Gender Disparities in the Labour Market? Examining the COVID-19 Pandemic in Alberta

John, Baker and Kourtney, Koebel and Lindsay M., Tedds

University of Waterloo, University of Toronto, University of Calgary

6 June 2012

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John Baker[1]

jd2baker@uwaterloo.ca

Kourtney Koebel[2]

kourtney.koebel@mail.utoronto.ca

Lindsay Tedds[3]

lindsay.tedds1@ucalgary.ca

[1] Department of Economics, University of Waterloo

[2] Centre for Industrial Relations and Human Resources, University of Toronto

[3] Department of Economics, University of Calgary

Publication Identification Code: TEG-88

Keywords: Coronavirus disease, Labour Market, Employment, Gender, Public Policy, Alberta, Intersectionality

Declaration of Conflicts of Interest: The authors declare they have no competing interests, either financial or community in nature.

Funding: This work was supported by a generous contribution by the John Dobson Foundation (Project 10011864) which had no role in the conceptualization, data collection, analysis, decision to publish, or preparation of the manuscript.

ABSTRACT

Since March 2020, the COVID-19 pandemic has significantly disrupted Canada's labour market. Following the mandated closures of schools, daycares and "non-essential" businesses in every province, a large and immediate unemployment shock was documented across the country. While signs of recovery began during the summer months, the re-emergence of the virus in the fall—and the extensive social distancing measures that ensued—merits an investigation of a possible K-shaped recovery, particularly as the Alberta government continues to debate whether the province's economic recovery plan should include gender-targeted policies. This paper provides a detailed examination of various labour force statistics by gender and parental status using data from Alberta up to and including the December 2020 release of the Labour Force Survey (LFS). We show that Alberta's labour market recovery over the summer months has persisted, and that there are no statistically significant differences in the labour market outcomes of men and women. We do, however, find significant differences between parents and non-parents, *irrespective of gender*. We discuss implications for Alberta's economic recovery plan.

Keywords: Coronavirus Disease, Labour Market, Employment, Gender, Public Policy, Alberta, Intersectionality

POLICY RECOMMENDATIONS

Based on our findings, we recommend the following policies; the Alberta government should:

1. Work with the federal government to ensure that the Canada Recovery Caregiving Benefit (CRCB) remains in place until there is no further threat of school or childcare facility closures or limits on in-home child-care providers (e.g. nannies).
2. Provide a provincial top-up of the CRCB, geared towards lower- or single-income parents, which would help ease trade-offs between childcare and employment that are unique to parents by supporting their income.
3. Continue to cooperate with the federal government to provide support to childcare facilities and schools so that they are able to provide adequate protection to children and their families.
4. Ensure that there is sufficient employment protection for parents so that they are less likely to experience labour market frictions when they are able to work again.
5. Ensure that families with young children who rely on the social assistance system for income support are not penalized by ceasing job search requirements.
6. Lobby for temporary changes to Canada's Employment Insurance (EI) program including exemptions from job search requirements and an extension of EI to workers who voluntarily leave employment to assume childcare because of the government's public health measures.

INTRODUCTION

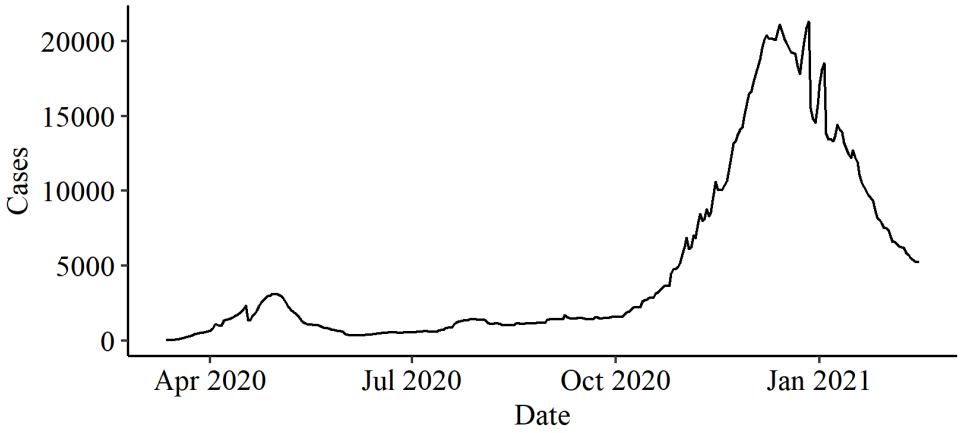
On March 5, 2020, Alberta reported its first case of the novel coronavirus disease (COVID-19). Shortly after, extensive measures were taken to "flatten the epidemic curve" and contain spread of the virus: schools and daycares closed on March 15, a state of public health emergency was declared on March 17, and the closure of non-essential businesses and services was mandated on March 27. The impact of these social distancing efforts on Alberta's labour market were large and immediate. In a year-over-year comparison, data from April 2020 shows that employment in Alberta declined by 15.5 percent, while the unemployment rate increased to 13.4 percent (Alberta Treasury Board and Finance 2020).

As the government started to relax public health restrictions over the summer months, Alberta's labour market showed promising signs of recovery (Business Council of Alberta 2020). However, when in-person K-12 school returned in September 2020, upwards of 30% of students chose the online learning option, depending on school district, as parents expressed concern about the safety of their children returning in-person to school (Bench 2021). By mid-September 2020, COVID-19 cases began to rise again, with Alberta's COVID-19 cases reaching new daily record highs throughout fall 2020 (see Figure 1). The re-emergence of the virus resulted in K-12 students, teachers, and staff having to isolate as exposures to the virus in schools led to another round of comprehensive social distancing restrictions. A second state of public health emergency was declared on November 24[1], and on November 30, in-person classes were moved fully online for grades 7-12 provincewide. On December 8, additional restrictions were imposed until January 12, 2021, including: i) prohibition of all indoor and outdoor social gatherings, including limiting in-home contact to household members only; ii) mandatory working from home when physical

[1] For additional details on the restrictions imposed by Alberta's government in November see Pearson (2020).

presence was not required; iii) mandatory closure of restaurants/bars/cafes, entertainment businesses, and personal and wellness services; and iv) all K-12 students returning to online learning for the first week of school in January.[2] Similar to the first round of social distancing measures, such substantial restrictions were likely accompanied by major changes to Alberta's labour market, including reduced working hours, increased unemployment, or complete non-participation in the labour force all together.

Figure 1: Number of Active COVID-19 Cases in Alberta, March 12, 2020-February 15, 2021



Source: Government of Canada Public Health Infobase, 2020-2021. Tabulations by authors.

While research in Canada has demonstrated that Canada's nation-wide economic shutdowns had the largest adverse impact on low-wage workers (Koebel and Pohler 2020; Lemieux et al. 2020; Statistics Canada 2020a), researchers and policymakers in Canada have been particularly concerned about the potential gendered effects of the crisis (Alon et al. 2020; Montenovo et al. 2020; Stevenson 2020; Qian and Fuller 2020).[3] Using data from March 2020

[2] See CBC News (2020) for further.

[3] For example, in a February 2021, a press release for the Feminist Response and Recovery Fund, the Government of Canada emphasized that "the COVID-19 pandemic has magnified systemic and longstanding inequalities, with women and girls disproportionately affected by the crisis" (Women and Gender Equality Canada, 2021). Similar concerns about an asymmetric economic recovery for women have been expressed by the federal government in the 2020 Fall Economic Update (Department of Finance, 2020).

across Canada, several reports have shown that employment losses were much larger for women than for men (Lemieux et al. 2020; Statistics Canada 2020a). Within the province of Alberta specifically, a report from the Business Council of Alberta (2020) similarly shows that the province's first round of business closures in March had much larger negative impacts on the labour market outcomes of women than men.

Compared to previous recessions, there are several factors unique to the COVID-19 economic crisis that explain why the shutdowns may have exacerbated gender-based disparities in the labour market. First, the mandatory shutdown of "non-essential" businesses disproportionately impacted industries that employ a relatively greater share of women than men (Alon et al. 2020). Second, school and childcare closures meant that parents had to provide childcare in the home. Because women in Canada tend to take on a greater share of unpaid work within the household (Moyser and Burlock 2018), the sudden need for at-home childcare during working hours may have also disproportionately reduced the ability of mothers to stay at (or return to) work.[4] Note that if this is the main mechanism driving gender labour market disparities during the pandemic, then as schools and childcare centers reopen, more women can return to work and the aforementioned gender disparities should disappear (at least for parents).

Evidence suggests that, in Alberta, the gendered labour market effects identified early on in the pandemic have not persisted. A report by the Business Council of Alberta (2020) shows that, over the summer months, as the government reduced restrictions, the employment of men and women recovered at similar rates.[5] The divergence in the gendered effects of the pandemic

[4] Even if the work of a parent is amendable to working from home, the need to provide childcare does not necessarily mean that pre-crisis hours of work (or even employment) were maintained.
[5] The Business Council of Alberta report also shows that women aged 55+, as well as women aged 20-24, did not experience the same recovery as men, or the key 25-54 demographic group more generally.

between March and August has led to ongoing disputes in Alberta's legislature about how to best design an economic recovery plan for province. The opposition party has cited the difficulty of managing parenting duties and work during the pandemic, as well as pre-crisis affordability of childcare in the province, as reasons for a gender-oriented economic recovery plan. In contrast, the ruling United Conservative Party has argued in line with the Business Council of Alberta report that women have recovered as well as men, and therefore a gender-focused plan is unwarranted.[6]

At Canada's federal level, evidence that the crisis created gendered differentials in employment outcomes early on prompted the government to define the economic consequences of the pandemic as a "she-cession."[7] And while the federal government has advocated for gender-based policies in its economic recovery package, Alberta's provincial government has not yet put forth a similar initiative. As these policy debates ensue, and the COVID-19 pandemic continues to upend Alberta's economy, there is a strong need to better understand the potential crisis-driven gender disparities in the labour market at the provincial level.

There are two main reasons that the evidence presented by the Business Council of Alberta (2020) is insufficient for both examining the possibility of gendered effects of the pandemic and determining which types of policies should be included in an economic recovery plan. First, the analysis ignores the intersection of gender with parental status. Because childcare provision is one of the main theoretical mechanisms behind greater reduced female employment during the crisis, what matters most for drawing informed conclusions is a comparison of mothers and fathers, not women and men more generally. Second, it is possible that the province may have experienced a

[6] This debate took place in the second sitting of the fall 2020 Alberta legislature between the Minister of Culture, Multiculturalism, and Status of Women—Leela Aheer—and opposition member Rakhi Pancholi.
[7] For further information on the Federal government's Fall Economic Statement, readers are referred to the Department of Finance (2020).

second divergence in the labour market outcomes of men and women similar to that in March because of the: i) large number of students opting for online learning in September 2020; ii) subsequent round of class specific shifts to online learning throughout the fall; iii) shifts to online learning for all students in grades 7 at the end of November; and iv) targeted mandatory business shutdowns in December. These second-wave closures could therefore result in a "k" shaped recovery, which may further exacerbate already large labour market disparities between women and men, even as the province begins to recover.

In this paper, we explore labour market trends in Alberta between March 2020 and December 2020 to determine whether gender-specific economic recovery policies are needed at the provincial level. More specifically, we explore whether and to what extent the pandemic produced differential labour market effects on women and men (with and without children) and whether these groups have recovered at similar rates. We are particularly interested in labour market outcomes during Alberta's second wave as this has yet to be considered by policymakers.

Using the public-use Labour Force Survey (LFS) microdata files, we focus on two main outcomes: employment and hours worked. While we confirm large gender differentials in the first wave of the pandemic, during the second wave, we find no evidence that women were impacted more adversely than men. Interestingly, we find that the crisis had persistently large, negative and statistically significant impacts on parents—both mothers *and* fathers—with young children in the household. Indeed, our results suggest that, during the second wave, men with young children have actually lost *more* hours of work than their female counterparts. However, when we investigate cumulative losses, we find that women with young children have experienced the largest reductions in hours worked over the entire course of the pandemic. Our results therefore do not point to evidence of a "she-cession" in Alberta. Instead, they suggest that the COVID-19 pandemic

is a crisis of parental care, and that, among parents, the shutdowns have not discriminated between fathers and mothers. We conclude with a discussion of policy implications.

DATA: THE LABOUR FORCE SURVEY

For our main results, we use Statistics Canada's LFS public-use microdata files from 2019 and 2020. The LFS is Canada's preeminent source for monthly data on the labour market. Each month, respondents are asked about their labour market behaviour in a given reference week, which usually includes the 15th day of the month. Survey respondents are drawn from the nationwide non-institutionalized population that are 15 years of age and older. The LFS uses a six-month rotating panel design: participating households are followed for six consecutive months, after which, they are dropped from the sample. The public-use LFS files do not allow researchers to link individuals across time; as such, we treat the LFS as a repeated cross-section. Our analyses use data from Alberta only.

We separately examine changes in labour force statistics for each month since the start of the pandemic (i.e., March 2020 to December 2020), which allows us to determine how trends have changed over time. We exclude individuals who have never worked (n = 13,228), as well as unpaid family workers (n = 258). In addition, we also exclude individuals who are not attached to the labour market since their employment was not impacted by the pandemic (noting that other outcomes such as job search may have been). More specifically, for each month, this involves dropping individuals who are not employed and who last worked more than a year ago (n = 51,471).

Our main outcomes of interest include a dichotomous measure of an individual's employment status and a continuous measure of an individual's total actual weekly hours of *formal, paid* work in the labour market (we emphasize formal and paid since this measure does

not capture unpaid work that takes place in the household). We use respondents' actual hours worked rather than their usual hours worked since the latter is unlikely to be impacted by the pandemic (see Koebel and Pohler 2020). To ensure that unemployed individuals and labour market non-participants are included in our hours worked estimates, we simply set actual hours worked to zero for all individuals who fall into these categories. We also provide results examining labour force participation and part-time employment. The former statistic allows us to determine the extent to which the economic shutdowns have pushed Alberta residents out of the labour market entirely, while the latter measure allows us to examine whether the composition of employment has shifted away from full-time work.

In this paper, we are particularly interested in identifying whether the COVID-19 pandemic had a differential impact on labour market outcomes across various socio-demographic groups. Given paramount concerns about the gendered impacts of the pandemic in the media and among policymakers, we first examine labour market trends across men and women. In addition, because many people faced the added burden of home-based childcare during the crisis, we also look across parent status, as well as the intersection of gender and parental status. For simplicity, we define parents as those whose youngest child is less than 13 years of age. We note that, due to limitations of the LFS questionnaire, we are unable to identify other sociodemographic groups that have may have been disproportionately impacted by the pandemic.[8] More specifically, we are unable to examine labour market trends across racial groups, gender identity or LGBTQ+ status.

DESCRIPTIVE STATISTICS

[8] Statistics Canada (2020b) focuses on the impact of COVID-19 on immigrants and visible minorities.

Table 1 displays descriptive statistics for our sample of respondents from Alberta in 2019 and 2020. There is a clear reduction in both employment and average actual hours worked between the two years. Overall, labour force participation declined by 2 percentage points, while part-time employment decreased by only one percentage point. Average wages increased slightly between the two years; this may be due to normal inflationary wage increases or could suggest that some lower-wage workers may have been less likely to respond to the LFS in 2020.

In terms of the sociodemographic characteristics of our sample, there are no remarkable differences between the pre- and post-pandemic years. In both years, almost half of our sample is comprised of women. About 19 percent of respondents work in the public sector, and roughly 25 percent are covered by a collective agreement. The majority of LFS respondents: i) are married; ii) are non-students; and iii) do not have any children residing in the household. Of those with children, the presence of a child under the age of 6 is the most common, followed by children aged 6-12. Finally, there is a relatively even distribution of ages in our sample, though there are very few respondents who are older than 65.

Table 1: Descriptive statistics, 2019 and 2020

	2019	2020		2019	2020
Average Actual Hours	30.42	27.15	Married** (ref: single)	.63	.64
Employment	.90	.84	Children		
Labour Force Participation	.94	.92	None	.63	.61
Part-Time Employment	.16	.15	Youngest child < 6	.14	.15
Average Hourly Wage	$31.39	$32.89	Youngest child 6-12	.11	.11
Average Job Tenure (months)	82.21	86.80	Youngest child 13-17	.06	.06
Public (ref: private)	.19	.19	Youngest child 18-24	.05	.06
Union	.25	.26	Age Group		
Low Education*	.30	.29	Age 15-19	.14	.14
Student			Age 25-34	.23	.23
Non-student	.92	.92	Age 35-44	.23	.24
Full-time	.06	.06	Age 45-54	.19	.19
Part-time	.02	.02	Age 55-64	.15	.16
Immigrant	.24	.23	Age 65+	.05	.05
Female	.46	.46			
N	89,644	76,697		89,644	76,697

Notes: Summary statistics are computed with LFS survey weights. Unweighted sample sizes reported. * Low education includes individuals who have secondary education or less. ** Married includes common-law relationships. Proportions may not sum to 1 due to rounding. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

It is clear in Table 1 that survey response declined substantially over the course of the pandemic. Overall, between 2019 and 2020 there is a reduction of 12,947 respondents. However, reassuringly, Table 1 also suggests that the decline in survey responses in not due to any apparent non-random attrition. That is, there is not one particular sociodemographic group that seems to be responding less to the LFS in 2020 compared to 2019. As such, we attribute the reduction in sample size to difficulties of conducting the survey during the pandemic rather than to selective or deliberate non-response.

In Table 2, we present data on changes in employment rates, labour force participation rates, average weekly hours worked, and the share of employment in part-time occupations across

a number of different demographics of interest. Note that, in order to reflect pre- and post-COVID-19 samples over the same seasonal period, these statistics include all data between March and December in 2019 and 2020.

Across gender, age, parental status, education and geography, declines in the Alberta labour market due to the COVID-19 economic crisis have been wide-ranging. The raw differentials we present in Table 2 suggest that, overall, the following groups have experienced especially large labour market consequences during the pandemic: i) women; ii) individuals under the age of 30; iii) individuals with less than a bachelor's degree; iv) and residents of Edmonton.[9] Across the four labour market statistics presented, the largest reductions are seen in employment rates. We do not observe movements of a similar magnitude for labour force participation. This suggests that many individuals shifted into unemployment rather than complete non-participation – i.e., many respondents may have been laid off or were still searching for work despite heavy losses in employment. Furthermore, the reduction in labour market hours worked is shown to be fairly uniform across all demographics. Table 2 also indicates that the 15–29-year-old cohort experienced a slight increase in part-time employment during the pandemic.

While these descriptive statistics give some insight into the labour market impacts of the COVID-19 pandemic in Alberta, they are far from conclusive. To conduct a statistically rigorous analysis of the crisis, in the next section, we present the regression framework we use to measure how these differentials have trended differently across time and whether they exhibit statistical significance.

METHODOLOGY

[9] In fact, deteriorating economic conditions in Edmonton led the city to the highest unemployment rate in the nation (Johnson, 2020).

Empirical Approach

We use a difference-in-difference approach to investigate the impact of the COVID-19 pandemic on labour supply in Alberta. For each group of interest, we compare labour force statistics from February 2020 to each of the post-COVID-19 months in 2020. We use February as our comparison month since it captures the most recent state of Canada's labour market before the onset of the crisis. To account for normal seasonal fluctuations in the labour market, we also use data from 2019. Using March and working hours as an example, to obtain the impact of the COVID-19 pandemic, we first take the difference between average hours worked in February 2020 and March 2020. We then take the difference between average hours worked in February 2019 and March 2019. Finally, we take the difference of these two results to obtain the effect of pandemic on hours worked. We repeat these computations for each month in 2020 up to and including December.

We emphasize that while we do not claim to present causal estimates in this paper, given the exogeneity of the government-enforced health restrictions, we are confident that our approach isolates the impact of the crisis. Importantly, we present average estimates that capture the "total pandemic effect." For each individual, there were potentially many different ways that public health restrictions could have impacted labour market outcomes, including: i) direct job loss due to business closures; ii) reductions in work due to greater at-home childcare needs; and iii) potential behavioural responses to the various crisis income support programs introduced by the federal government. Due to limitations of the LFS data, we are unable to distinguish between these different mechanisms and so our estimates should be interpreted as a "total pandemic effect."

Table 2: Changes in labour market statistics between 2019 and 2020, March – December

	Employment Rate			Labour Force Participation Rate			Average Weekly Hours Worked			Part-Time Employment		
	2019	2020	Diff.	2019	2020	Diff.	2019	2020	Diff.	2019	2020	Diff.
Men (15-29)	83.3	74.0	-9.3	89.2	86.7	-2.5	29.0	23.5	-5.5	21.0	23.9	+2.9
Men (30-54)	94.2	89.9	-4.3	98.2	97.2	-1.0	37.3	33.8	-3.5	4.9	5.5	+0.6
Women (15-29)	84.9	72.5	-12.4	89.6	84.4	-5.2	23.7	18.4	-5.3	34.8	37.0	+2.2
Women (30-54)	93.6	87.5	-6.1	96.3	93.9	-2.4	28.6	25.4	-3.2	21.0	21.1	+0.1
Parents (Child <13, Men)	95.4	91.4	-4.0	98.7	97.6	-1.1	38.0	34.2	-3.8	3.9	5.1	+1.2
Parents (Child <13, Women)	92.2	86.7	-5.5	94.7	92.7	-2.0	24.8	21.9	-2.9	27.8	26.6	-1.2
Parents (Child >=13, Men)	95.2	90.6	-4.6	98.1	96.4	-1.7	37.7	33.5	-4.2	4.0	5.8	+1.8
Parents (Child >=13, Women)	95.3	89.1	-6.2	97.1	94.3	-2.8	30.1	26.6	-3.5	22.6	22.0	-0.6
Bachelor's Degree	92.8	88.5	-4.3	95.4	94.3	-1.1	31.1	28.4	-2.7	15.5	14.7	-0.8
No Bachelor's	88.8	80.9	-7.9	93.4	90.3	-3.1	30.1	25.7	-4.4	18.9	19.5	+0.6
Calgary	90.2	83.9	-6.3	94.2	92.4	-1.8	30.1	26.7	-3.4	17.8	16.8	-1.0
Edmonton	90.2	82.8	-7.4	94.6	91.3	-3.3	30.2	26.2	-4.0	17.2	18.3	+1.1
Other Alberta	89.3	82.9	-6.4	93.2	90.6	-2.6	31.1	26.9	-4.2	18.7	18.9	+0.2

Notes: Labour market statistics are computed with LFS survey weights. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

Estimation

To obtain the labour market effects of the COVID-19 crisis, we estimate a double-difference regression shown in equation (1) below:

$$(1) \quad Y_{imt} = \alpha + \delta COVIDMonth_m * COVIDYear_t + \beta COVIDMonth_m + \theta COVIDYear_t + \gamma \boldsymbol{X}_{imt} + \varepsilon_{imt}$$

The outcome variable Y_{imt} captures one of the following labour market statistics: employment, actual hours worked, participation, or part-time employment status for individual *i* in month *m* and year *t*. $COVIDMonth_m$ is an indicator for whether a respondent is observed in a month after the start of the pandemic (i.e., March/April/May/etc.=1; February=0), while $COVIDYear_t$ is a dichotomous variable capturing whether a respondent is observed in the crisis year (i.e., 2020=1; 2019=0). Therefore, $COVIDMonth_m * COVIDYear_t$ is an interaction term indicating that a respondent is observed in one of the post-COVID-19 months in 2020, so that δ represents the labour supply effects of the COVID-19 pandemic.

To examine the impact of the crisis across different groups, equation (1) is estimated separately for men and women, as well as for parents and non-parents (i.e., individuals whose youngest child is younger than 13 years of age). We also estimate equation (1) separately for fathers and mothers to determine whether the effects of the pandemic were moderated by the interaction between gender and parental status. Finally, we compare labour market effects across the age of the youngest child in the household to determine whether having a relatively young child intensifies negative employment effects. The vector $\boldsymbol{X}_{imt}$ includes a number of control variables that vary depending on the groups in the estimation sample but, in general, include: gender, an indicator for the presence of a child under the age of 13, marital status, age (in 5-year

age groups) and highest level of educational attainment. We specify which control variables have been used in a regression in the notes of each figure.

Because we are particularly interested in the differential impact of the pandemic across different groups, we also estimate a triple-difference regression that allows us to examine whether any of the labour market differences we observe between two groups are statistically different. For example, the difference between men and women is estimated by equation (2):

$$(2) \quad Y_{imt} = \alpha + \delta Female_i * COVIDMonth_m * COVIDYear_t + \gamma Female_i * COVIDMonth_m + \pi Female_i * COVIDYear_t + \eta COVIDMonth_m * COVIDYear_t + \mu Female_i + \beta COVIDMonth_m + \theta COVIDYear_t + \gamma \boldsymbol{X}_{imt} + \varepsilon_{imt}$$

The variables in equation (2) are identical to those in equation (1), except for the addition of $Female_i$, which is an indicator for whether individual i is a woman (i.e., female=1; male=0). The differential impact of the pandemic on the labour supply of men and women is therefore represented by δ. A negative, significant coefficient on this term would suggest that women experienced greater losses in employment or hours worked than men. For our other groups of interest (i.e., parents with young children, fathers and mothers) we simply replace $Female_i$ with a dichotomous variable that equals one if the respondent belongs to the given group.

To ensure that our results are representative of Alberta's population we use LFS sample weights in all analyses.[10] We do not pool the monthly data so that we are able to examine how the effects of the pandemic evolved on a month-to-month basis. For the hours worked outcome, we use ordinary least squares (OLS) to estimate equations (1) and (2), noting that respondents with

[10] The average unweighted monthly sample size consists of 6,931 individuals.

zero hours worked remain in the full sample.[11] In contrast, for the binary employment, participation, and part-time status outcomes, we use a linear probability model (LPM).[12]

EMPIRICAL RESULTS

Gender-Based Differentials: Has COVID-19 Generated a "She-Cession?"

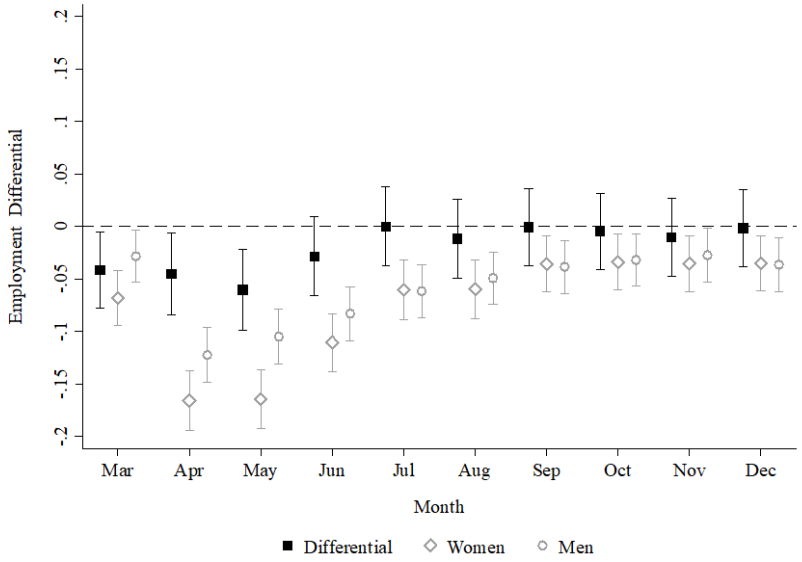
We begin our analysis by investigating the extent to which the pandemic produced labour market differences between men and women. This differential is an important starting point, given that various federal and provincial policymakers have emphasized the need for a gendered economic recovery plan.

While the gendered labour market effects early on in the pandemic have already been well documented in Alberta (Business Council of Alberta 2020), recall that the province experienced its greatest increase in COVID-19 cases in the fall, which subsequently led to a to second state of emergency and another round of "non-essential" business closures. As such, the question remains as to how these gendered trends have evolved in the latter half of 2020. Figure 2 plots the results of the employment regressions estimated using equation (1) and equation (2) for men and women. To be clear, the black squares represent the difference in employment between men and women, while the light gray diamonds/circles indicate the group-specific estimate. The vertical bars denote the 95 percent confidence intervals computed using robust standard errors.

[11] We also estimate the hours worked outcome with and without those with zero hours of work and find similar overall results.

[12] We use the LPM for simplicity in interpretation. There are, however, drawbacks to this approach, including the linearity assumption, and the possibility that the fitted values may fall outside of the [0,1] interval.

Figure 2: Double- and triple-difference estimates of the effect of the COVID-19 pandemic on employment by gender, 2019-2020



Notes: Figure 2 displays the regression results for each month of the pandemic estimated using equations 1 and 2. The dependent variable is an indicator for employment. The vertical bars denote the 95 percent confidence intervals computed using robust standard errors. The black squares represent the difference in employment between men and women (equation 2), while the light gray diamonds/circles indicate the group-specific estimate (equation 1 estimated separately for women and men). Controls include: a dichotomous variable equal to 1 if the respondent is married or in a common-law relationship, the age of the respondent (in 5-year age groups), the respondent's highest level of educational attainment, and a dichotomous variable equal to 1 if the respondent's youngest child is under the age of 13. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

Figure 2 confirms that women in Alberta experienced a disproportionate employment loss relative to men in the first three months of the pandemic. The difference in the likelihood of employment is around five percentage points between March and May. These differences are significant at the 5% level. However, the estimated gender differential converges to zero during the summer months and remains at a similar level through the fall and into December. Interestingly, these results suggest that Alberta's second wave did not reproduce the large differentials that were observed in the beginning of the crisis. Instead, Figure 2 suggests that between July and December 2020, men and women have faced almost identical employment losses – around four percentage points below pre-crisis levels.

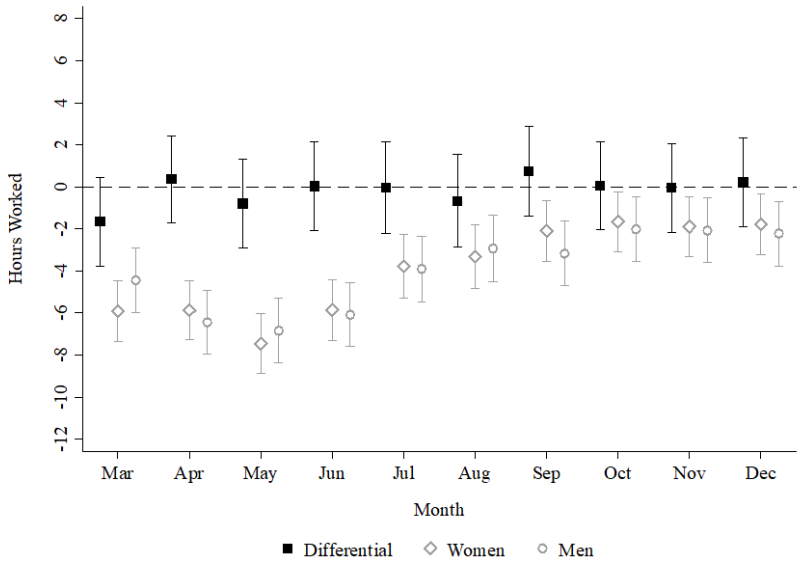
Although we observe a convergence in employment levels in the second half of 2020, labour market disparities between men and women may still exist if their actual hours worked are differentially reduced relative to pre-crisis levels. To investigate this, we plot the estimates for hours worked in Figure 3. Our results suggest that, early in the pandemic, both men and women experienced profound declines in weekly labour market hours. For example, in May, actual hours worked declined by six to seven hours on average. However, similar to the employment estimates, there is some gradual recovery over the course of the summer and fall months. We do not find any compelling evidence to suggest that there are statistically different reductions in hours worked between men and women.

In the Appendix, we report our analysis investigating labour market participation and part-time status. Trends in labour force participation are similar to the employment estimates shown in Figure 2. For part-time employment, we find that women were slightly less likely to be employed in part-time jobs, while men were actually more likely to be employed on a part-time basis. In most months, this difference is statistically significant, and could be an indication that men were underemployed during the pandemic, even though we find no difference in hours worked.

In summary, we do not find evidence that Alberta's second round of economic shutdowns generated a "she-cession." While this suggests that the province may not need a gender-based recovery plan,[13] it does not rule out a need for policy intervention among other groups. Indeed, because school and daycare closures have had profound effects on workers with young children, we investigate this group next.

[13] Note that there are important gendered differences in labour market outcomes that existed prior to the pandemic which may require policy attention. These pre-crisis differences are distinct from the disparities that we are investigating in this paper (i.e., those generated by the pandemic).

Figure 3: Double- and triple-difference estimates of the effect of the COVID-19 pandemic on actual hours worked by gender, 2019-2020



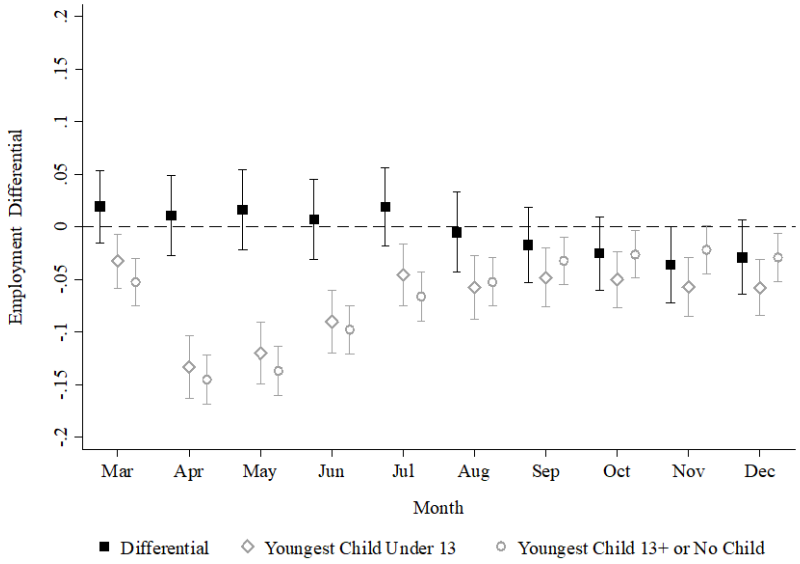
Notes: Figure 3 displays the regression results for each month of the pandemic estimated using equations 1 and 2. The dependent variable is a continuous measure of hours worked. The vertical bars denote the 95 percent confidence intervals computed using robust standard errors. The black squares represent the difference in hours worked between men and women (equation 2). The light gray diamonds/circles indicate the group-specific estimate (equation 1 estimated separately for women and men). Controls include: a dichotomous variable equal to 1 if the respondent is married or in a common-law, the age of the respondent (in 5-year age groups), the respondent's highest level of educational attainment, and a dichotomous variable equal to 1 if the respondent's youngest child is under the age of 13. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

Parent Status Differentials: Do Young Children Pose Unique Labour Market Challenges?

The pandemic has presented a unique set of challenges to parents in Alberta, many of whom have had to balance their time between childcare and formal and informal work activities amid two province-wide states of emergency. School and daycare closures ultimately result in trade-offs between childcare and paid employment. In turn, these trade-offs may generate adverse employment consequences for parents simply because a child is present in the household. This trade-off is likely to be especially large among people with younger children who require more attention and supervision (Montenovo et al., 2020).

In Figure 4 we compare the employment status of respondents whose youngest child is under the age of 13 to those whose youngest child is 13 years of age or older and those who have no child at all. We focus on parents with children under the age of 13 as we believe that this age captures the point at which the trade-offs between working in the labour market and providing childcare are likely the strongest.

Figure 4: Double- and triple-difference estimates of the effect of the COVID-19 pandemic on employment by presence/age of youngest child, 2019-2020



Notes: Figure 4 displays the regression results for each month of the pandemic estimated using equations 1 and 2. The dependent variable is an indicator for employment. The vertical bars denote the 95 percent confidence intervals computed using robust standard errors. The black squares represent the difference in employment between respondents whose youngest child is under the age of 13 and respondents: i) whose youngest child is 13 years of age or older; or ii) who have no children at all (equation 2). The light gray diamonds/circles indicate the group-specific estimate (equation 1 estimated separately for these groups). Controls include: a dichotomous variable equal to 1 if the respondent is married or in a common-law relationship, the age of the respondent (in 5-year age groups), the respondent's highest level of educational attainment, and a dichotomous variable equal to 1 if the respondent is female. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market. *Source:* Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

Figure 4 shows that, between March and August, parents of young children actually lost *fewer* jobs than parents with older or no children, though these differences are not statistically significant. However, in the fall, gaps in employment increase to a modest but significant estimate

of about three percentage points. Beginning in September, there is evidence of a slight downward trend among parents with young children, which coincides with the beginning of the school year.

There are two main reasons why the employment of parents may have continued to trend downward during the second wave of Alberta's pandemic. First, between September and December 2020, many parents may have elected to use online learning or to provide home schooling for their children rather than risk the uncertainties associated with a return to the classroom.[14] Second, in October 2020, the federal government introduced the Canada Recovery Caregiving Benefit (CRCB). The CRCB provides $500 weekly payments to households that have had to reduce formal paid employment hours to provide child care.[15] The availability of this income support coincides with the downward trends observed in Figure 4, suggesting that the CRCB may have also incentivized more parents to stay home with their children.

The findings presented in Figure 4 suggest that, even among parents who have maintained employment, there may be a substantial re-allocation of hours away from the labour market towards home production.[16] We investigate this in Figure 5, which shows that the stable differentials in employment observed early on in the pandemic mask relatively large declines in hours worked among parents with young children. Subjugated to closures of childcare centers and schools, the challenges experienced by this group of workers are considerably different from the

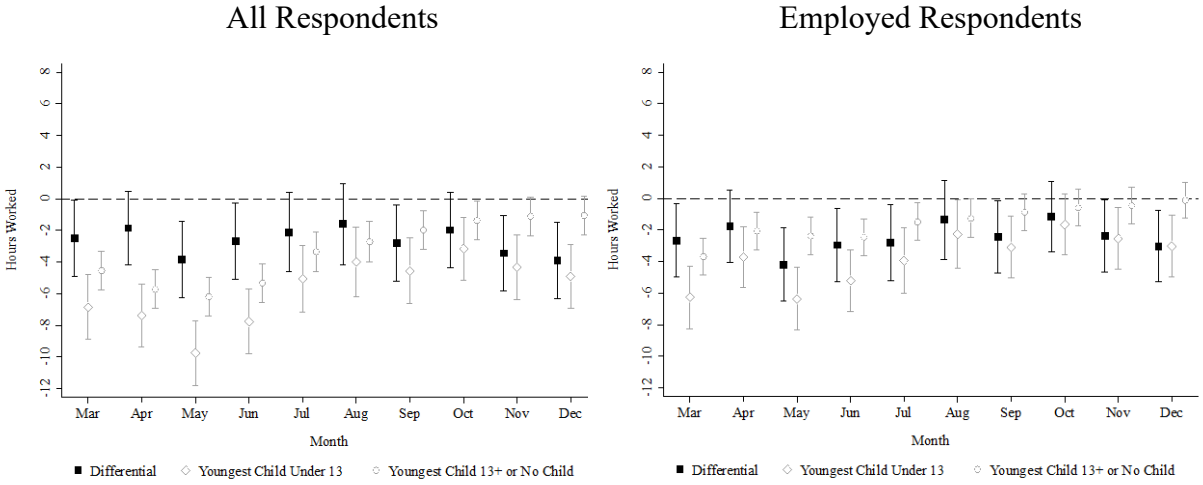
[14] Indeed, relative to 2019, the coronavirus has led to a near doubling of enrollment in provincial home-based schooling (Edwardson, 2020) – an option which is eligible for funding from the Alberta government. The ability to receive such funding may impact the labour market decisions of parents differently than non-parents (or parents with older children).

[15] To be eligible for the CRCB, parents must have experienced a 50 percent reduction in weekly working hours because of a need to care for a child under 12. The CRCB is also available to individuals who have reduced their hours worked due to care for another family member that may have been affected by school, daycare or other care facilities. Eligibility also extends to individuals providing care for a child who is at a high-risk of contracting the COVID-19 virus.

[16] Recall that in our full sample, we set actual hours worked to 0 for respondents who are unemployed or out of the labour force. Figure 5 shows that the hours differentials by parental status is robust among those who are still working and those who are not.

rest of the population as parental activities effectively reduce the amount of time available to do other things like formal, paid work in the labour market (i.e., constrained optimization). In most of the months in Figure 5, many of the differentials exhibit statistical significance and are typically in the range of two to four less hours worked per week for parents relative to non-parents. Specific to parents of young children, the change in hours worked relative to pre-COVID-19 levels was nearly ten hours less per week on average in May. During the summer and fall months, this number reduced slightly to about five hours less on average in December.

Figure 5: Double- and triple-difference estimates of the effect of the COVID-19 pandemic on actual hours worked by presence/age of youngest child, 2019-2020



Notes: Figure 5 displays the regression results for each month of the pandemic estimated using equations 1 and 2. The dependent variable is a continuous measure of hours worked. The left panel contains estimates for the entire sample of LFS respondents, while the right panel contains estimates for employed respondents only. The vertical bars denote the 95 percent confidence intervals computed using robust standard errors. The black squares represent the difference in employment between respondents whose youngest child is under the age of 13 and respondents: i) whose youngest child is 13 years of age or older; or ii) who have no children at all (equation 2). The light gray diamonds/circles indicate the group-specific estimate (equation 1 estimated separately for these groups). Controls include: a dichotomous variable equal to 1 if the respondent is married or in a common-law relationship, the age of the respondent (in 5-year age groups), the respondent's highest level of educational attainment, and a dichotomous variable equal to 1 if the respondent is female. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

The relatively greater loss in hours worked for parents with young children still leaves room for a potential gendered effect of the pandemic given that women tend to spend relatively

more time on home production and childcare than men (Moyser and Burlock 2018). Are mothers bearing the brunt of increased home production duties? We turn to this question next.

Examining Differentials Between Mothers and Fathers: Who is Making a Bigger Trade-Off?

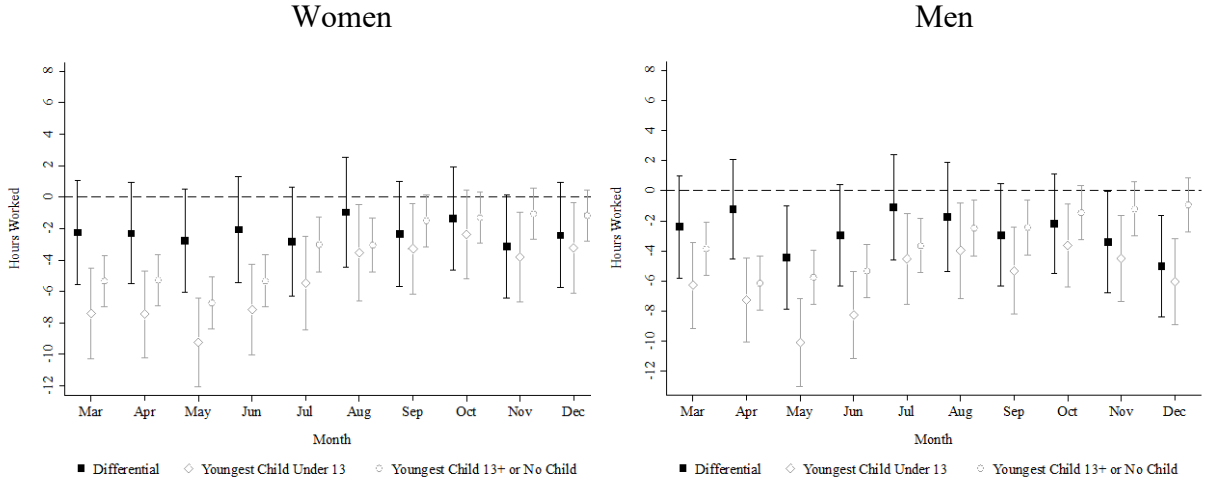
We start this section by noting that any differences in hours worked between men and women documented in this section should be interpreted with the following caveat: if women with children worked fewer hours relative to men before the pandemic, then they ultimately had less hours to give up during the pandemic. We explore whether and how differences in pre-pandemic labour market participation impact the interpretation of our results at the end of this section.

Figure 6 shows the change in hours worked between 2019 and 2020 for respondents with and without children, separately for men and women. During the second wave, there is an evident downward trend in working hours for both men and women with young children. While these trends are similar for both genders, there is a much greater decline in hours worked for men, particularly in November and December when Alberta faced its second round of school closures. This is suggestive of more equitable sharing of parental duties and perhaps provides evidence that the pandemic may be shifting attitudes about the role of men in household work. This is consistent with other research in the UK showing that the pandemic has produced a substantial increase in the share of home responsibilities held by men (Chung et al. 2020).

Note that one implication of conditioning the data in this way is that reductions in sample sizes generate much larger confidence intervals. With this added note of caution, we highlight that all of the point estimates are consistently below zero for both women and men with young children.

However, the difference in reductions of working hours between parents and non-parents is statistically significant only for men in the last two months of 2020.

Figure 6: Double- and triple-difference estimates of the effect of the COVID-19 pandemic on actual hours worked by gender and presence/age of youngest child, 2019-2020

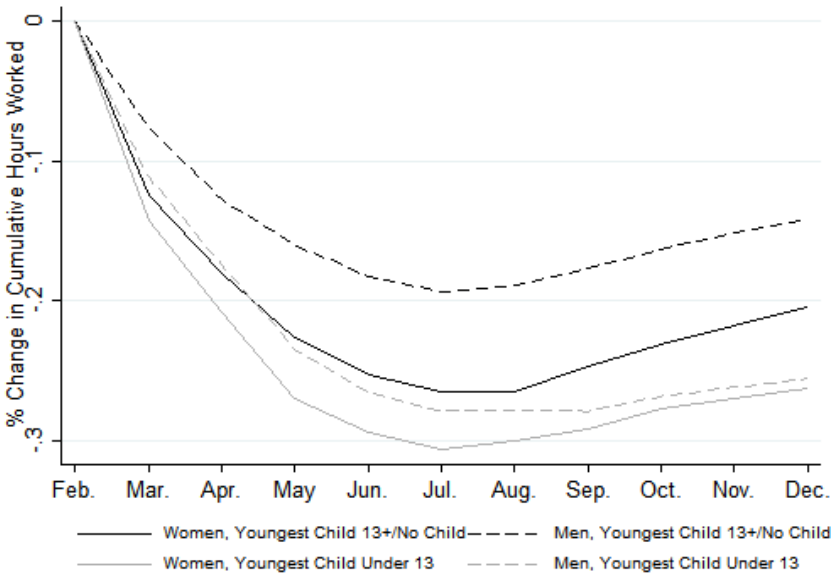


Notes: Figure 6 displays the regression results for each month of the pandemic estimated using equations 1 and 2. The dependent variable is a continuous measure of hours worked. The left panel contains estimates for women, while the right panel contains estimates for men. The vertical bars denote the 95 percent confidence intervals computed using robust standard errors. The black squares represent the difference in employment between respondents whose youngest child is under the age of 13 and respondents: i) whose youngest child is 13 years of age or older; or ii) who have no children at all (equation 2). The light gray diamonds/circles indicate the group-specific estimate (equation 1 estimated separately for these groups). Controls include: a dichotomous variable equal to 1 if the respondent is married or in a common-law relationship, the age of the respondent (in 5-year age groups), and the respondent's highest level of educational attainment. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

A reoccurring theme in the data on labour market hours is the concept of *persistence* or the tendency for shocks such as the COVID-19 pandemic to have long-run effects that dissipate slowly. Because we observe steady reductions in working hours for parents of young children throughout the pandemic, persistence may be particularly concerning for this group. Cumulatively, this means that lower working hours will build up over time, leading to the potential for even greater differences between parents and non-parents in the medium run. For example, a full-time parent working three hours less per week (relative to an individual without a child under the age of 13) would accumulate an excess loss of 120 hours between March and December – the

equivalent of three full-time weeks – attributed to the pandemic effect alone. We examine this empirically in Figure 7, where we illustrate the loss of aggregate cumulative hours relative to 2019, noting that the difference in February is normalized to zero.[17]

Figure 7: Percent change in cumulative labour market hours lost compared to 2019 by gender and presence/age of youngest child



Notes: Figure 7 displays the percent change in cumulative labour market hours lost over the course of the pandemic relative to 2019 by gender and presence/age of youngest child. We separately examine the following four sub-samples: i) women whose youngest child is under the age of 13; ii) women whose youngest child is 13 years of age or older or who have no child at all; iii) men whose youngest child is under the age of 13; and iv) men whose youngest child is 13 years of age or older or who have no child at all. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

Across all groups, the cumulative effect of the pandemic was most severe in the summer months, after which, some momentum in the labour market levelled out the differences relative to 2019. Nonetheless, by December, all gender-parent pairings saw large reductions in total hours worked. Figure 7 suggests that parents of young children (as highlighted by the gray lines) experienced the most profound reductions in hours worked, and that men and women experienced

[17] More specifically, we gather the cumulative sum of total hours worked by parental status and gender from February to December in 2019 and 2020. Then, we normalize these values such that the February amount is set to be 100 in both years. Finally, we take the log difference between 2020 and 2019.

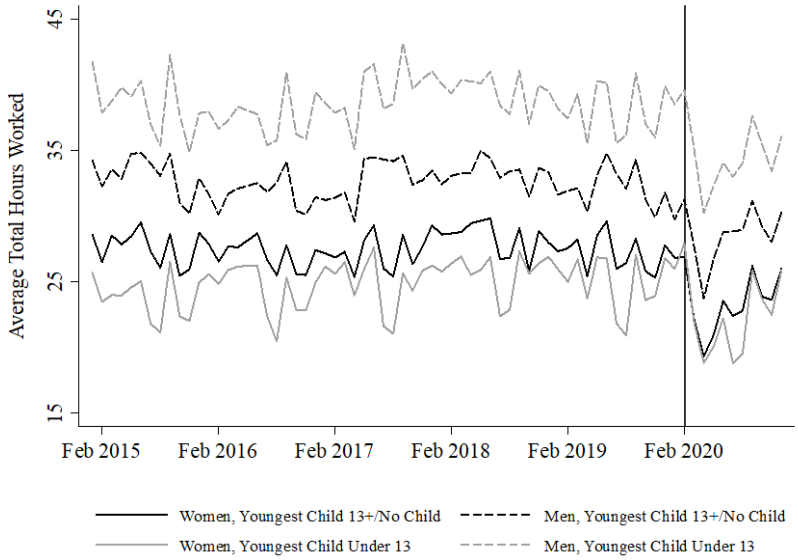
nearly the same cumulative losses by the end of 2020. At 14 percent, men without young children lost the smallest percent of hours relative to 2019, while women with young children saw the largest declines by the end of 2020 – 26 percent below their 2019 level. However, also note that by December 2020, the cumulative losses among men and women with young children were roughly at the same level. Given the large gaps between these two groups through the spring and summer months, this suggests that changes in hours worked among men in the second wave were substantial enough that they resulted in roughly the same cumulative losses by the end of December 2020.

Given our finding that the hours worked of men with young children have been particularly impacted in the second half of the COVID-19 crisis, it is important to distinguish between what can be classified as a "pandemic effect" and any normal economic disparities that existed before the COVID-19 crisis. For example, Alberta has the highest proportion of stay-at-home parents across Canada (Statistics Canada, 2018). Although Statistics Canada (2018) does not disaggregate this statistic by gender, this likely also means that Alberta has the highest proportion of stay-at-home mothers. Relative to men, this suggests that women with children likely had less hours to lose when businesses and schools/daycares started to close throughout the province in March 2020. This, in turn, may explain the smaller reductions in hours worked among women with children in the second wave of Alberta's pandemic compared to their male counterparts (i.e., they may have maxed out reductions in working hours).

In Figure 8, we display the monthly historical trends in average hours worked between 2015 and 2020 by gender and parent status. It is clear that, before the pandemic, men with young children consistently worked the highest average weekly hours. In contrast, women with young children tended to work about 10-15 hours less than men with young children. The large gap

between these two groups suggests that the division of household labour is still heavily placed on women. Importantly, Figure 8 further confirms that part of the reason we are observing large negative impacts on the hours worked of men with young children may be because they had more to lose in the first place.

Figure 8: Trends in average hours worked by gender and presence/age of youngest child, 2015-2020

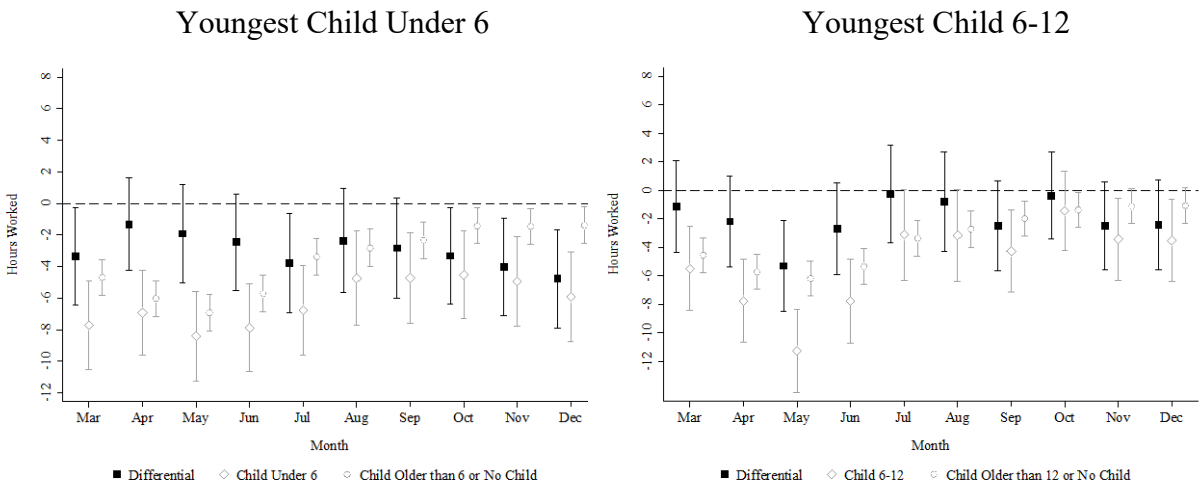


Notes: Figure 8 displays the trends in average hours worked by gender and presence/age of youngest child. We separately examine the following four sub-samples: i) women whose youngest child is under the age of 13; ii) women whose youngest child is 13 years of age or older or who have no child at all; iii) men whose youngest child is under the age of 13; and iv) men whose youngest child is 13 years of age or older or who have no child at all. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2015-2020. Tabulations by authors.

Parental Status Differentials by Age of Youngest Child: Does Having a Child Under the Age of 6 Exacerbate Labour Market Differences?

As a final consideration, we examine labour market differences between parents whose youngest child is aged 0-5 compared to parents whose youngest child is aged 6-12.[18] We compare parents with differently aged children as a child aged 0-5 likely requires more attention from parents than older children; moreover, a child aged 0-5 is likely to be enrolled in daycare, while a child aged 6-12 is likely affiliated with Alberta's formal schooling system. We present these comparisons in Figure 9. The left panel shows differences between parents with a child under the age of 6 with all others, while the right panel plots the differences between those with a child aged 6-12 and respondents with older or no children.

Figure 9: Double- and triple-difference estimates of the effect of the COVID-19 pandemic on actual hours worked by age of youngest child, 2019-2020



Notes: Figure 9 displays the regression results for each month of the pandemic estimated using equations 1 and 2. The dependent variable is a continuous measure of hours worked. The left panel compares respondents whose youngest child is under 6 to either those whose youngest child is older than 6 or to those with no child at all, while the right panel compares respondents whose youngest child is between 6 and 12 to either those whose youngest child is older than 12 or to those with no child at all. The vertical bars denote the 95 percent confidence intervals computed using robust standard errors. The black squares represent the difference in hours worked between respondents with young children to respondents either with a relatively older child or no child at all (equation 2), while the light gray diamonds/circles indicate the group-specific estimate (equation 1 estimated separately for these groups). Controls include: a dichotomous variable equal to 1 if the respondent is married or in a common-law relationship, the age of the respondent (in 5-year age groups), the respondent's highest level of educational attainment, and a dichotomous variable equal to 1 if the respondent is female. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

[18] In the public-use version of the LFS data, the age of the youngest children is presented in this categorical format, and it is the lowest-level demographic information that we have about parental status.

Although both groups have, at times, experienced significant losses in labour market hours, we gather from Figure 9 that reductions in hours worked have been greater among parents with children under the age of 6. In normal times, children under the age of 6 tend to require significantly more care than older children, which is estimated to be an excess 33 percent more hours among married parents (Alon et al., 2020). Given that the COVID-19 pandemic has led to closures of daycare centres and schools – and that parents may, more generally, fear sending their children outside of the home during a public health crisis – it is likely that parents with children under the age of 6 have had to re-allocate a large portion of labour market hours into childcare. Our results in Figure 7 indicate that this finding likely has additional implications cumulatively, where the compounding effect of lost hours has likely continued to persist.

POLICY DISCUSSION AND CONCLUDING REMARKS

In this paper, we examined a number of different labour force statistics to understand the impact of the COVID-19 pandemic across different sociodemographic groups in Alberta. We show that initial large differences in labour market outcomes between men and women dissipated over the summer and fall months and that there is no evidence of a "she-cession" in Alberta's second wave. Our most striking result is significantly large differences in hours worked between parents and non-parents - *irrespective of gender*. These findings suggest that recovery plans which disproportionately focus on gender may be insufficient for addressing the complex labour market dynamics experienced by different groups throughout the pandemic. Rather than focus exclusively on gender, we propose that policymakers target policies towards both mothers and fathers with young children. Moreover, given that the distribution of vaccines means that some sense of normalcy seems within reach, we believe that policies seeking to address labour market frictions

in Alberta should be targeted and temporary in nature. We discuss complementary policy alternatives in turn.[19]

First, we propose that the CRCB should be administered until there is no further threat of school or daycare closures or limits on in-home child-care providers (this will likely be when the province is fully vaccinated). In our view, parents should not have to face additional burdens of stress associated with how they will pay their bills or feed their families in the event that they must leave employment or reduce their hours of work to care for a young child. The availability of a guaranteed child care benefit is a reassuring safety net for parents who currently face a high degree of uncertainty in their day-to-day lives. As of January 10, 2021, Alberta has received $144 million in direct subsidies through the CRCB program – this is the third highest per capita expenditure among the Canadian provinces.[20] Moreover, data from the Canada Revenue Agency (2021) shows that nearly 70 percent of the beneficiaries in Alberta have been women, suggesting that, despite our findings that men with young children have experienced larger declines in hours worked than women, the latter group may still be taking on a disproportionate amount of childcare responsibilities within the home.

One shortcoming of the federal CRCB program is that the benefit is uniform across the country. In effect, regions with lower costs of living ultimately benefit from greater purchasing power. Moreover, the weekly CRCB of $500 amounts to less than a full-time minimum wage job in Alberta. As such, although the CRCB provides a floor for parents, it may be much lower than their employment income and insufficient to pay bills and meet basic needs. As such, we also

[19] Note that our policy recommendations do not attempt to address pre-pandemic differences in employment between men and women with children. We specifically focus on policies to address the multitude of problems created by the government's public health restrictions. We hope to re-visit policy ideas to address pre-pandemic differences once the labour market has returned to normal.

[20] This is according to data from the Canada Revenue Agency (2021), and tabulations made by the authors from Statistics Canada Table 17-10-0009-01.

propose that a provincial top-up of the CRCB, geared towards lower- or single-income parents would be a cost-effective and targeted policy to help ease the pandemic-driven trade-offs that are unique to parents.

Second, the province of Alberta should continue to cooperate with the federal government to provide support to childcare centres and schools so that they are able to provide adequate protection to children and their families. For example, Alberta has received $87 million in funding to help licensed childcare centers cover increased costs related to the pandemic (Ramsay, 2020). Alberta itself has allocated $17.8 million towards additional health and safety measures in childcare centres (Mertz, 2020), and has similarly pledged to provide "enhanced health and safety measures" in the K-12 schooling system (Government of Alberta, 2020). Although controversial, the Alberta government also ended a pilot program in July 2020 that provided $25 a day childcare to families with children (Hudes, 2020). Shortly thereafter, this program was reinstated with federal funding for families whose annual income is less than $75,000. These types of investments improve the likelihood that schools and daycares can remain open, while also providing ease of mind to parents who may be uncomfortable sending their children outside of the home for school or daycare during a public health pandemic. Ensuring a safe environment for children, in turn, allows parents to maintain employment and their hours worked. Furthermore, affordable options for childcare may be necessary more than ever as parents – in particular, low-income parents – may be cash-strapped due to lack of employment income throughout 2020.

Third, the Alberta government should ensure that there is sufficient employment protection for parents. Women and men with children should not face employment penalties for reducing hours worked or leaving the labour market to care for children, nor once they are able to return to the labour market. Relatedly, the government should ensure that families with young children who

rely on the social assistance system do not lose this crucial form of income support by ceasing job search requirements during the pandemic—particularly if more widespread lockdowns must be introduced.

Fourth, while Employment Insurance (EI) falls under federal jurisdiction, Alberta could lobby for a few temporary changes that would be especially beneficial for parents. For instance, parents who are displaced from work to provide care for young children could be temporarily exempt from job search requirements. Moreover, extending employment insurance availability to workers who voluntarily leave employment to assume home production duties because of the government's social distancing measures would be a natural extension to assist in the transition back to a "normal" labour market.

Fifth, we must emphasize that the analysis conducted in this study describes the *short-run* effect of the COVID-19 pandemic on Alberta's labour market. For example, we are unable to determine the extent to which the large cumulative reductions in hours worked that we document in Figure 7 will impact long-run outcomes for parents – and mothers especially. When the province is eventually able to return to normalcy, there will likely still be lingering effects from the pandemic on the labour market outcomes of the various socio-demographic groups examined in this paper. Moreover, it is important to note that, even though we show that employment has converged between men and women, because the latter group faced larger employment losses early on in the pandemic, in the longer run, women may experience more labour market frictions due to missed on-the-job training and other work experience opportunities—a concept known as *scarring*.[21] As such, future research must examine whether the pandemic produced differential long-run effects on labour market outcomes for the groups studied in this paper. Such research will

[21] These long-run benefits and costs are further described in Stevenson (2020) and Alon et al. (2020).

also better serve a discussion of long-run policy implications that are beyond the scope of our study and likely help to address pre-pandemic differences that exist between men and women.

Finally, our policy recommendations are intended to address the disparities in the labour market created by the pandemic only. That is, we examine pandemic effects – we are not analyzing or commenting on the pre-pandemic status quo. Given substantial pre-pandemic labour market differences between men and women with and without children (see Figure 8), it is worth considering whether the status quo is acceptable and what policy options may help facilitate greater female labour force participation. This is not within the scope of our paper, but we raise it as an important consideration for future research.

We end on a hopeful note. Our paper provides preliminary evidence that Alberta fathers may have taken on a greater share of childcare and other household responsibilities during the pandemic. This is consistent with a report from the UK, which also provides descriptive evidence that fathers spent more time providing childcare and performing other unpaid household work than they did before the pandemic (Chung et al. 2020). Alon et al. (2020) have also documented this change, and further note that the pandemic may erode traditional social norms that propagate the uneven distribution of labour in the household. This suggests that the pandemic may generate long-run benefits for both women and men. Women may see reduced household responsibilities if men continue to take on a greater share of parenting duties. In contrast, many men are now recognizing the benefits of spending more time with their children (Lamont 2021). These changes may be everlasting if the pandemic has made firms more willing to provide flexible work arrangements in terms of both when and where work is completed. Indeed, if these trends continue, there may be greater improvements in the future labour market participation of women with young children who disproportionately shouldered the burden of home production well before the COVID-19 era.

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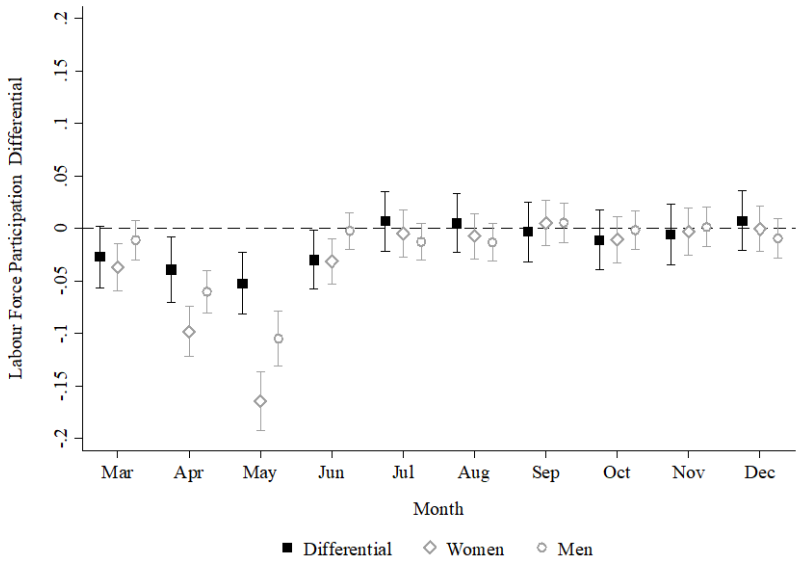
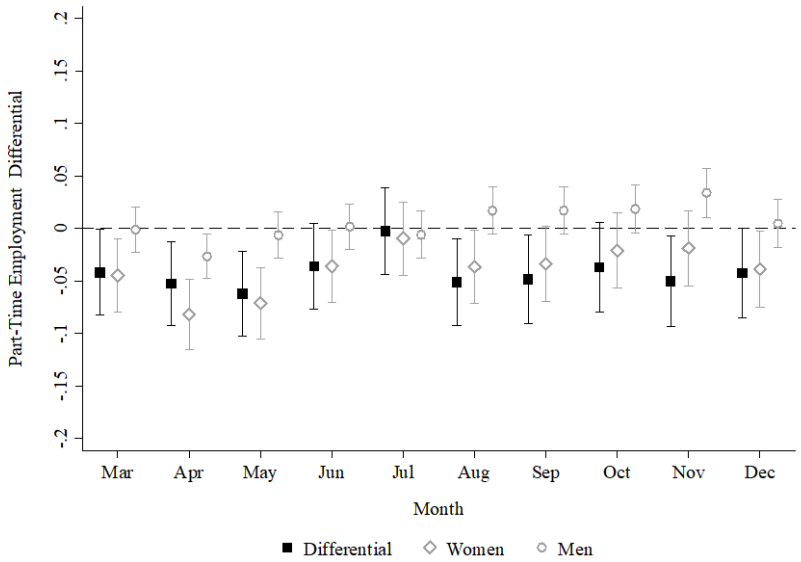
APPENDIX

Figure A.1: Double- and triple-difference estimates of the effect of the COVID-19 pandemic on labour force participation by gender, 2019-2020



Notes: Figure A.1 displays the regression results for each month of the pandemic estimated using equations 1 and 2. The dependent variable is an indicator for labour force participation. The vertical bars denote the 95 percent confidence intervals computed using robust standard errors. The black squares represent the difference in labour force participation between men and women (equation 2). The light gray diamonds/circles indicate the group-specific estimate (equation 1 estimated separately for women and men). Controls include: a dichotomous variable equal to 1 if the respondent is married or in a common-law relationship, the age of the respondent (in 5-year age groups), the respondent's highest level of educational attainment, and a dichotomous variable equal to 1 if the respondent's youngest child is under the age of 13. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.

Figure A.2: Double- and triple-difference estimates of the effect of the COVID-19 pandemic on part-time employment by gender, 2019-2020



Notes: Figure A.2 displays the regression results for each month of the pandemic estimated using equations 1 and 2. The dependent variable is an indicator for labour force participation. The vertical bars denote the 95 percent confidence intervals computed using robust standard errors. The black squares represent the difference in part-time employment between men and women (equation 2). The light gray diamonds/circles indicate the group-specific estimate (equation 1 estimated separately for women and men). Controls include: a dichotomous variable equal to 1 if the respondent is married or in a common-law relationship, the age of the respondent (in 5-year age groups), the respondent's highest level of educational attainment, and a dichotomous variable equal to 1 if the respondent's youngest child is under the age of 13. Sample excludes: i) unpaid family workers; ii) respondents who have never worked; and iii) respondents who are not attached to the labour market.
Source: Canadian Labour Force Survey, public-use microdata files, 2019-2020. Tabulations by authors.