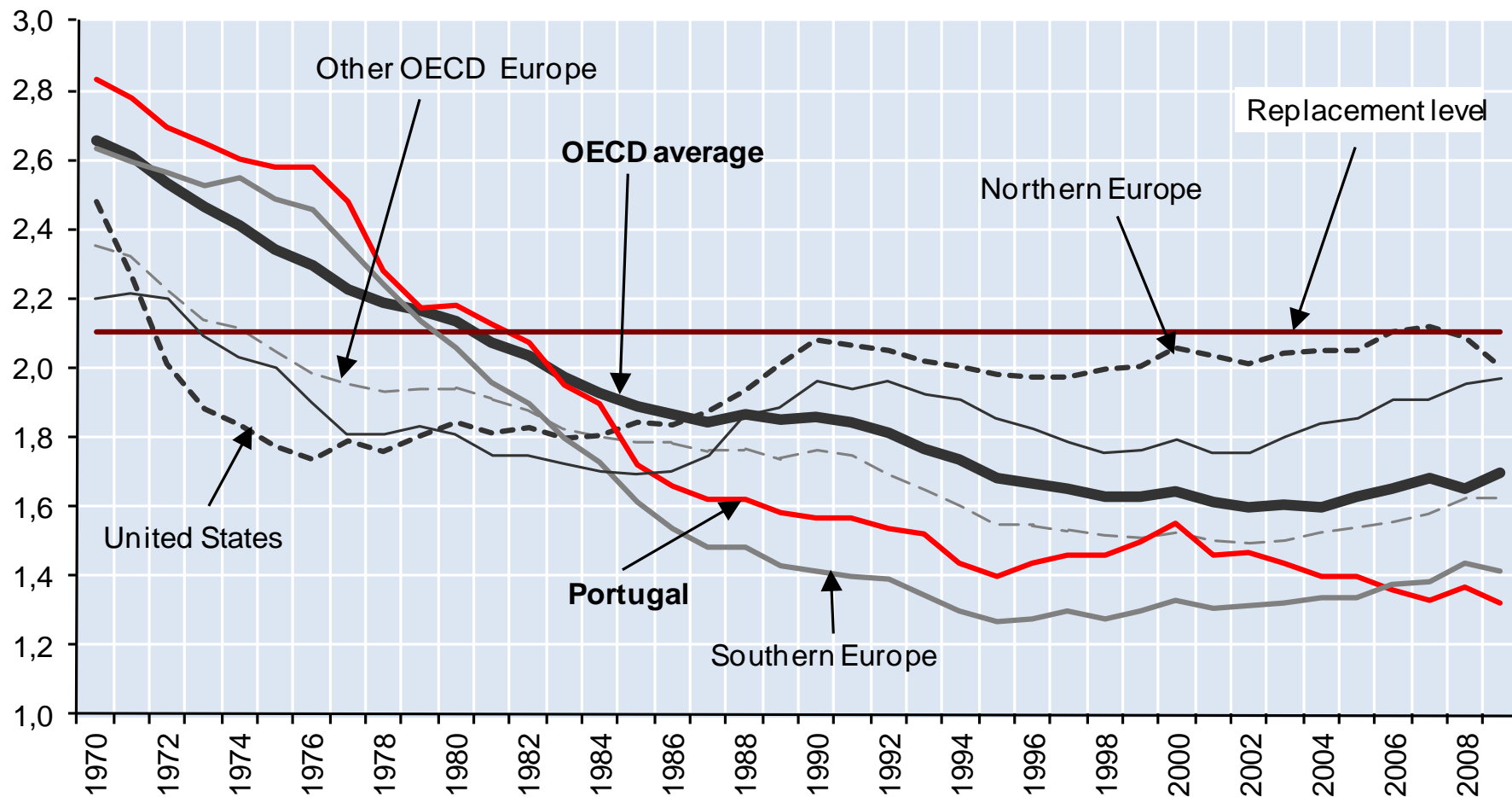


Human Fertility and OECD countries economic development

*Lisbon Conference on European and
Portuguese Fertility decline
17th February 2012*

Olivier Thévenon
OECD and INED
olivier.thevenon@oecd.org

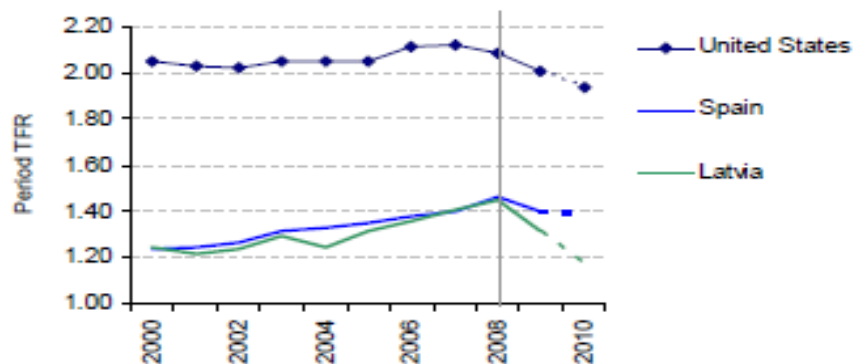
Fertility trends in OECD countries



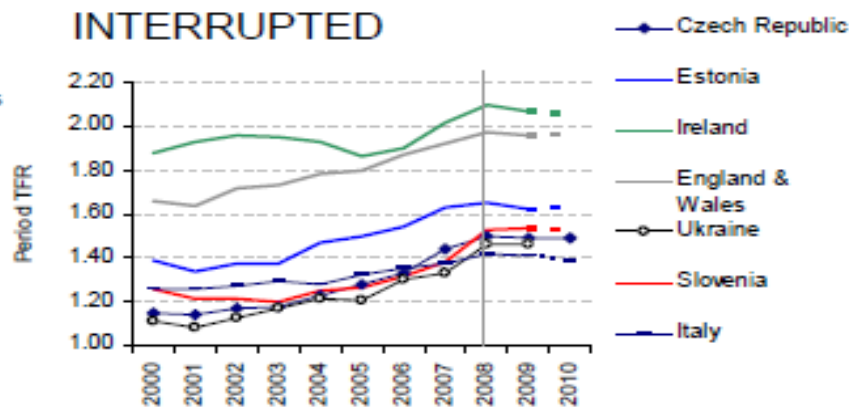
Source: OECD Family Database

Differentiated fertility responses to the recession, 2009-2010

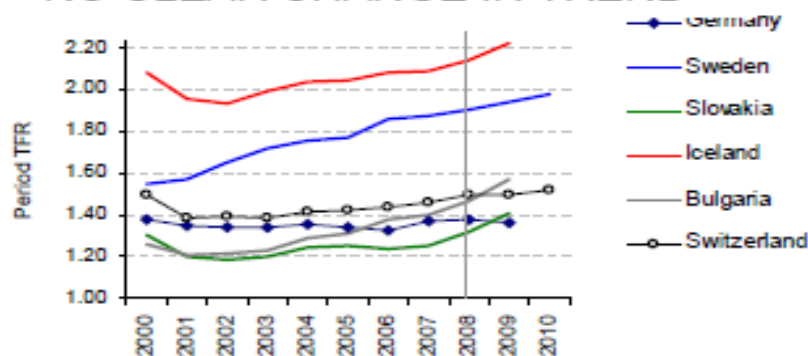
TREND REVERSAL



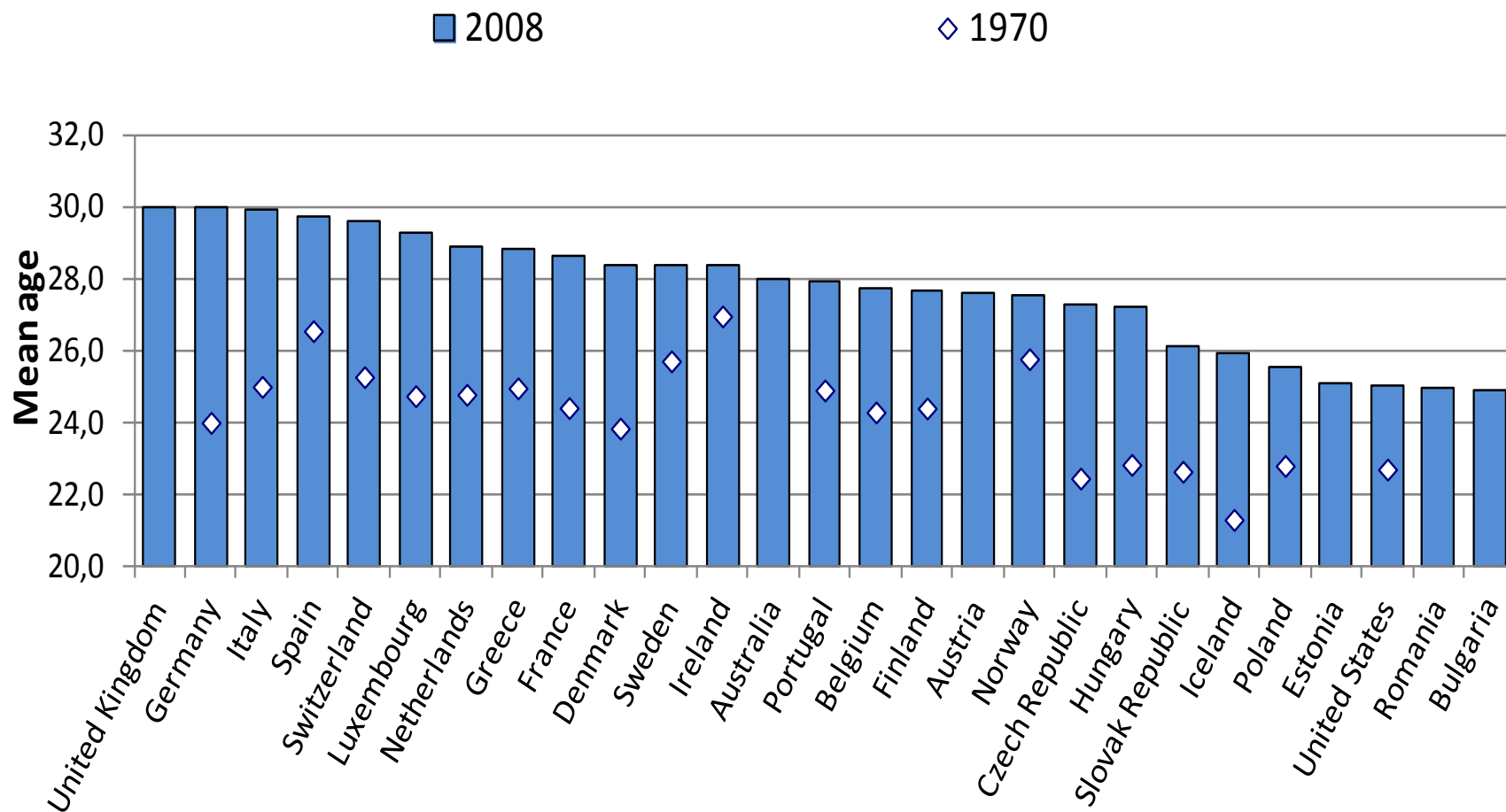
FERTILITY RISE INTERRUPTED



NO CLEAR CHANGE IN TREND

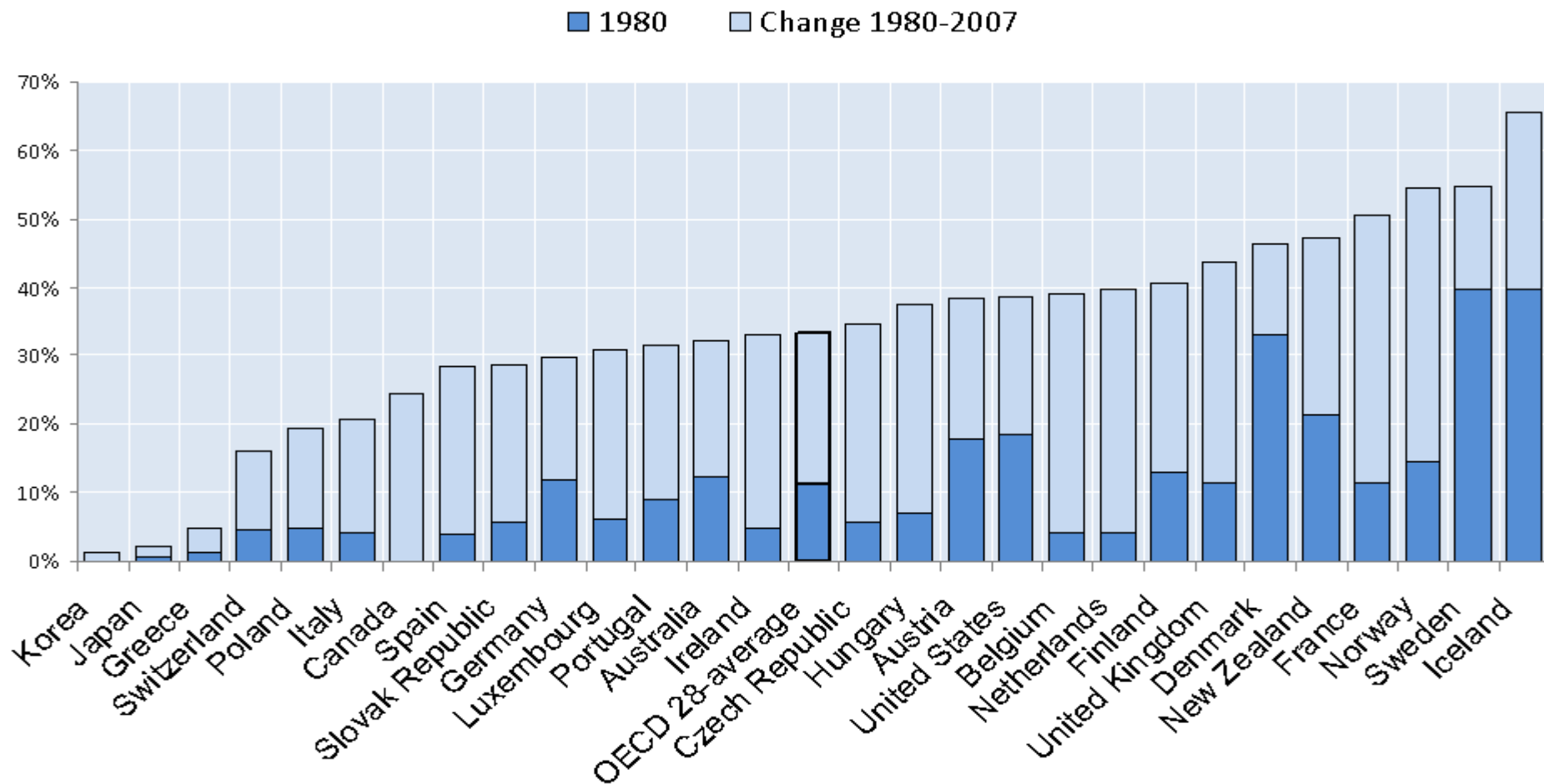


Postponement of first childbirth



Source: OECD Family Database

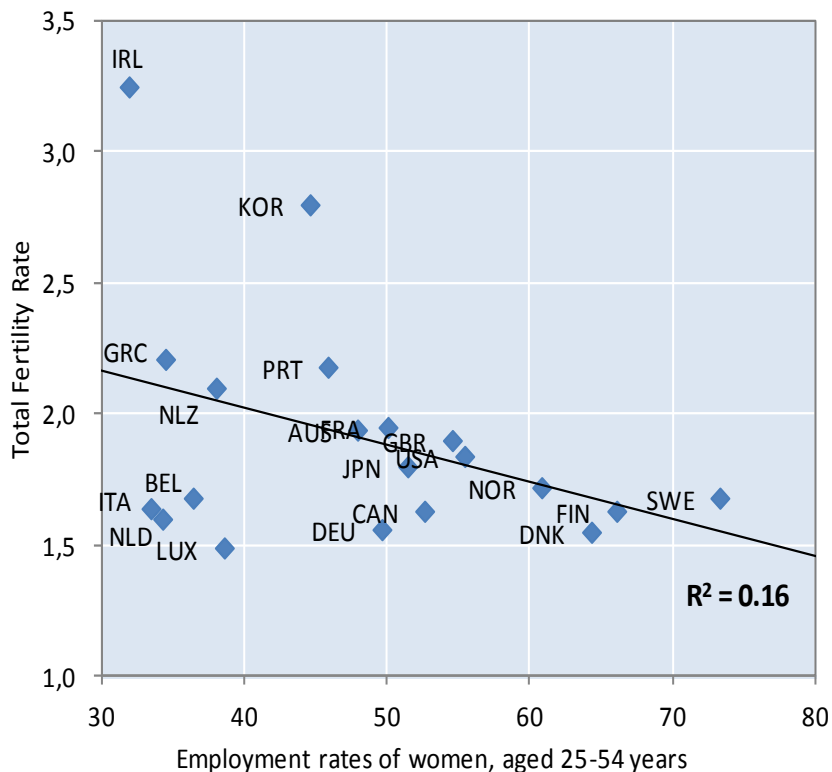
Increase in out-of-wedlock childbirths



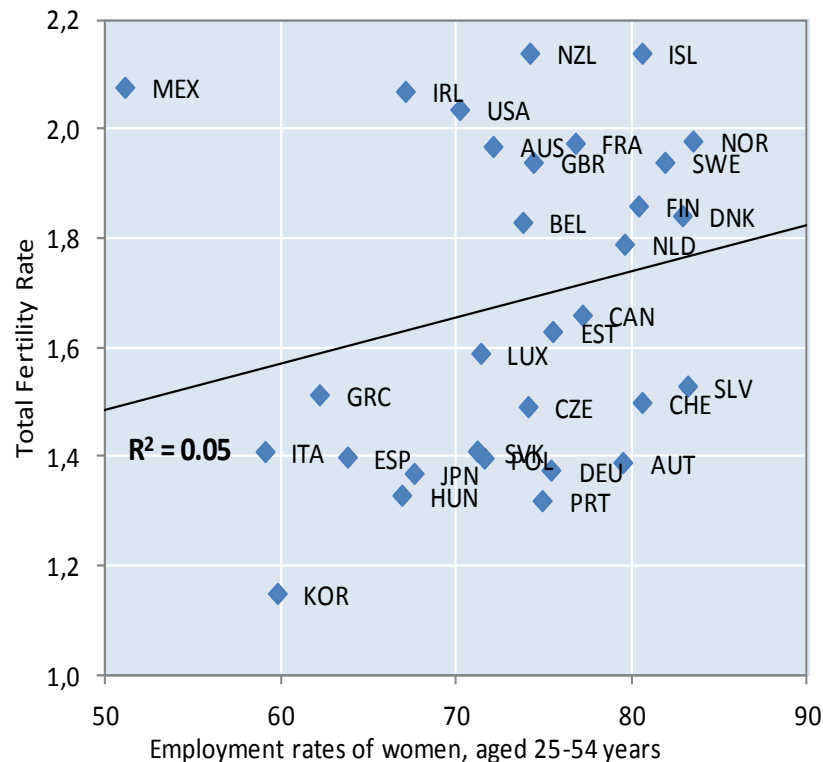
Source: OECD Family Database

Fertility rates are higher where female employment rates are also higher

1980

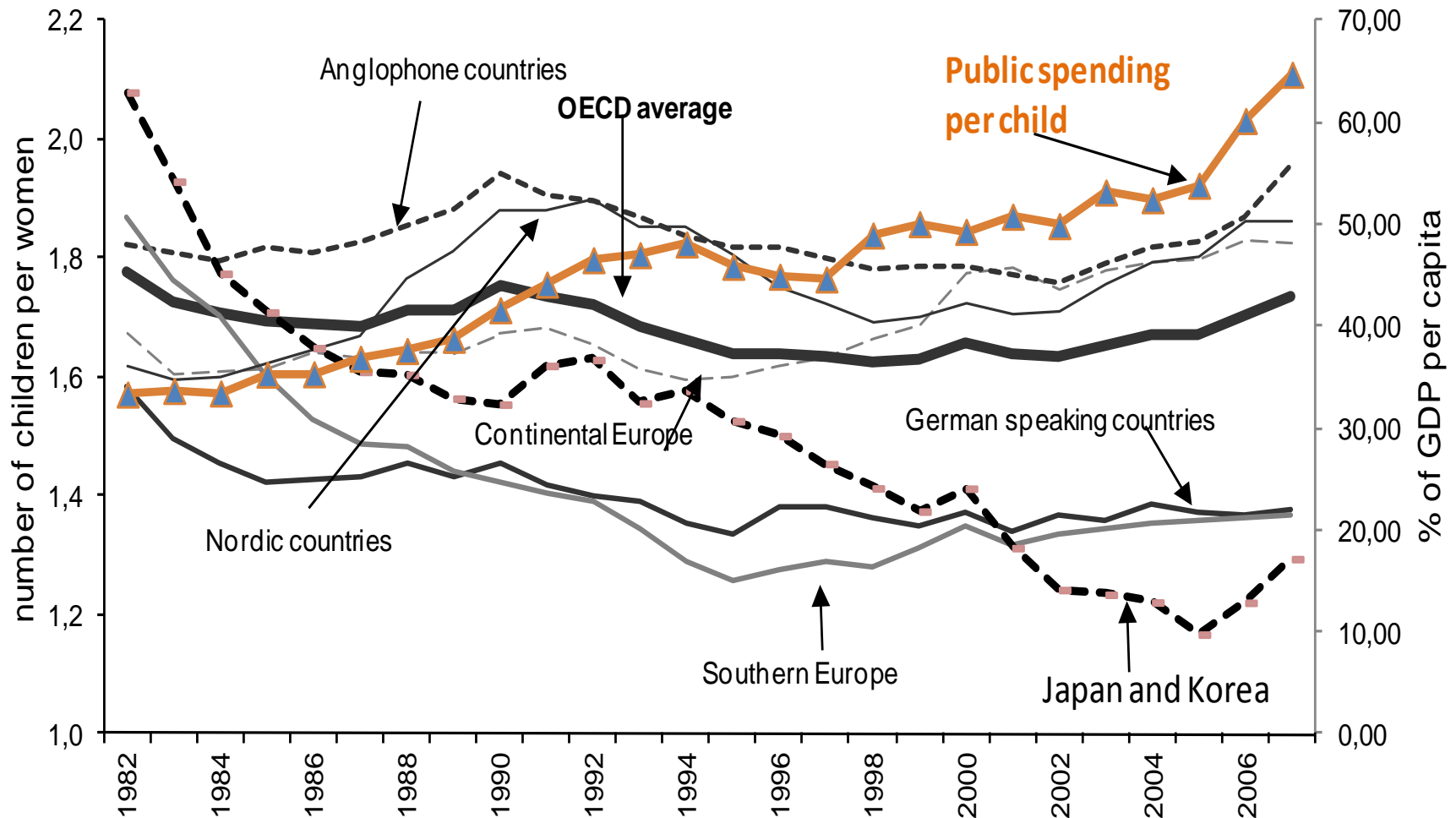


2009

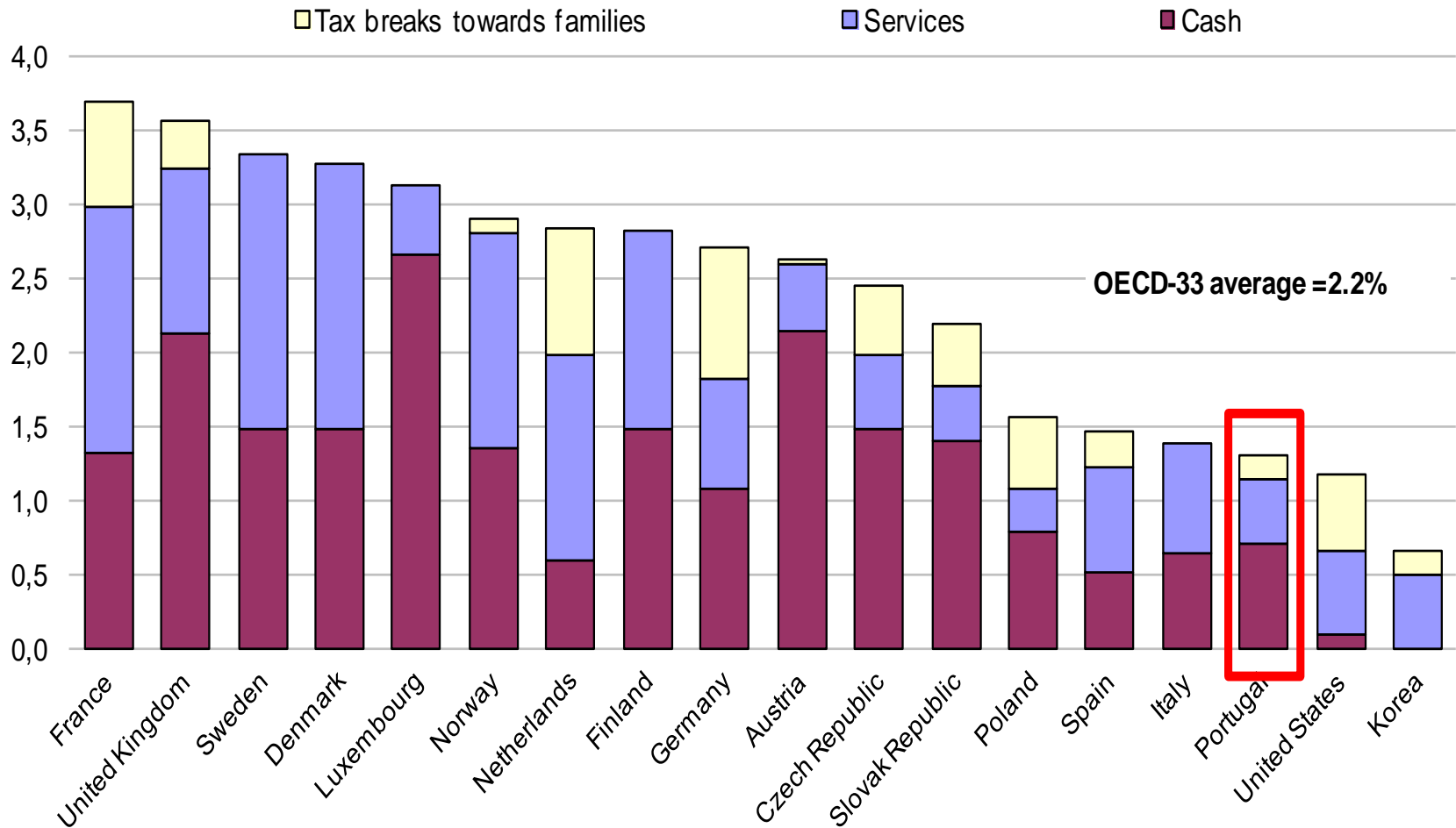


Source: OECD (2011), *Doing Better for Families*, OECD, Paris.

Trends in fertility and public expenditures per child

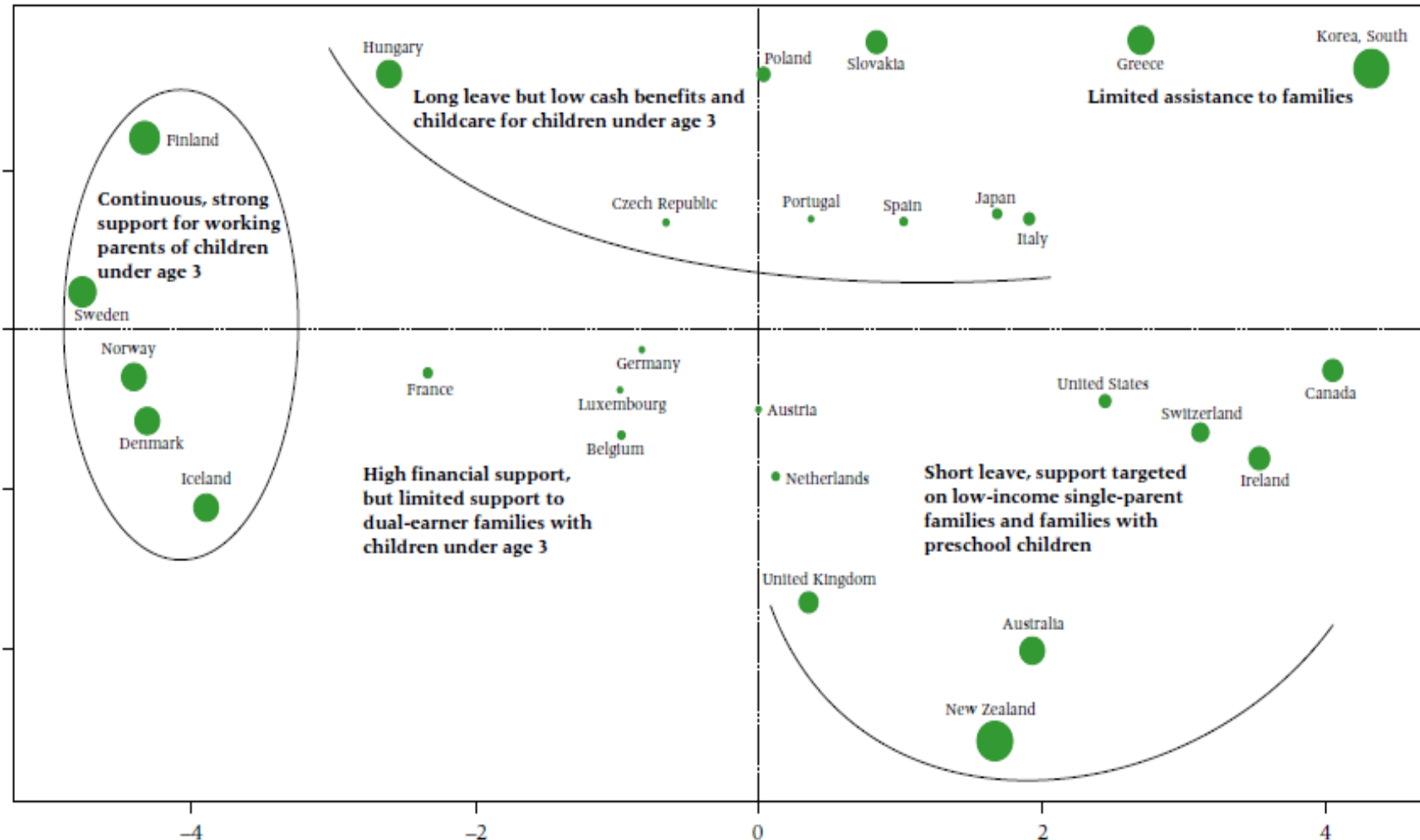


Variable “Investments” in families - 2007



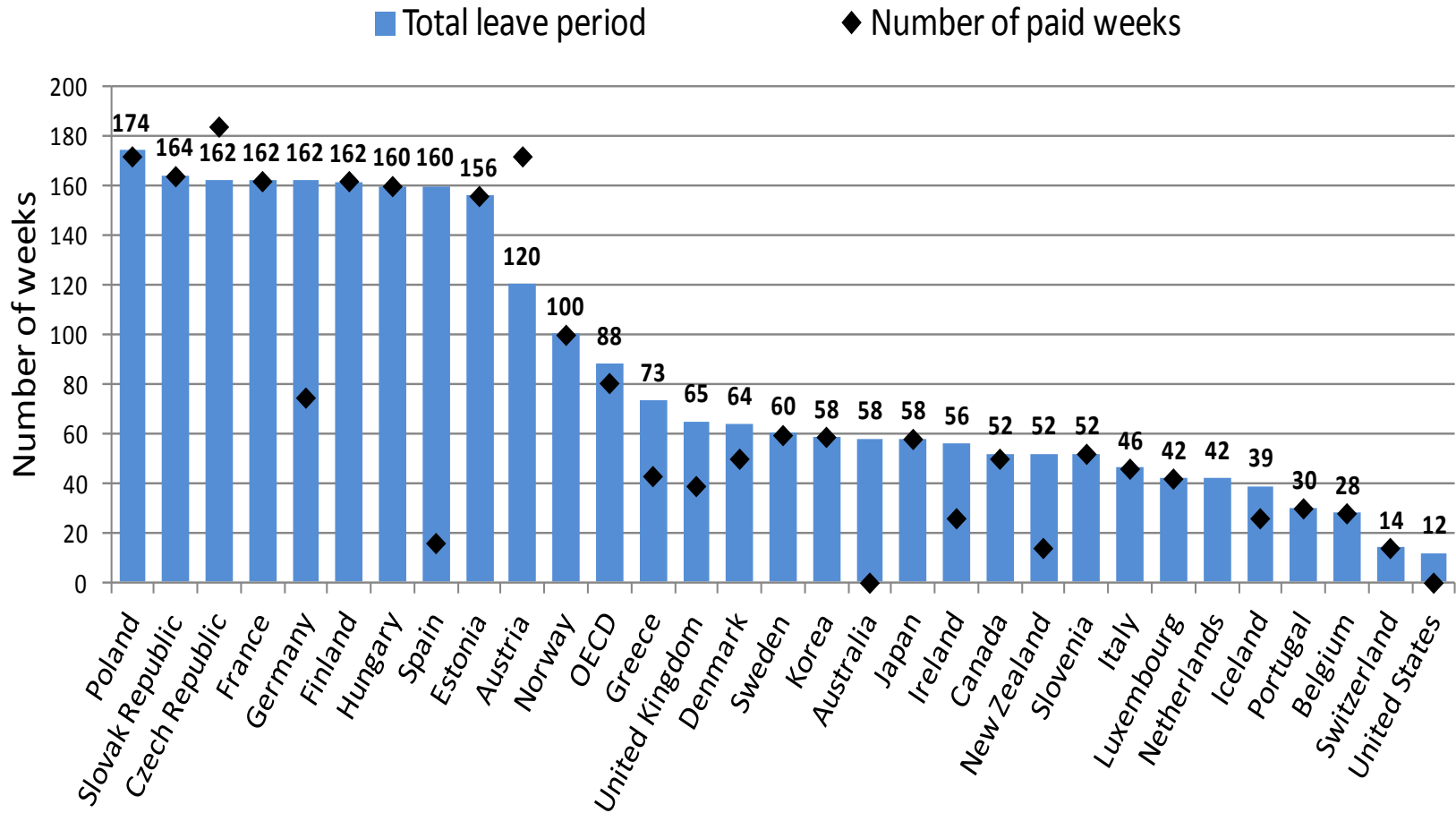
Source: OECD (2011), *Doing Better for Families*, OECD, Paris.

Family Policy Patterns in OECD countries



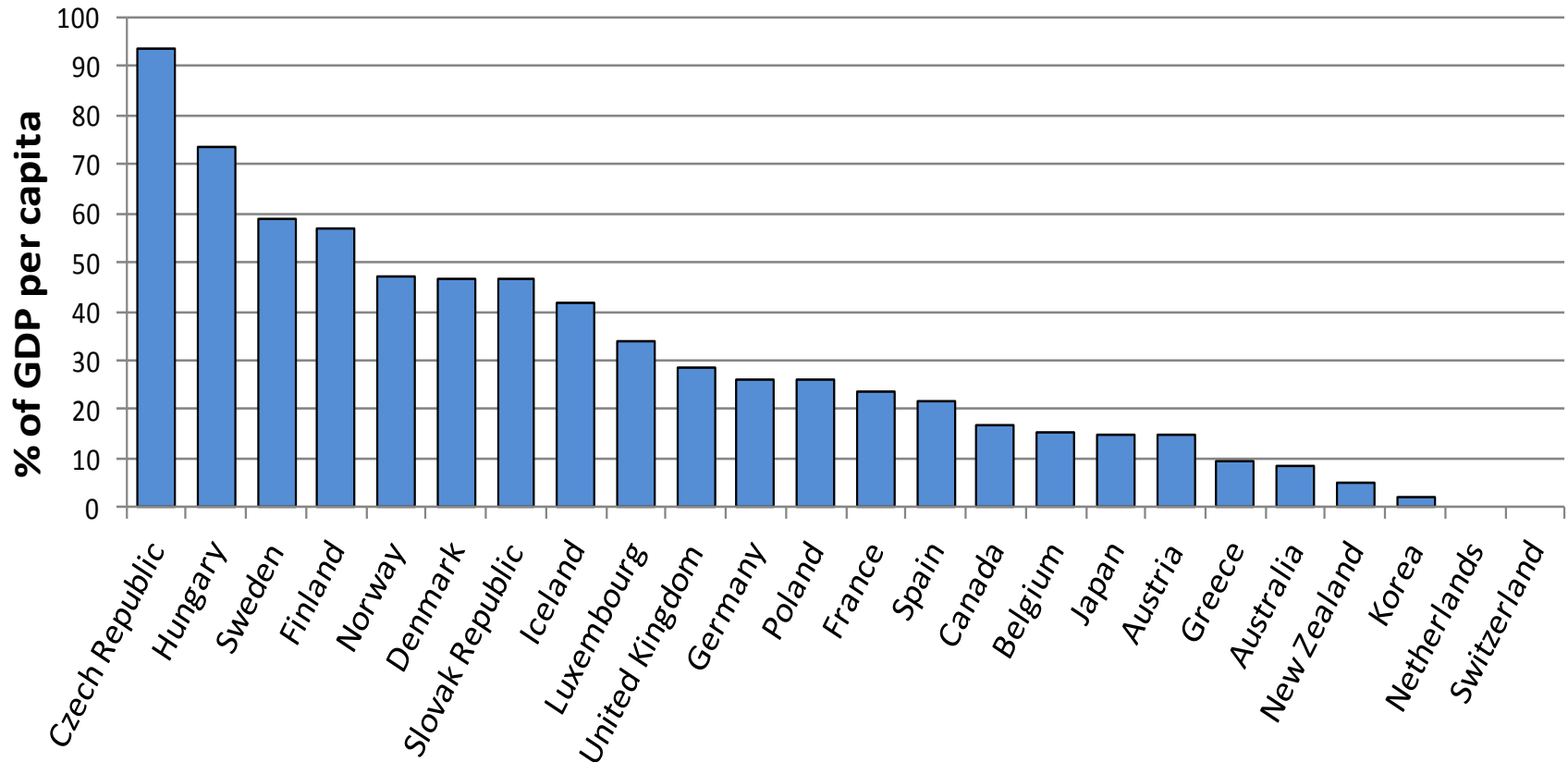
Source: Thévenon (2011), « Family Policies in OECD countries: A Comparative Analysis », *Population and Development Review*, 37(1):57-87.

Differences in Parental Leave Policies have increased



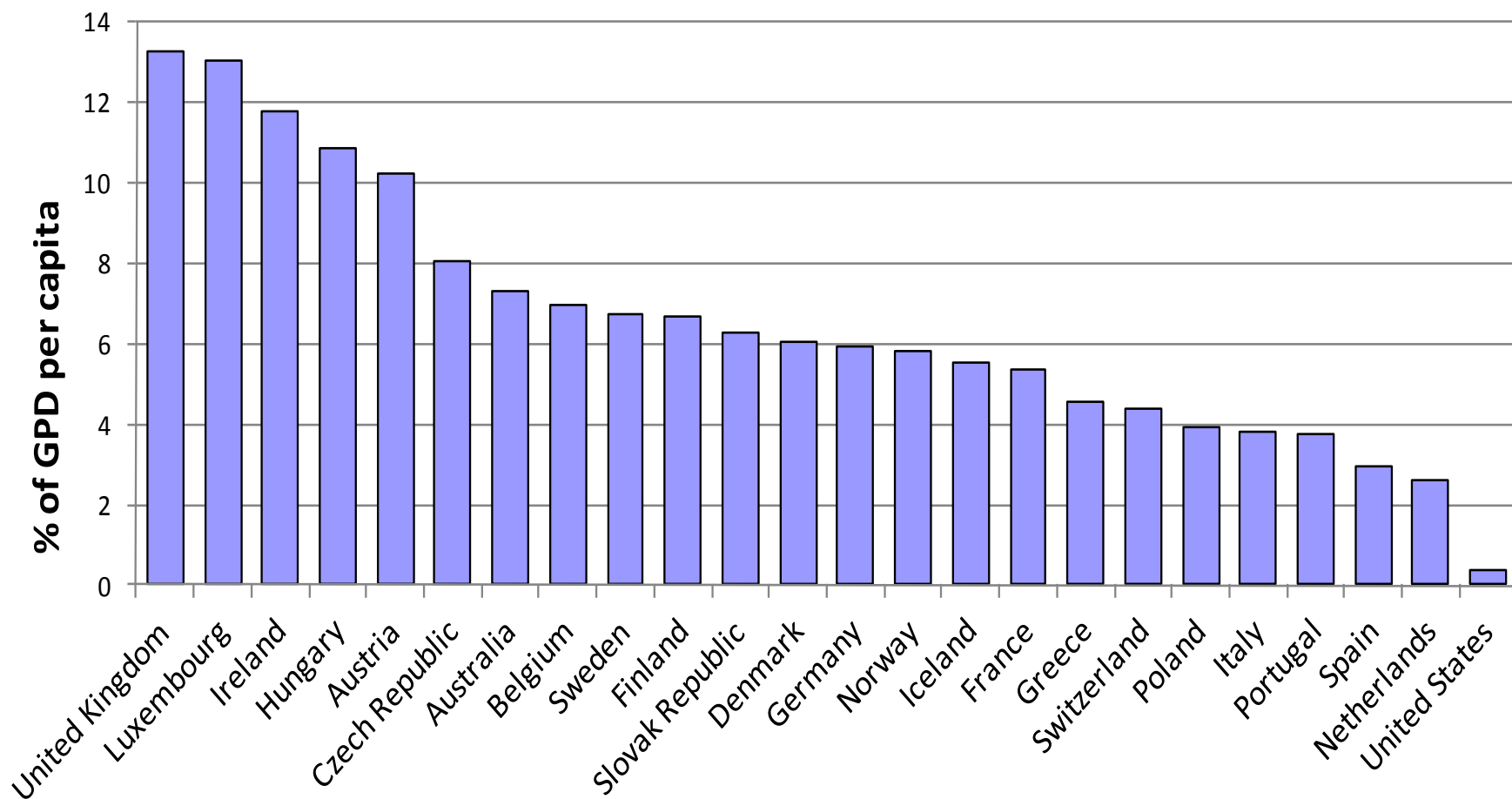
Paid weeks women can take in one block after childbirth

Income support at and per childbirth (parental leave benefit, birth grants)

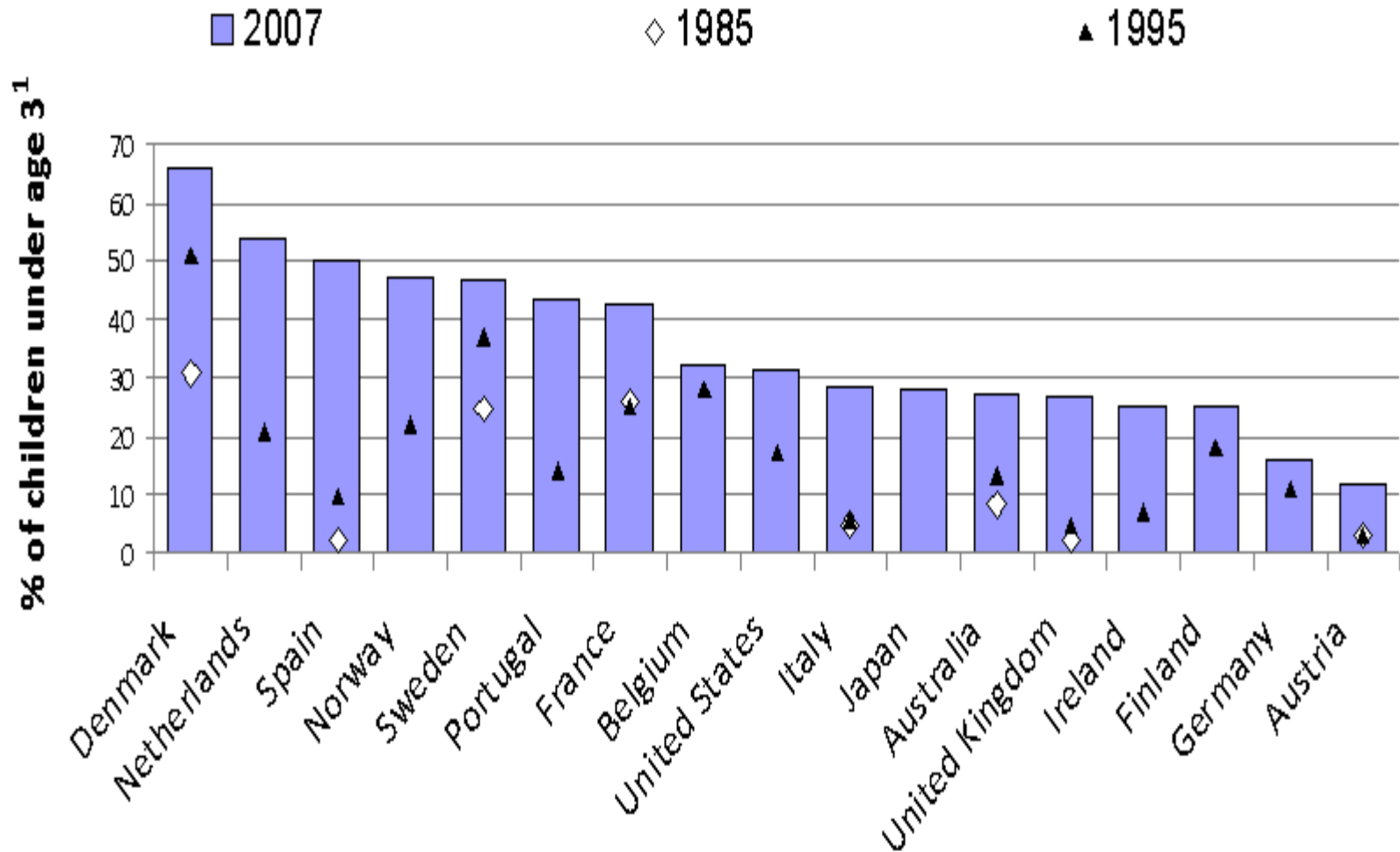


Spending per childbirth in % of GDP per capita – including maternity/parental leave benefits, birth grants.

In-cash support per children under 20



Childcare service coverage for children under 3



What drives fertility trends?

- How to explain fertility “rebound”?:
 - The end of the process of childbearing postponement
 - Change in the relationships between economic development and fertility (Myrskylä et al., 2009).
 - Institutional factors: attitudes/norms towards childbearing, policies
- Two-step analysis:
 - Analysis of the relationships between economic development (e.g. increase in GDP per capita) and fertility trends?
(26 OECD countries over 1960-2007)
 - Influence of family policies on fertility trends, over and above the influence of GDP.
(18 OECD countries over 1980-2007)

The relation btw economic development and fertility rates turns positive

Equation

$$TFR_{i,t} = \beta_1 + \beta_2 * \ln GDPpc_{i,t} + \beta_3 * \ln(GDPpc_{i,t})^2 + \varepsilon_{i,t}$$

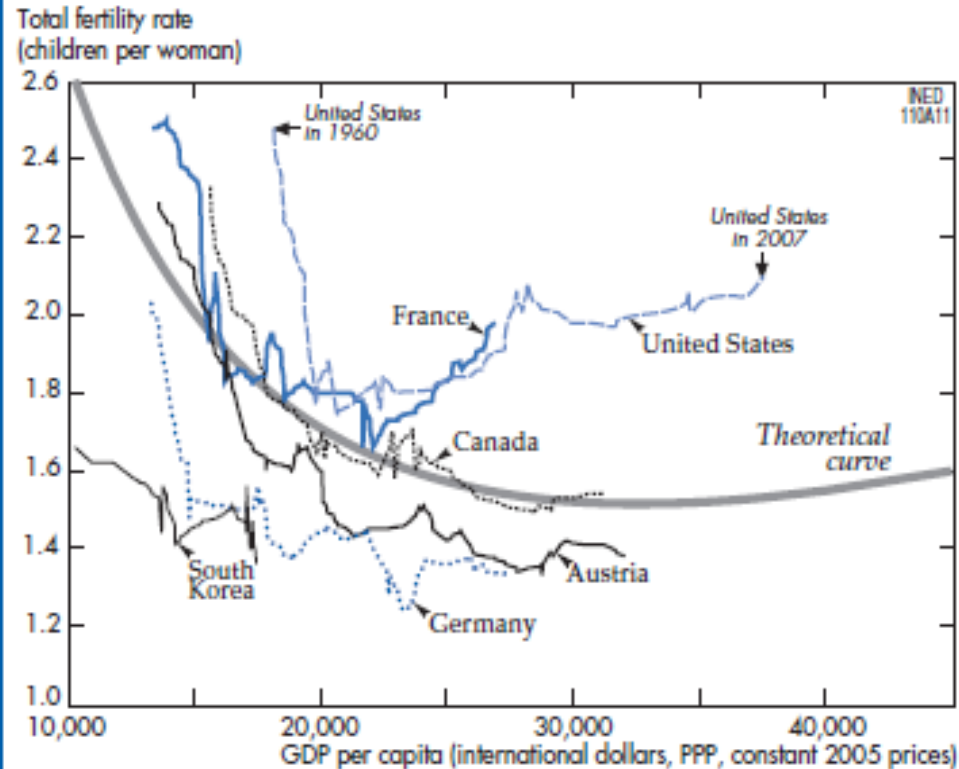
Controls:

- Births postponement: tempo-adjusted TFR, MAB
- Education, female employment rates
- OVB, non-stationnarity, endogeneity
→ 2SLS, Fixed Effects, First Difference, System GMM

Results:

Inversed-J shaped relation between economic development and fertility trends

Figure 2 - Fertility in relation to GDP per capita in selected countries, 1960-2007



Interpretation: Each point on the curve of a country indicates the GDP per capita and fertility in a given year in that country; the curve joining the points shows the path followed by the country between 1960 and 2007 (between 1986 and 2007 for South Korea).

Source: OECD Family database (2010).

(A. Lucht, O. Thévenon, *Population & Societies*, 481, INED, September 2011)

Within GDP?

Decomposition of GDP per capita

$PIBpc_{i,t} = \text{Labour productivity} * \text{working hours} * \text{employ. rates}$

$$\begin{aligned} \rightarrow \quad adjTFR_{i,t} &= \beta_1 + \beta_2 * \ln(labourproductivity)_{i,t} \\ &+ \beta_3 * \ln(avrg.hrs.perworker_men) + \beta_4 * \ln(avrg.hrs.perworker_women) \\ &+ \beta_5 * \ln(employmentrate_men) + \beta_6 * \ln(employmentrate_women) \\ &+ \beta_7 * \ln(ratioactivepopulation_men) + \beta_8 * \ln(ratioactivepopulation_women) + \varepsilon_{i,t} \end{aligned}$$

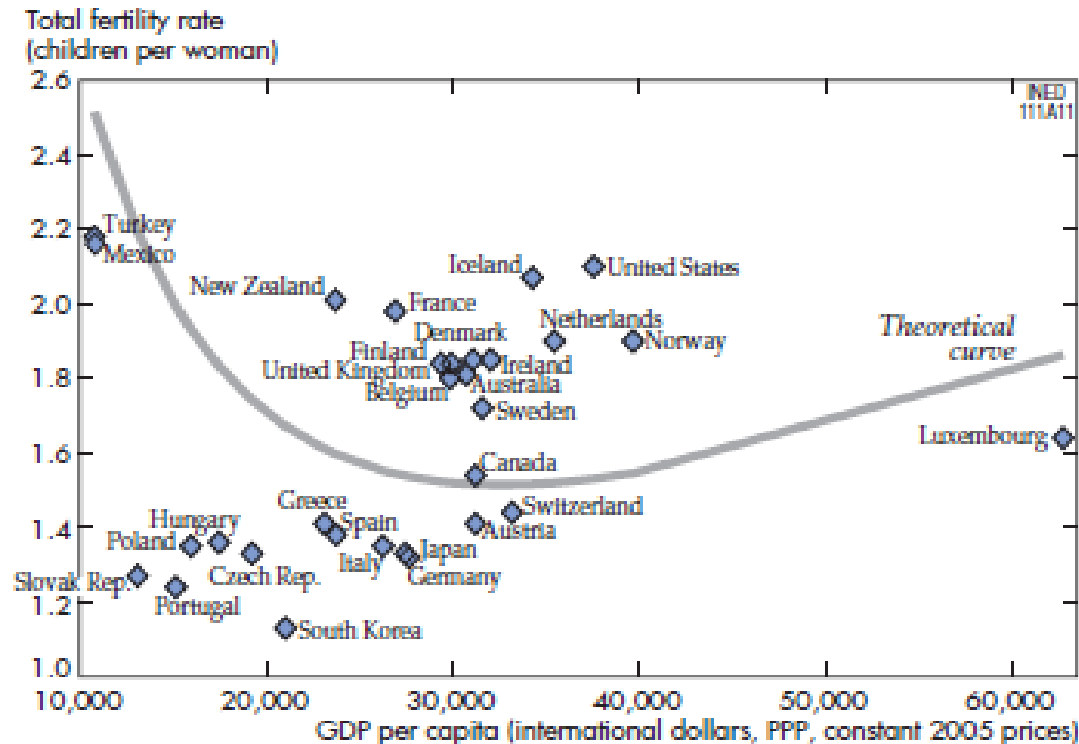
Results

Steeper increases in fertility rates are observed in countries where the participation of women in the labour market have significantly risen and contributed to economic growth.

Question

Are countries with high fertility and female employment those with higher support to balance work and family?
=> what's behind GDP?

*Figure 3 - GDP per capita and fertility
in the 30 OECD countries in 2006*



Interpretation: Each point represents a country. For example, in 2006 Canada had a TFR of 1.54 children per woman (vertical scale) and a GDP per capita of 32,160 international dollars.

Source: Authors' calculations.

(A. Lucif, O. Thévenon, *Population & Societies*, 481, INED, September 2011)

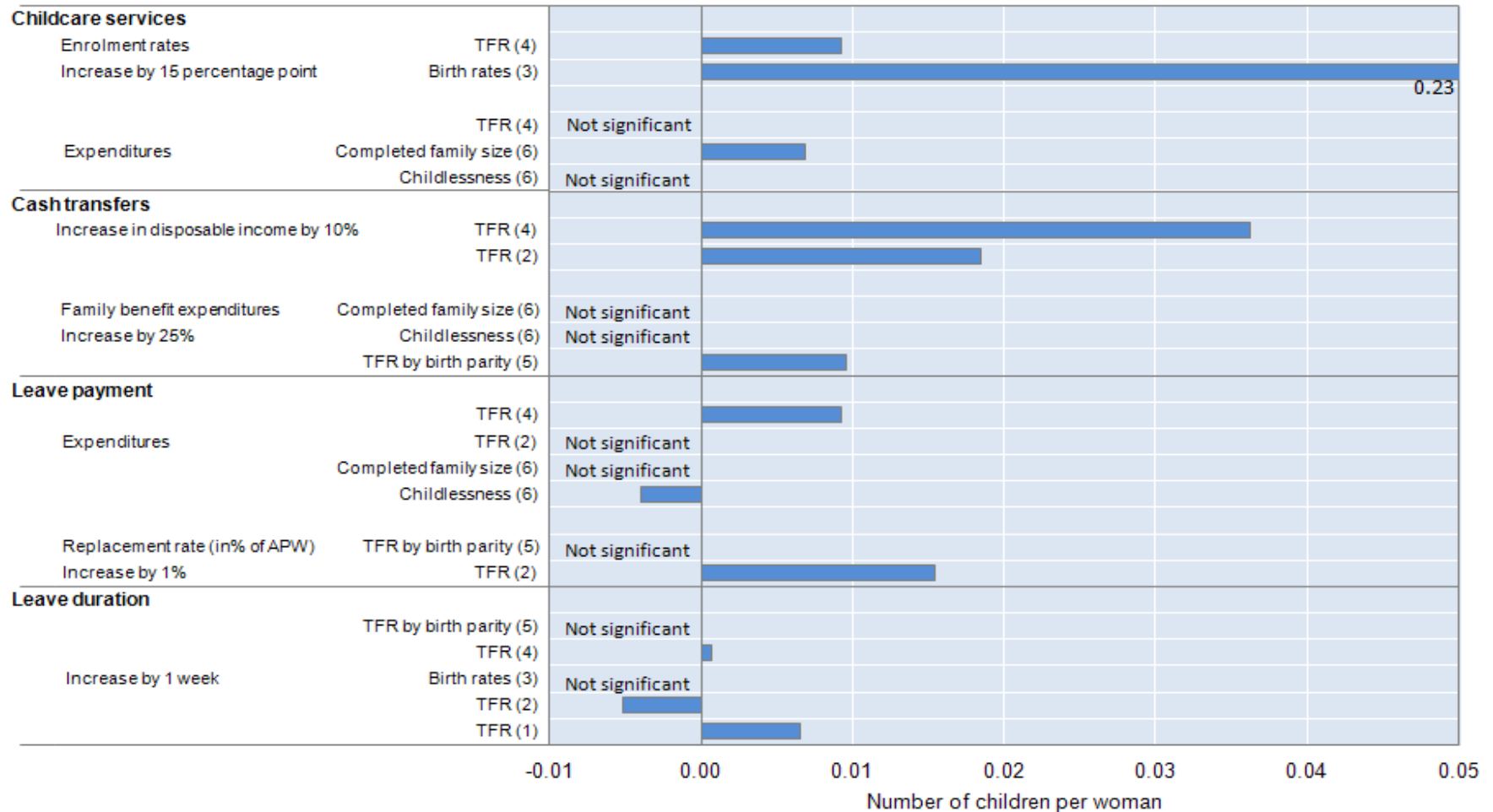
Economic development intersect with institutional factors

- **Family policies:**
 - Income transfers: to bear the financial cost of children
 - Cash transfers at childbirth
 - “Regular “cash transfers
 - Leave entitlements and childcare services: reduce the “indirect-opportunity” cost due to the impact of children on (female) labour market participation.
 - Number of weeks of paid leave
 - Enrolment of children 0-3 in formal care
 - Spending in childcare services per child
- **Gender equality/women’s empowerment**: women education attainment and labour market participation.
- **Labour market insecurity** (Unemployment/temporary employment affect the timing of birth; Employment protection)
- **Childbearing norms**: tolerance to out-of-wedlock births.

Endogenous variable:	total fertility rate (TFR)				tempo adj. TFR	
Type of regression:	Two Way Fixed Effects	Two Way Fixed Effects	Two Way Fixed Effects	Two Way Fixed Effects	Two Way Fixed Effects	Two Way Fixed Effects
Regressors:						
<i>spending on cash benefits per child (% GDPpc)</i>	0.0197*** (3.70)	0.0188*** (3.75)	0.0187*** (3.37)	0.0358*** (5.72)	0.0875*** (6.40)	0.0674*** (6.14)
<i>spending on maternity leave (% GDPpc)</i>	0.00264** (2.83)	0.00228* (2.58)	0.00217* (2.40)	0.00205* (2.14)	0.000563 (0.37)	-0.000646 (-0.57)
<i>nb. paid leave weeks</i>	0.000734** (3.04)	0.000671** (2.94)	0.000604* (2.52)	0.000571* (2.38)	0.000514 (0.65)	-0.0000351 (-0.06)
<i>enrolment young children (0-2) in childcare</i>	0.00403*** (3.59)	0.00213 (1.89)	0.00252* (2.24)	0.00541*** (4.64)	-0.00539** (-3.16)	0.000943 (0.54)
<i>spending on childcare services (0-2) (% GDPpc)</i>	0.00153 (1.29)	0.00301* (2.60)	0.00164 (1.43)	-0.00212 (-1.62)	-0.0152*** (-7.24)	-0.00513** (-2.88)
<i>female employment rate (25-54)</i>	-0.0131*** (-5.68)	-0.0186*** (-7.60)	-0.0108*** (-4.81)	-0.0198*** (-8.18)		-0.0184*** (-6.31)
<i>women's average working hours</i>	0.0000182 (0.10)	-0.000298 (-1.61)	0.0000656 (0.36)	0.000239 (1.09)		0.0000351 (0.15)
<i>unemployment rate (25-54)</i>		-0.0181*** (-4.88)				
<i>labour market protection</i>			0.0145 (0.79)			
<i>share of out-of-wedlock births</i>				0.0124*** (5.04)		
N	228	228	222	191	161	120
nb. of countries:	16	16	16	14	11	9
time period:	1982-2007	1982-2007	1982-2007	1982-2007	1982-2007	1982-2007
R ² :	0.999	0.999	0.999	0.999	0.998	0.999

18 countries: Denmark, Netherlands, Spain, Norway, Sweden, Portugal, France, New Zealand, Belgium, United States, Italy, Japan, Australia, United Kingdom, Ireland, Finland, Germany, Austria.

Do our results confirm the literature?



Reference of Studies (1) Adsera (2004); (2) D'Addio and Mira d'Ercole (2005); (3) Hilgeman and Butts (2009); (4) **Luci and Thévenon (2011)**; (5) Gauthier and Hatzius (1997); (6) Kalwij (2010).

Conclusion

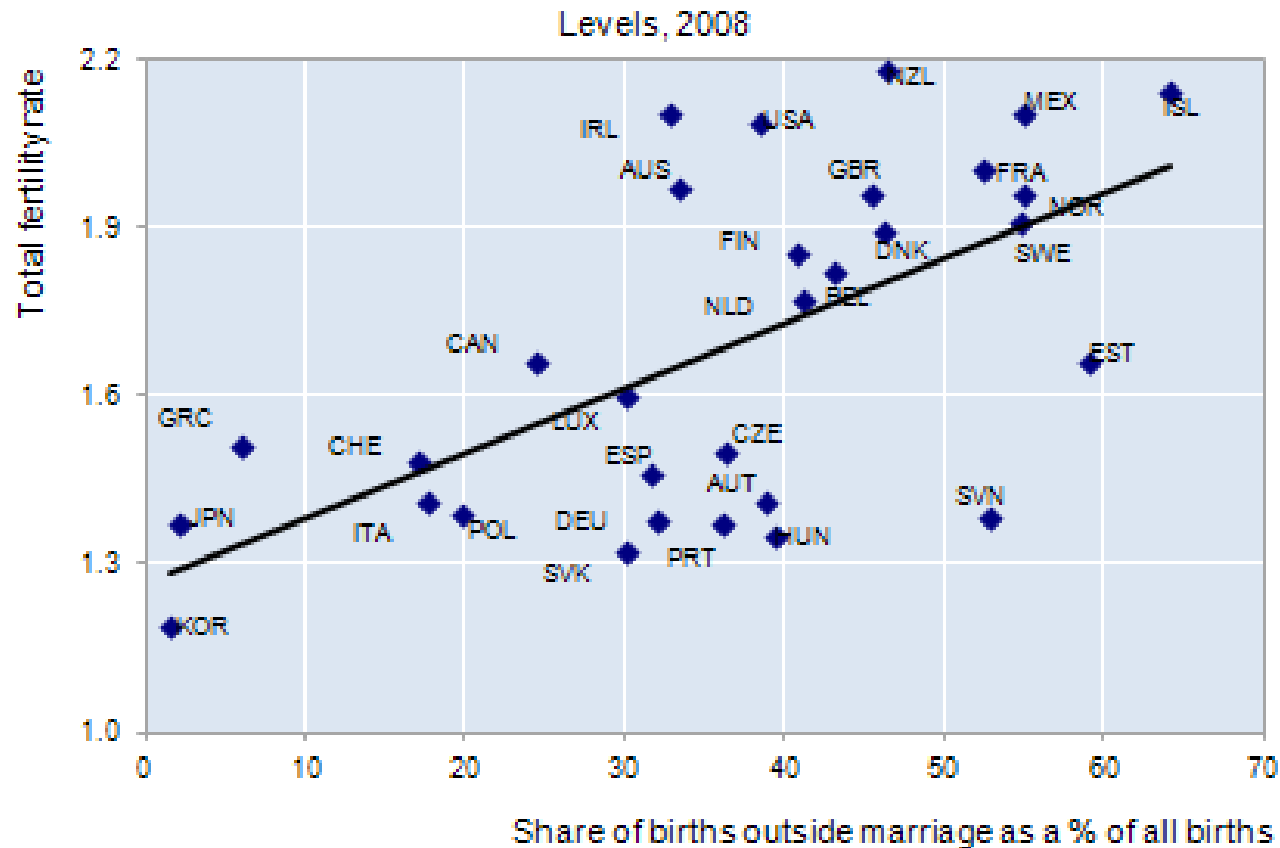
- Increase in female education and employment is conducive to delay childbearing, but fertility « re-increase » shows the limit of postponement
- Fertility « rebound » reveals a change in the relationships between fertility trends and economic development, of which the increase in female employment is an important component
- Countries with highest fertility rates are those where there are more opportunities for women to combine childbearing and work (fertility rates are now higher in countries where female employment are higher)
- Role of Institutional background
 - ✓ Importance of policy mix (and continuity) over childhood: paid leave, financial transfers and childcare enrolment rates have all a positive influence on fertility rates
 - ✓ Large effects of cash transfers over childhood and of childcare services coverage, while the number of paid weeks of leave at birth have a smaller incidence but depend on payment.
 - ✓ Larger acceptance of out-of-marriage births seem to enhance fertility rates

Thank you for your attention!

More information:

- Luci A., Thévenon O. (2011), “Does economic development explain the fertility rebound in OECD countries?”, *Population and Societies*, 481, September.
- Luci A., Thévenon O. (2012), “The impact of family Policies on Fertility Trends of Developed Countries, Working Paper INED, 174.
- Thévenon O. (2011), “Family Policies in OECD Countries: A Comparative Analysis”, *Population and Development Review*, 37(1):57-87.
- OECD (2011), “Fertility Trends: What Have Been the Main Drivers?”, Chapter 3 in *Doing Better for Families*, OECD, Paris, released the 28th of April.
- Luci, A., Thévenon, O. (2010). “Does economic development drive the fertility rebound in OECD countries”. INED working paper, 167.
http://www.ined.fr/fichier/t_publication/1514/publi_pdf1_dt_167.pdf
- OECD Family Database: www.oecd.org/els/social/family/database
- www.oecd.org/els/social/family

Births outside marriage contribute to high fertility rates



Source: OECD Family Database