QPIP. Assuming that the effects of the reform were heterogeneous, this equation estimates the average treatment effect on the treated (ATT).

The term Z_i is a vector of personal characteristics including age and education and immigrant status as well as household characteristics such as family size, number of children aged 0-1 and 1-5 and 6-17, which controls for changes in group composition. The term P_i is a set of indicators for each of the 6 provinces in the sample, essentially controlling for province-fixed effects. ϵ_{it} is the error term. I calculate cluster-robust standard errors that generalize the White (1980) heteroskedastic-consistent estimates of OLS standard errors to the clustered setting in order to account for possible heteroskedasticity and within-province dependence of standard errors, which are particularly a concern in difference-in-difference estimations since the regressor of interest is highly correlated within clusters (Bertrand et al., 2004). However, the small number of province-level clusters available in my sample leads to concerns regarding statistical inference since asymptotic tests have been shown to over-reject with too few clusters. Accordingly, I use bootstrap-t procedures suggested by Cameron et al. (2008) to provide asymptotic refinement of standard errors. All analyses are conducted using ordinary least squares regressions despite the binary nature of some of the indicators because they resulted in very similar estimates as those from logit estimates, and the calculation of marginal effects from triple interaction terms in logit estimations is known to be difficult (Puhani, 2008).

For regressions exploring the heterogeneous effects of the policy reform on specific groups, the estimating equation is:

$$\begin{aligned} Y_{it} = {} & \alpha + \beta Quebec * Post_{i,t} + \delta Group * Quebec * Post_{i,t} + \theta Post_{i,t} \\ & + \chi Group_{i,t} + \sigma Group * Quebec_{i,t} + \omega Group * Post_{i,t} + \\ & + \phi Z_i + \lambda P_{it} + \pi T_i + \epsilon_{it}, \end{aligned} \tag{6}$$

where in addition to the Variables in the basic DD equation, I also include an indicator $Group_{i,t}$ which takes the value 1 if the mother i belonged to a particular group, i.e. was a low-income or first-time mother, depending on the regression . Interaction terms with $Quebec_{i,t}$ and $Post$ are also included. Here, the primary parameters of interest are β, the coefficient on $Quebec * Post_{i,t}$, which describes how the reform affected the average person who does not belong to the particular group, and δ, the coefficient on $Quebec * Post * Group_{i,t}$,

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which captures the differential effect of the reform on outcomes for the average mother from the particular sub-group compared to the average mother not in the sub-group.

In order to be valid, the identification strategy requires that mothers did not alter their fertility or labor market behavior in anticipation of the reform, i.e. that the reform was mostly unanticipated. To investigate the validity of this design Figure 6 gives a measure of when and to what extend potential parents could have known about the reform. The figure displays the Google Search Volume Index relating to the number of 'QPIP' searches on Google Canada. It shows that there were virtually no searches before the reform occurred, and there is a pronounced spike in January 2006 when the new program was introduced.[12]
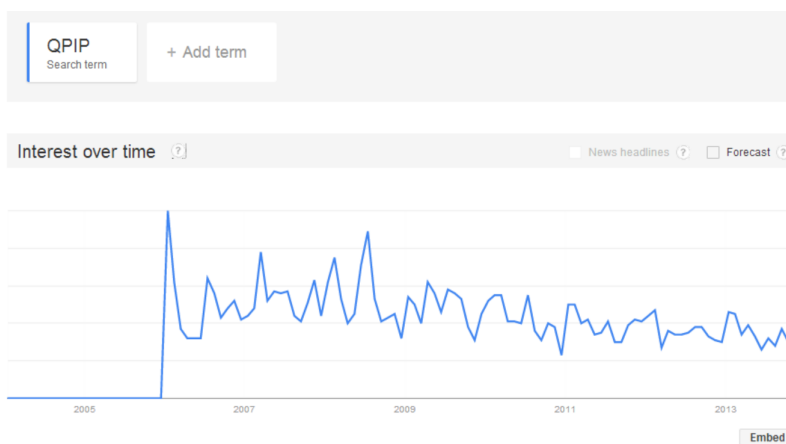

Figure 6: Google Search Volume Index: Searches for the term 'QPIP' over time

One vulnerability of the difference-in-difference identification strategy is that the estimates would be affected by any Quebec-specific shocks that may have coincided with the institution of the QPIP program. Hence, we must consider whether the introduction of QPIP coincided with any other major government programs such as publicly subsidized childcare and tax benefits that have been shown to affect the labor market behaviors of parents of young children (Baker et al., 2008; Lefebvre et al., 2009). In Quebec, accredited and regulated childcare facilities have been offering low-fee daycare for children aged 4 and under since 1997. The last change to this system occurred in 2001, when the low-fee policy was extended to include children under the age of 1. Thus, there have been no changes in childcare policies during the time period under study here. A fiscal reform for families with children which included a new working income supplement to low-income households in January 2005 is also relevant, but the eligibility criteria were such that it mostly favors single-parent families working at or near the minimum wage. My sample, which excludes single parents for precisely such a reason, therefore should not be overtly affected by this program.

4   Results

Figures 7 and 8 graph the claim rates and leave durations of new fathers in Quebec and other provinces in the six months surrounding the introduction of QPIP on 1st January 2006. It is clear from the pattern of

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[12]Google Search Volume Indices for the full name of the program in English or in French reveal similar results.

claim rates in Figure 7 that there was an immediate response to the new program. Between December 2005 and January 2006 there was a distinct jump in fathers' participation, from 15% to 55%. Figure 8 shows a similar strong program effect on fathers' leave duration in Quebec- the average number of weeks of leave
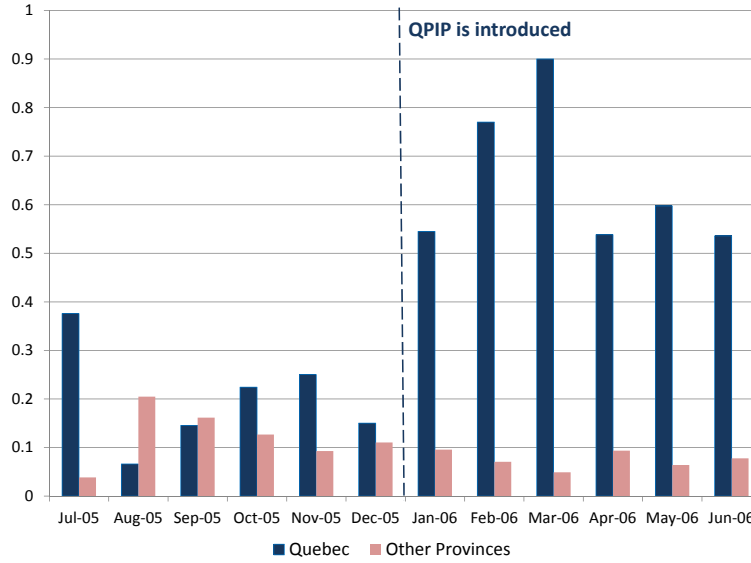

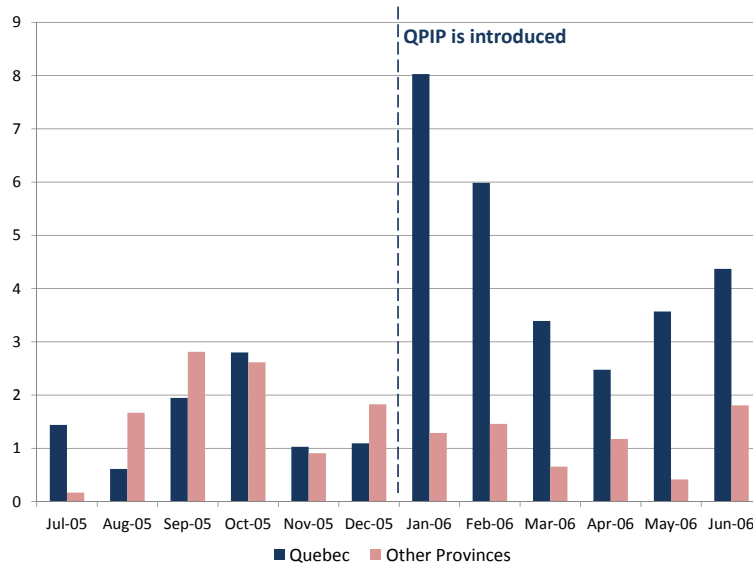Figure 7: Fathers' Claim rates in the months surrounding the reform

Figure 8: Average duration of fathers' leave in the months surrounding the reform

tripled in the 6 months following the reform compared to the six months prior. These patterns of response reveal a dramatic response in fathers' participation to the new benefits scheme, along both the extensive and

intensive margin.

Having shown the patterns of fathers' participation and leave duration in the months surrounding the reform, we now turn our attention to regression estimates using the full sample from the 2002-2010 period. Table 3 presents the most striking finding of this paper: the program effect of the new paid parental leave system on fathers' participation rates. Column 1 of Table 3 presents estimates from our difference-in-difference regression and shows that the QPIP program was associated with a rise of 52 percentage points in fathers' claim rates for parental leave benefits. This result is both economically and statistically significant. The magnitude of the marginal effect is enormous given that it represents an increase of nearly 150% of the pre-reform mean participation rate of 20% of Quebecois fathers. Column 2 of Table 2 shows how the program had heterogeneous treatment effects for fathers from different income backgrounds. Fathers from low-income households experienced a considerably smaller increase in claim rates than their higher-earning counterparts. The difference of 25 percentage points is both economically and statistically significant. However, it is not large enough to neutralize the general rise in claim rates, such that the claim rates of low-income fathers did rise under the new program but by less than that of fathers from higher-income households. Column 3 reveals the program also had heterogeneous effects by birth parity: fathers who had their first child experienced a bigger increase than fathers who had their second or later child. Fathers having their first child are likely to be younger and have younger spouses, both of which would be correlated with more gender egalitarian beliefs - however, age is explicitly controlled for in these regressions and so cannot account for this effect. The heterogeneous program effect for first-time fathers is more likely explained by the fact that they are experiencing their first transition to parenthood; the patterns of parenting behavior in their household have not been set yet and they approach the experience with a more open mind than fathers who have already had children and are more established in their parenting patterns. Column 4 shows that there is an interaction between the program effect and the mothers' leave participation. This is explained by the fact that many of the fathers who previously took leave did so because their wives could not take paid leave, whereas under the new program more fathers participated despite their wives being able to claim paid leave and doing so.

Table 3: Results from Regressions for Fathers' Parental Leave Benefits Claim Rates

Variables	(1)	(2)	(3)	(4)	(5)
Quebec * Post-Reform	0.515*	0.541***	0.457*	0.345	0.498***
	[0.075]	[0.000]	[0.068]	[0.188]	[0.000]
Low-income Household * Quebec * Post-reform		-0.242***			
		[0.003]			
First Child * Quebec * Post-reform			0.128**		
			[0.015]		
Mother claimed * Quebec * Post-Reform				0.215*	
				[0.076]	
Maternal leave duration * Quebec * Post-Reform					0.003
					[0.132]
Observations	9,484	9,484	9,484	9,484	6690

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Dependent variable is an indicator taking value 1 if the respondent reported her spouse has claimed or plans to claim parental leave benefits. Regression Sample comprises mothers aged 18-50 with a partner/spouse and a child

Table 4: Results from Regressions for Fathers' Leave Duration (weeks)

Variables	(1)	(2)	(3)	(4)	(5)
Quebec * Post-Reform	3.139	3.617**	3.054	5.88	2.393
	[0.135]	[0.055]	[0.258]	[0.812]	[0.487]
Low-income Household * Quebec * Post-reform		-3.860***			
		[0.003]			
First Child * Quebec * Post-reform			0.204		
			[0.642]		
Mother claimed * Quebec * Post-Reform				-2.639	
				[0.991]	
Maternal leave duration * Quebec * Post-Reform					0.010
					[0.838]
Observations	9,484	9,484	9,484	9,263	5,194

Note: *** p<0.01, ** p<0.05, * p<0.1. Dependent variable is an indicator taking value 1 if the respondent reported her spouse has claimed or plans to claim parental leave benefits. Regression Sample comprises mothers aged 18-50 with a partner/spouse and a child under one year old. Clustered robust p-values were calculated using bootstrap-t procedures and are presented in brackets.

Table 4 presents results from regressions which consider the intensive margin of paternal participation, i.e. the average duration of parental leave taken by fathers. Here too we find evidence of a program effect though it is only statistically significant in some specifications: the introduction of the new program in Quebec is associated with an increase of 3 weeks in the average duration of fathers' leave. This increase is highly economically significant in magnitude, representing a 150% of the pre-reform mean in Quebec. Column 2 shows that low-income fathers experience a heterogeneous program effect along the intensive margin too. Low income fathers experienced a change in leave duration that was over 3 weeks less than that of fathers from high income households, essentially rendering the program effect null in their case. Interestingly, despite the fact that longer leave taken by the mother necessarily should reduce the amount of leave available to fathers, and that QPIP weakened this constraint by introducing some reserved 'daddy days', there is no statistically significant interaction between the program effect and mothers' leave behavior. The reform does not appear to have changed the way fathers' leave duration responds to mothers' leave participation or duration.

The above analyses of fathers' claim rates and leave duration both reveal an interesting result: low-income fathers experienced a *smaller* response to the reform along both the extensive and intensive margin. This result is not consistent with the predictions of the simple economic rational discussed in section 2.2, whereby, since low-income fathers experienced a larger marginal reduction in price of leave they should have responded more strongly (if we ignore the quota which we expected did not bind). This response in claim rates to the new program offers a compelling argument that the quota cannot be ignored, and that the way in which the benefits are framed may be important. The reform did not change the total amount of leave available to a mother, and actually increased the total amount of household leave - so the quota did not necessitate the father take leave in order to maintain the amount of leave consumed by a household under the counter-factual. Moreover, though as discussed in Section II, theoretically the quota made it necessary for maximization that

the fathers take leave, the data show that over 60% of families did not use all the leave available to them previously so that the new weeks of leave introduced were essentially fungible. So why did so many more fathers elect to take leave under the new program? It is very likely fathers' claim rates responded to the increased generosity of the new program. However, if financial compensation was the only factor at play we should have seen a larger proportional response in claim rates for low-income fathers, for whom the marginal increase in benefits was larger. However, this is not the case, as can be seen clearly in the regression results in Tables 3 and 4. Therefore, it appears that fathers have responded not only to the better compensation, but also to their ownership of a portion of total family leave. This is suggestive evidence of an intra-household flypaper effect, i.e., that benefits tend to stick to the household member they land on.

This behavioral response to the reservation of weeks for the father when many families did not face a binding constraint seems anomalous. It contradicts the standard theoretical result from a unitary model of household decision making, whereby the parents (when not at the cap) should treat any increase in leave as an ordinary extension of leave. In this case, an intra-household flypaper effect might suggest irrationality. However, one possible explanation for such an intra-household flypaper effect is that there is a labeling effect from designating some leave as daddy-only.[13] Thaler (1990) proposes that a household may maintain 'mental accounts' with different marginal propensities to consume. If this holds, then labeling a benefit transfer as 'daddy-only' may put it in a different mental account for consumption only by the father. This paper provides the first evidence of an intra-household flypaper effect in the consumption of leave benefits between husband and wife stemming from a pure labeling effect. One possible mechanism behind this intra-household flypaper effect, which would explain the differential response by income group, is that fathers from different income groups have differing marginal propensities to consume time with children. Alternatively, the reservation of 'daddy weeks' may have introduced a social stigma to fathers not utilizing this privilege, which differs in intensity by income groups. Both these mechanisms would be consistent with the higher value that higher-earning and better-educated parents place on time with their children (Guryan et al., 2008).[14]

Table 5 presents regression estimates of the program effect on mothers' participation rates. Here too a clear program effect becomes apparent: the new program was associated with a clear rise in claim rates of 12 percentage points. While the response in mothers' claim rates may not seem as dramatic as that of fathers, it should be remembered that mothers' claim rates were always much higher to begin with (71% in Quebec pre-reform) and had less room to grow. The increase in mothers' participation represents 17% of the mean for mothers who were not treated, and further, this brings the average post-reform claim rate in Quebec to 81%. Column 2 suggests that contrary to low-income fathers, low-income mothers actually experienced a *larger* program effect than their higher-earning counterparts. Low-income mothers experienced a further

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[13]Another explanation that has been put forward to explain an intra-household flypaper effect is that in collective models of household decision-making, the allocation of resources is determined by a decision-making process which hinges crucially on who received the income (Bourguignon and Chiappori, 1992). This model was used to explain results from Lundberg (1997) which show that transferring child benefits from fathers to mothers in England resulted in increased consumption of childrens' clothes. Using this model in the context of parental leave benefits, decisions about the distribution of paid parental leave between spouses would depend on relative ownerships of leave weeks. This might suggest that the behavioral response of fathers to the QPIP reform is due to fathers' new legal ownership of some leave. However, it should be noted that fathers always had shared ownership of a substantial portion of leave. Further, in order for their new legal ownership to be the deciding factor, it would require that mothers' previously used their bargaining power through leave ownership to negotiate away from fathers taking leave, which seems counter-intuitive and unlikely to have been the case for most couples.

[14](Guryan et al., 2008) show that time spent with ones children seems to be valued more by individuals with a higher opportunity cost of time i.e. higher-earning and higher-educated parents. The fact that they observe a positive education gradient in child care as a primary activity but not in total time spent with children may suggest that highly-educated parents view child care as an investment which merits their active attention.

increase in claim rates of 18 percentage points compared to their higher-income counterparts. It should be noted that this coefficient is not statistically significant, but still highly economically significant, representing over 90%

Table 5: Results from Regressions for Mothers' Parental Leave Benefits Claim Rates

Variables	(1)	(2)	(3)	(4)	(5)
Quebec * Post-Reform	0.118***	0.100***	0.103	0.051	.194***
	[0.000]	[0.000]	[0.263]	[0.439]	[0.000]
Low-income Household * Quebec * Post-reform		0.183			
		[0.359]			
First Child * Quebec * Post-reform			0.026		
			[0.96]		
Father claims * Quebec * Post-Reform				0.126*	
				[0.067]	
Father's leave duration * Quebec * Post-Reform					-0.001
				d	[0.623]
Observations	9,484	9,484	9,484	9,484	7,304

Note: *** p<0.01, ** p<0.05, * p<0.1. Dependent variable is an indicator taking value 1 if the respondent reported she has claimed or plans to claim parental leave benefits. Regression Sample comprises mothers aged 18-50 with a partner/spouse and a child under one year old. Clustered robust p-values were calculated using bootstrap-t procedures and are presented in brackets.

of the pre-reform gap in claim rates. This result is also understandable given that for low-income mothers, eligibility and financial feasibility were the main barriers to leave-taking, and QPIP considerably eased these. There is also an interaction between the program effect and spouse's participation, such that the program effect is nearly 12 percentage points higher for mothers whose husbands took leave. This is likely being driven by the fact that prior to the reform a large portion of the fathers who took leave did so because their wives could not do so whereas under QPIP fathers are more likely to participate even if their wife is eligible for leave.

Table 6 presents estimates of the effect of the QPIP reform on mothers' leave duration (measured in months). Column 1 shows that the new program was associated with an increase in the average mothers' leave duration by nearly half a month. This effect is both statistically and economically significant, representing 5% of the pre-reform mean of 10 months in Quebec. Low-income mothers experience a smaller increase than their higher-earning counterparts, and mothers having their first child appear to experience a slightly larger increase than their counterparts having higher-order births, but both of these coefficients in Columns 2 and 3 are not statistically significant. Interestingly, while the program effect on mothers' leave duration does not respond to fathers' participation, it does decrease with the fathers' leave duration. The magnitude of this coefficient makes sense also: for every week of leave taken by her spouse, the mother takes 0.27 months (or approximately 1 week) less of leave herself. This is an interesting result - since the daddy quota renders the first 5 weeks of leave taken by fathers to be independent of mothers' leave duration, this result suggests that under the new program fathers are definitely taking more leave than was reserved for them and families are closer to exhausting their total leave, such that mothers must necessarily reduce their own leave to accommodate that of fathers.

Table 6: Results from Regressions for Mothers' Leave Duration (months)

Variables	(1)	(2)	(3)	(4)	(5)
Quebec * Post-Reform	0.500**	0.534**	0.355*	1.205	0.495***
	[0.027]	[0.040]	[0.059]	[0.116]	[0.052]
Low-income Household * Quebec * Post-reform		-0.401			
		[0.723]			
First Child * Quebec * Post-reform			0.296		
			[0.818]		
Father claimed * Quebec * Post-Reform				0.510	
				[0.992]	
Fathers' leave duration * Quebec * Post-Reform					-0.027**
					[0.003]
Observations	6,690	6,690	6,690	6,690	5,194

Note: *** p<0.01, ** p<0.05, * p<0.1. Dependent variable is a continuous variable measuring months of planned or actual leave taken by the respondent. Regression Sample comprises mothers aged 18-50 with a partner/spouse and a child under one year old. Clustered robust p-values were calculated using bootstrap-t procedures and are presented in brackets.

Table 7 presents estimates of the program effect on exit rates. In columns 1-5 the regression results show the reform was not associated with any increase or decrease in the average exit rates of mothers from the labor market. This confirms the ex-ante expectation that since the duration of job-protected leave remained constant in all provinces across this time period there should have been no change in the incentives for mothers to remain in or leave the workforce after their leave ended.

Table 7: Results from Regressions for Mothers' Exit Rates

Variables	(1)	(2)	(3)	(4)	(5)
Quebec * Post-Reform	0.011	0.015	0.018	0.025	-0.025
	[0.383]	[0.51]	[0.05]	[0.131]	[0.918]
Low-income Household * Quebec * Post-reform		-0.054			
		[0.527]			
First Child * Quebec * Post-reform			-0.014		
			[0.175]		
Father claimed * Quebec * Post-Reform				-0.046	
				[0.562]	
Father's Leave duration * Quebec * Post-Reform					0.002
					[0.531]
Observations	7,914	7,914	7,914	7,914	6,651

Note: *** p<0.01, ** p<0.05, * p<0.1. Dependent variable is an indicator taking value 1 if the respondent reported she does not plan to return to work. Regression Sample comprises mothers aged 18-50 with a partner/spouse and a child under one year old. Clustered robust p-values were calculated using bootstrap-t procedures and are presented in brackets.

Table 8 explores the effect of the QPIP program on the likelihood of a mother returning to her pre-birth employer once the period of maternity leave ends. Columns 1-5 suggest that the reform did not have any statistically significant effect on the probability that the average mother returns to her original employer. However, one interesting result is revealed in Column 4: mothers whose husbands took leave are considerably more likely to return to their employers under QPIP, by nearly 10 percentage points. This suggests that QPIP reduced the pressure that some mothers face to switch to a more parent-friendly employer, and that fathers' leave participation was the mechanism for this change. In the pre-reform period, many of the fathers who took leave did so because their wives could not, rendering the question of the mother returning to her employer moot, whereas under the new program fathers were more likely to participate regardless of their wives' participation. Due to the considerable increase in fathers' leave-taking even when their wives took leave some mothers can now return to work while their spouse is on leave and feel more comfortable leaving the baby in the fathers' care instead of non-family daycare. Alternatively, even if the father's leave has ended by the time she returns to work, he has likely developed competence in care-giving through on-the-job training, such that the mother does not have as strong a comparative advantage in home production. As a result, the couple may share household responsibilities more equally without trading off efficiency and the mother may feel less pressure to switch to a more accommodating job.

Table 8: Results from Regressions for Mothers' Employer Continuity

Variables	(1)	(2)	(3)	(4)	(5)
Quebec * Post-Reform	-0.009	-0.002	-0.024	-0.021	-0.026
	[0.922]	[0.914]	[0.505]	[0.172]	[0.125]
Low-income Household * Quebec * Post-reform		-0.076			
		[0.215]			
First Child * Quebec * Post-reform			0.028		
			[0.016]		
Father claimed * Quebec * Post-Reform				0.0952***	
				[0.009]	
Fathers' leave duration * Quebec * Post-Reform					0.002
					[0.11]
Observations	6,337	6,337	6,337	6,337	4986

Note: *** p<0.01, ** p<0.05, * p<0.1. Dependent variable is an indicator taking value 1 if the respondent reported she has returned or plans to return to her pre-birth employer. Regression Sample comprises mothers aged 18-50 with a partner/spouse and a child under one year old. Robust p-values were calculated using cluster bootstrap-t procedures and are presented in brackets.

Table 9 presents results from estimations of the income loss experienced by households following the birth of a child. Columns 1-5 provide evidence of a considerable decrease in household income loss in the month following the birth under the new program, though the statistical significance of coefficients varies across columns. Column 1 of Table 10 presents evidence that a household that was exposed to the QPIP reformed suffered a smaller income loss by $244, though the coefficient is not statistically significant. Notably, column 2 shows that low-income households actually experience nearly $487 greater income than their higher-income counterparts under QPIP, such that the reform is associated with a net increase in their income loss in the month following the birth. This is likely being driven by the considerable increase in participation amongst

low-income families, especially low-income mothers. Under the old program they didn't qualify for or couldn't afford parental leave but also didn't suffer any wage loss as a result, whereas the generous eligibility criteria and compensation of QPIP induced their participation but the household now experiences a loss of earnings as a result. Higher-income parents (especially mothers) were more likely to take leave regardless of the reform; the increase in benefit income for every participating parent outweighed the loss of income for the small number of parents on the margin who were induced to participate by the reform.

Table 9: Results from Regressions for Household Income Loss

Variables	(1)	(2)	(3)	(4)	(5)
Quebec * Post-Reform	-245.54	-288.84	-203.188***	-273.57	-246.24
	[0.794]	[0.526]	[0.003]	[0.918]	[0.918]
Low-income Household * Quebec * Post-reform		487.4***			
		[0.000]			
First Child * Quebec * Post-reform			-102.134		
			[0.978]		
Father claimed * Quebec * Post-Reform				-110.34	
				[0.399]	
Fathers' leave duration * Quebec * Post-Reform					2.72
					[0.706]
Observations	6,675	6,675	6,675	6,675	6,527

Note: *** p<0.01, ** p<0.05, *p<0.1. Outcome is the household income loss reported by mother for the month following the birth of her youngest child. Clustered robust p-values were calculated using bootstrap-t procedures and are presented in brackets.

5   Conclusion

This paper examines the impact of a large expansion of parental leave entitlements through the establishment of a more generous and less gendered program in Quebec. It investigates how the lowered eligibility criteria, raised income claims ceilings and replacement rates, and the reservation of daddy weeks may have affected parents' participation rates, mothers' labor market outcomes and household incomes. There are several interesting and relevant findings. First, the reform was associated with a remarkable increase of 52 percentage points in the probability of a father making a claim for parental leave benefits. This dramatic result is robust across all our specifications and confirms a clear increase in participation from fathers of all income groups. Second, the reform is also associated with an increase in fathers' leave duration of over 3 weeks. Notably, the reform had a smaller impact on fathers from low income households, who experienced a smaller increase in claim rates and leave duration than fathers from higher income households. This is somewhat surprising, since the marginal increase in benefits under the new program was greater for low-income parents. I interpret this as evidence that the improved compensation is not the only feature of QPIP that influenced behavior, and that the daddy quota appears to have been important too, working through a labeling mechanism which differed across income groups. This would suggest that the way in which the rights to leave are distributed within a household influences the household's decisions regarding resource allocation, even if they do not present a binding constraint. The labeling of leave as 'daddy-only' thus appears

to produce an intra-household flypaper effect.

The move from the EI Program to the QPIP program also had a considerable impact on mothers' leave-taking behavior. On average, the reform was associated with an increase of 11 percentage points in mothers' participation rates. There is evidence that there was a particularly large (though not statistically significant) effect for mothers from low-income households, and that the reform led to a shrinking of the income gap in access to paid leave. The new program also increased the average length of maternity leave by nearly half a month. Although there was no change in exit rates from the labor market or job continuity for the average mother, the reform was associated with an increase in the likelihood of a mother returning to her pre-birth employer for mothers whose husbands also took leave. Lastly, the program was associated with a reduction in the income loss experienced by a household following the birth of a child.

These results point to the success of the reform in attaining several of its goals: increasing access to benefits, increasing parental time with newborns, improving labor market outcomes for mothers, protecting households from income loss incurred by leave-taking and, most notably, promoting gender equality by encouraging fathers' involvement in childcare. The success of the reform in promoting the equal sharing of parenting responsibilities is only expected to grow over time as cultural norms and expectations adapt and as a larger proportion of fathers experience their first birth under QPIP and thereby become even more likely to take leave in the future. These findings should be of interest to policymakers looking to design reforms to remedy issues of access and coverage associated with existing paid parental leave programs, as well as to promote greater gender equality. Perhaps most crucially, the evidence of an intra-household flypaper effect caused by the labeling of some leave as 'daddy- only' seems to offer important justification for the establishment of individual non-transferable rights, and is of relevance to policy-makers aiming to encourage equal participation between spouses in public programs.

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