

# Long term effects of the Parental Leaves in Poland

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# Motivation

- Big question on the work and family reconciliation
- Cost-benefit analysis of policy instruments - what about the long run?
- Context of family policy, reproductive health,
- Context of labour supply, active aging and health care

# Parental leave outcomes

## Mothers

- Postbirth period recovery (and the return to labour market) [Brugiavini et al., 2013; Albanesi & Olivetti, 2016]
- Stress level reduction
- Risk of depression [Haran et al., 2014]
- Physical and mental health [Staehelin et al., 2007; Dagher et al., 2014]

## Children

- Health [Staehelin et al., 2007]
- Cognitive and behavioral development [Baker & Milligan, 2010]
- Long term outcomes

Very little evidence on the long term effects - single study by Avendano et al. [2015] showing the depression reduction

# Parental leaves in Poland before 1989

- Not many sources (primary documents investigation)
- First maternity benefit- 1922
- 1948: 12 weeks
- 1968: family leave - 12 months
- 1972: 16 weeks
- minor changes in 1974 and 1983
- 1989: 16/18 weeks of maternity leave

# Data

- SHARE - wave 4
- SHARELIFE - wave 3
- Women aged 50+
- n=1061
- Retrospective data on fertility and labour market experiences

# Labour market situation and health

- 92% retired
- 14.33% still working
- 67.69% has some type of chronic illness
- 32.76% limited and 24% severely limited activities due to health
- Self-reported health: 23.09% poor, 35.49% fair

# Maternity leave patterns

- 53.35% of women didn't take a maternity leave (some of them never worked)
- 14.51% took one, 20.55% took two leaves (n=408 leave histories)

# Maternity leave duration

How long was maternity interruption	Freq.	Percent	Cum.
-----			
1 month or less	8	1.96	1.96
More than 1 month but less than 3 month	156	38.24	40.20
More than 3 months but less than 6 mont	54	13.24	53.43
More than 6 months but less than 1 year	44	10.78	64.22
More than 1 year but less than 3 years	64	15.69	79.90
3 years or longer, but worked at some p	82	20.10	100.00
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Total	408	100.00	



# Sources of income on the leave

- income from (self-)employment- 280 (28.37%)
- support from spouse/partner- 774 (78.42%)
- **maternity benefits - 254 (25.73%)**
- child benefits - 65 (6.59%)

# Methods

- Logistic and ordered regression
- Difference-in-difference
- Investigation of both eligibility and take-up effects
- Effect of first child

# Employment probability

Logistic regression

Number of obs = 747

LR chi2(17) = 2465855.16

Prob > chi2 = 0.0000

Pseudo R2 = 0.4697

Log likelihood = -1392174.5

	working	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
years edu		1.084645	.0006152	143.26	0.000	1.083439	1.085851
nr of children		1.084405	.0013574	64.74	0.000	1.081748	1.087068
nr of leaves		1.018945	.0000737	259.42	0.000	1.0188	1.019089
maternity job break		.9588193	.0019144	-21.06	0.000	.9550745	.9625788
long-term illness		.6368845	.0025446	-112.92	0.000	.6319167	.6418914
SAH							
2		.1575492	.0030983	-93.97	0.000	.1515922	.1637403
3		.2433599	.00467	-73.64	0.000	.2343768	.2526873
4		.0927029	.0018004	-122.46	0.000	.0892405	.0962997
5		.0955226	.0018971	-118.25	0.000	.0918759	.0993141
limit activ		1.067775	.0043897	15.95	0.000	1.059206	1.076413
edu to birth dur		1.000662	.000048	13.79	0.000	1.000568	1.000756
age started working		1.025221	.0003645	70.06	0.000	1.024507	1.025935
age at birth1		1.103212	.0005559	194.95	0.000	1.102123	1.104302
eligible maternal1		3.73e+10	1.68e+09	540.96	0.000	3.42e+10	4.07e+10
eligible*age		.662844	.0004355	-625.86	0.000	.6619909	.6636981
eligiblelongmaternal1		1.012039	.0069158	1.75	0.080	.9985748	1.025685
eligible fam leave1		.4008044	.0047577	-77.02	0.000	.391587	.4102387
_cons		.0319369	.0008691	-126.56	0.000	.0302782	.0336865

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Logistic regression
Number of obs      =      816
LR chi2(16)        =    202203.33
Prob > chi2        =      0.0000
Pseudo R2          =      0.0700
Log likelihood = -1343051.4

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-----+-----
worked after retirement|Odds Ratio   Std. Err.      z    P>|z|    [95% Conf. Interval]
-----+-----
      years edu |    1.115444   .0006548    186.12   0.000    1.114161    1.116728
            age |    1.027928   .0004339     65.25   0.000    1.027078    1.028779
    nr of children |    .9435424   .0012928    -42.41   0.000     .941012    .9460796
    nr of leaves |    .9902566   .0000772   -125.55   0.000    .9901052    .9904079
left job after child |    .4850703   .0062028    -56.58   0.000    .4730642    .4973811
maternity job break |    1.428566   .0021599    235.90   0.000    1.424339    1.432806
  long-term illness |    1.059741   .0049124     12.52   0.000    1.050156    1.069413
      SAH |
        2 |    .5495703   .0086747    -37.92   0.000    .5328285    .5668382
        3 |    3.629092   .0235744    198.43   0.000    3.58318    3.675592
        4 |    2.901004   .016839    183.49   0.000    2.868188    2.934197
  limit activ |    1.041931   .0048131     8.89   0.000    1.03254    1.051408
  edu to birth dur|    1.000405   9.95e-06    40.72   0.000    1.000386    1.000425
    age at birth1 |    1.029515   .0005534    54.11   0.000    1.028431     1.0306
eligible maternal1 |    .6831015   .0081077    -32.11   0.000    .667394    .6991786
eligiblelongmaternal1 |    .981692   .006029    -3.01   0.003    .9699462    .99358
  eligible fam leave1 |    .9173715   .0066741    -11.85   0.000    .9043832    .9305463
      _cons |    .0010263   .0000378   -187.02   0.000    .0009549    .001103

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# Self-assessed health

Ordered logistic regression

Number of obs = 747

LR chi2(9) = 1084942.68

Prob > chi2 = 0.0000

Pseudo R2 = 0.0749

Log likelihood = -6703993.8

	SAH	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
years edu		.8948663	.0002574	-386.11	0.000	.8943619	.8953711
income-pension		.9948506	.000287	-17.89	0.000	.9942882	.9954134
nr of children		.988072	.0005364	-22.10	0.000	.9870212	.9891238
edu to birth		1.000139	1.30e-06	106.96	0.000	1.000136	1.000141
age star tworking		.996027	.0001235	-32.11	0.000	.9957851	.9962691
age at birth1		.9982805	.0000223	-77.14	0.000	.9982369	.9983242
eligible maternal1		.4422381	.0022587	-159.75	0.000	.4378333	.4466872
eligiblelongmaternal1		.5702915	.0013794	-232.18	0.000	.5675942	.5730015
eligible fam leave1		.5682876	.0013919	-230.73	0.000	.5655661	.5710223
/cut1		-7.949903	.0084442			-7.966453	-7.933353
/cut2		-5.574713	.0067039			-5.587852	-5.561573
/cut3		-2.976458	.0064327			-2.989066	-2.96385
/cut4		-1.20761	.006327			-1.22001	-1.195209

# Number of children

Source	SS	df	MS	Number of obs	=	6,783,466
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Model	1659215.3	4	414803.824	F(4, 6783461)	>	99999.00
Residual	14488687.8	6,783,461	2.1358843	Prob > F	=	0.0000
-----						
Total	16147903.1	6,783,465	2.38048005	R-squared	=	0.1028
				Adj R-squared	=	0.1028
				Root MSE	=	1.4615

nr of children	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
-----						
eligible maternal1	1.108556	.0019356	572.72	0.000	1.104762	1.11235
eligible long maternal1	-.1718376	.0018077	-95.06	0.000	-.1753806	-.1682947
eligible fam leave1	.1055748	.0017966	58.76	0.000	.1020536	.109096
years edu	-.108691	.0001855	-585.98	0.000	-.1090545	-.1083275
_cons	2.612909	.002263	1154.63	0.000	2.608473	2.617344

	hypertension	cholesterol	stroke	diabetes	arthritis	ulcer
age	0.9953 0.000	1.0359 0.000	1.0139 0.000	0.9997 0.000	1.0148 0.000	1.0635 0.000
Nr of children	1.0172 0.001	0.9846 0.001	1.0406 0.001	1.0798 0.001	1.0500 0.001	1.0515 0.001
Years edu	0.9567 0.000	0.9746 0.000	0.9513 0.000	0.9652 0.001	0.9894 0.000	0.9271 0.000
Eligible maternal1	0.9124 0.003	1.1449 0.004	1.3057 0.004	1.3761 0.006	0.6528 0.002	0.8834 0.003
Eligible long maternal1	0.6882 0.002	1.2238 0.004	1.0090 0.003	0.4243 0.002	0.9429 0.003	0.6560 0.002
Eligible famleave1	0.6920 0.002	0.6899 0.002	1.0166 0.003	0.6446 0.003	0.8712 0.003	1.2265 0.004
Maternity job break	0.9399 0.001	0.9856 0.001	0.9546 0.001	0.8890 0.001	0.9766 0.001	0.9849 0.001
Left job after child	0.8072 0.004	0.7719 0.004	1.2003 0.005	0.9996 0.007	0.5330 0.003	0.9631 0.004
Age started working	1.0095 0.000	1.0073 0.000	1.0079 0.000	1.0156 0.000	1.0004 0.000	0.9944 0.000
Worked after retirement	1.2009 0.004	0.8155 0.003	0.8210 0.003	0.6511 0.004	0.7957 0.003	0.8217 0.003
const	4.6907 0.058	0.0422 0.001	0.2639 0.003	0.1275 0.002	0.3128 0.004	0.0638 0.001
Pseudo R2	0.0350	0.0443	0.0186	0.0654	0.0222	0.1166

	back pain	swolen legs	sleep problem	dizziness	fatigue	limit act
age	0.9953 0.000	1.0359 0.000	1.0139 0.000	0.9997 0.000	1.0148 0.000	1.0635 0.000
Nr of children	1.0172 0.001	0.9846 0.001	1.0406 0.001	1.0798 0.001	1.0500 0.001	1.0515 0.001
Years edu	0.9567 0.000	0.9746 0.000	0.9513 0.000	0.9652 0.001	0.9894 0.000	0.9271 0.000
Eligible maternal1	0.9124 0.003	1.1449 0.004	1.3057 0.004	1.3761 0.006	0.6528 0.002	0.8834 0.003
Eligible long maternal1	0.6882 0.002	1.2238 0.004	1.0090 0.003	0.4243 0.002	0.9429 0.003	0.6560 0.002
Eligible famleave1	0.6920 0.002	0.6899 0.002	1.0166 0.003	0.6446 0.003	0.8712 0.003	1.2265 0.004
Maternity job break	0.9399 0.001	0.9856 0.001	0.9546 0.001	0.8890 0.001	0.9766 0.001	0.9849 0.001
Left job after child	0.8072 0.004	0.7719 0.004	1.2003 0.005	0.9996 0.007	0.5330 0.003	0.9631 0.004
Age started working	1.0095 0.000	1.0073 0.000	1.0079 0.000	1.0156 0.000	1.0004 0.000	0.9944 0.000
Worked after retirement	1.2009 0.004	0.8155 0.003	0.8210 0.003	0.6511 0.004	0.7957 0.003	0.8217 0.003
const	4.6907 0.058	0.0422 0.001	0.2639 0.003	0.1275 0.002	0.3128 0.004	0.0638 0.001
Pseudo R2	0.0350	0.0443	0.0186	0.0654	0.0222	0.1166



	hearing	eyesight	reading	writing	orientation	numeracy	memory
Age	1.0730 0.000	1.0384 0.000	1.0271 0.000	1.0376 0.000	0.9417 0.000	0.9619 0.000	1.0516 0.000
Nr of children	1.0192 0.001	1.1266 0.001	1.1243 0.001	1.1440 0.001	0.9591 0.001	1.0047 0.001	1.1300 0.001
Years edu	0.9277 0.000	0.8894 0.000	0.7480 0.000	0.7382 0.000	1.1812 0.001	1.2239 0.000	0.8972 0.000
Eligible maternal1	0.9708 0.003	0.5020 0.001	0.6458 0.002	0.6025 0.002	2.2903 0.009	1.4125 0.004	0.6533 0.002
Eligible long maternal1	1.0969 0.003	1.4168 0.003	1.4084 0.003	1.1329 0.003	0.4978 0.002	0.8397 0.002	0.8791 0.002
Eligible famleave1	1.3073 0.004	1.2943 0.004	1.0828 0.003	1.2489 0.003	0.6381 0.003	1.1767 0.003	1.3054 0.004
Maternity job break	1.0254 0.001	0.9874 0.001	1.0023 0.001	0.9914 0.001	1.0017 0.001	0.9729 0.001	1.0039 0.001
Left job after child	1.7985 0.008	0.7142 0.003	1.5460 0.006	1.5464 0.007	1.4420 0.012	1.5366 0.006	1.9083 0.008
Age started working	1.0169 0.000	0.9954 0.000	0.9863 0.000	0.9886 0.000	0.9714 0.000	0.9764 0.000	0.9995 0.000
Worked after retirement	1.0333 0.003	0.8674 0.003	0.9170 0.003	0.9648 0.003	2.0509 0.015	1.0255 0.003	0.9959 0.003
cut1	1.2961 0.011	-2.667244 0.0106497	-2.8948 0.011	-2.4523 0.011	-8.6858 0.020	-3.6296 0.011	-1.3957 0.011
cut2	3.4070 0.011	-0.942903 0.01039	-1.2637 0.011	-0.8885 0.011	-8.3031 0.020	-1.6326 0.011	0.5176 0.011
cut3	5.8099 0.011	1.172127 0.0103436	0.9639 0.011	1.4009 0.011	-7.1269 0.019	0.3229 0.011	3.0666 0.011
const	7.1418	2.273606	1.7912	2.5316	-4.9398	2.0480	4.3307

# Conclusions

- Results robust over several different specifications
- Eligibility gives positive both self reported health and employment outcomes
- Mixed results of eligibility on cognitive and motoric outcomes
- Usage of maternity leave supports most of the health outcomes

**Thank You for Your attention!**