CAHIER DE RECHERCHE ♯0914E
Département de science économique
Faculté des sciences sociales
Université d'Ottawa

WORKING PAPER ♯0914E
Department of Economics
Faculty of Social Sciences
University of Ottawa

The Long-term Effects of Maternal Employment on Daughters' Later Labour Force Participation and Earnings[1]

Catherine Deri Armstrong[2], Ross Finnie[3] and Jennifer Stewart[4]

November 2009

[1] We thank Yan Zhang and Benoit St-Jean for research assistance and Martin Dooley, Marie Drolet, and Kevin Milligan for helpful comments. We also gratefully acknowledge the research support of SSHRC (Grant #410-2007-2146) and seminar participants from the University of Ottawa empirical lunch workshop, the 2008 Société canadienne de science économique congress, the 2008 Canadian Economics Association meetings and the 2009 Society for the Advancement of Behavioural Economics meetings.
[2] Department of Economics, University of Ottawa, 55 Laurier E., Ottawa, Ontario, Canada, K1N 6N5; Email: CDArmstrong@uottawa.ca.
[3] Graduate School of Public and International Affairs, University of Ottawa, 55 Laurier E., Ottawa, Ontario, Canada, K1N 6N5; Email: rfinnie@uottawa.ca.
[4] School of Public Policy & Administration, Carleton University, 1125 Colonel By Drive, Ottawa, Ontario, Canada, K1S 5B6; Email: stewart@connect.carleton.ca.

Abstract

This paper investigates the long-term effects of maternal labour force participation on daughters' later labour force participation and earnings. The majority of the existing work in this area investigates how current maternal labour force participation affects current child outcomes, including scholastic, behavioural and health outcomes. The Longitudinal Administrative Databank (LAD), a 20 percent random sample of Canadian tax filers provides a unique opportunity to link information regarding a mother's labour force participation from the birth of a daughter onward, to the daughter's own labour force participation in later years. We find that maternal employment is correlated with both an increased likelihood of working and increased earnings, but that no long term effects remain once unobserved heterogeneity is addressed. These findings call into question the growing concern that a large body of research has raised regarding the negative impacts of maternal employment on child outcomes.

Key words: *maternal employment, earnings, labour force participation.*

JEL Classification: J2, J3.

Résumé

Cet article examine les effets à long terme des taux d'activité des mères sur les taux d'activité et les salaires de leurs filles. La majorité des études existantes examinent comment le taux d'activité des mères affecte leurs enfants dans la même période: incluant leurs résultats scolaires, leurs comportements et leurs états de santé. La banque de donnée Données administratives longitudinales (DAL), un échantillon alléatoire de 20% de déclarants Canadiens fournit une occasion unique pour lier l'information sur le taux d'activité des mères à partir de la naissance d'une fille au taux d'activité lors qu'elle devient adulte. On trouve que le taux d'activité des mères est positivement corrélé avec la probabilité que sa fille travaille et qu'elle gagne des salaires élevés, mais qu'il ne reste aucun effet à long terme lorsque l'hétérogénéité non-observée est adressée. Ces résultats vont à l'encontre des inquiétudes croissantes quant aux impacts négatifs des taux d'activité des mères sur la performance de leurs enfants.

Mots clés: *taux d'activité des mères, salaires, taux d'activité.*

Classification JEL: J2, J3.

I. Introduction

Arguably the most striking change in the labour force over the past 30 years has been the significant increase in female labour force participation. In 1977, 55 percent of females aged 15 to 44 participated in the labour force. In 2005, participation for this age group exceeded 77 percent, representing a 39 percent increase (Statistics Canada, 2009). Many implications of this change have been studied, for example, the impact on fertility decisions, the associated decline in female health, as well as the decline in the health of their spouses, and the impact on equilibrium wages, for example.

Because the labour force participation of women with dependent children (hereafter referred to as mothers) has followed a similar trend, attention has also been given to the effect this change has had on children. Scholastic, behavioural, developmental, and health outcomes have all been studied. Work in this field is very recent, and the results range from finding detrimental effects to small improvements in child outcomes. Almost all studies look at the effects of *current* maternal employment (ME) on *current* child outcomes. The literature thus focuses on children still living at home. What is largely missing from this literature is evidence of any long-term effect.

Cognitive scores, measured for children up to age 11, have received considerable attention. While Blau and Grossberg (1992), Baum (2003), Ruhm (2004), Gregg et al. (2005), and Bernal (2008) find that ME is related to lower cognitive scores, Gagne (2002), Berger et al. (2005), and James-Burdumy (2005) conclude that ME has either no effect or a positive effect on cognitive scores, and Gennetian et al. (2002), Waldfogel et al. (2002), and Ruhm (2008) find contradictory results for different sub-samples.

Baker et al. (2008) find that the introduction of a government subsidy for child care that increased use of child care and increased ME is related to worse behavioural scores in preschool children. Aughinbaugh and Gittleman (2004) find no effect of ME on adolescents' risky behaviours while Lopoo (2004) finds that ME increases the likelihood of teenage childbearing in wealthier schools and decreases it in poorer schools. Anderson *et al*. (2003) conclude that ME is related to a higher likelihood of obesity in children.

Few papers have examined the relationship between maternal employment and long-run outcomes. Ermisch and Francesconi (2002) use the British Household Panel Survey to estimate the impact of parental employment on children's educational attainment as young adults. They find that ME when a child is less than 6 years old decreases the likelihood of educational attainment, as does paternal employment although the effect is smaller. Dustman and Schoenberg (2008) and Wurtz (2007) use changes in maternity leave entitlement for Germany and Denmark, respectively, to estimate the impact of increased maternal time at home (therefore decreased maternal employment). Both studies find no impact on the wages or educational outcomes for children.[5] These papers that examine the long run consequences of maternal employment have focused on maternal employment at young ages of the child (generally pre-school age) and, in the case of the papers using changes in maternity leave policy, looked at small changes in leave (increases from 6 weeks to 4 months).

Our paper examines the long run effects of ME when the daughter is between 1-17 years of age (not just at young ages) on two measures of the daughter's later labour force activity: the probability of her working and her earnings.[6] Understanding whether the short term detrimental effects of ME persist or disappear with time is critical to any full understanding of the effects of ME on children's outcomes.[7]

Our primary data source is the Longitudinal Administrative Databank (LAD), a longitudinal data set based on a 20 percent random sample of Canadian tax filers going back to 1982. Because the rate of tax filing is very high in Canada, the LAD's coverage of the adult population is estimated to be over 95 percent of the target population in any

[5] Note that we summarize only papers that explicitly address the issue of unobserved heterogeneity described further below– that mothers who work may be different from mothers who do not work in unobservable ways that could be correlated with child outcomes.

[6] We focus on daughters primarily because there is greater variation in the labour force participation of women. A second reason to focus on daughters is that there is some evidence that the role model effect, described in detail below, may be stronger for daughters [Conley and Albright, 2005] .

[7] There is a related literature linking test scores of children to their later earnings as adults. Our paper may also help to improve our understanding of this relationship as ME has, in some cases, been associated with lower test scores (see, for example, Rose 2006).

given year (Finnie and Bernard, 2005). Additionally, the LAD is immense in size, containing nearly six million observations in 2000 alone. These data provide a unique opportunity to link information regarding a mother's labour force participation when the daughter was young to the daughter's own labour force participation as an adult.

Using linear probability (LPM) and logit models, we find that there exists a positive relationship between ME and daughters' later labour force participation and earnings, with stronger relationships for ME when the daughters are in their late teens (age 15-17). However, as is commonly discussed in the literature above, the difference in outcomes between children whose mothers were strongly attached to the labour force and children whose mothers did not have a strong attachment, may not be due to the difference in maternal employment per se. Rather this difference may be due to unobserved characteristics, such as the mother's ability or preferences, which affect both the likelihood of maternal employment and the child's outcomes. To address this possibility we employ three strategies: 1) a sister fixed effect (FE) strategy which exploits variation in ME across sisters in the sample, 2) an instrumental variables (IV) strategy which exploits variation in ME due to local unemployment rates, and 3) following Gottschalk (1996), an event history strategy which exploits the order in which events occur.

The results suggest that the LPM effects overestimate the true relationship between ME and child outcomes. Specifically, we find that ME generally has no long term effect on child outcomes when unobserved heterogeneity is addressed. These findings, therefore, call into question the growing concern previous research has raised regarding the negative effects of maternal employment on child outcomes.

II. Model, Empirical Strategy and Data

Theoretical Model

Theoretical models that address the relationship between ME and child outcomes are generally based on one of two frameworks. Becker and Tomes (1986) propose a model

based on the idea that child outcomes are produced using a combination of maternal time and market goods. ME will decrease the time available for producing child outcomes (hypothesized to have a negative effect on child outcomes), but will increase the amount of market goods and services that can be purchased (hypothesized to have a positive effect on child outcomes).

In contrast, the socialization or role model theory proposes that when a mother works, the socialization process for her children changes. A mother who works sets an example for her children and creates specific values about working and attachment to the labour market (see discussion in Haveman and Wolfe (1995)). This role model effect could also be related to Akerlof and Kranton's (2000) notion of identity, whereby individuals essentially seek to emulate people whose behaviour they seek to match -- in this case their mothers.

The household production model argues that ME affects child outcomes because the mother provides less time and more income for her child and thus does not provide a clear prediction of the effect of ME. However, the socialization model argues that maternal employment changes the preferences of her child and thus predicts that ME should be associated with increased labour force participation and attachment.

Empirical Strategy

To investigate the relationship between ME and later labour force participation and earnings, we begin by estimating baseline models. These consist of 1) linear probability and logit regressions for the dichotomous working outcome, 2) a linear regression for ln(earnings) for the full sample (including all daughters) re-coding daughters who report no earnings or negative earnings as 1 (ln(1)=0), and 3) a linear regression for ln(earnings) conditional on working.[8] Specifically, we estimate:

[8] Tobit models offer an alternative functional form. We present results using Tobit models in Appendix A. The results are comparable to the main results of the paper.

$$Y_{it} = \alpha + \beta_1 ME_i + \beta_2 Family\,Income_i + \beta_3 Lone\,Parent\,Family_i + \beta_4 X_{it} + \varepsilon_{it} \quad (1)$$

where *Y* represents either the probability of labour force participation of the daughter or the logarithm of her earnings. We include one observation for each year we observe the daughter as an adult.

The key independent variable is the measure of ME between the ages of 1-17, described in detail below. The ME variable is constant for each daughter. We include two other time-invariant independent variables reflecting the situation of the daughter growing up: the average family market income excluding the mothers' earnings between the ages of 1-17, and an indicator for the percentage of years the daughter is observed to be in a lone parent family over the years 1-17.[9,10] Note that excluding mother's income from the family income variable allows us to interpret the ME coefficient as the impact of both maternal income and time.

Included in the set of additional control variables, *X*, are variables reflecting the daughter's situation the year of the observation as an adult: current family status (controls for whether the daughter is married and the number of children she has), indicators for region size, province of residence, currently residing with her parents, being an English speaker in Quebec or a French speaker outside of Quebec, age and calendar year. Also included in *X* are indicators for age at match, missing data regarding ME, and age of the mother at the birth of their daughter.[11,12,13]

[9] Family market income is defined as the sum of employment income, other employment income, net self employment income, investment income, rental income, dividend income, other income, pension income, superannuation income and limited partnership income. Income from social assistance is not included.

[10] We estimate two other models to examine the choice of income measure on the ME coefficient – one excluding any measure of household income and another including maternal earnings in the measure of household earnings. The choice of family income control is not found to have a measurable effect on the ME coefficient.

[11] There are six region size dummies: urban area with a population greater than 500,000, urban area with a population 100,000-499,999, urban area with a population 30,000 - 99,999, urban area with a population between 15,000 - 29,999, urban area with a population 1,000 -14,999 and rural area with a population under 1,000.

[12] As described further below, the construction of our data set involves matching daughters to their family of origin at various ages. We include the age at match variables to capture possible biases arising from the possibility that daughters we match at earlier ages may be different from daughters we match at older ages in ways that affect labour force participation and earnings.

We cluster-correct the standard errors to allow the error terms to be correlated across observations for a given daughter but independent across observations from different daughters. All observations are weighted using infinitesimal random weights designed to insure individual confidentially in the LAD. All estimates of sample size are weighted and rounded to the nearest 5, again for reasons of confidentially.

The fundamental problem in estimating the effect of ME on any child outcome is the issue of non-random selection into employment. Mothers who choose to work may be different in unobserved ways, such as skill, ability or preferences, from mothers who choose not to work. The effect of such unobserved characteristics will be to bias the estimated coefficient on ME, although the predicted direction of the bias is ambiguous. If mothers who work are more productive both in and out of the home then we would expect the coefficient on maternal employment to capture the effect of the higher productivity and to be biased upwards. Alternatively, productivity in the home may be negatively correlated with productivity outside of the home and the estimated coefficient on maternal employment would be biased downwards. (See Ruhm (2008) for an examination and example of this issue). ME may also be correlated with other unobserved mother and household characteristics that may affect daughters' later work patterns. We deal with the problem of unobserved heterogeneity in three ways.

The first approach is to identify sisters in our data and estimate a sister fixed-effect model, which controls for any unobserved factors that are constant across sisters over

[13] We considered including controls for both birth order and average family size. However, given that the nature of the information available in the LAD reflects current family size, and, as explained below, many of the daughters in the sample are only observed from age 15 onward, we worried that we would incorrectly assume many of these daughters were the older(est) children when in fact their older siblings would have already left home. In such cases we would underestimate both birth order and family size.

We were able to identify the 'older' sibling within the sister pairs in the data. We included an indicator for being the older daughter of a sibling pair to see if such a variable had any explanatory power in predicting labour market outcomes in FE models. Being the 'older' sibling was associated with a 6.4 percent increase in earnings (full sample). The estimated effects in the working and conditional earnings regressions were not estimated precisely. We found that the estimated effects of ME remained unchanged.

time, including mothers' fixed characteristics, such as education.[14] A similar strategy was employed in Ermisch and Francesconi (2002).

Our second approach is to use an instrumental variables strategy. An instrument is needed that is correlated with maternal employment but has no effect of its own on daughters' later labour force participation/earnings. We use the average unemployment rate for the Economic Region for each year we have information on the mothers' employment status as our instrument.[15] Local economic conditions are likely to affect the mothers' current employment, but are unlikely to have a direct effect on the daughters' later employment or earnings. Variation in the instrumental variable exists across regions (for daughters of the same birth cohort) and across years (for daughters of the same region at different points in time). Further variation exists due to differences in the number of years ME is observed for daughters (for example, due to the unbalanced nature of the panel described below) and because of movement over time across regions.

Third, we follow the example of Gottschalk (1996). In that paper, the authour examines whether intergenerational correlations in welfare use between mothers and daughters reflect a causal relationship or simply unobservable characteristics correlated across generations. He exploits the order in which events occur to identify the effects of unobserved heterogeneity. It is hypothesized that the probability of a daughter being on welfare at a given point in time, *t*, should be higher if her mother was on welfare prior to *t* than if the mother was on welfare after time *t*. He thus includes both a measure of the mothers' welfare participation prior to, and after, *t* in his regressions. He highlights that one major advantage of this methodology is that it achieves identification through assumptions about timing rather than the usual exclusionary restrictions required for IV. Following this methodology, we construct a measure of future ME to include in our

[14] Unobserved characteristics that change over time will, however, not be controlled for in this model. If the mother changes her effort or productivity as her children age or as she has more children then the estimated coefficients on maternal employment may still be biased.

[15] Economic Region is defined as a grouping of Census Divisions used by Statistics Canada for analysis of regional economic activity. Across the 10 provinces there were 71 Economic Regions before 2001 and 73 thereafter. Data used in the construction of this instrument is available from CANSIM- Statistics Canada socio-economic database.

models in addition to past ME. As future ME cannot be causal, we interpret a significant coefficient as evidence of unobserved heterogeneity.

Data

The LAD is an ongoing longitudinal dataset going back to 1982. Constructed from Canada Revenue Agency tax files, it comprises a 20 percent random sample of Canadian tax filers. The unit of observation is the individual. Individuals are matched into family units on an annual basis and the related family information is added to each individual's record. The LAD thus provides information on sources of income, taxes and demographic information at both individual and family levels. The most recent year of the LAD available when the analysis took place was 2005. Because the rate of tax filing is very high in Canada, the LAD's coverage of the adult population is estimated to be 95 percent of the target population in any given year (Finnie and Bernard, 2005).

We restrict our sample to those identified as "daughters" in the LAD. These "daughters" are the set of all females aged 20-40 in the 1985-2005 years of the LAD 1) who filed a tax return when living at home with their parent(s) between the ages of 15 and 19, 2) whose mothers (or step-mothers) also appear in the LAD and 3) whose mothers filed taxes for at least one year when the her daughter was between 1 and 17.

Approximately 70 percent of the young women captured in the LAD at age 20 or above over the period of our analysis are linked to their family of origin between the ages of 15 and 19 (Step 1 above). Of these families to which the young women were matched, over 99 percent included a mother, and of those mothers, almost exactly the expected 20 percent (19.74 percent) percent are included in the LAD as individuals that are themselves followed longitudinally, reflecting the one in five sample frame of the LAD and the high rate of filing of these women (Step 2 above). Finally, over 99% of the matched mothers who themselves are in the LAD filed taxes at least once when the daughter was 1-17 (Step 3 above).

The 70 percent match rate to families raises the possibility of selection bias, but there are reasons to believe this bias is not likely to be problematic. First, there is no reason to expect, *ex ante*, such a bias, because filing or not filing a tax form while living at home would not seem to be obviously related to any particular individual or family characteristic. Second, to be a problem, the bias has to be in the relationships represented in the models we estimate (i.e., the relationship between ME and daughters' later labour force outcomes), not just differences in the characteristics of the women or their families (e.g., labour force employment rates) of those included in our samples and those excluded. Finally, other published work using similar tax-based data to estimate similar intergenerational processes, including Corak and Heisz (1999) and Oreopoulos (2003), found no evidence of any such selection bias.

We restrict our sample to women aged 20-40 for the following reasons. The lower bound is necessary as we want to look at adult outcomes. The upper bound is the oldest age at which we can observe a woman in 2005 (the most recent year of data available) and have at least one observation for her mother's labour force participation from age 17 or younger. We include one observation for each year we see a woman 20-40 in the data. Daughters who are generally older over the period covered by the LAD are followed for more years as adults but are not tracked as far back into their childhood, while younger daughters are not followed as far into adulthood but are tracked back to younger ages in childhood. For example, we include only one observation for a woman who was 20 years old in 2005, but 21 observations for a woman who was 40 years old in 2005. See Appendix B for a depiction of the unbalanced nature of our sample.

Finally, we exclude observations for years in which the daughter is identified as being a post-secondary student, as well as for preceding years for such individuals.[16] To avoid any problems related to students not being properly identified or the endogeneity of education, we re-estimate the models on a sample excluding daughters under 25. The

[16] Student status is identified using the information from the daughters' post secondary education deductions. If a daughter's education deduction indicates full time studies and her tuition fee is higher than 25 percent of the average provincial tuition fees for both the current and the following year, the daughter is identified as a student.

assumption is that by age 25 most individuals will have completed their education. The results using this restricted sample are consistent with the main findings of the paper.

Our final sample consists of 94,500 daughters, and when the multiple observations per daughter are taken into account, a sample of approximately 935,300 observations results.

Dependent Variables

For each observation we construct two dependent variables: a dichotomous indicator for whether the daughter worked in a given year as measured by whether her employment income was greater than $1000, and the logarithm of the year's employment income.[17,18]

Maternal Employment Variables

For each year, we construct a dichotomous indicator of maternal employment income in excess of $1000, our cut-off for considering a mother to be 'employed'. We then create a variable equal to the number of years of ME as a proportion of observed years between ages 1-17.[19] Thus our maternal employment variable is bounded [0,1], but is not dichotomous. This variable is the key independent variable in our analysis.

We also create separate ME variables by age group which we use in some specifications. The choice of age groups; ages 1-2, 3-4, 5-9, 10-14 and 15-17, is based on findings from the literature and by the institutional environment. [20] As above, these ME variables are

[17] All dollar amounts throughout the paper have been converted to 2005 Canadian Dollars.

[18] Specifically, we consider a daughter to be employed if she earned more than $1000 in salaries or wages, or if her gross self-employment income was more than $1000 in the calendar year. For the earnings regressions, earnings are defined to be the sum of net self-employment earnings, wages, salaries, tips and other employment income.

[19] We do not include the year a child is born (age 0) in the ME variable as the data do not include information on the exact month of birth. As such, we cannot distinguish whether employment income in the year a child is born refers to employment prior to or after the birth of the child.

[20] Several authors (eg. Waldfogel et al. (2002), Ruhm (2004), Blau and Grossberg (1992), James-Burdumy (2005), and Ermisch and Francesconi (2002)) find that the effect of ME depends on the timing in the first years of the child's life. We separate the early years into two categories 1-2 and 3-4 in response to these findings. The next two categories were chosen because children are school-age and the effect of ME may be different. We create a category for ME during high school because Gennetian et al. (2002) and Baum (2004) find negative outcomes for children whose mothers entered the work force in the high school years. Recall that we have data on ME at age 15-17 for every daughter, and thus the ME at age 15-17 coefficient is being identified with the entire sample. However, only the younger daughters in the data can be used to identify the effect of ME at the earlier ages.

the number of years of ME as a proportion of observed years in the age interval. These variables are similarly bounded [0,1] but are not dichotomous.

We include data only for years for which we have maternal employment information. There are two possible reasons such information would not be available: 1) if the data do not go far enough back in time to observe maternal employment at a given age, or 2) the mother did not file a tax return in a given year. In regressions where we break down ME into finer age categories, we control for such missing information by including indicators for missing data for all years in a given age category. This practice allows us to distinguish between a '0' meaning earnings were 0 over the period in question versus cases where we were unable to obtain employment information.

Figure 1a shows the distribution of ME at the different age groups (1-2, 3-4, 5-9, 10-14 and 15-17). Specifically, it shows the proportion of mothers who never worked in all the years in the interval (ME=0), the proportion of mothers who work in every year in the age interval (ME=1) and the proportion who worked in some years (0<ME<1). Figures 1b and 1c show the same distributions but for two different family types – daughters that were always in lone mother families and daughters that were always in two parent families. There are two points to note in these figures. First, in all figures the likelihood of the mother working increases with the age of the child. Second, the likelihood of working at any age is slightly higher for mothers in two parent families compared to mothers in lone-mother families. Of course a non-working lone mother is not necessarily the same as a non-working mother in a two parent family. When a lone mother is not working, she is likely receiving social assistance, which is less likely to be the case for a non-working mother from a two parent family. As the effect of ME on the daughter's earning may be quite different for the two family types, we control for family type in the estimations below, as well as carry out the analysis by family type in the some specifications.

Table 1 provides summary statistics for our full sample, which includes multiple observations for each daughter. Over 72% of our observations represent daughters under

30 years of age. This large percentage is expected as we have the opportunity to see all possible cohorts at young ages. The average of the ME variable over the whole sample is 0.664 reflecting the proportion across all observations of the years when the child was between 1 and 17 that the mother worked. The average family income (excluding maternal earnings) is just over $55,000[21]. The percent of all observations observed to be a lone mother household is 9.5%. Looking across the distribution of family types, 73.7% of our observations represent women who are attached (married or cohabitating), 18.7% represent single women without children and 7.6% represent lone parents. The majority of the daughters were born to mothers between 20 and 29 years of age (64.3%).

III. Results

We begin by plotting the kernel densities for ln(earnings) at age 30 by ME status: mothers who never worked for all years she was observed (ME=0), mothers who worked for all years she was observed (ME=1) and mothers who worked for some years ((0<ME<1). Figure 2 shows a rightward shift in the distribution of earnings as we move from the mother not working any year, to some years of employment, to working in all observed years. This graph suggests that, on average, daughters whose mothers worked earn more money as 30 year olds than daughters whose mothers never worked; suggesting a positive influence of ME on daughters' outcomes.

We now turn to the results of our regression models to see if these apparently positive ME effects are borne out further.

Baseline Models

Table 2 presents the baseline models for the paper – models that do not control for unobserved heterogeneity. For the dichotomous 'working' dependent variable we estimate both a logit and a LPM. While the logit model may be considered more appropriate given the dichotomous nature of the dependent variable, we also estimate a

[21] The Canadian average family income including mothers' earnings (over the relevant years) in 2005 dollars is $56,373. (CANSIM Table 2020404)

linear probability model as the FE and IV models estimated later are based on a linear regression. Further, Moffit (1999) has argued that linear probability models are more robust and generate results similar to logit models when the mean of the dependent variable is not close to zero or one, as is the case here. Both strategies yield quantitatively similar results: an increase in ME from 0 to 1 increases the probability of a daughter working by approximately 5 percentage points. From a base of 88 percent, this result represents an increase of about 5.7 percent.

For the ln(earnings) dependent variable we report results for one regression using the full sample of daughters, re-coding daughters who report no earnings or negative earnings as 1 (ln(1)=0), and another regression conditional on working, that is, dropping all daughter-years with earnings less than $1000.

The coefficient for ME in the linear ln(earnings) regression in column 3 can be interpreted as follows. Comparing a situation where the mother never worked when the daughter was 1-17 to a situation where she worked every year when the daughter was 1-17 is associated with an increase in the daughter's ln(earnings) by 0.543 – or her earnings by approximately 54 percent. In the regression conditioning on working, ME increases the daughter's ln(earnings) by 0.058 – or her earnings by 5.8 percent. The coefficient in the unconditional regression is significantly larger, as would be expected, as it captures both the effect on the probability of working and on earnings conditional on working.[22]

Taken together, the results for both dependent variables are consistent with the simple findings of the kernel densities, and are suggestive of a 'role model' story or the Becker and Tomes story where the beneficial effects of increased goods and services from ME outweigh the deleterious effects of reduced maternal time. Maternal employment is positively correlated with long term labour force attachment of daughters.

[22] The difference in the sample sizes between the conditional (827,205) and unconditional (935,300) regressions provides an estimate of the employment rate of 88 percent. Two factors can explain this elevated rate. First, the data do not include daughters who did not file taxes (those more likely to have had no earnings). Second, estimates of employment will always be higher when reflecting behaviour over a year (as tax records do) as compared to a point in time.

Next, we turn briefly to other variables of interest. The estimated coefficients in all specifications suggest a clear positive relationship between household income and daughters' later labour force outcomes. An increase in average annual family income of $50,000 over ages 1-17 increases the probability of work by 0.5 percent and increases ln(earnings) by 4.5 percent for the whole sample and 1.0 percent for the conditional sample.

The coefficients of the lone parent variables, reflecting family status during childhood, are consistently negative and significant. Always being in a lone mother family between the ages of 1-17 decreases the probability of work by 3.5 percent and 4.6 percent in the logit and LPM respectively, and decreases ln(earnings) by 51.5 percent for the whole sample, 12.4 percent for the conditional sample.

The current family status indicators generally perform as expected. Relative to the omitted category, attached with one child, having no children is associated with a greater likelihood of working and higher earnings. Additional children and single parent status is generally associated with both a decreased likelihood of working and lower earnings.

We control for whether the daughter current lives at the home of her parent(s) to address the possibility that daughters living at home may be different in ways that affect labour force decisions compared to daughters that have moved out. Daughters who still live at home are 3 to 4 percent more likely to be working but conditional on working earn 7.9 percent less.

Daughters born to younger mothers (less than 20 years) and older mothers (30 years or greater) are less likely to be working (1.3 percent and 1.4 percent respectively in the LPM) and, conditional on working, earn less (3.2 percent and 5.1 percent respectively).[23]

Controlling for Unobserved Heterogeneity

[23] Looking at child test scores as the outcome, Bernal (2008) similarly finds that relative to mothers 19-32 years of age at the birth of the child, test scores of daughters of younger and older mothers were lower.

Tables 4a-c report the main results of the paper, where we attempt to control for unobserved heterogeneity. Specifically, they include the FE, IV and 'Gottschalk' regressions for both the working, full sample earnings and conditional sample earnings models respectively. For comparison, the LPM regressions from Table 2 are reported as well.

In FE models, the ME effect is identified from differences in ME experiences across sisters in the sample. The sister pairs are identified using the family information obtained when the daughters are linked to their parents. Table 3 describes the variation in ME we have for the sisters in our sample. Column 2 provides the total number of daughters in our data for five age groups, column 3 provides the number of siblings identified in the data, and columns 4 and 5 provide the number for which the ME variable in the age range is the same and different.[24] For example, the data contains information on ME at ages 15-17 for 92,240 daughters. Of these 8,720 of them have sisters in the data: of these 6,770 have the same values for ME while 1,955 have different values for ME at that age. In the 1-2 age group 40 percent of the ME variables have different values between sisters. The percentage declines to 22 percent for the oldest age group. Because the percentage of mothers who work increases significantly as the children grow up (Figure 1), it is not surprising that there would be less variation in the older age groups.

In the FE models, the coefficients for ME are no longer significant in the working and full sample earnings models and are negative but only marginally significant in the conditional earnings model (second columns of Tables 4a-c). Especially because our sample size is large, we interpret statistical significance at the 10 percent level to not be meaningfully significant.[25] Given the precision of our estimates, we can statistically rule out at the 95% confidence level that going from a situation where the mother never worked when the daughter was 1-17 to working every year when the daughter was 1-17

[24] Note that the row representing the 15-17 year olds represents all the daughters in the data as we have at least one observation for every daughter at this age.
[25] As the probability of finding statistical significance increases with sample size, it is common to adjust the significance level downward when dealing with large data sets. See Kennedy (2003) and references therein.

increases the probability of the daughter working by more than 2.6% and increases earnings by more than 0.4%.

A possible explanation for the negative coefficient in the conditional earnings regression may be a birth order story. Consider a mother who stays at home until each child turns 10 years old and then goes back to work. The youngest child will have the most years of ME while the oldest will have the least. As the birth order effect is that older children have better outcomes (see for example Kantarevic & Mechoulan 2006), this birth order effect will cause a negative correlation between outcomes and ME. To address this possibility, we identify the 'older' sibling within the sister pairs in the data. Recall from footnote 9 that we can only determine relative, not absolute, birth order. We include an indicator for being the older daughter of a sibling pair to see if such a variable had any explanatory power in predicting labour market outcomes in FE models. Being the 'older' sibling is associated with a 6.4 percent increase in earnings (full sample). The estimated effects in the working and conditional earnings regressions are not estimated precisely. We find that the estimated effects of ME remained unchanged.

This evidence suggests that controlling for the unobserved characteristics of the mother essentially nullifies the previously positive estimated effects of ME.

The second strategy for dealing with the possible unobserved heterogeneity is IV where the instrument used is the average of the local unemployment rates for each year we have information on the mothers' employment status.[26] The results are reported in the third columns of Tables 4a-c and include the first stage t-statistics for the instrument, the p-values for the Hausman test, a specification test for determining whether or not LPM

[26] While we recognize the potential concerns regarding the use of aggregate level instruments when linked to micro-data (Moulton 1990), we are not as concerned with under-estimated standard errors in our situation as the number of groups in our data is significantly large. Donald and Lang (2007) assert that standard asymptotics should apply in situations exploiting variation across 50 states. Here, the number of groups is far greater than 73, the number of Economic Regions in 2001. Recall that our aggregated instrument is the average of the local (economic region) unemployment rates in the regions the daughter/mother lived over the number of years we observe the mother in our data. Thus the groups vary by 1) the ERs the mothers lived in over the sample period which includes the possibility of moving, and 2) the years we observe the mother.

produces consistent estimates. Our instrument passes the first stage tests in all regressions. The Hausman tests suggest that LPM does not produce consistent estimates in the two earnings models (we strongly reject that LPM is consistent) and thus IV is the preferred specification. We cannot reject that LPM does produce consistent estimates in the working model.

In the working and full sample earnings models the coefficients of ME are not significant - suggesting once more the importance of controlling for unobserved heterogeneity. In the conditional earnings model, however, the coefficient of ME remains significant and becomes unrealistically large in magnitude. Comparing a situation where the mother never worked when the daughter was 1-17 to a situation where she worked every year when the daughter was 1-17 increases the daughter's ln(earnings) by 2.421 – or her earnings by 242 percent. This finding calls into question the validity of our instrument. Even though the instrument passes most commonly accepted tests for instruments, it may not in fact be adequate. For example, if daughters remain close to where they grew up and there is serial correlation of the unemployment rate in a given region then there may be a direct causal pathway from the instrument to the outcome variables.

The final columns in Tables 4a-c show the results from our 'Gottschalk' model where we exploit the order in which events occur to identify the effects of unobserved heterogeneity. We construct measures of future ME equal to the proportion of years the mother worked after the year of the observation, excluding all years that the mother was age 60 or over. For example, for the observation of a 20 year old daughter in 1985, the mother's future ME is the proportion of observed years of ME from 1986-2005. For the observation for that same daughter at age 30 in 1995, future ME is the proportion of observed years of ME from 1996-2005. Note that we exclude observations for daughters from the most recent year of data available, 2005, as there is no available data from which to construct future ME.

The test, modified from Gottschalk (1996), holds that if the effect of ME for years after the observation on the daughter's outcomes is found to be significant, we can conclude

that unobserved heterogeneity is in fact important. Put another way, the coefficient for future ME should be zero in the case of no unobserved heterogeneity and should be equal to the coefficient of past ME in the case of no causal link. The latter possibility is exactly what is borne out in the regressions. In all cases the coefficients for future ME are positive, statistically significant and of roughly the same magnitude as the coefficients of past ME.

The results from the three exercises above provide the main result of the paper. The positive correlation between ME and labour market attachment shown in Table 2 reflects, to at least a large degree, unobserved heterogeneity. Differences in mothers' preferences, abilities or skills, drive the LPM results which overstate the effect of ME on daughters' outcomes.

As FE models capture constant unobserved heterogeneity – which may be related to family income and lone parent status as well as ME – the results from the FE model can provide insight into the interpretation of other covariates as well. The estimated family income effect becomes negative in the FE models. A $50,000 increase in average annual family market income for ages 1-17 is found to decrease the probability of the daughter working by 1 percent and conditional on working, decreases a daughter's later earnings by 4 percent. Dooley and Stewart (2004) find similar negative income effects when FE models were used to examine the effect of income on various academic outcomes for Canadian children. The authours hypothesize that the negative income effect may be capturing a birth order effect – as the same time as lower birth order is associated with better labour market outcomes, family income increases over time. Lower birth order children (with better labour market outcomes) are raised with lower average family income.[27]

While the estimated lone mother family effects in the FE models have negative point estimates, they are not estimated as precisely as in the LPM. This result suggests that the

[27] As we describe in an earlier footnote, we are not able to identify birth order in any meaningful way to test this hypothesis.

negative correlation between being in a lone parent family growing up and later labour market outcomes may not in fact be causal or at least not as strong as the LPM results indicate, similar to what we find for ME.[28]

Separating the ME variable into five age ranges

The literature in the area has pointed to ME at various ages as having different effects on child outcomes. To distinguish whether the impacts of ME differ based on the particular years of a daughter's development, we re-estimate the models separating the effect of ME into five age ranges: ages 1-2, 3-4, 5-9, 10-14 and 15-17.

The results from this analysis are presented in Tables 5a-c. Similar coefficients are found for the LPM regressions as in Table 2. For all age groups except ages 3-4 ME is found to have a positive effect on the probability of working and on full sample earnings, with generally stronger effects in the later years. In the conditional earnings sample the coefficient is only significant for the older two age groups. Going from a situation where the mother never worked (ages 1-17) to always worked (ages 1-17) increases the probability of working by 8.9 percentage points and increases the daughter's earnings by 83 percent (the sum of the significant estimated effects at each age group) in the full sample and 6.8 percent in the conditional sample.

However, once the unobserved heterogeneity is controlled for, in most cases the positive effects of ME diminish significantly. No ME variables enter significantly in the IV models. In the FE work and full sample earnings models (Tables 5a and 5b), only the ME ages 5-9 remain statistically significant at the 1% level. In particular, ME at the older ages, where the largest effects were previously found, are no longer significant at better than the 5% level. In the conditional earnings FE model the ME coefficient for ages 10-14 even becomes negative. The magnitude and significance of future ME variables in the

[28] Similar results have been found in previous research. For example, Lipman et al. (2002) investigate the impact of lone mother status on child outcomes and find that the correlation between child outcomes and lone mother status is greatly overstated without adequate controls for income and education.

Gottschalk models further support the notion of no causal relationship between ME and daughters' later labour force outcomes.

Estimating the effect of ME at age 15-17 only

We next re-estimate the baseline model (Table 4) but considering only ME at age 15-17. We do so for two reasons. First, in the LPM regressions, this age group most often yields coefficients of the largest magnitude for ME. Second, because of the unbalanced nature of the sample and the matching process, we do not have observations for all daughters for any age group, but for this age group we have observations for over 97% of daughters.

The coefficient for ME at age 15-17 will not be as affected by sample selection in the way it might be for the variables capturing ME when the daughter is younger. (Recall that we do control for this possible selection to some extent by including controls for 'missing' ME information due to the nature of the data.) At the same time, we recognize that ME at ages 15-17 is likely strongly correlated with past ME. Thus, the LPM coefficients likely suffer from omitted variable bias in that they still capture the effects of past ME.

The results are presented in Table 6. The story here is remarkably similar to that found when ME at ages 1-17 were considered together. The ME coefficient is positive and strongly significant in all LPM specification. When unobserved heterogeneity is controlled with FE, the ME effect disappears completely. In the IV models the ME coefficient is not significant in the working and full sample earnings models but is positive and larger in magnitude than LPM in the conditional earnings model – similar to what was found in Table 4. The coefficients of the past and future ME are very close in magnitudes in all Gottschalk specifications suggesting no causal link between ME and daughters' outcomes.

Thus even with a cleaner sample the main story remains unchanged - the positive correlation between ME and labour market attachment captured by the LPM models overstates the effects of ME on daughters' outcomes.

Models estimated separately by family type

Both because ME is correlated with family type as seen in Figure 1, and because there are likely significant differences between a lone mother not working and a mother in a two-parent family not working, we re-estimate the models by family type. We separate the sample into three family types – always two parent, always lone parent, and sometimes lone parent families. ME could be expected to have a different impact across the family types because the alternative to working is likely not the same for each family type. For two parent families, when a mother is not working it is likely that the spouse is employed and the mother has chosen to stay at home, while for lone parent families if the mother is not working it is likely that the family is receiving social assistance. Gottschalk (1996) finds significant correlation across generations of social assistance use so we may expect to find that ME has a stronger effect on the labour market outcomes of daughters from lone parent families because it implies less use of social assistance when the daughter was young. Furthermore, the role model effect may vary by family type if, for example, the presence of only one parent amplifies the role model effect.

The results are presented in Table 7. In the LPM regressions for all three models the largest (positive) coefficients for ME are found for the 'sometimes in lone parent families' and the smallest coefficient is always found for two parent families suggesting perhaps that the role model of the mother is most important in the less stable families. In all cases the estimates are highly significant.

Again, controlling for unobserved heterogeneity nullifies the positive effects of ME found in the LPM models, although there are some exceptions. For 'sometimes lone parent families,' the FE models indicate that ME has a positive effect on earnings in the full sample regression. While the Hausman test indicates that we cannot reject that OLS is consistent (and thus ME is perhaps strongly and positively associated with daughters earnings), the Gottshalk model still indicates that unobserved heterogeneity is important and that no causal relationship exists.

More mixed results appear in the conditional earnings regressions. In the IV models, the ME effects for the 'always two parent' and 'always lone parent' families are large and significant suggesting a positive causal relationship between ME and daughters' earnings conditional on working. As before, we have concerns about the validity of our instrument, which may undermine these results.

In contrast however, the FE and Gottschalk approaches suggest that unobserved heterogeneity is important and challenge the assertion of causality. Thus the main result of the paper, that there is no long-run causal relationship between ME and daughter's labour market outcomes, is generally upheld when the analysis is carried out by family type.

IV. Discussion and Conclusion

This paper investigates the long-term effects of maternal employment on daughters' later labour force participation and earnings. The majority of the existing work in this area investigates how current maternal labour force participation affects current child outcomes, including scholastic, behavioural and health outcomes. The literature thus focuses on children still living at home. Using the Longitudinal Administrative Databank, a large, representative random sample of Canadian tax filers, we link information regarding a mother's labour force participation when her daughters are young to the daughters' own labour force participation and earnings in later years. We further extend the analysis of this issue by examining the effect of ME that occurred not only at young ages of the daughter, but also ME up to the age of 17.

Baseline linear probability models estimates suggest a positive relationship between maternal employment (ME) and daughters' later labour force participation and earnings, with stronger effects for ME when the daughters are in their teens (age 15-17) than at younger ages. However, differences in outcomes between daughters of mothers who were strongly attached to the labour force and daughters whose mothers did not have a strong attachment may not be due to the differences in maternal employment, per se. Rather the

differences may be due to unobserved characteristics, such as the mothers' ability, preferences or skills that affect both the likelihood of ME and the daughters' outcomes. To address this possibility we use a sister fixed effect strategy which exploits variation in ME across sisters in the sample, an instrumental variables strategy which exploits variation in ME due to local unemployment rates and, following Gottschalk (1996), an event history strategy which exploits the order in which events occur.

For the likelihood of earning more than $1000 (our measure of labour force participation), all three strategies for every cut of the data (be it looking at ME at ages 1-17, at ages 15 to 17, in five age ranges or by family type) all point to the same conclusion: LPM effects overestimate the true relationship between ME and daughters' later labour force participation. And while the results for earnings occasionally support the notion that the positive relationship between daughters' earnings and ME is causal, the evidence predominantly rejects this notion. There is something about families where mothers work that is related to the daughters' later work but it is not caused by the mothers' actual labour supply itself. Unobserved heterogeneity associated with mothers' preferences, skills, abilities or even education, a variable unavailable in the LAD, drives the positive association.

Whereas most previous studies have looked at outcomes that could be clearly interpreted as good (i.e. cognitive scores) or bad (i.e. obesity, acting out or aggression), our analysis of labour force outcomes does not necessarily have such a subjective interpretation. Working could be interpreted as a positive outcome in as much as it implies social inclusion, and higher earnings imply greater marginal productivity. However, work per se implies disutility. Regardless of the interpretation of our outcome measures in this vein, our findings indicate that there is little in the way of long run effects.

These findings, therefore, call into question the growing concern previous research has raised regarding the negative effects of maternal employment on child outcomes. Any negative effect in childhood of ME does not translate into long term impacts on labour market outcomes in adulthood.

References

Akerlof, George and Rachel Kranton. 2000. “Economics and Identity.” *Quarterly Journal of Economics* 115(3):715-753.

Anderson, Patricia M., Kristen F. Butcher, Phillip B. Levine. 2003. “Maternal Employment and Overweight Children.” *Journal of Health Economics* 22(3):477-504.

Aughinbaugh, Alison, and Maury Gittleman. 2004. “Maternal Employment and Adolescent Risky Behavior.” *Journal of Health Economics* 23(4):815–838.

Baker, Michael, Jonathan Gruber, and Kevin Millligan. 2008. “Universal Childcare, Maternal Labor Supply, and Family Wellbeing.” *Journal of Political Economy* 116(4):709-45.

Baum, Charles L. III. 2003. “Does Early Maternal Employment Harm Child Development? An Analysis of the Potential Benefits of Leave Taking.” *Journal of Labor Economics* 21(2):409-448.

Baum, Charles L. 2004. “The Long-Term Effects of Early and Recent Maternal Employment on a Child’s Academic Achievement.” *Journal of Family Issues* 25(1):29-60.

Becker, Gary and Nigel Tomes. 1986. “Human Capital and the Rise and Fall of Families.” *Journal of Labor Economics* 4(3):S1-39.

Berger, Lawrence M., Jennifer Hill and Jane Waldfogel. 2005. “Maternity Leave, Early Maternal Employment and Child Health and Development in the US.” *The Economic Journal* 115(501):F29–F47.

Bernal, Raquel. 2008. “The Effect of Maternal Employment and Child Care on Children’s Cognitive Development.” *International Economic Review* 49(4):1173-1209.

Blau, Francine and Adam Grossberg. 1992. “Maternal Labor Supply and Children's Cognitive Development.” *The Review of Economics and Statistics*, 74(3):474-481.

Conley, Dalton and Karen Albright. 2005. “The Effect of Maternal Labor Market Participation on Adult Siblings’ Outcomes: Does Having a Working Mother Lead to Increased Gender Equality in the Family?” unpublished.

Corak, Miles. 2001. “Are the Kids All Right? Intergenerational Mobility and Child Well Being in Canada.” Statistics Canada, Analytical Studies Branch Research Paper No. 171.

Corak, Miles and Andrew Heisz. 1999. “The Intergenerational Earnings and Income Mobility of Canadian Men: Evidence from Longitudinal Income Tax Data.” *Journal of Human Resources* 34(3):504-533.

Cragg, J.G., and S. G. Donald. 1993. “Testing Identifiability and Specification in Instrumental Variables Models.” *Economic Theory*, 9(2):222-240.

Donald, Stephen G., and Kevin Lang. 2007. “Inference with Difference-in-Difference and Other Panel Data.” *The Review of Economics and Statistics* 89(2): 221–233.

Dooley, Martin and Jennifer Stewart. 2004. “Family Income and Child Outcomes in Canada.” *Canadian Journal of Economics*, 37(4):898-917.

Dustmann, Christian and Uta Schönberg. 2008. “The Effect of Expansions in Maternity Leave Coverage on Children’s Long-Term Outcomes.” IZA Discussion Paper No. 3605.

Ermisch, John and Marco Francesconi. 2002 “The Effect of Parents' Employment on Children's Educational Attainment.” Working Paper #2002-21, Institute for Social and Economic Research, University of Essex.

Finnie, Ross and André Bernard. 2005. “The Intergenerational Transmission of Lone Mother and Low Income Status: Family and Neighborhood Effects.” Statistics Canada Analytical Studies Research Paper.

Finnie, Ross and Ian Irvine. 2006. “Mobility and Gender at the Top Tail of the Earnings Distribution.” *The Economic and Social Review* 37(2):1-25.

Gagne, Lynda. 2002. “Parental Work, Child-care Use and Young Children's Cognitive Outcomes.” Research Data Centre Research Paper, Catalogue no. 89–594-XIE (October), Statistics Canada, Ottawa.

Gennetian, Lisa A., Greg J. Duncan, Virginia W. Knox, Wanda G. Vargas, Elizabeth Clark-Kauffman, and Andrew S. London. 2002. How Welfare and Work Policies for Parents Affects Adolescents: A Synthesis of Research Manpower Demonstration Research Corporation.

Gregg, Paul, Elizabeth Washbrook, Carol Propper and Simon Burgess. 2005. “The Effects of a Mother’s Return to Work Decision on Child Development in the UK.” *The Economic Journal* 115(501):F48–F80.

Gottschalk, Peter. 1996. “Is the Correlation in Welfare Participation Across Generations Spurious?” *Journal of Public Economics* 63(1):1-25.

Haveman, Robert and Barbara Wolfe. 1995. “The Determinants of Children’s Attainments: A Review of Methods ad Findings.” *Journal of Economic Literature* 33(4):1829-1878.

James-Burdumy, Susanne. 2005. “The Effect of Maternal Labor Force Participation on Child Development.” *Journal of Labor Economics* 23(1):177-211.

Kantarevic, Jasmin and Stephane Mechoulan. 2006. “Birth Order, Educational Attainment, and Earnings: An Investigation Using the PSID” *Journal of Human Resources* 41(4):755-777.

Kennedy, Peter. 2003. A Guide to Econometrics 5th Edition, Cambridge, MA, The MIT Press.

Lipman, Ellen L., Michael H., Boyle, Martin D., Dooley, and David R. Offord. 2002. “Child Well-Being in Single-Mother Families.” *Journal of the American Academy of Child and Adolescent Psychiatry* 41(1):75-82.

Lopoo, Leonard M. 2004. “The Effect of Maternal Employment on Teenage Childbearing.” *Journal of Population Economics* 17(4):681–702.

Moffitt, Robert, A. 1999. “New Developments in Econometric Methods for Labor Market Analysis.”, in Ashenfelter, O. and D. Card (eds.), Handbook of Labor Economics, Elsevier, pp. 1367-1397.

Moulton, Brett. 1990. “An Illustration of a Pitfall in Estimating the Effects of Aggregate Variables on Micro Units.” *The Review of Economics and Statistics* 72(2):334-338.

Oreopoulos, Philip. 2003. “The Long Run Consequences of Growing Up in a Poor Neighborhood.” *Quarterly Journal of Economics* 118(4):1533-1575.

Rose, Heather. 2006. “Do Gains in Test Scores Explain Labor Market Outcomes?” *Economics of Education Review* 25(4):430-46.

Ruhm, Christopher. 2004. “Parental Employment and Child Cognitive Development.” *Journal of Human Resources* 39(1):155-192.

Ruhm, Christopher. 2008 “Maternal Employment and Adolescent Development.” *Labour Economics* 15(5):958–983.

Statistics Canada. 2009. CANSIM Tables 282-0002 and Labour Force Survey.

Waldfogel, Jane , Wen-Jui Han, Jeanne Brooks-Gunn. 2002. “The Effects of Early Maternal Employment on Child Cognitive Development.” *Demography*, 39(2):369-392.

Wurtz Rasmussen, Astrid. 2009. “Increasing the Length of Parents' Birth-Related Leave: The Effect on Children's Long-Term Educational Outcomes.” *Labour Economics* forthcoming.

Appendix A: Tobit results

a) Main

	Coefficients	Unconditional	Conditional	Probability
Maternal Employment Ages 1-17	0.605***	0.603***	0.587***	0.002***
	[0.010]	[0.010]	[0.009]	[0.000]
Family Market Income Ages 1-17	0.010***	0.010***	0.009***	0.000***
	[0.001]	[0.001]	[0.001]	[0.000]
Always Lone Mother Family Ages 1-17	-0.569***	-0.567***	-0.552***	-0.002***
	[0.016]	[0.016]	[0.015]	[0.000]
N	935300	935300	935300	935300

b) IV

	Coefficients	Unconditional	Conditional	Probability
Maternal Employment Ages 1-17	1.616**	1.609**	1.560**	0.007**
	[0.634]	[0.631]	[0.608]	[0.003]
Family Market Income Ages 1-17	0.009***	0.009***	0.009***	0.000***
	[0.001]	[0.001]	[0.001]	[0.000]
Always Lone Mother Family Ages 1-17	-0.614***	-0.611***	-0.593***	-0.002***
	[0.032]	[0.032]	[0.030]	[0.000]
N	935300	935300	935300	935300

c) Gottshalk

	Coefficients	Unconditional	Conditional	Probability
Maternal Employment Ages 1-17	0.453***	0.451***	0.436***	0.0021***
	[0.011]	[0.010]	[0.010]	[0.0001]
Family Market Income Ages 1-17	0.010***	0.010***	0.010***	0.0000***
	[0.001]	[0.001]	[0.001]	[0.0000]
Always Lone Mother Family Ages 1-17	-0.549***	-0.546***	-0.527***	-0.0026***
	[0.016]	[0.016]	[0.016]	[0.0001]
Maternal Employment 'After'	0.481***	0.478***	0.462***	0.0023***
	[0.011]	[0.011]	[0.011]	[0.0001]
N	935300	935300	935300	935300

Note: Reported coefficients are marginal effects. Standard Errors in parentheses. *** signifies p<0.001, ** signifies p<0.05, * signifies p<0.10. Covariates also include: current family status, living at home, the age of the mother at the birth of the daughter, region size, province of residence, age at match, age, year, controls for missing maternal employment data and indicators for being an English speaker in Quebec or a French speaker outside of Quebec. The family market income variable is measured in $10,000.

Appendix B: Construction of our sample

LAD Years

'82	**'83**	**'84**	**'85**	**'86**	**'87**	**'88**	**'89**	**'90**	**'91**	**'92**	**'93**	**'94**	**'95**	**'96**	**'97**	**'98**	**'99**	**'00**	**'01**	**'02**	**'03**	**'04**	**'05**
-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**
-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**
-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**
6	7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**
7	8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
8	9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
9	10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**
10	11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**
11	12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**
12	13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**
13	14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**
14	15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**
15	16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**
16	17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**
17	18	19	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**

Note: The numbers in the table represent the relevant subset of daughters' ages for each year of LAD data available. Our sample is based on daughters 20-40 years (darker shaded area) for which we have at least one year of maternal employment data from when the daughter was between 1 and 17 years (lighter shaded area). This table thus demonstrates the unbalanced nature of our sample. Daughters who are generally older over the sample period are followed for more years as adults but are not tracked as far back into their childhood, while younger daughters are not followed as far into adulthood but are tracked back to younger ages.

Figure 1a

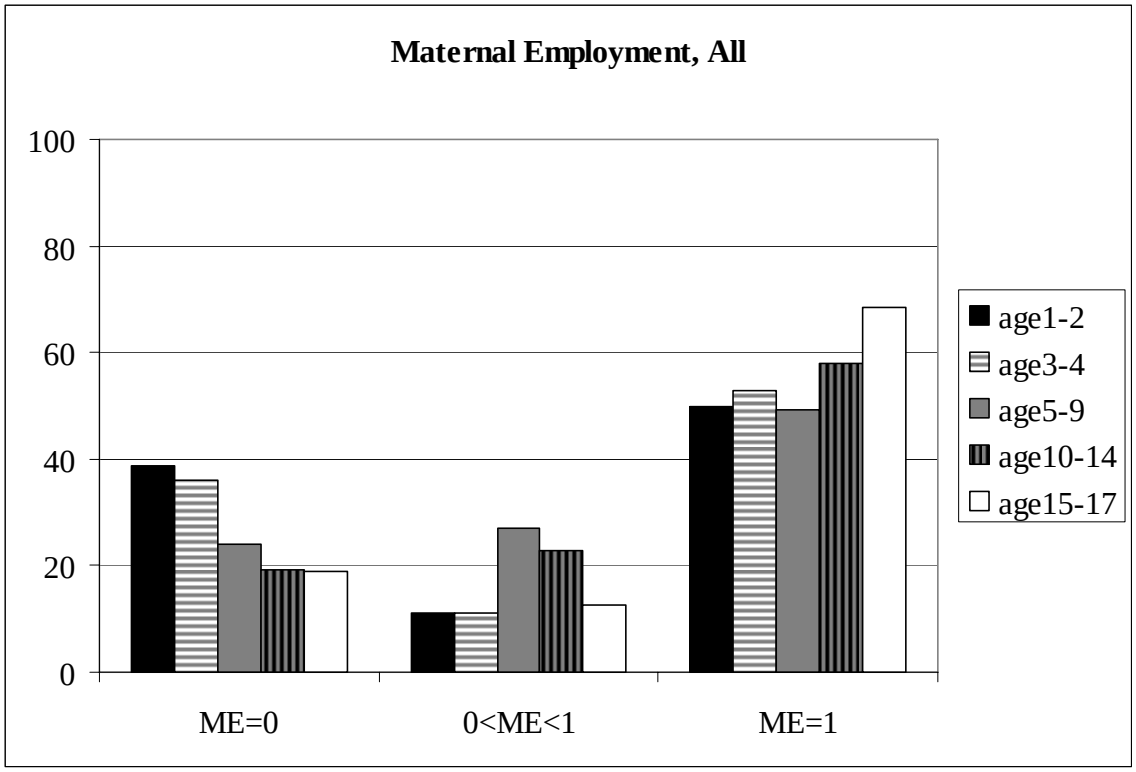
Maternal Employment, All
100
80
60
40
20
0
ME=0
0<ME<1
ME=1
age1-2
age3-4
age5-9
age10-14
age15-17

Figure 1b

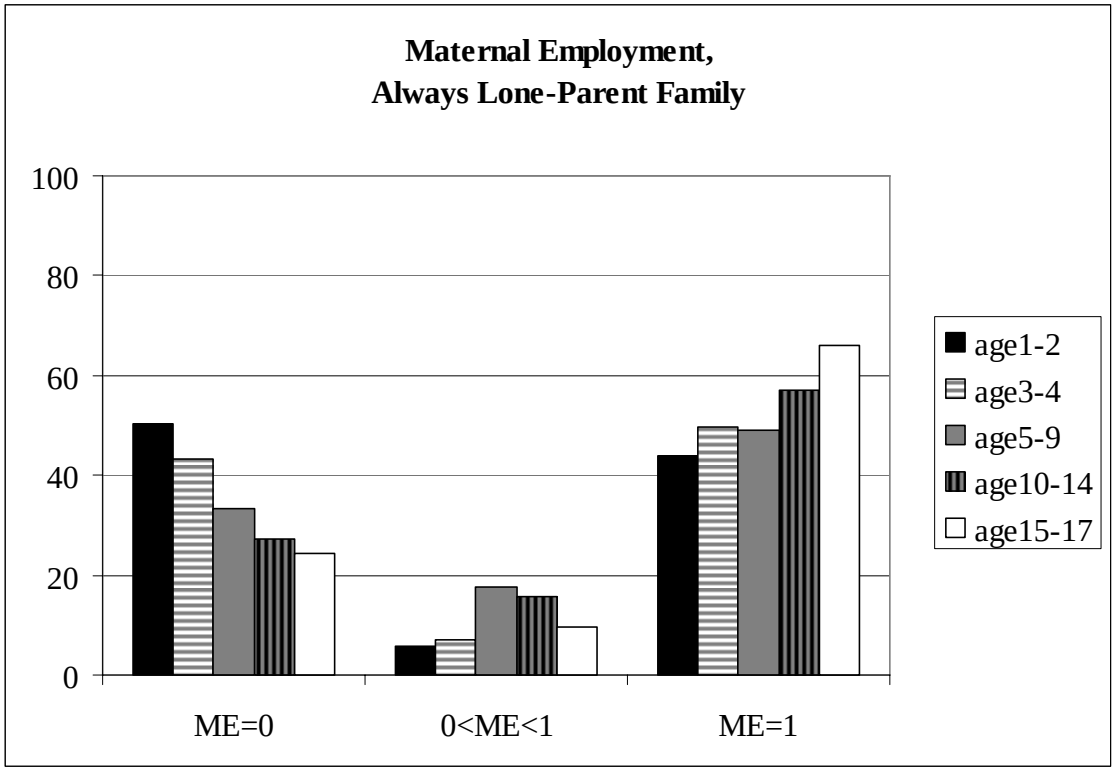

Figure 1c

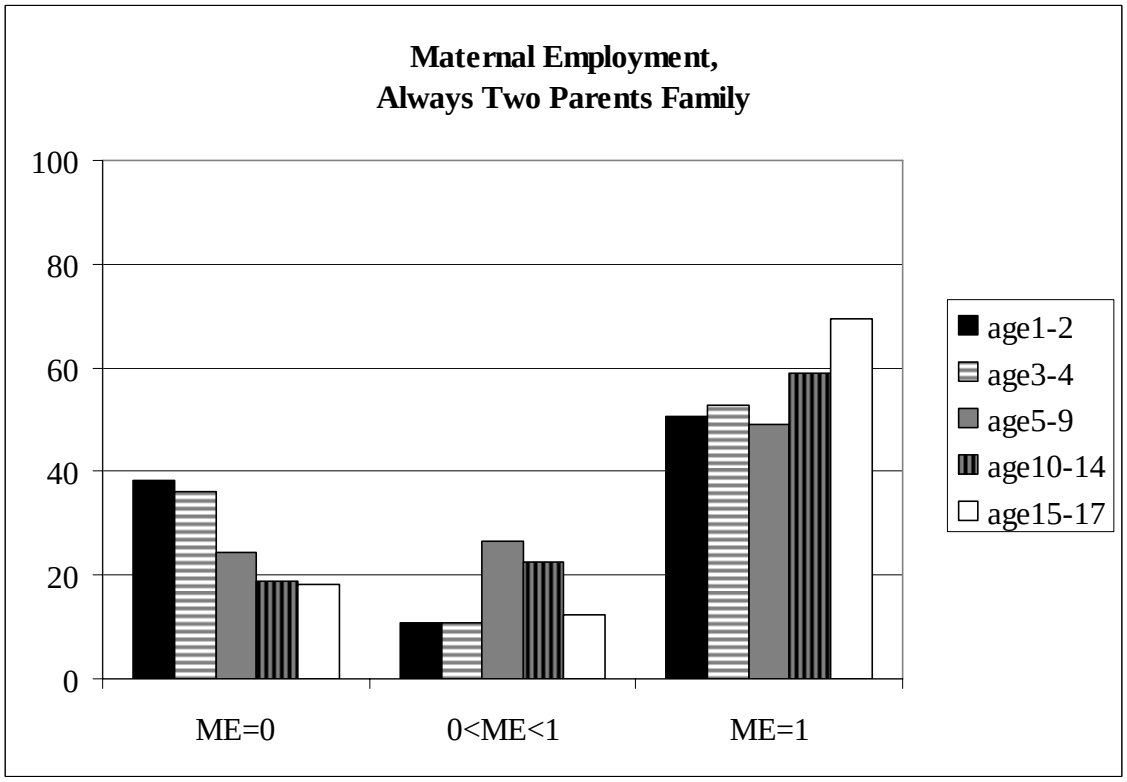

Figure 2

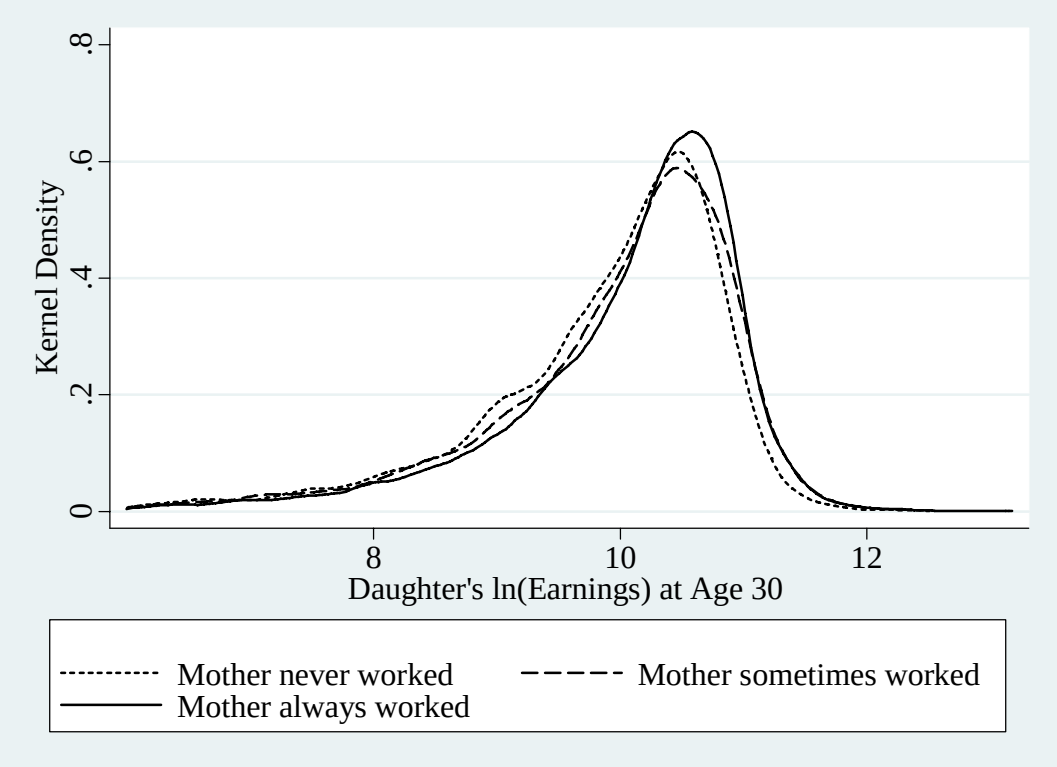
Kernel Density
0
.2
.4
.6
.8
8
10
12
Daughter's ln(Earnings) at Age 30
Mother never worked
Mother sometimes worked
Mother always worked

Table 1: Summary Statistics

Age 20-29 (%)	72.7
Age 30-39 (%)	27.3
Maternal employment (1-17)	0.664
Family market income ages 1-17, excluding mother's earnings (2005 Canadian dollars)	55,260
Lone mother family ages 1-17	0.095
Single (%)	18.7
Attached (%)	40.3
Attached with 1 child (%)	11.9
Attached with 2 children (%)	13.4
Attached with 3 children (%)	5.8
Attached with 4+ children (%)	2.3
Lone parent 1 child (%)	4.2
Lone parent 2+ children (%)	3.4
Living at home (%)	31.1
Mother <20 at birth of daughter (%)	6.2
Mother 20-29 at birth of daughter (%)	64.3
Mother 30+ at birth of daughter (%)	29.6
N	935,300

Note: These average summary statistics are drawn from the full sample and include multiple observations for each daughter. Refer to Appendix B for a presentation of the unbalanced nature of the sample. Maternal employment (lone mother) in this table is the average of the maternal employment (lone mother) variable across all observations including multiple observations for each daughter. Recall each observation's ME (lone mother) reflects the proportion of the observed years when the child was between one and 17 that the mother worked (was a lone mother).

Table 2: Baseline Regressions

	Working		ln(earnings)	
	Logit	**LPM**	**Full Sample**	**Conditional on Working**
Maternal Employment Ages 1-17	0.049***	0.054***	0.543***	0.058***
	[0.002]	[0.002]	[0.022]	[0.007]
Family Market Income Ages 1-17 ($10,000)	0.001***	0.001***	0.009***	0.002***
	[0.000]	[0.000]	[0.002]	[0.001]
Always Lone Mother Family Ages 1-17	-0.035***	-0.046***	-0.515***	-0.124***
	[0.003]	[0.004]	[0.036]	[0.011]
Single	0.069***	0.103***	1.231***	0.387***
	[0.003]	[0.002]	[0.022]	[0.007]
Attached	0.067***	0.096***	1.149***	0.367***
	[0.003]	[0.002]	[0.019]	[0.006]
Attached with 2 Children	-0.033***	-0.037***	-0.479***	-0.130***
	[0.002]	[0.002]	[0.025]	[0.009]
Attached with 3 Children	-0.037***	-0.035***	-0.466***	-0.093***
	[0.003]	[0.004]	[0.036]	[0.013]
Attached with 4+ Children	-0.048***	-0.045***	-0.469***	0.036**
	[0.005]	[0.006]	[0.055]	[0.016]
Lone Parent with 1 Child	-0.084***	-0.119***	-1.088***	-0.031***
	[0.004]	[0.004]	[0.042]	[0.011]
Lone Parent with 2 or More Children	-0.102***	-0.125***	-1.257***	-0.099***
	[0.005]	[0.005]	[0.050]	[0.013]
Living at Home	0.039***	0.032***	0.196***	-0.079***
	[0.002]	[0.002]	[0.015]	[0.004]
Mom's Age at Birth <20	-0.010***	-0.013***	-0.147***	-0.032***
	[0.003]	[0.004]	[0.036]	[0.011]
Mom's Age at Birth 30+	-0.015***	-0.014***	-0.167***	-0.051***
	[0.002]	[0.002]	[0.017]	[0.005]
N	935300	935300	935300	827205

Note: Standard errors in parentheses. *** signifies p<0.001, ** signifies p<0.05, * signifies p<0.10. For the logit model marginal probabilities are reported. Covariates also include: region size, province of residence, age at match, age, year and indicators for being an English speaker in Quebec or a French speaker outside of Quebec.

Table 3: Variation in Maternal Employment across Sisters

	N	With Sisters	ME Same	ME Different
Age 1-2	27,975	2,355	1,425	930
Age 3-4	36,260	3,255	2,005	1,250
Age 5-9	57,885	5,535	3,520	2,015
Age 10-14	81,060	7,810	5,555	2,255
Age 15-17	92,240	8,720	6,770	1,955

Table 4: Regressions controlling for unobserved heterogeneity

a) Dependent Variable: Working

	LPM	FE	IV	Gottshalk
Maternal Employment Ages 1-17	0.054***	0.002	0.049	0.040***
	[0.002]	[0.012]	[0.136]	[0.002]
Family Market Income Ages 1-17	0.001***	-0.002***	0.001***	0.001***
	[0.000]	[0.001]	[0.000]	[0.000]
Always Lone Mother Family Ages 1-17	-0.046***	-0.023	-0.046***	-0.044***
	[0.004]	[0.023]	[0.007]	[0.004]
Maternal Employment 'After'				0.045***
				[0.002]
1st Stage t-stat for instrument			-3.67	
Hausman Test			0.8543	
N	935300	935300	935300	847155

b) Full Sample, Dependent Variable: ln(earnings)

	LPM	FE	IV	Gottshalk
Maternal Employment Ages 1-17	0.543***	-0.015	1.591	0.407***
	[0.022]	[0.107]	[1.430]	[0.023]
Family Market Income Ages 1-17	0.009***	-0.028***	0.008***	0.009***
	[0.002]	[0.007]	[0.002]	[0.002]
Always Lone Mother Family Ages 1-17	-0.515***	-0.414*	-0.561***	-0.496***
	[0.036]	[0.211]	[0.073]	[0.036]
Maternal Employment 'After'				0.429***
				[0.021]
1st Stage t-stat for instrument			-3.67	
Hausman Test			0.0318	
N	935300	935300	935300	847155

c) Conditional on Working, Dependent Variable: ln(earnings)

	LPM	FE	IV	Gottshalk
Maternal Employment Ages 1-17	0.058***	-0.073*	2.421**	0.045***
	[0.007]	[0.043]	[1.002]	[0.007]
Family Market Income Ages 1-17	0.002***	-0.008***	0.003***	0.002***
	[0.001]	[0.003]	[0.001]	[0.001]
Always Lone Mother Family Ages 1-17	-0.124***	-0.177**	-0.265***	-0.121***
	[0.011]	[0.086]	[0.063]	[0.011]
Maternal Employment 'After'				0.038***
				[0.006]
1st Stage t-stat for instrument			-2.85	
Hausman Test			0.0000	
N	827205	827205	827205	748795

Note: Standard Errors in parentheses. *** signifies p<0.001, ** signifies p<0.05, * signifies p<0.10. Covariates also include: current family status, living at home, the age of the mother at the birth of the daughter, region size, province of residence, age at match, age, year and indicators for being an English speaker in Quebec or a French speaker outside of Quebec. The family market income variable is measured in $10,000.

Table 5: Breaking down ME into age groups

a) Dependent Variable: Working

	LPM	**FE**	**IV**	**Gottshalk**
ME Ages 1-2	0.020***	0.007	-0.226	0.019***
	[0.004]	[0.010]	[0.534]	[0.004]
ME Ages 3-4	0.001	0.002	0.123	-0.001
	[0.003]	[0.008]	[0.480]	[0.004]
ME Ages 5-9	0.010***	0.023***	-0.165	0.007**
	[0.003]	[0.007]	[0.153]	[0.003]
ME Ages 10-14	0.018***	0.015**	0.12	0.015***
	[0.003]	[0.006]	[0.162]	[0.003]
ME Ages 15-17	0.041***	0.012*	0.042	0.031***
	[0.003]	[0.006]	[0.141]	[0.003]
Maternal Employment 'After'				0.041***
				[0.002]
1st Stage F-stat for joint significance of instruments ME Ages 1-2			27.62	
1st Stage F-stat for joint significance of instruments ME Ages 3-4			25.56	
1st Stage F-stat for joint significance of instruments ME Ages 5-9			28.56	
1st Stage F-stat for joint significance of instruments ME Ages 10-14			16.32	
1st Stage F-stat for joint significance of instruments ME Ages 15-19			18.19	
Hausman Test			0.0000	
N	935300	935300	935300	847155

b) Full Sample, Dependent Variable: ln(earnings)

	LPM	FE	IV	Gottshalk
ME Ages 1-2	0.157***	-0.026	-2.364	0.146***
	[0.033]	[0.090]	[5.193]	[0.037]
ME Ages 3-4	-0.009	0.024	1.578	-0.03
	[0.032]	[0.073]	[4.605]	[0.034]
ME Ages 5-9	0.082***	0.156***	-1.523	0.053*
	[0.029]	[0.060]	[1.510]	[0.030]
ME Ages 10-14	0.185***	0.058	1.381	0.147***
	[0.030]	[0.053]	[1.656]	[0.031]
ME Ages 15-17	0.410***	0.144**	0.79	0.312***
	[0.027]	[0.057]	[1.444]	[0.028]
Maternal Employment 'After'				0.394***
				[0.021]
1st Stage F-stat for joint significance of instruments ME Ages 1-2			27.62	
1st Stage F-stat for joint significance of instruments ME Ages 3-4			25.56	
1st Stage F-stat for joint significance of instruments ME Ages 5-9			28.56	
1st Stage F-stat for joint significance of instruments ME Ages 10-14			16.32	
1st Stage F-stat for joint significance of instruments ME Ages 15-19			18.19	
Hausman Test			0.0000	
N	935300	935300	935300	847155

c) Conditional on Working, Dependent Variable: ln(earnings)

	LPM	FE	IV	Gottshalk
ME Ages 1-2	0.001	-0.057	-0.604	-0.001
	[0.011]	[0.036]	[2.662]	[0.012]
ME Ages 3-4	-0.015	-0.007	0.594	-0.021**
	[0.010]	[0.029]	[2.364]	[0.010]
ME Ages 5-9	-0.006	-0.055**	0.173	-0.008
	[0.009]	[0.024]	[0.533]	[0.009]
ME Ages 10-14	0.026***	-0.070***	0.502	0.021**
	[0.009]	[0.021]	[0.626]	[0.009]
ME Ages 15-17	0.042***	0.009	0.776	0.033***
	[0.008]	[0.023]	[0.650]	[0.009]
Maternal Employment 'After'				0.035***
				[0.006]
1st Stage F-stat for joint significance of instruments ME Ages 1-2			23.47	
1st Stage F-stat for joint significance of instruments ME Ages 3-4			23.02	
1st Stage F-stat for joint significance of instruments ME Ages 5-9			29.88	
1st Stage F-stat for joint significance of instruments ME Ages 10-14			14.12	
1st Stage F-stat for joint significance of instruments ME Ages 15-19			13.80	
Hausman Test			0.0000	
N	827205	827205	827205	748795

Note: Standard Errors in parentheses. *** signifies p<0.001, ** signifies p<0.05, * signifies p<0.10. Covariates also include: family market income (for the five age groups), lone mother family status (for the five age groups), current family status, living at home, the age of the mother at the birth of the daughter, region size, province of residence, age at match, age, year, controls for missing maternal employment data and indicators for being an English speaker in Quebec or a French speaker outside of Quebec.

Table 6: Estimating the effect of Maternal Employment at age 15-17 only

a) Dependent Variable: Working

	LPM	FE	IV	Gottshalk
Maternal Employment Ages 15-17	0.054***	0.006	0.048	0.040***
	[0.002]	[0.006]	[0.065]	[0.002]
Family Market Income Ages 15-17	0.000**	-0.002***	0.000*	0.000**
	[0.000]	[0.000]	[0.000]	[0.000]
Always Lone Mother Family Ages 15-17	-0.035***	-0.014	-0.035***	-0.035***
	[0.003]	[0.011]	[0.003]	[0.003]
Maternal Employment 'After'				0.043***
				[0.002]
1st Stage t-stat for instrument			-7.65	
Hausman Test			0.8462	
N	935300	935300	935300	847155

b) Full Sample, Dependent Variable: ln(earnings)

	LPM	FE	IV	Gottshalk
Maternal Employment Ages 15-17	0.540***	0.100*	0.894	0.403***
	[0.022]	[0.055]	[0.663]	[0.023]
Family Market Income Ages 15-17	0.003**	-0.024***	0.003**	0.003**
	[0.001]	[0.004]	[0.001]	[0.002]
Always Lone Mother Family Ages 15-17	-0.408***	-0.317***	-0.415***	-0.408***
	[0.030]	[0.097]	[0.032]	[0.031]
	[0.019]	[0.010]	[0.023]	[0.020]
Maternal Employment 'After'				0.419***
				[0.021]
1st Stage t-stat for instrument			-7.65	
Hausman Test			0.1775	
N	935300	935300	935300	847155

c) Conditional on Working, Dependent Variable: ln(earnings)

	LPM	FE	IV	Gottshalk
Maternal Employment Ages 15-17	0.055***	0.019	0.897***	0.041***
	[0.006]	[0.022]	[0.271]	[0.007]
Family Market Income Ages 15-17	0.001**	-0.009***	0.001*	0.001**
	[0.000]	[0.001]	[0.000]	[0.000]
Always Lone Mother Family Ages 15-17	-0.113***	-0.177***	-0.139***	-0.113***
	[0.009]	[0.039]	[0.013]	[0.009]
Maternal Employment 'After'				0.038***
				[0.006]
1st Stage t-stat for instrument			-6.67	
Hausman Test			0.0000	
N	827205	827205	827205	748795

Note: Standard Errors in parentheses. *** signifies p<0.001, ** signifies p<0.05, * signifies p<0.10. Covariates also include: current family status, living at home, the age of the mother at the birth of the daughter, region size, province of residence, age at match, age, year, controls for missing maternal employment data and indicators for being an English speaker in Quebec or a French speaker outside of Quebec. The family market income variable is measured in $10,000.

Table 7: Regressions by Family Type

a) Dependent Variable: Working

	LPM	FE	IV	Gottshalk
Always 2 Parent Family				
ME Ages 1-17	0.045***	0.018	0.076	0.033***
	[0.002]	[0.013]	[0.055]	[0.002]
Family Market Income Ages 1-17	0.001***	-0.003***	0.001***	0.001***
	[0.000]	[0.001]	[0.000]	[0.000]
Maternal Employment 'After'				0.038***
				[0.002]
1st Stage t-stat for instrument			-8.55	
Hausman Test			0.0350	
N	776195	776195	776195	705535
Always Lone Parent Family				
ME Ages 1-17	0.098***	0.088	0.042	0.074***
	[0.012]	[0.176]	[0.116]	[0.012]
Family Market Income Ages 1-17	-0.002	-0.026***	-0.002	-0.002
	[0.003]	[0.009]	[0.003]	[0.003]
Maternal Employment 'After'				0.068***
				[0.011]
1st Stage t-stat for instrument			-4.44	
Hausman Test			0.1819	
N	47400	47400	47400	44205
Sometimes Lone Parent Family				
ME Ages 1-17	0.117***	0.098*	0.091	0.089***
	[0.008]	[0.055]	[0.088]	[0.008]
Family Market Income Ages 1-17	0.003***	0.003	0.003***	0.003***
	[0.001]	[0.002]	[0.001]	[0.001]
Maternal Employment 'After'				0.076***
				[0.007]
1st Stage t-stat for instrument			6.22	
Hausman Test			0.5520	
N	111705	111705	111705	97420

b) Full Sample, Dependent Variable: ln(earnings)

	LPM	FE	IV	Gottshalk
Always 2 Parent Family				
ME Ages 1-17	0.455***	0.135	1.132**	0.338***
	[0.023]	[0.116]	[0.571]	[0.025]
Family Market Income Ages 1-17	0.008***	-0.037***	0.008***	0.008***
	[0.002]	[0.008]	[0.002]	[0.002]
Maternal Employment 'After'				0.364***
				[0.022]
1st Stage t-stat for instrument			-8.55	
Hausman Test			0.0001	
N	776195	776195	776195	705535
Always Lone Parent Family				
ME Ages 1-17	0.983***	-0.391	0.962	0.746***
	[0.116]	[1.596]	[1.179]	[0.120]
Family Market Income Ages 1-17	-0.013	-0.283***	-0.013	-0.007
	[0.036]	[0.086]	[0.036]	[0.035]
Maternal Employment 'After'				0.670***
				[0.106]
1st Stage t-stat for instrument			-4.44	
Hausman Test			0.8397	
N	47400	47400	47400	44205
Sometimes Lone Parent Family				
ME Ages 1-17	1.121***	1.288***	0.563	0.867***
	[0.076]	[0.480]	[0.865]	[0.080]
Family Market Income Ages 1-17	0.034***	0.025	0.039***	0.036***
	[0.008]	[0.016]	[0.011]	[0.008]
Maternal Employment 'After'				0.719***
				[0.067]
1st Stage t-stat for instrument			6.22	
Hausman Test			0.1498	
N	111705	111705	111705	97420

c) Conditional on Working, Dependent Variable: ln(earnings)

	LPM	FE	IV	Gottshalk
Always 2 Parent Family				
ME Ages 1-17	0.056***	-0.036	0.755***	0.044***
	[0.007]	[0.047]	[0.218]	[0.008]
Family Market Income Ages 1-17	0.002***	-0.011***	0.003***	0.002***
	[0.001]	[0.003]	[0.001]	[0.001]
Maternal Employment 'After'				0.037***
				[0.007]
1st Stage t-stat for instrument			-7.82	
Hausman Test			0.0000	
N	692180	692180	692180	628800
Always Lone Parent Family				
ME Ages 1-17	0.070**	-0.727	0.794**	0.043
	[0.033]	[0.614]	[0.383]	[0.036]
Family Market Income Ages 1-17	0.009	-0.003	0.007	0.009
	[0.012]	[0.057]	[0.012]	[0.012]
Maternal Employment 'After'				0.066**
				[0.030]
1st Stage t-stat for instrument			-4.47	
Hausman Test			0.0000	
N	39520	39520	39520	36860
Sometimes Lone Parent Family				
ME Ages 1-17	0.086***	0.228	-0.530*	0.073***
	[0.020]	[0.177]	[0.294]	[0.022]
Family Market Income Ages 1-17	0.005**	0.002	0.010***	0.005**
	[0.002]	[0.006]	[0.003]	[0.002]
Maternal Employment 'After'				0.039**
				[0.018]
1st Stage t-stat for instrument			5.98	
Hausman Test			0.0000	
N	95505	95505	95505	83140

Note: Standard Errors in parentheses. *** signifies p<0.001, ** signifies p<0.05, * signifies p<0.10. Covariates also include: lone mother family status (ages 1-17), current family status, living at home, the age of the mother at the birth of the daughter, region size, province of residence, age at match, age, year and indicators for being an English speaker in Quebec or a French speaker outside of Quebec. The family market income variable is measured in $10,000.