

Fertility, Female Labor Supply, and Family Policy

Daniela Ujhelyiova

University of Würzburg

8. Juli 2010

- 1 Motivation
- 2 Related Literature
- 3 Model
- 4 Simulation Results
- 5 Conclusion

1 Development of Total Fertility Rates

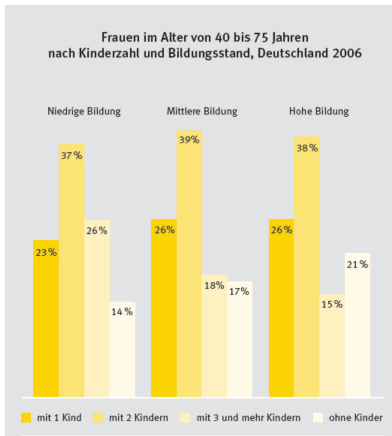
Declining total fertility rates (TFRs) in the last few decades



Quelle: Statistisches Bundesamt, Geburten in Deutschland, 2007

1 Development of Total Fertility Rates

Difference in TFRs conditional on educational background



② Female Labor Market Participation (FLMP)

In the past: negative correlation between fertility and FLMP

In 2005: sign of correlation turned positive

2 Female Labor Market Participation (FLMP)

In the past: negative correlation between fertility and FLMP

In 2005: sign of correlation turned positive

Is a joint increase in TFR and FLMP possible?

What are the central common determinants of women's childbearing and labor supply decisions?

What We Do

We simulate alternative reforms of child benefits and family taxation in Germany, since this country has an extremely negative past record regarding TFRs and FLMP

What We Do

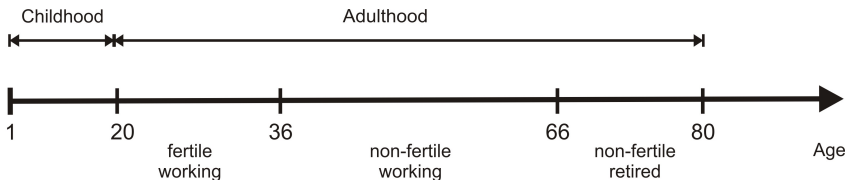
We simulate alternative reforms of child benefits and family taxation in Germany, since this country has an extremely negative past record regarding TFRs and FLMP

... in order to increase the fertility rate (and female labor supply?) and the long-run growth rate of the economy.

Literature of calibrated models on economics of the family

- Search-on-the-Job Models
 - Da Rocha, Fuster (IER, 2006)
 - Erosa, Fuster, Restuccia (RED, 2002)
- General Equilibrium Models
 - Conesa (2000)
 - Doepke, Hazan, Maoz (2008)

The Life Cycle



Children

- newborns: younger than 2 years
- time-intensive: aged between 2 and 6 years
- non-time-intensive: aged between 6 and 20 years

The Household

- overlapping generations of married couples with children
- three different educational (skill) classes
- variable female labor supply, fixed male labor supply
- taxes on consumption and income
- uncertainty about fertility
- no bequest motive

Decision about Number and Timing of Children

- one child per period
- children as durable consumption good

$$u(c_j, l_j, n_j) = \left\{ \left[c_j^{\alpha_1} l_j^{1-\alpha_1} \right]^{1-\frac{1}{\rho}} + \alpha_2 n_j^{1-\frac{1}{\rho}} \right\}^{\frac{1-\frac{1}{\gamma}}{1-\frac{1}{\rho}}}$$

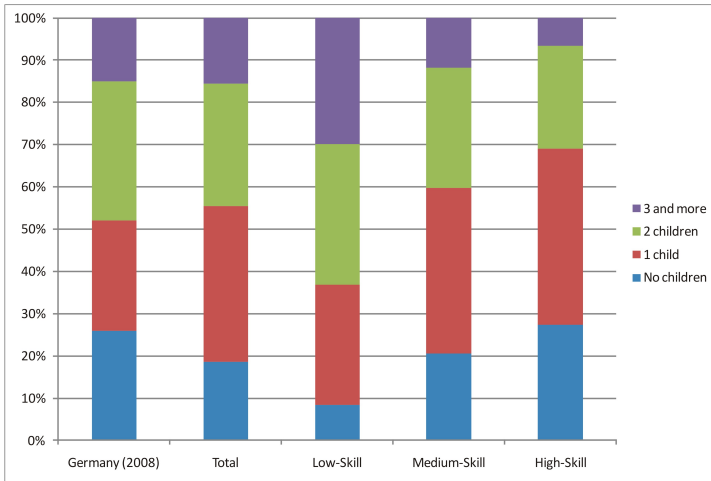
- monetary and time costs of children
- direct and in-kind family benefits
- human capital (productivity) depreciation for women with children

- endogenous growth rate (native and immigration)
- Cobb-Douglas production function
- PAYG pension system (flat pension)

The initial equilibrium - calibration targets

	Model solution	Germany 2007/2008
Total fertility rate (TFR)	1.46	1.38
Total mean age at childbirth (in years)	29.9	29.8
Total mean age at first child (in years)	27.9	26.1
Skill-specific fertility rates		
Low-Skilled	1.96	1.94
Middle-Skilled	1.34	1.35
High-Skilled	1.11	1.14
Skill-specific share of childless (in %)	8/21/27	11/16/26

Aggregate and skill-specific family structures



Simulation Approach

- steady state comparison
- scenarios with exogenous and endogenous population growth

Reform of Family Benefits

- R1** increase of direct transfers per child
- R2** increase of in-kind benefits per child, reduction of time costs of children
- R3** increase of in-kind benefits, reduction of time costs of children and decrease in direct transfers

R1: Child Benefits		
	exogenous growth	endogenous growth
TFR	1.82	1.79
TFR(1)	2.58	2.50
TFR(2)	1.66	1.62
TFR(3)	1.24	1.26
τ_C	4.1	3.1
τ	0.0	-3.9
A	3.0	0.1
L^f	-10.8	-5.0
Y	-3.1	0.9

	R1	R2	R3
	Child Benefits	In-kind Transfers	Benefit Structure
TFR	1.79	1.88	1.52
TFR(1)	28	26	-7
TFR(2)	21	30	7
TFR(3)	14	34	20
τ_c	3.1	4.2	0.6
τ	-3.9	-4.8	-0.8
A	0.1	-2.7	-2.2
L^f	-5.0	-1.7	2.9
Y	0.9	2.4	1.3

Reform of Family Taxation

Joint Filing → Family Taxation

- increase in TFR
- reduction of income tax revenue
- especially high-skilled women increase childbirth
- reduction in female labor supply
- high fraction of childless high-skilled families
⇒ negative effects from higher taxes dominate

- Analysis of alternative policy reforms in order to increase the TFR and FLMP
- Due to higher taxation households are typically hurt by the effects of family policy, but they benefit from the change in the population structure
- A joint increase of fertility rate and female employment rate as observed in cross-country studies is possible (change from direct to in-kind benefits)

- Analysis of alternative policy reforms in order to increase the TFR and FLMP
- Due to higher taxation households are typically hurt by the effects of family policy, but they benefit from the change in the population structure
- A joint increase of fertility rate and female employment rate as observed in cross-country studies is possible (change from direct to in-kind benefits)

Different reactions of skill-specific TFRs and FLMPs:

- Higher family benefits mainly increase fertility of low-skilled families
- Reform of family taxation reduces female labor force participation especially of high-skilled women

- Employment uncertainty
- Modeling singles without children
- Transition path, LSRA compensation payments
- Life span uncertainty