The Effect of Daddy Quota on Gender Differences in Labor Market Outcomes

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저출산 시대의 노동 포럼

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Motivation & Research Question

- Design of parental leave policy:
  - Varies largely across developed countries, mostly gender neutral
  - Majority of OECD countries men make up about **one in five parents** who participate in paid publicly administered parental leave (OECD, 2016)
- Parental leave reform in the province of Quebec, established 5 weeks of paid parental leave **exclusively for fathers** (paternity leave/daddy quota)

$\Rightarrow$ **Does daddy quota affect gender labor market outcomes?**

- Our hypothesis:
  - Increase in the proportion of fathers who stay on parental leave positively affects women's outcomes
  - Statistical discrimination of women in childbearing age decreases and gender norms become more equal

Preview of Results

- Establishment of daddy quota led to an increase in probability of employment for all women
- We do not find an effect of daddy quota on younger men's employment $\Rightarrow$ supporting the gender norm channel
- We observe a decline of younger men's wage $\Rightarrow$ supporting statistical discrimination channel

Quebec Parental Insurance Plan

- Employment Insurance (EI) program provided parental benefit in all Canadian provinces until 2006
- In the beginning of 2006, Quebec replaced EI with Quebec Parental Insurance Plan (QPIP)
- Both EI and QPIP are financed by payroll tax and include job-protecting provision

EI & QPIP Features		
	EI	**QPIP**
Max. Insurable Earnings	$39,000	$57,000
Eligibility Requirement	600hrs of insurable work Employee status	$2,000 insurable earnings
Flexibility	-	Basic/Special plan
Paternity leave	NO	YES

Quebec Parental Insurance Plan

- Summary of QPIP:
  - Total amount of weeks available to mothers did not change (50)
  - Fathers gained 5 weeks of paternity leave: individual and non-transferable right to parental leave
  - Total amount of weeks available to the family increased by the daddy quota (50 $\Rightarrow$ 55)
  - The parental leave became more generous: higher replacement rates ▸ QPIP detail
- Direct effects of QPIP reform
  - The proportion of fathers claiming or intending to claim the benefit rose from 22% in 2004 to 83% in 2013 (9% to 12.2% in the rest of Canada)
  - Following QPIP average father stayed on parental leave for 5 weeks (= the length of daddy quota) (Patnaik, 2017)

Theoretical Framework

Household i's utility function:

$$w_{Fi} L_{Fi} + w_{Mi} L_{Mi} - \frac{L_{Fi}^2}{2} - \frac{L_{Mi}^2}{2} - \gamma_i(Q)\mathbb{1}\{L_{Fi} > 0\}. \tag{1}$$

Labor supply:

$$L_{Fi}^S(w_{Fi}; \gamma_i(Q)) = w_{Fi} \cdot \mathbb{1}\left\{w_{Fi} \geq \sqrt{2\gamma_i(Q)}\right\}, \tag{2}$$

$$L_{Mi}^S(w_{Mi}) = w_{Mi}. \tag{3}$$

$\gamma_i(Q)$: women's fixed utility cost of participating in the labor market before $(Q = 0)$ and after $(Q = 1)$ the reform

Labor market equilibrium

Labor demand:

- Wage is equal to the marginal productivity of labor.

Labor market equilibrium:

$$w^*_{g,a(i)} = \theta_{g,a(i)}, \tag{4}$$

$$l^*_{M,Y} = \theta_{M,Y} \cdot \alpha I, \tag{5}$$

$$l^*_{M,O} = \theta_{M,O} \cdot (1-\alpha) I, \tag{6}$$

$$l^*_{F,Y}(Q) = \theta_{F,Y} \cdot \alpha I \cdot \Phi_Y(Q), \tag{7}$$

$$l^*_{F,O}(Q) = \theta_{F,O} \cdot (1-\alpha) I \cdot \Phi_O(Q). \tag{8}$$

Effects of QPIP

(1) Statistical discrimination: younger men's expected productivity ($\theta_{M,Young}$) decreases $\Rightarrow$ their wage ($w^*_{M,Young}$) decreases

(2) Equalizing gender norms: participation cost of women $\gamma_i(Q)$ decreases $\Rightarrow$ the share of women participating in the labor market ($\Phi(Q)$) increases $\Rightarrow$ women's employment ($l^*_F(Q)$) increases

- Research documents long run effect of paternity leave: Patnaik (2017) shows QPIP equalizes long term division of household labor
- More emphasis on flexible workplace

(3) Women's wage will decrease as well as men's (assuming downward sloping labor demand)

Data

- Canadian Labour Force Survey (LFS) from years 2002-2010:
  - Large, nationally representative, monthly survey
- 4 subsamples:
  - women/men 17–49 years old with no or younger children (the youngest child below 5 years)
  - women/men between 50–64 years old with no or older children (the youngest child at least 13 years old)
- Difference-in-difference strategy:
  - Pre-reform group consists of 2002-2005 data, and 2006-2010 serves as the post-reform group
  - Quebec serves as a treatment group and the rest of Canadian provinces serve as the control group (Ontario, Alberta, Manitoba and Saskatchewan, British Columbia, and Atlantic Region)

▸ Descriptive Statistics

Empirical Analysis

- Baseline difference-in-difference regression:

$$Y_{ipt} = \alpha + \beta * After_t * Quebec_p + \gamma * Quebec_p + \delta * After_t + \phi * X_{ipt} + \epsilon_{ipt} \quad (A)$$

- Generalized difference-in-difference regression:

$$Y_{ipt} = \alpha + \beta * Quebec_p * After_t + \phi * X_{ipt} + \delta_t + \lambda_p + \epsilon_{ipt} \quad (B)$$

- Year specific coefficients:

$$Y_{ipt} = \alpha + \beta_t * Quebec_p * Year_t + \phi * X_{ipt} + \delta_t + \lambda_p + \epsilon_{ipt} \quad (C)$$

Y_{ipt}: Outcome of interest for a person i living in a province p surveyed in a year t
$Quebec_p$: 1 when the individual lives in Quebec
$After_t$: 1 when observation is from 2006 or later
X_{ipt}: Set of personal characteristics including age and education level, marital status, presence/age of a child
δ_t, λ_p: Year and province fixed effects
ϵ_{ipt}: Error term

Table: QPIP Effect on the probability of employment: Women

	Younger women		**Older women**	
	(1)	(2)	(3)	(4)
Quebec*After	0.0170**	0.0174***	0.0118	0.0124***
	(0.0068)	(0.0054)	(0.0141)	(0.0043)
After	-0.0072		0.0120	
	(0.0059)		(0.0099)	
Quebec	-0.0188**		-0.0651***	
	(0.0048)		(0.0117)	
All covariates	YES	YES	YES	YES
Province&Year FE	NO	YES	NO	YES
Clustered std. e.	YES	YES	YES	YES
N	2122089	2122089	1328309	1328309
R^2	0.08	0.09	0.15	0.15

Table: QPIP Effect on the probability of employment: Men

	Younger men		**Older men**	
	(1)	(2)	(3)	(4)
Quebec*After	0.0074	0.0084	-0.0113	-0.0098*
	(0.0127)	(0.0061)	(0.0130)	(0.0050)
After	-0.0111		0.0120	
	(0.0106)		(0.0118)	
Quebec	-0.0204***		-0.0322***	
	(0.0069)		(0.0101)	
All covariates	YES	YES	YES	YES
Province&Year FE	NO	YES	NO	YES
Clustered std. e.	YES	YES	YES	YES
N	2286983	2286983	1242603	1242603
R^2	0.10	0.11	0.12	0.13

Table: QPIP effect on hourly wage

	Younger women	**Older women**	**Younger men**	**Older men**
Quebec*After	-0.0241***	-0.0215**	-0.0273***	-0.0113
	(0.0090)	(0.0090)	(0.0099)	(0.0095)
Prov.&year FE	YES	YES	YES	YES
All covariates	YES	YES	YES	YES
Clustered std. e.	YES	YES	YES	YES
N	1394728	631752	1543681	612689
R^2	0.42	0.24	0.40	0.17

Accounting for Business Cycle: Bartik IV

- Produces measure of local labor demand unrelated to changes in local labor supply (Bartik, 1991; Katz and Murphy, 1992; Wozniak, 2010)
- Measure of average national employment growth across industries weighted by local industry employment shares

$$Bartik_{pt} = \sum_{i=1}^{18} e_{pit-1}(lnE_{-pit} - lnE_{-pit-1})$$

e_{pit}: Share of province p employment in industry i in year t
E_{-pit}: National employment in industry i in year t excluding province p employment in that industry

Table: QPIP effect on the probability of employment: Bartik Included

	Younger women	**Older women**	**Younger men**	**Older men**
Quebec*After	0.0168***	0.0103**	0.0074	-0.0103*
	(0.0056)	(0.0045)	(0.0061)	(0.0052)
Bartik	-0.1449	-0.6117**	-0.2825	-0.1398
	(0.1852)	(0.2460)	(0.2711)	(0.2930)
Prov.&year FE	YES	YES	YES	YES
All covariates	YES	YES	YES	YES
Clustered std. e.	YES	YES	YES	YES
N	2122089	1328309	2286983	1242603
R^2	0.09	0.15	0.11	0.13

◂ Return

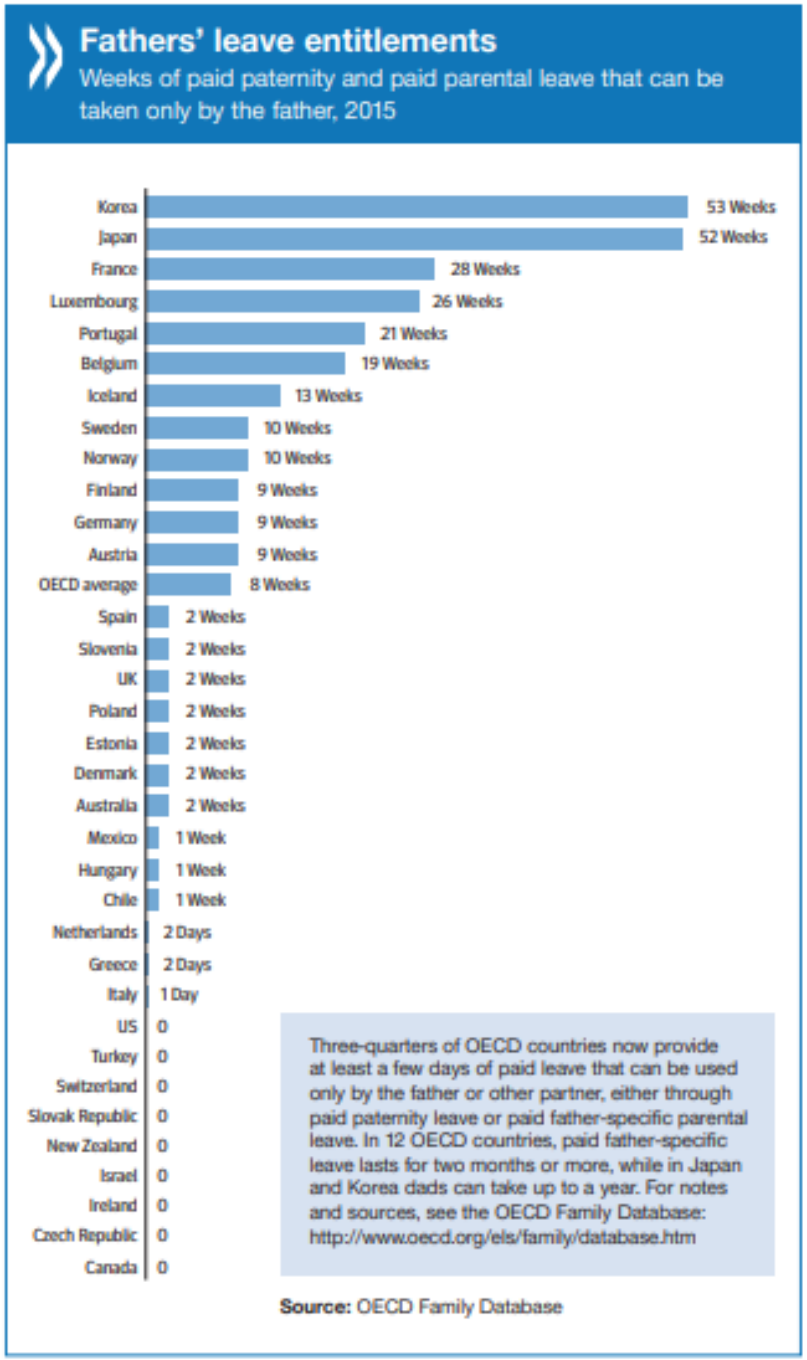
Conclusion

- Parental leave policy has important implications beyond the effects on parents and children
- Establishment of daddy quota in Quebec increased probability of employment for women
- We explain our findings by decrease in statistical discrimination of women in childbearing age and more equal gender norms
- Future direction:
  - Find evidence of changing gender norms
  - Robustness checks: synthetic control strategy
  - Incorporate a downward sloping labor demand function in the production function

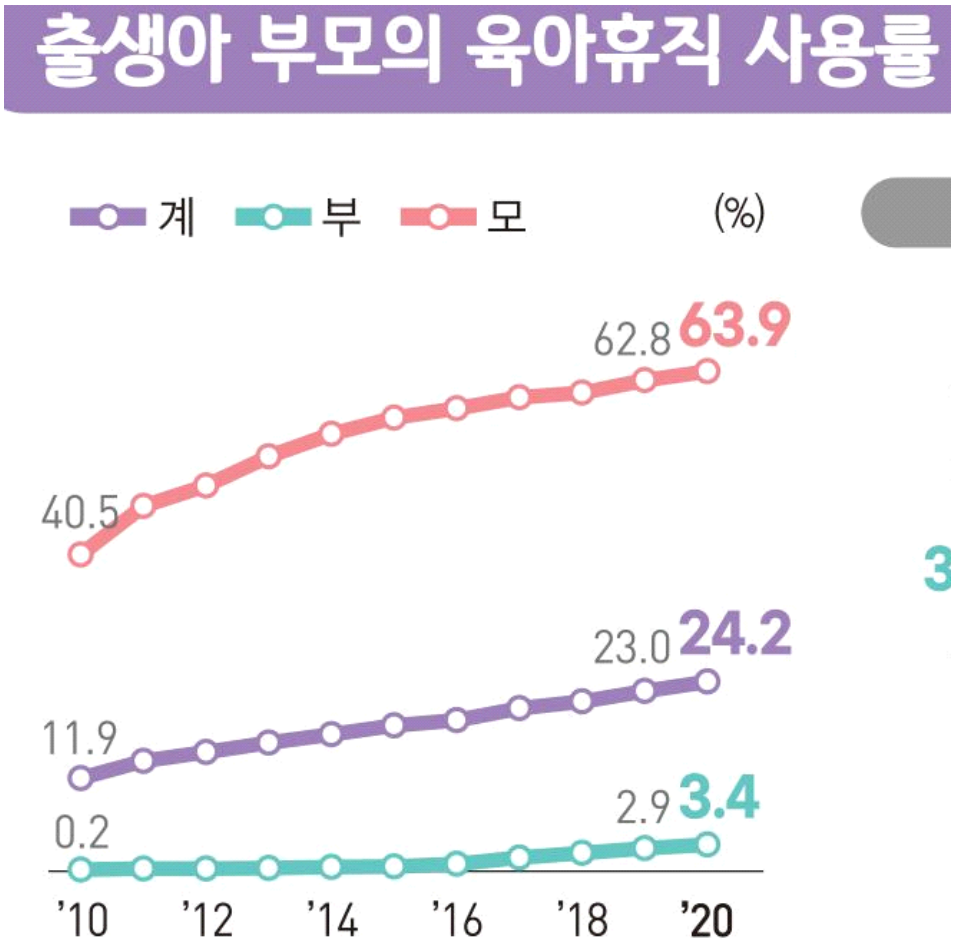
한국의 육아휴직제도

- 여성 1년 + 남성 1년 (총 2년)
- 통상임금의 50%($\rightarrow$ 80%)
  - 상한액 월 120만원($\rightarrow$ 150만원), 하한액 월 70만원
  - 평균 소득대체율은 35% 내외
- 급여액 중 25%는 복직 6개월 후 일괄 지급 (수급률 70%미만)
- (아빠육아휴직보너스제)부모가 순차적으로 육아휴직을 사용하는 경우, 두 번째 사용한 사람 3개월 급여 통상임금의 100%(상한 250만원)
- (3+3육아휴직제) 부모 첫 3개월+3개월 급여 상향 지급
  - 母 3개월 + 父 3개월 : 상한 월 300만원(통상임금의 100%)
  - 母 2개월 + 父 2개월 : 상한 월 250만원(통상임금의 100%)
  - 母 1개월 + 父 1개월 : 상한 월 200만원(통상임금의 100%)

OECD 국가별 남성 할당 육아휴직 기간

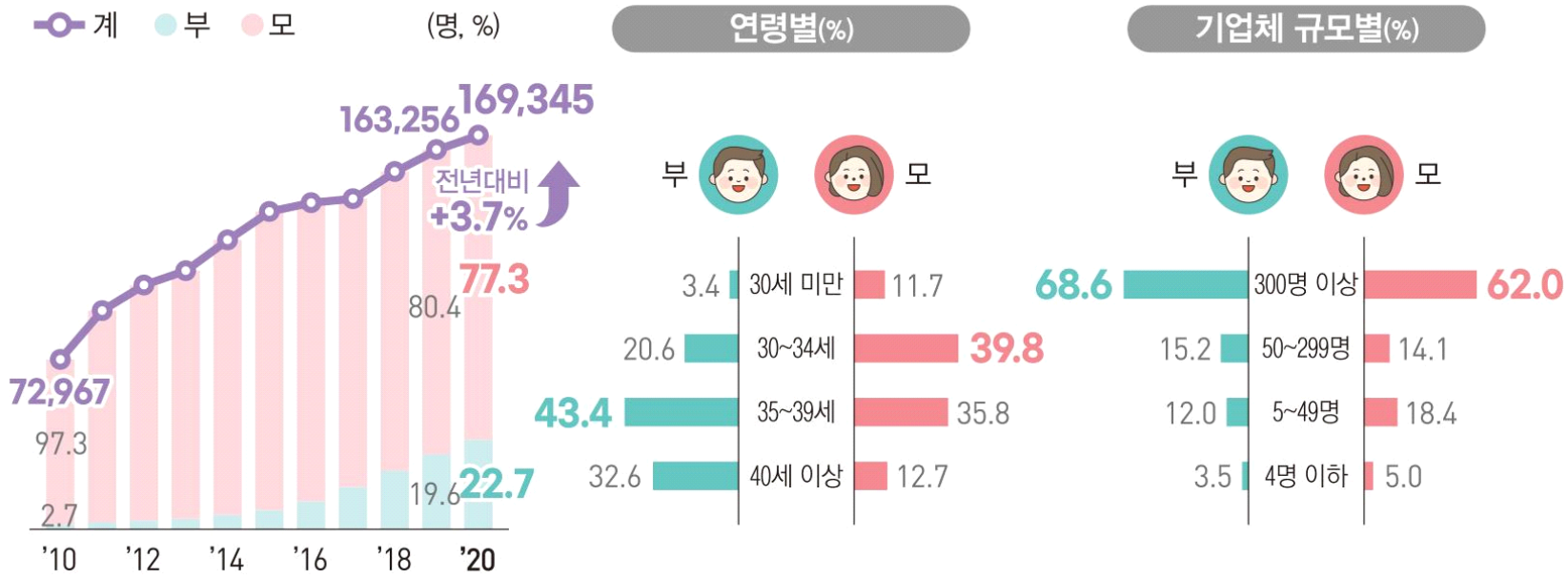


2020년 육아휴직 사용률



출생아 100명당 여성 21.4명, 남성 1.3명
OECD 19국 평균 여성 118.2명, 남성 43.4명

2020년 육아휴직 사용률



전체 육아휴직자 중 남성의 비율은 OECD 평균 수준에 도달

2017년 육아휴직 사용기간

[표1] 2017년 육아휴직 사용자 및 사용기간

(단위: 명)

연도		계	3개월 이하	3-6 개월	6-9 개월	9-12 개월
'17 년	여	78,080 (100%)	7407 (9.5%)	7562 (9.7%)	5841 (7.5%)	57270 (73.3%)
	남	12,043 (100%)	4927 (41%)	1679 (14%)	579 (4.8%)	4858 (40.2%)
	전체	90,123 (100%)	12334 (13.7%)	9241 (10.3%)	6420 (7.1%)	62128 (6.9%)

자료: 고용노동부 보도자료(2018.1.26.)

한국의 육아휴직제도

- 남녀 모두 낮은 육아휴직 사용률을 기록
  - 지난 몇년간 빠르게 상승, 특히 남성 사용률 가파르게 증가
- 육아휴직 기간이나 남성 우대 측면의 제도는 훌륭하지만 소득 대체율이 매우 낮은 편
  - 소득 대체율 상승을 통한 사용률 증가를 고려할 수 있음
  - 부모급여 월 100만원 공약 - 육아휴직 소득대체율 증가에 사용한다면?
- 한편 육아휴직후 복직률이 낮은 것은 회사와 휴직자 모두에게 부담
  - 기업의 부담을 줄여주는 정책 필요(육아휴직장려세제)

Duration and Replacement Rates			
	EI	**QPIP Basic**	**QPIP Special**
Maternity leave	15 weeks 55%	18 weeks 70%	15 75%
Parental leave	35 weeks 55%	7+25 weeks 70%+55%	25 weeks 75%
Paternity leave	0	5 weeks 70%	3 weeks 75%

Note: Parents may take parental leave simultaneously or in succession.

◂ Return

Table: Descriptive Statistics: 2002-2005

	Quebec	Control
women	0.514	0.518
age 17-19	0.048	0.052
age 20-21	0.031	0.032
age 22-24	0.045	0.044
age 25-26	0.030	0.028
age 27-29	0.043	0.042
age 30-34	0.073	0.078
age 35-39	0.088	0.090
age 40-44	0.106	0.105
age 45-49	0.106	0.102
age 50-54	0.094	0.089
age 55-59	0.082	0.076
age 60-64	0.064	0.058
age 65-69	0.050	0.049
age 70&up	0.108	0.120
high school or less	0.462	0.474
some college	0.081	0.090
post secondary cert./diploma	0.327	0.292
bachelors degree	0.094	0.098
graduate degree	0.037	0.046
married	0.610	0.613
child	0.321	0.325
labor force	0.636	0.652
employed	0.581	0.604
N	873600	3947754

◂ Return