

Temporary work and fertility

Sara Cools^a Hans Henrik Sievertsen^b Marte Strøm^b

^aInstitute for Social Research, ^bVIVE and University of Bristol

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Fertility is declining

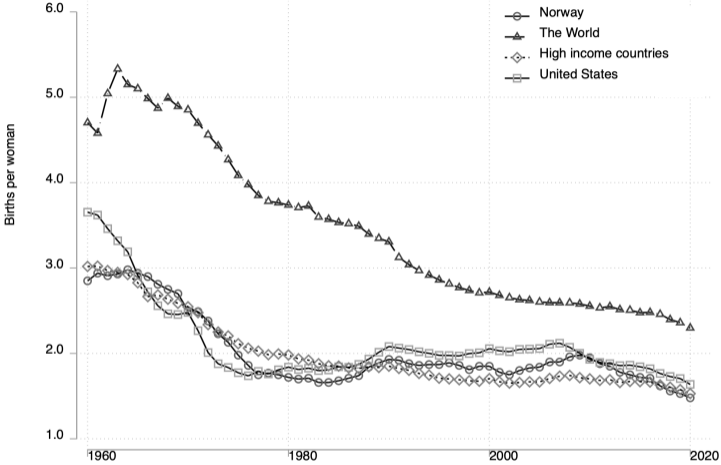


Figure: Total fertility rates across the world

Notes: Data source the World Bank. The line shows the total fertility rate

...especially in recent years

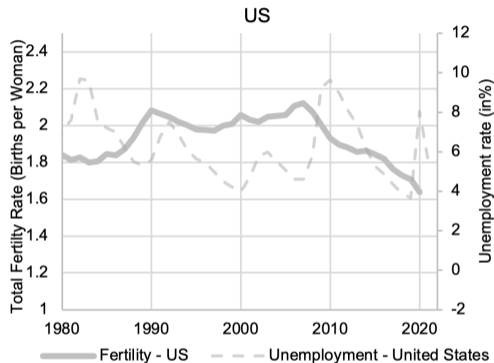
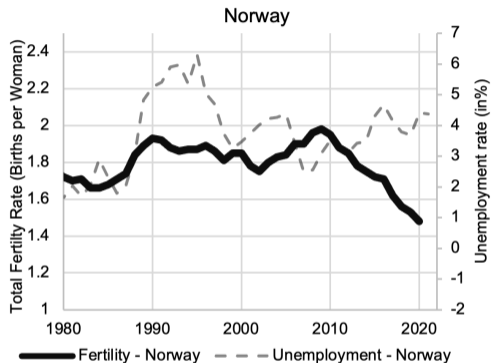


Figure: Total fertility rates in NO and the US

Notes: Data source the World Bank.

Alternative work arrangements are increasing

- ▶ Alternative work arrangements on the rise across all OECD countries (Katz and Krueger, 2019, Boeri et al., 2020)
- ▶ Increasing share of workforce is self-employed, temping or on temporary contracts
- ▶ Young workers overrepresented in these alternative work arrangements (OECD, 2002, 2020)

Norway

- ▶ Increasing share of workforce is on a temporary contract or working through a temp help agency
- ▶ Deregulation during 2013–2021 (right-wing government)
- ▶ Stricter regulation from 2021– (left-wing government)

Temporary work is correlated with reduced fertility

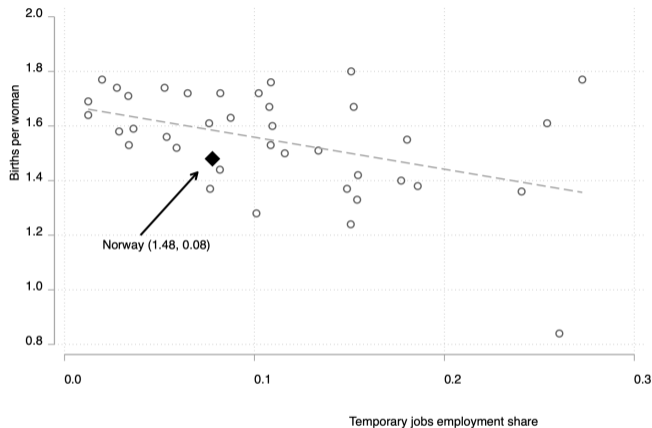


Figure: Cross-country correlation in temporary work share and fertility

Notes: Data sources OECD (work shares) and the World Bank (fertility). Markers show the total fertility rates and temporary employment shares for all workers across gender and age in the most recent year after 2014.

Previous literature

Temporary work is negatively correlated with fertility

- ▶ France (Laudaud, 2021)
- ▶ Germany (Auer and Danzer, 2016)
- ▶ Portugal (Lopes, 2020)
- ▶ Spain (Rica and Iza, 2005, Guner et al., 2021, Martinez-Jimenez and Vall Castelló)

Life-cycle models predict that temporary jobs reduce fertility

- ▶ Portugal (Lopes, 2020)
- ▶ Spain (Guner et al., 2021)

This paper

Research question: How does employment protection deregulation affect fertility?

DiD estimation:

- ▶ A reform in Norway in 2015 lifted restrictions on temporary contracts
- ▶ Not all municipalities adopted the policy change
- ▶ Fertility rates decreased more in municipalities that adopted the policy change

Norwegian data and sample specification

- ▶ Main sample is all individuals aged 25–45 in the period 2011–2019
 - ▶ ages 18–70 for municipality employment analysis
- ▶ Fertility from birth registry
- ▶ Labour market attachment from employer-employee registry
- ▶ Education from education registry
- ▶ Demographic information from the National Population Register
- ▶ Links between registers by personal identifiers

Main issue:

- ▶ Temporary work not well-defined in register data
- Merge with Labor Force Survey to get measure for subsample.

Main outcome variables

Fertility outcomes

- ▶ "Have children": indicator variable equal to 1 if a woman has children
- ▶ "Birth first child": indicator variable equal to 1 if she gives birth to her first child that year
- ▶ "Birth second child" and "Birth third child"

Labor market attachment

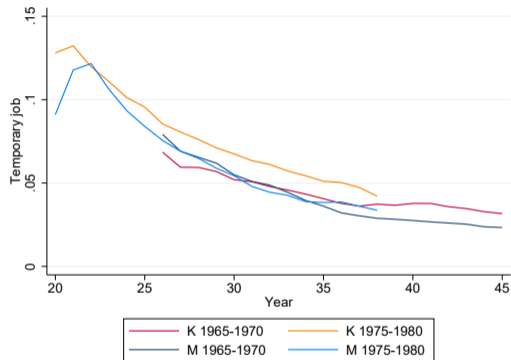
- ▶ "Temporary job": indicator variable equal to 1 if an individual is in a work relationship lasting shorter than a year
- ▶ "Permanent job": indicator variable equal to 1 if an individual is in a work relationship lasting longer than a year

Who works in a temporary job?

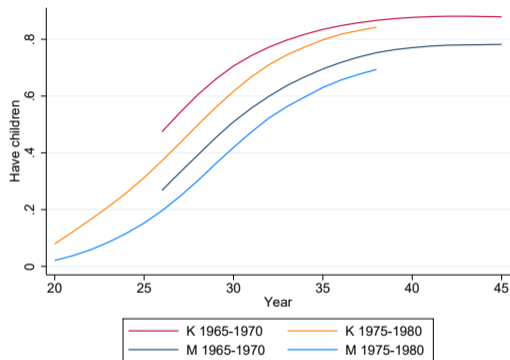
Table: Descriptive statistics, register data

	Permanent job		Temporary job	
	mean	sd	mean	sd
Age	42.14	(12.73)	32.22	(11.76)
Young, age 18 – 24	0.10	(0.30)	0.33	(0.47)
Prime age, age 25 – 54	0.70	(0.46)	0.60	(0.49)
Senior, age 55 – 70	0.20	(0.40)	0.06	(0.24)
Woman	0.48	(0.50)	0.49	(0.50)
Immigrant	0.20	(0.40)	0.30	(0.46)
Low or no education	0.03	(0.18)	0.07	(0.26)
Lower secondary education	0.21	(0.41)	0.23	(0.42)
Upper secondary education	0.35	(0.48)	0.34	(0.47)
Higher education	0.40	(0.49)	0.35	(0.48)
Hourly wage	347.30	(202.89)	274.67	(188.25)
Contracted weekly hours	32.72	(8.76)	26.23	(12.19)
Labor income	570460.28	(378352.45)	339016.83	(316119.98)
N	2181026.00		113536.00	

Age profiles, temporary employment and parenthood



(a) Temporary job



(b) Probability of having children

Figure: Probabilities of having a temporary job and having children across age and cohorts

Is temporary work correlated with fertility?

Table: Regression on lagged temporary job status, register data

	1	2	3	4	5	6
Temporary employed	-0.16*** (0.0010)	-0.16*** (0.0010)	-0.058*** (0.00092)	-0.044*** (0.00093)	-0.044*** (0.00093)	-0.041*** (0.00091)
N	4938029	4938029	4938029	4733557	4733557	4733557
Year		✓	✓	✓	✓	✓
Age			✓	✓	✓	✓
Education				✓	✓	✓
Immigrant					✓	✓
Municipality						✓

The Norwegian reform

- ▶ July 2015: Norwegian government lifted restrictions on temporary contracts
 - ▶ Before reform: Temporary contracts only allowed under special circumstances
 - ▶ After reform: Temporary contracts (up to one year) allowed for all regular jobs
 - ▶ National legislation, but local variation in implementation
 - ▶ Municipal political majorities could overrule the national policy
 - ▶ “Refusing municipalities” did not allow free use of temporary contracts
- Quasi-experimental variation in change in temporary job share between municipalities

Identification and estimation

$$y = \alpha + \beta Treated \times After + \gamma' \mathbf{M} + \eta' \mathbf{T} + \lambda' \mathbf{X} + e \quad (1)$$

- ▶ y is a measure of fertility
- ▶ $Treated \times After$ is 1 \geq 2015 for individuals who lived in a treated municipality in 2015.
- ▶ \mathbf{M} and \mathbf{T} are municipality and year indicators
- ▶ \mathbf{X} are age, origin, education, indicators

Did the reform affect temporary employment?

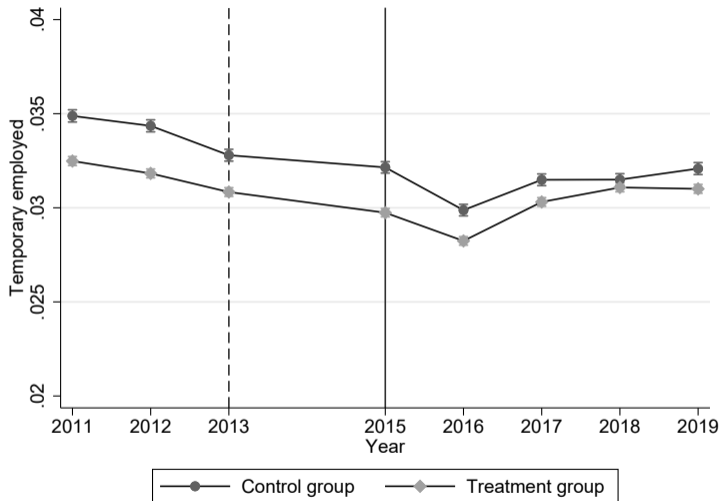


Figure: Share with temporary contract in treatment and control (“refusing”) municipalities

Did the reform affect temporary employment?

Table: DiD estimates of reform treatment on employment variables, women and men

	Women		Men	
	Permanent job	Temporary job	Permanent job	Temporary job
Treated post reform	-0.0044** (0.0021)	-0.00015 (0.00057)	-0.0057* (0.0031)	0.0022*** (0.00081)
ymean	0.69	0.039	0.73	0.037
ysd	0.46	0.19	0.44	0.19
N	5565758	5565758	5835196	5835196

Identification and estimation

The reform (potentially) affected

- ▶ Actual individual employment status
- ▶ Local employment and perceived uncertainty

We are interested in the combined effect of these factors → the reduced form effect

Reduced form event study results

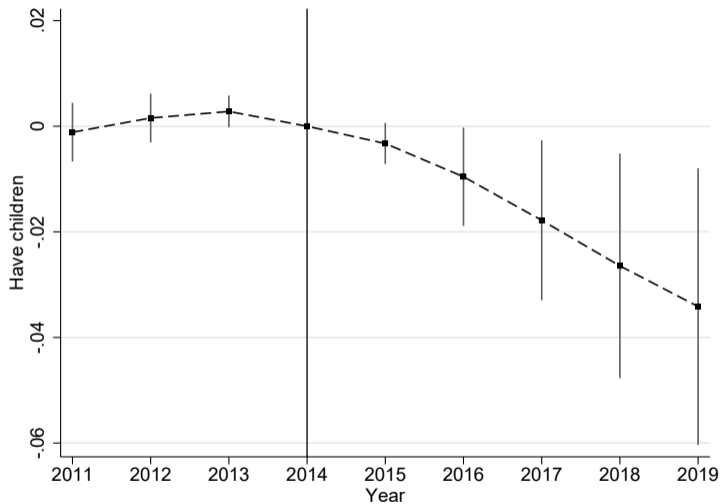
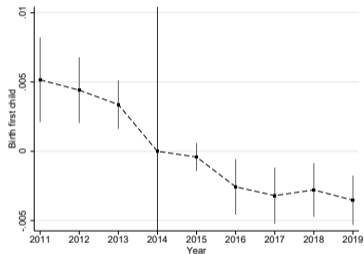
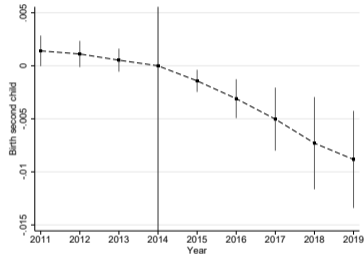


Figure: The probability of having children, women

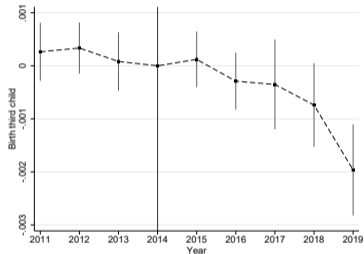
Reduced form event study results



(a) Birth first child



(b) Birth second child



(c) Birth second child

Figure: The probability of giving birth, women

Regression results

Table: DiD estimates of reform treatment on employment variables, women

	Have children	Birth first child	Birth second child	Birth third child
Treated post reform	-0.019* (0.011)	-0.0057*** (0.0020)	-0.0058*** (0.0021)	-0.00080*** (0.00024)
ymean	0.71	0.026	0.027	0.011
ysd	0.45	0.16	0.16	0.11
N	5755299	5755299	5755299	5755299

Summary

- ▶ Temporary employment is common at childbearing ages - and more so in younger cohorts in Norway
- ▶ In July 2015, the Norwegian government lifted restrictions on temporary employment
- ▶ Temporary work increased after the reform
- ▶ Fertility declined

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Where in the economy are temporary jobs?

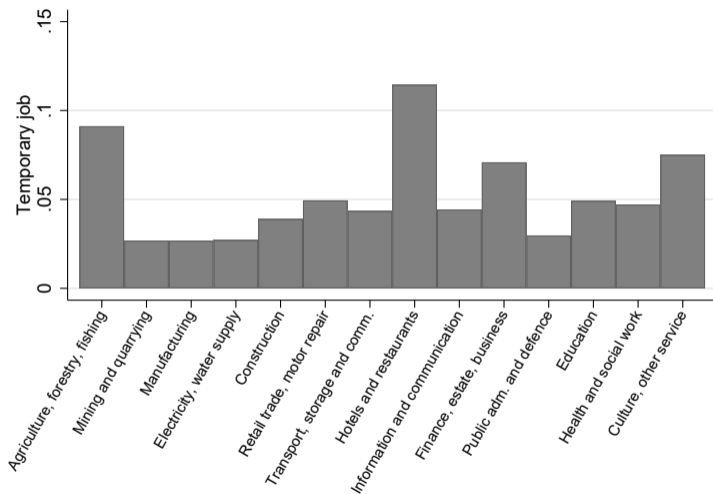


Figure: Shares of temporary jobs across industries, register

Where in the economy are temporary jobs?

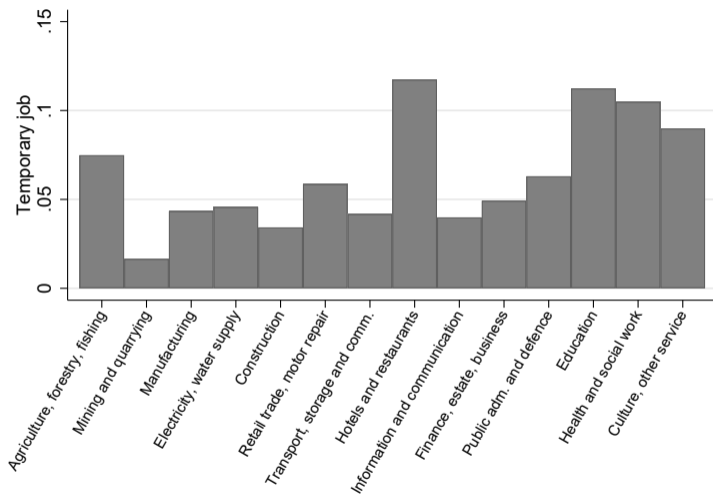


Figure: Shares of temporary jobs across industries, Labor Force Survey

Who works in temporary work?

Table: Descriptive statistics, Labor Force Survey

	Permanent job		Temporary job	
	mean	sd	mean	sd
Age	43.38	(13.21)	31.73	(13.18)
Young, age 18 – 24	0.09	(0.28)	0.35	(0.48)
Prime age, age 25 – 54	0.67	(0.47)	0.52	(0.50)
Senior, age 55 – 70	0.23	(0.42)	0.07	(0.26)
Woman	0.47	(0.50)	0.59	(0.49)
Immigrant	0.17	(0.37)	0.23	(0.42)
Low or no education	0.02	(0.15)	0.03	(0.18)
Lower secondary education	0.22	(0.41)	0.28	(0.45)
Upper secondary education	0.35	(0.48)	0.30	(0.46)
Higher education	0.41	(0.49)	0.39	(0.49)
Fulltime, 37+ hours	0.76	(0.42)	0.49	(0.50)
Long parttime, 20-37 hours	0.12	(0.32)	0.21	(0.41)
Short parttime, 1-20 hours	0.11	(0.32)	0.28	(0.45)
Labor income	574255.41	(420700.00)	295762.86	(219477.95)
N	11541.00		938.00	

Is temporary work correlated with fertility?

Table: Regression on lagged temporary job status, LFS

	1	2	3	4	5	6
Temporary employed	-0.12*** (0.015)	-0.12*** (0.015)	-0.056*** (0.014)	-0.047*** (0.014)	-0.047*** (0.014)	-0.048*** (0.014)
N	12266	12266	12266	12266	12266	12266
Year		✓	✓	✓	✓	✓
Age			✓	✓	✓	✓
Education				✓	✓	✓
Immigrant					✓	✓
Municipality						✓

Did the reform affect temporary employment?

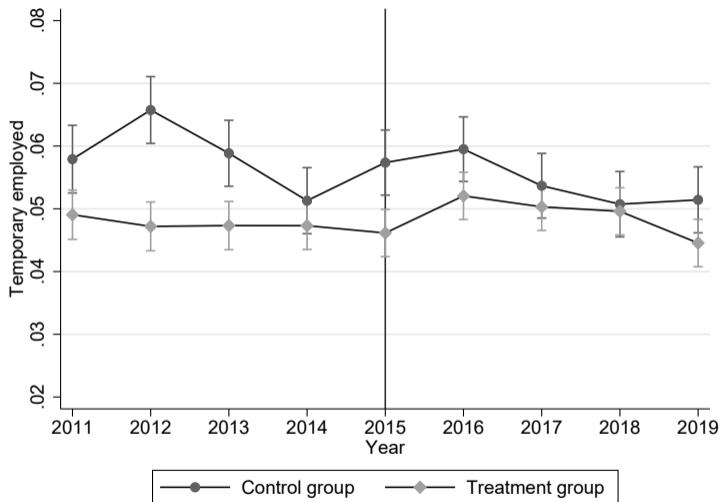


Figure: Share with temporary contract in treatment and control (“refusing”) municipalities, LFS