

Social protection and fertility



Do social security payments influence on total fertility rate?

Evidence from OECD countries

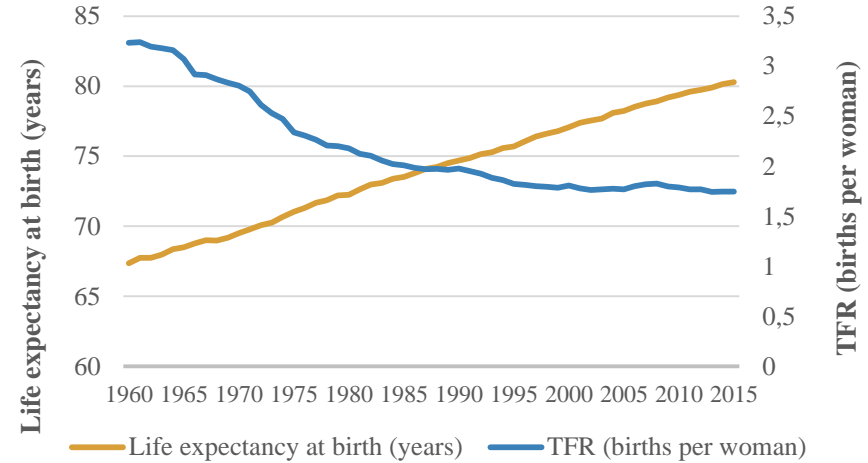


Main purpose:

To observe the changes in a demographic situation of OECD countries from the economic perspective. Implementation of this study enables to define whether selected countries could affect their population growth rates and improve their capital labor ratios and labor market conditions by introducing appropriate social security programs.

Why OECD?

The reason for choosing OECD countries is that during the last decades the demographic situation in these countries has changed significantly. They faced significant drop in a fertility rate, which was accompanied with increase in a life expectancy. For instance, the total fertility rate (TFR) for these countries, was 3.23 in 1960 and by 2015, this figure declined and became 1.75, while the life expectancy for a population in this period increased approximately from 67 to 80 years. This led to deterioration of labor market conditions and economic situation as a whole.



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Literature Review

- Becker and Barro (1988): demand theory of fertility which is also known as “Parental altruism” model was created.
- Caldwell (1978): “Reverse altruism” or “Caldwell type” model based on old-age security motivation was created.
- Most of empirical analyses (Swidler (1983), Hohm (1975), Cigno et al. (2002), Boldrin et al. (2005)) concluded that social contributions are said to decrease the willingness to have children.

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Methodology



Model

- Fertility model under utility maximizing framework, in which children are taken as a normal good is used.
- The model to be estimated by this study is as follows:

$$TFR = \beta_0 + \beta_1 FamPMT + \beta_2 PenBen + \beta_3 Rural + \beta_4 LogGDP + \beta_5 RealIR + \beta_6 IMR + u$$

- TFR is total fertility rate and it is considered as endogenous variable in the model;
- *FamPMT* is benefit payments provided to families with children;
- *PenBen* are expenditures on pension payments;
- *Rural* is the percent of a rural population;
- *LogGDP* is log transformed form of real GDP;
- *RealIR* is real interest rate;
- *IMR* is infant mortality rate.



Data

Figures for the pension and family benefits are obtained from Organization for Economic Co-operation and Development (OECD) data on Social Protection. Statistics on other variables, including fertility rate, are taken from World Bank database of development indicators (WDI). Period covered is from 1980 to 2013 for 19 OECD countries.

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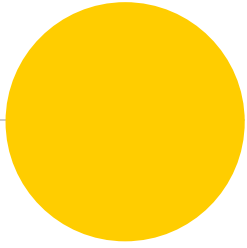
Results



Hausman test

- ◉ H_0 : preferred model is random effects
(difference in coefficients not systematic)
- ◉ H_a : preferred model is fixed effects
(difference in coefficients systematic)
- ◉ $Chi^2(6)=4,62$
- ◉ $Prob>Chi^2=0,59$ (fail to reject H_0)

Random-effects IV regression; Dependent variable-TFR			
	Model 1	Model 2	Model 3
<i>FamPMT</i>	0.0690*** (0.0132)	0.0614*** (0.0158)	0.116*** (0.0167)
<i>PenBen</i>	-0.0477*** (0.00483)	-0.0518*** (0.00530)	-0.0601*** (0.00778)
<i>logGDP</i>		-0.0174 (0.0426)	0.220*** (0.0739)
<i>Rural</i>		-0.00504** (0.00225)	-0.00485** (0.00215)
<i>IMR</i>			0.0278*** (0.00540)
<i>RealIR</i>			-0.00478** (0.00227)
<i>Constant</i>	1.844*** (0.0506)	2.178*** (0.454)	-0.488 (0.821)
<i>Observations</i>	574	574	474
<i>Number of ID</i>	19	19	19
Wald X^2	102.99	105.99	218.08
Prob> X^2	0.0000	0.0000	0.0000
X^2 critical (95% conf level)	5.99147	9.48773	12.5916
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			
Notes:			
Instrumented: FamPMT PenBen			
Instruments: RurallogGDP RealIR IMR L2.FamPMT L2.PenBen			



Thanks for attention!
