HUNGARIAN DEMOGRAPHIC RESEARCH INSTITUTE

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COUNTING WOMEN'S WORK

# The quantity-quality tradeoff: a cross-country comparison of unpaid care time investments per child in relation to fertility

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# Starting point

- Quantity-quality tradeoff hypothesis by Becker
- Parents substitute quality for quantity when they decide how many children they have (Becker 1960, Becker and Lewis 1973, Becker and Barro 1988)

↓ Fertility

↑ Spending per child / human capital investment

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- When the hypothesis is tested on country-level macro data, quality is usually operationalized as:
  - only educational investments (Barro and Lee 2010)
  - education + health investments in children (Lee and Mason 2010, Lee and Donehower 2011, Prettner et al. 2013)
  - consumption of children less their income (Ogawa et al. 2016)

# Objective

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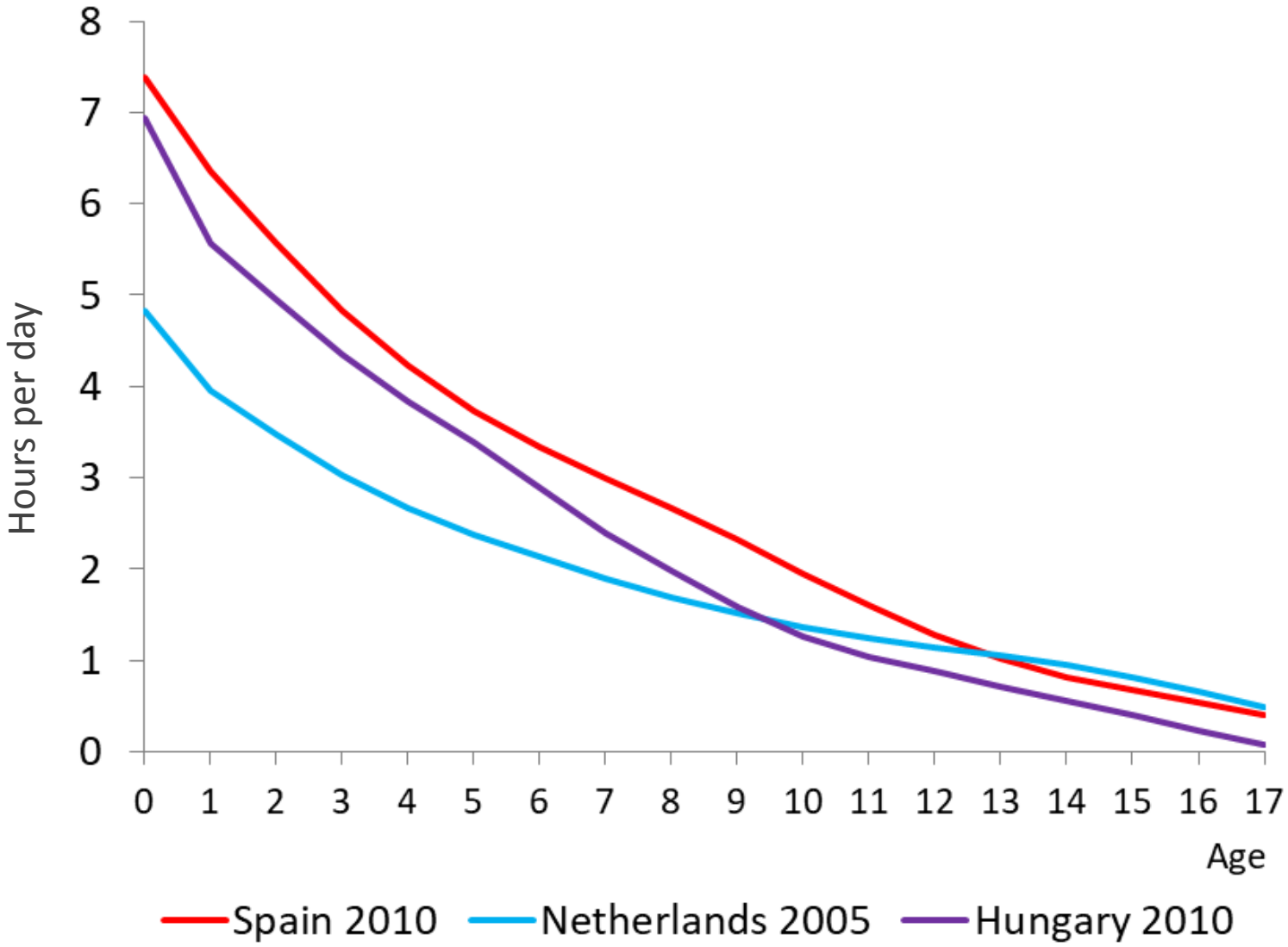
- Our aim is to **incorporate the unpaid time costs of children into measures of child quality**
- Using time use surveys and replacement wage imputation, we quantify the value of childcare in 25 countries (physical care, supervision of child, playing, teaching, reading, talking with children)
- We combine market expenditures per child with the measures of time inputs, and explore their relation to fertility in a cross-national comparative context

# Data on child quality

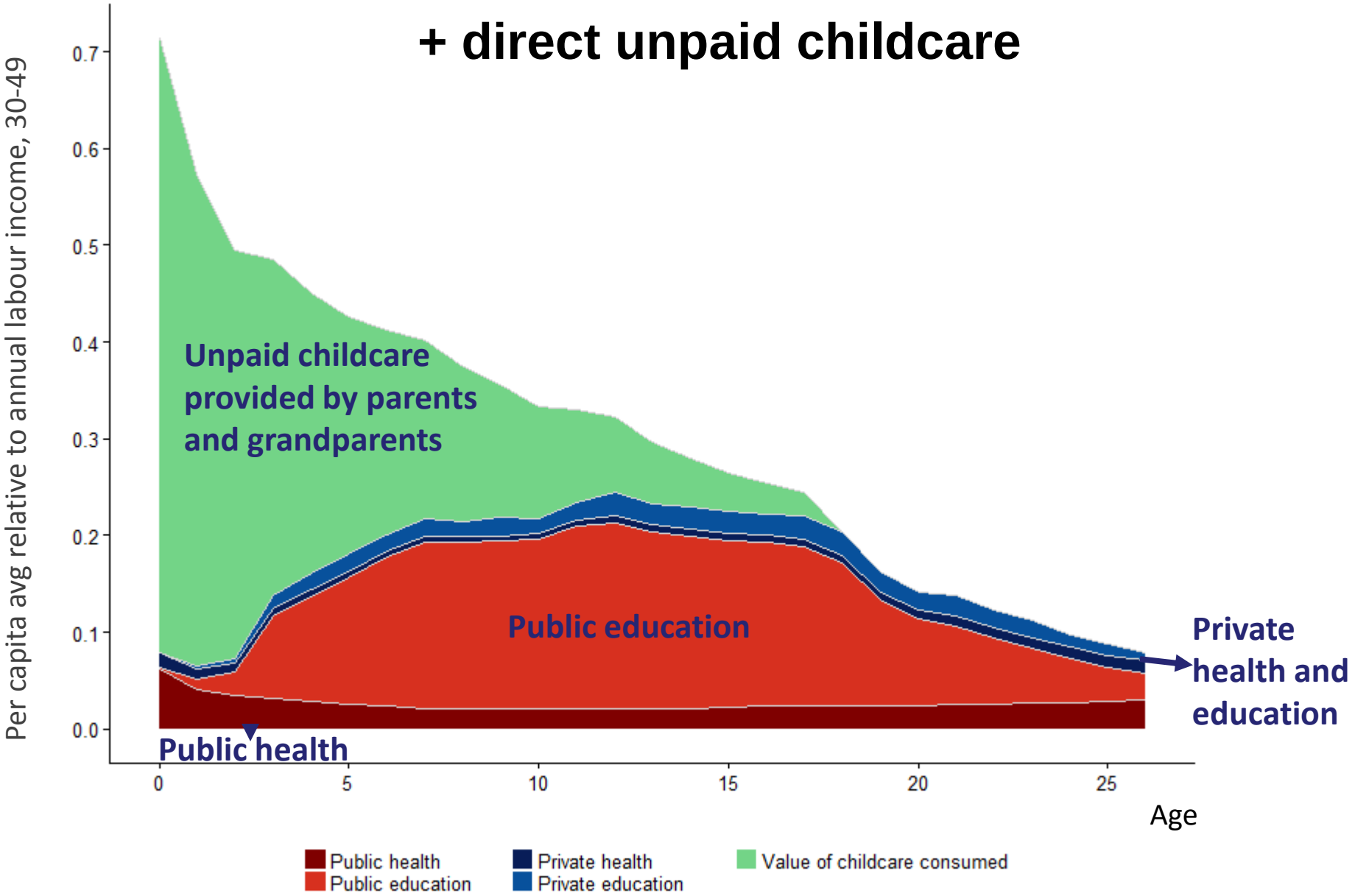
- National Transfer Accounts (NTA, Lee and Mason) &
- National Time Transfer Accounts (NTTA, Donehower 2011)
- 25 countries, 2000-2010
  - Low and middle-income countries (Africa, Europe, Latin-America): BG, CR, EE, GH, HU, LV, LT, MX, PL, SN, UY, ZA
  - High income countries (Europe, US): AT, BE, DE, DK, ES, FI, FR, IT, NL, SE, SI, UK, US
- **Two child quality proxies**:
  - **Human capital investments per child**: Public and private education and health costs + value of *unpaid childcare* received at home per child in each country
  - **Total spending per child**: Total public and private spending + value of *unpaid childcare and other services* received at home up to self-supporting ages

# Unpaid childcare received at home (per capita)




Source: NTTA estimates from AGENTA.

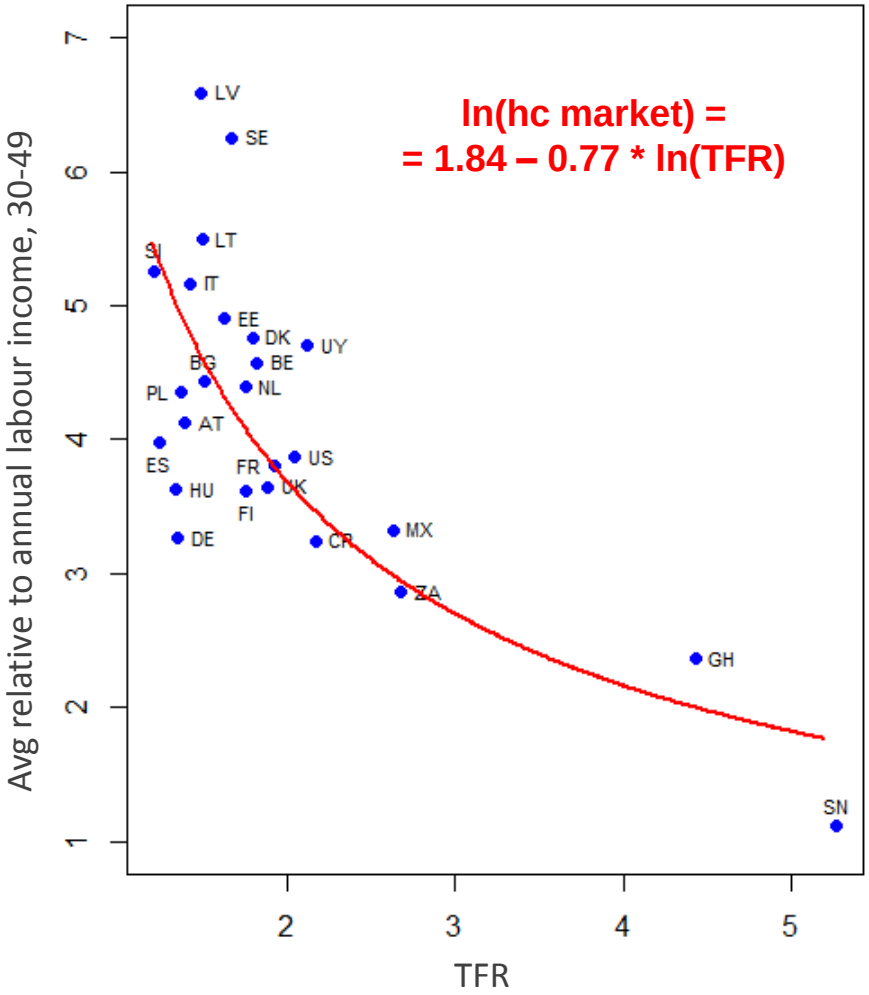
# Education + health investments + + direct unpaid childcare




Note: Average of 25 countries around 2000-2010. Source: Authors' calculations using NTA estimates from ntaccounts.org & AGENTA and NTTA estimates from AGENTA and CWW.

# HC investment per child vs fertility

**Education + health investments per child & fertility, replicating Mason et al. (2016)**




**$R^2$=0.60,** *** p < 0.001
Standard error for the coefficient estimate: 0.127
Residual standard error: 0.224

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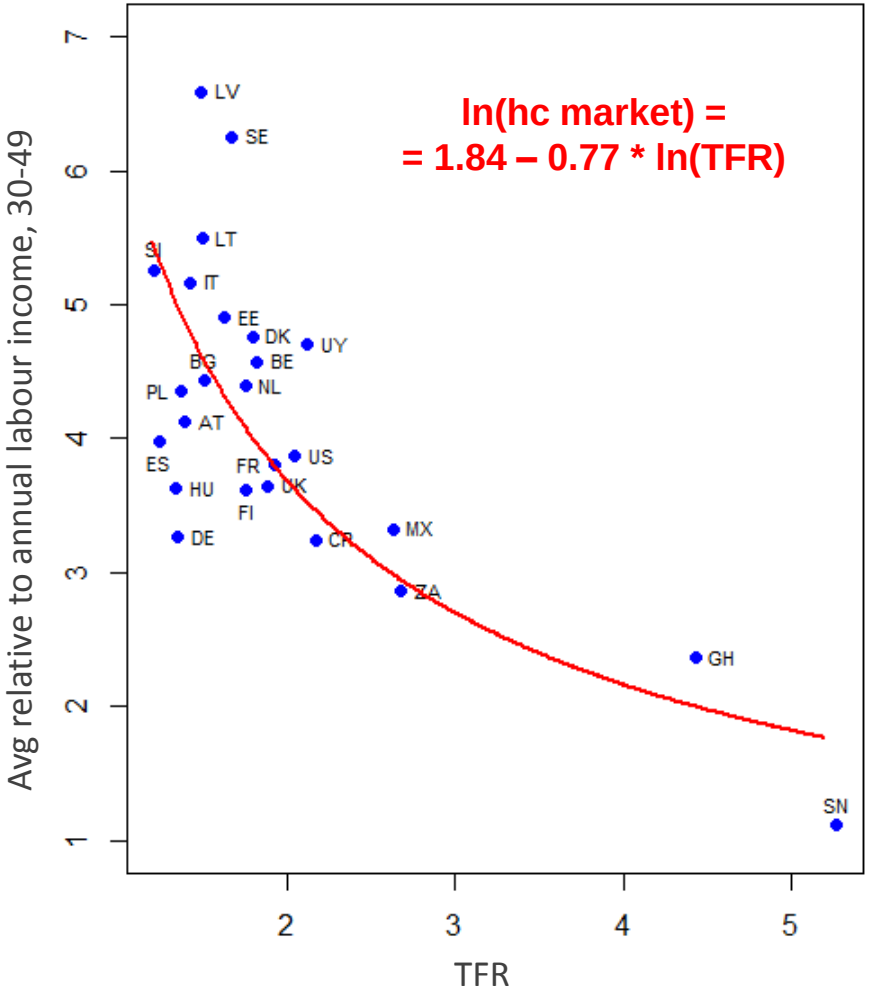


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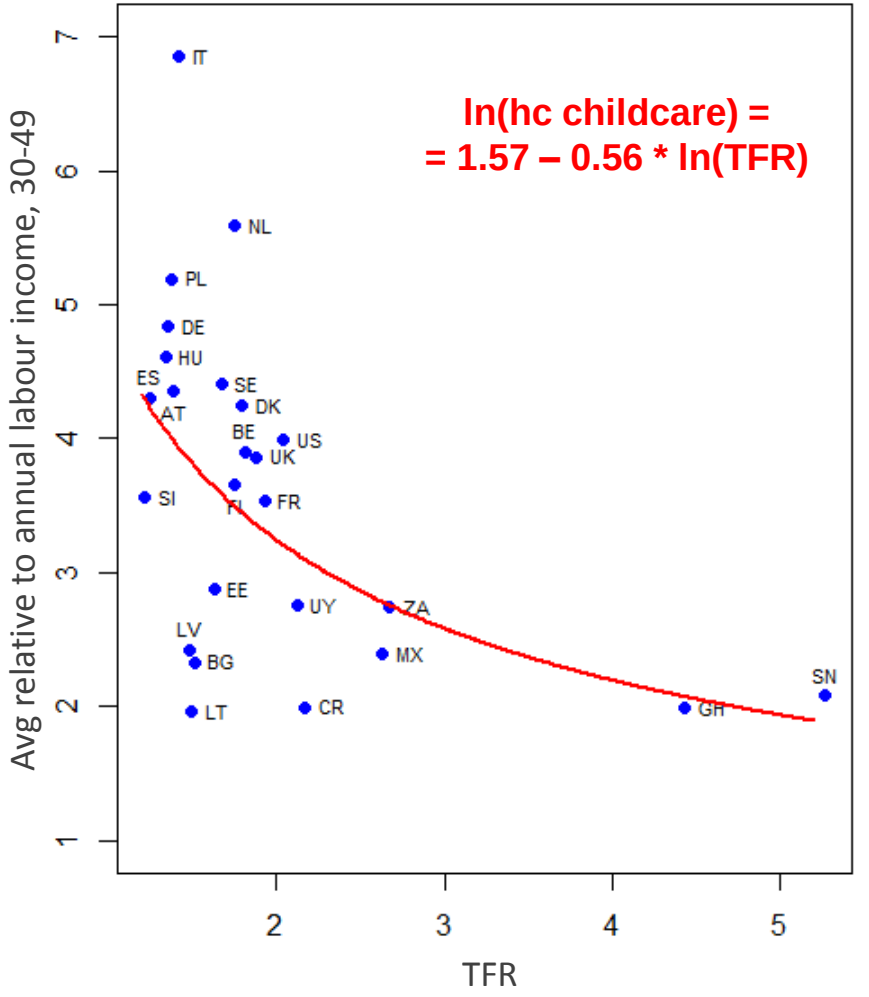
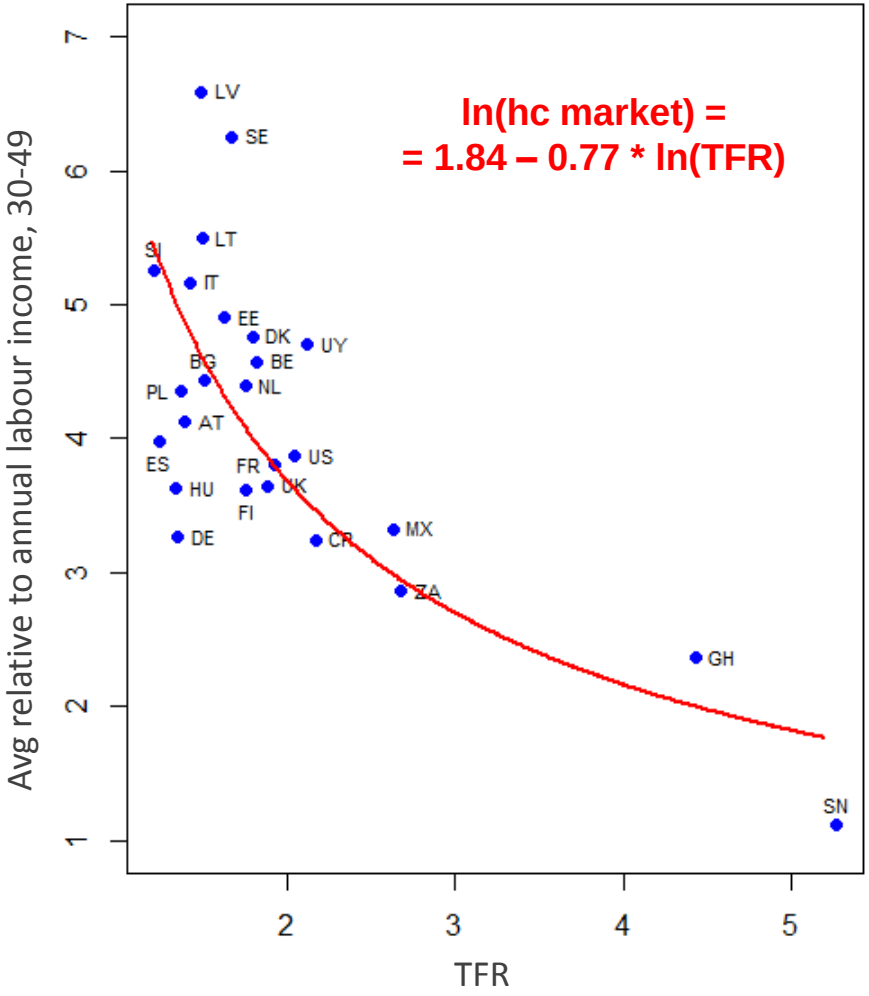
**Unpaid childcare received at home per child & fertility**




**$R^2$=0.30,** ** p < 0.01
Standard error for the coefficient estimate: 0.169
Residual standard error: 0.299

# HC investment per child vs fertility

**Education + health investments per child & fertility, replicating Mason et al. (2016)**

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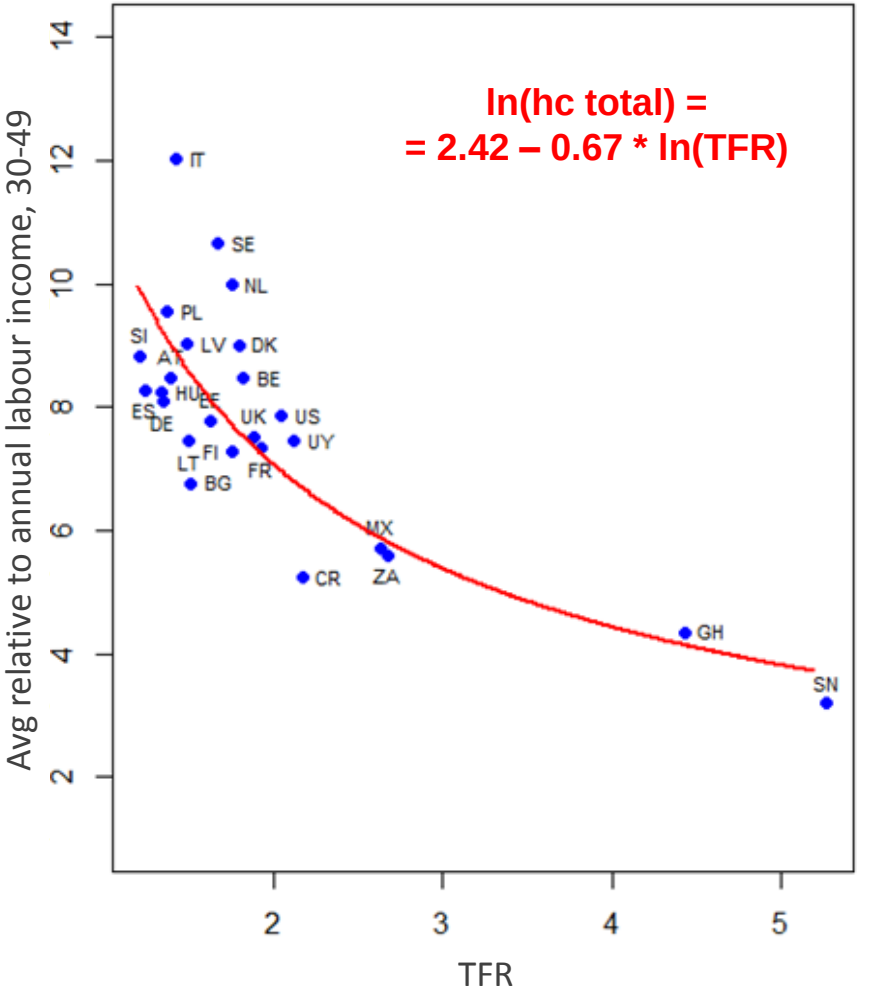
**Education + health investments + childcare received at home per child & fertility**




**$R^2$=0.71,** *** p < 0.001
Standard error for the coefficient estimate: 0.088
Residual standard error: 0.155

# Summary

- **Unpaid childcare** received at home is an important and significant part of human capital investments
- Education and health investment measures **combined with** unpaid childcare support the quantity-quality tradeoff hypothesis on the country-level
- The quantity-quality tradeoff operates via both market and nonmarket channels

- Results relate to policy issues in many areas:
  - Changing population structure (burden of dependency)
  - Costs of childbearing and who pays them
  - Gender equity

Vargha, Lili & Donehower, Gretchen (forthcoming): The Quantity-Quality Tradeoff: A Cross-Country Comparison of Market and Nonmarket Investments per Child in Relation to Fertility.

*Population and Development Review.*

Vargha, Lili, Gál, Róbert Iván & Crosby-Nagy, Michelle (2017): Household production and consumption over the lifecycle: National Time Transfer Accounts in 14 European countries.

*Demographic Research* 36(32): 905-944.

AGENTA database (European data):
http://www.wittgensteincentre.org/ntadata/

# Thank you!

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