

Mother's Educational Level and Family Structure and Economic Well-Being: comparing Spain and Italy

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- **Single parent families** have dramatically **increased** in all western countries during recent decades.
- However, nowadays, one of the most important social changes is not the **increase of single parent families per se** but rather the fact that **single parenthood has become more common among low educated women** in most Western countries.
- This research presents several limitations

LIMITATIONS

A) Consequences

- Several researchers have alerted us to the potential consequences of socioeconomically uneven family change on children's well-being and living conditions (McLanahan and Percheski 2008).
- But, there is limited research that explicitly demonstrates whether this demographic change has negative consequences (with the exception of Härkönen, 2014).
- For this reason, in this study, we focus on the consequences of the increase of single parenthood among low educated mothers on poverty and family income comparing Spain and Italy.

B) Mediterranean countries

- Most research studies Anglo-Saxon or Scandinavian countries.
- Few studies focus on Mediterranean countries.
- Traditionally, single mother families had a higher educational level than mothers in two parent families in Spain and in Italy.

But,

- our recent research has shown, using data from EU-SILC data from 2005 and 2011, mothers in single mother families have lower educational level than mothers in two parent families in Spain but the opposite is true in Italy (Garriga, Sarassa and Berta, under review).

Table 1. Family structure by mother's education

| | Spain 2005 | | Spain 2011 | |
|---------------|---------------|------------|---------------|------------|
| | Single mother | Two parent | Single mother | Two parent |
| Low | 56 | 48 | 50 | 37 |
| Medium | 25 | 23 | 20 | 24 |
| High | 19 | 29 | 30 | 39 |
| | | | | |
| | Italy 2005 | | Italy 2011 | |
| | Single mother | Two parent | Single mother | Two parent |
| Low | 41 | 45 | 34 | 38 |
| Medium | 36 | 35 | 42 | 41 |
| High | 23 | 20 | 24 | 21 |

Why this demographic change may have specially negative consequences in Spain?

1-Rapid social change.

- This demographic change has occurred in 5 years.
- Spanish census data from 2001 shows that mothers in single mother families had **higher educational levels** to mothers in two parent families (Flaquer, Almeda and Navarro, 2006).
- Consequently, it seems that **the change of the educational gradient of single-motherhood in Spain** has occurred in a shorter period of time than in any other Western country.
- Several researchers have argued that **Spanish family** is moving from the **Mediterranean model** to the **Nordic one** and this change is especially true for **young cohorts** (Garriga, Sarassa & Berta, 2014; Moreno & Marí-Klose 2013; Martín-Garcia 2013).

2- Economic crisis

- This change has been followed by one of the most important crises that has ever faced Spanish society.
- All types of families from different social strata have experienced the negative consequences of the big recession. However, the most vulnerable families, such as single parent families and families with low educated parents, have suffered the most negative effects of the economic crisis (Sarasa et al, 2013).

Main question

- What are the consequences of the increase in single motherhood among low educated women on poverty and family income?

Concretely:

Would income and poverty differences by family types be more similar if single mother families had the same educational level as mothers in two parent families?

Hypothesis

Hypothesis 1: In Spain, the effect of single mother on family income would be lower if single mothers had the same educational level than mothers in two parent families (especially in younger cohorts and during the economic crisis).

Hypothesis 2: In Italy, the effect of single mother on poverty and family income would be greater if single mothers had the same educational level than mothers in two parent families. We do not expect differences before and after the economic crisis.

Table 2. Percentages Unemployment by educational level.

| | | Women (aged 25-59 years) | | | Men (aged 25-59 years) | | |
|--------------|---------------|--------------------------|------|----------|------------------------|------|----------|
| | | 2005 | 2011 | Relative | 2005 | 2011 | Relative |
| Spain | Low | 14,4 | 28,5 | 98 | 6,9 | 26 | 277 |
| | Medium | 9,9 | 21 | 112 | 5,2 | 17,5 | 237 |
| | High | 7,3 | 12,6 | 73 | 4,9 | 10,8 | 120 |
| | Total | 10,5 | 20,2 | 92 | 5,9 | 19 | 222 |
| Italy | Low | 11,5 | 11,6 | 1 | 6 | 8,5 | 42 |
| | Medium | 7,1 | 7,2 | 1 | 3,9 | 5,1 | 31 |
| | High | 7,2 | 6,4 | -11 | 4,4 | 4,1 | -7 |
| | Total | 8,5 | 8,2 | -4 | 4,9 | 6,4 | 31 |

Data

- In this paper, we use the 2005 and 2011 waves of EU-SILC which include an inter-generational module containing information on attributes related to the family of origin.
- The most important weakness of this data is that it is not longitudinal
- EU_SILC is a unique database that contains Spanish information on the characteristics of single mother families in recent years and allows cross-national comparability.

Family structure

Sample: 7,280 mothers in Spain and 10,422 in Italy

- Mothers in two parent family (natural father or stepfather) (6,472 cases in Spain and 9,270 cases in Italy)
- Mothers in single mother families (808 cases in Spain and 1,152 Italy)
- EU-SILC classification of household structure does not consider mothers that live with another adult who is not their partner to be single mothers but we have found that around 40% of single mothers in Spain live with another adult and 30% in Italy.
- For this reason, we consider mothers who live with another adult that is not their partner to be single mothers.

Education:

- **Low:** Lower secondary education or less (ISCED 1 and 2).
- **Medium:** ISCED 3 (upper secondary education) and ISCED 4 (post-secondary non tertiary education).
- **High:** Tertiary education (ISCED 5 and 6)

Control variables

Mother's type of area measures the degree of urbanization of the area where the mother lives: 1- densely populated; 2- intermediate, and; 3 -thinly populated.

Country of birth is defined as the country of residence of the mother at the time of birth: 1- born in the respondent's country of residence (Spain); 2-born in another European country; 3-born outside of Europe

Mother's year of birth

Year of the survey: 2005 or 2011

Control variables of family of origin

- Living in a single mother family at age 14
- Grandmother's educational level (high, low)
- Grandmother's activity status: working mother at age 14

Dependent variables

1-Poverty relative

2-The total equivalized disposable income is the total disposable household income, that is the sum of incomes from work, assets, and private and public transfers, net of taxes, for all household members.

The equivalized household size is defined as: $1 + 0.5 * ((\text{component aged 14 and over}) - 1) + 0.3 * (\text{component aged 13 or less})$.

We have calculated the **log of income**

Research strategy

Main research question

- Would the income differences by family types be similar if single mothers had the same educational level as mothers in two parent families?
- Which part of the effect of single mothers on family income is explained by differences in mother's education?
- Logistic regression for poverty
- OLS regression
- Quantile regression: We want to observe the effect of family structure along the income distribution.
- We do not want to observe only the mean or the low part of the income distribution such as we do with poverty.

- We perform a propensity score analysis in order to control for the effect of single mother family.
- Model 1: $\text{Logincome or poverty} = \text{single mother} + \text{pscore}$
- Model 2: $\text{Logincome or poverty} = \text{single mother} + \text{education} + \text{pscore}$

Table 2. Coefficients from logistic regressions for Spain and Italy on poverty.

| Coefficients | Spain | | | | | |
|---------------|---------|----------|-------|---------|-----------|-------|
| | 2005 | | | 2011 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | 0,86*** | 0,79*** | 8% | 0,80*** | 0,68*** | 15% |
| Medium | | -0,88*** | | | -0,82*** | |
| High | | -1,49*** | | | -1,80*** | |
| Low | | Ref | | | Ref | |
| | Italy | | | | | |
| Coefficients | 2005 | | | 2011 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | 0,83*** | 0,96*** | -16% | 0,83*** | 0,97*** | -17% |
| Medium | | -1,14*** | | | -0,921*** | |
| High | | -2,08*** | | | -1,95*** | |
| Low | | Ref | | | Ref | |

- In Spain, comparing Model 1 and Model 2, mother's education reduces the effect of single mother on poverty
- In contrast, in Italy mother's education increases the effect of single mother in poverty. No differences before and after the economic crisis.

Table 2. Coefficients from OLS regressions for Spain and Italy on Log of income

| Coefficients | Spain | | | | | |
|---------------|----------|----------|-------|----------|----------|-------|
| | 2005 | | | 2011 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,40*** | -0,34*** | 15% | -0,34*** | -0,23*** | 32% |
| Medium | | 0,33*** | | | 0,43*** | |
| High | | 0,65*** | | | 0,84*** | |
| Low | | Ref | | | Ref | |

| Coefficients | Italy | | | | | |
|---------------|----------|----------|-------|----------|----------|-------|
| | 2005 | | | 2011 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,52*** | -0,54*** | -4% | -0,78*** | -0,79*** | -4% |
| Medium | | 0,37*** | | | 0,38*** | |
| High | | 0,76*** | | | 0,64*** | |
| Low | | Ref | | | Ref | |

- In Italy, the magnitude of the **effect of single mother increases** when **mother's education** is considered in the model for income. But the increase is greater in poverty than in income.

In contrast,

- **In Spain, the part explained of the magnitude** of the coefficient of single mother by mother's education is greater in 2011 than in 2005.
- It is also greater for **income** than for **poverty**.
- For this reason, we decided to make a quantile regression.

| Quantile regression Coefficients | Spain 2005 | | | | | | | | |
|-------------------------------------|-------------|----------|-------|----------|----------|-------|-------------|----------|-------|
| | Quantile 25 | | | Median | | | Quantile 75 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,31*** | -0,31*** | 0% | -0,28*** | -0,25*** | 10% | -0,29*** | -0,16*** | 45% |
| Medium | | 0,27*** | | | 0,30*** | | | 0,29*** | |
| High | | 0,56*** | | | 0,62*** | | | 0,63*** | |
| Low | | Ref | | | Ref | | | Ref | |
| | Spain 2011 | | | | | | | | |
| | Quantile 25 | | | Median | | | Quantile 75 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,38*** | -0,25*** | 34% | -0,31*** | -0,22*** | 29% | -0,39*** | -0,23*** | 41% |
| Medium | | 0,36*** | | | 0,30*** | | | 0,30*** | |
| High | | 0,76*** | | | 0,70*** | | | 0,63*** | |
| Low | | Ref | | | Ref | | | Ref | |

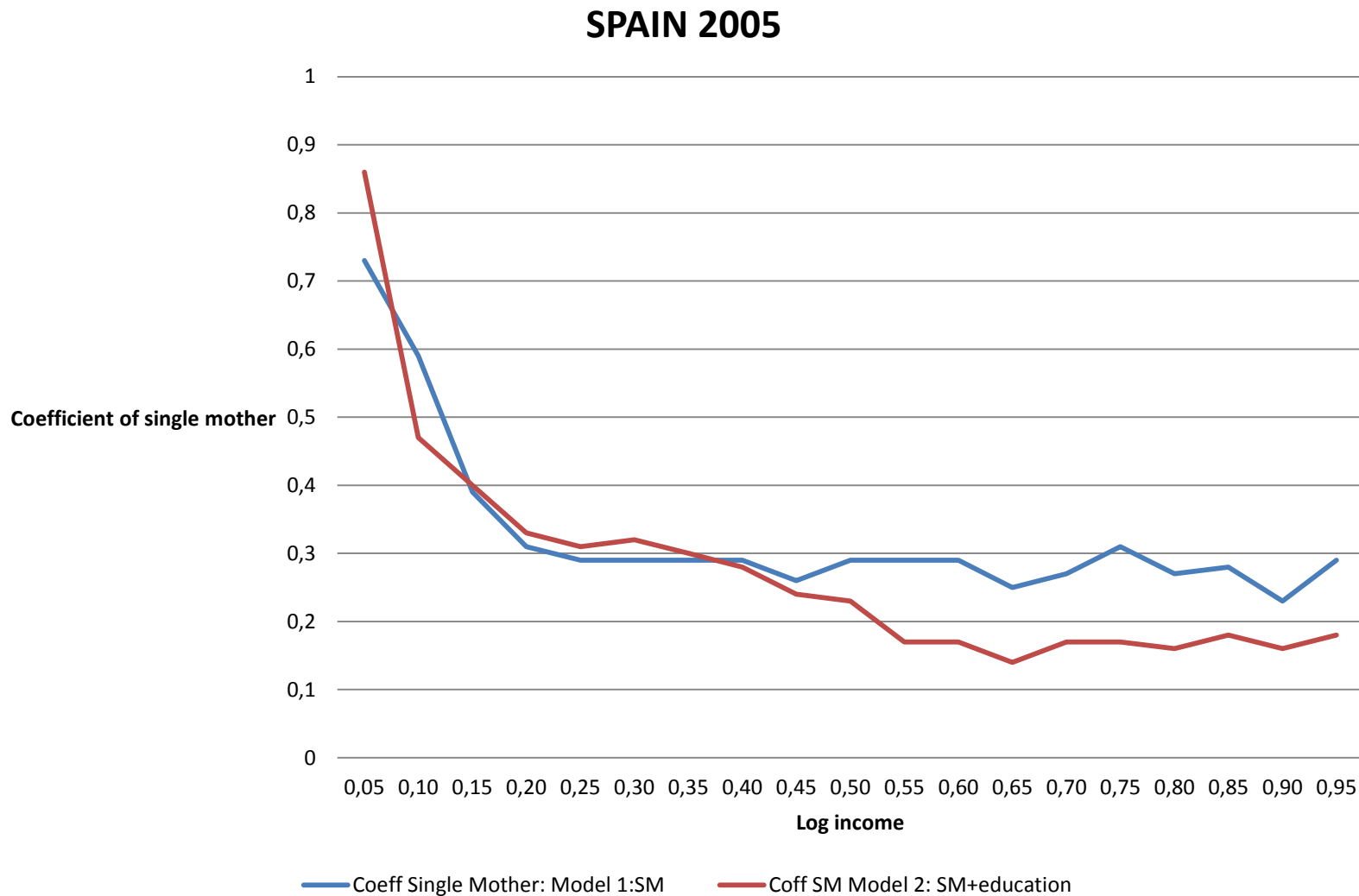
- In 2005, the effect of mother's education is similar across different income quantiles.
- In 2005, the effect of single mother families is similar across different quantiles in Model 1 (without controlling for mother's education).
- In 2005, however, the effect of single mother families differs by income quantiles when mother's education is considered in the model (model 2).
- In 2005, mother's education explains the magnitude of single mother coefficient in quantile 0,5 and 0,75 but it is not the case in quantile 0,25.

But in 2011

- The effect of mother's education in quantile 0,25 is greater in 2011 than in 2005.
- In 2011, mother's education explains the magnitude of single mother coefficient across quantiles while in 2005 it was only from quantile 0,5.

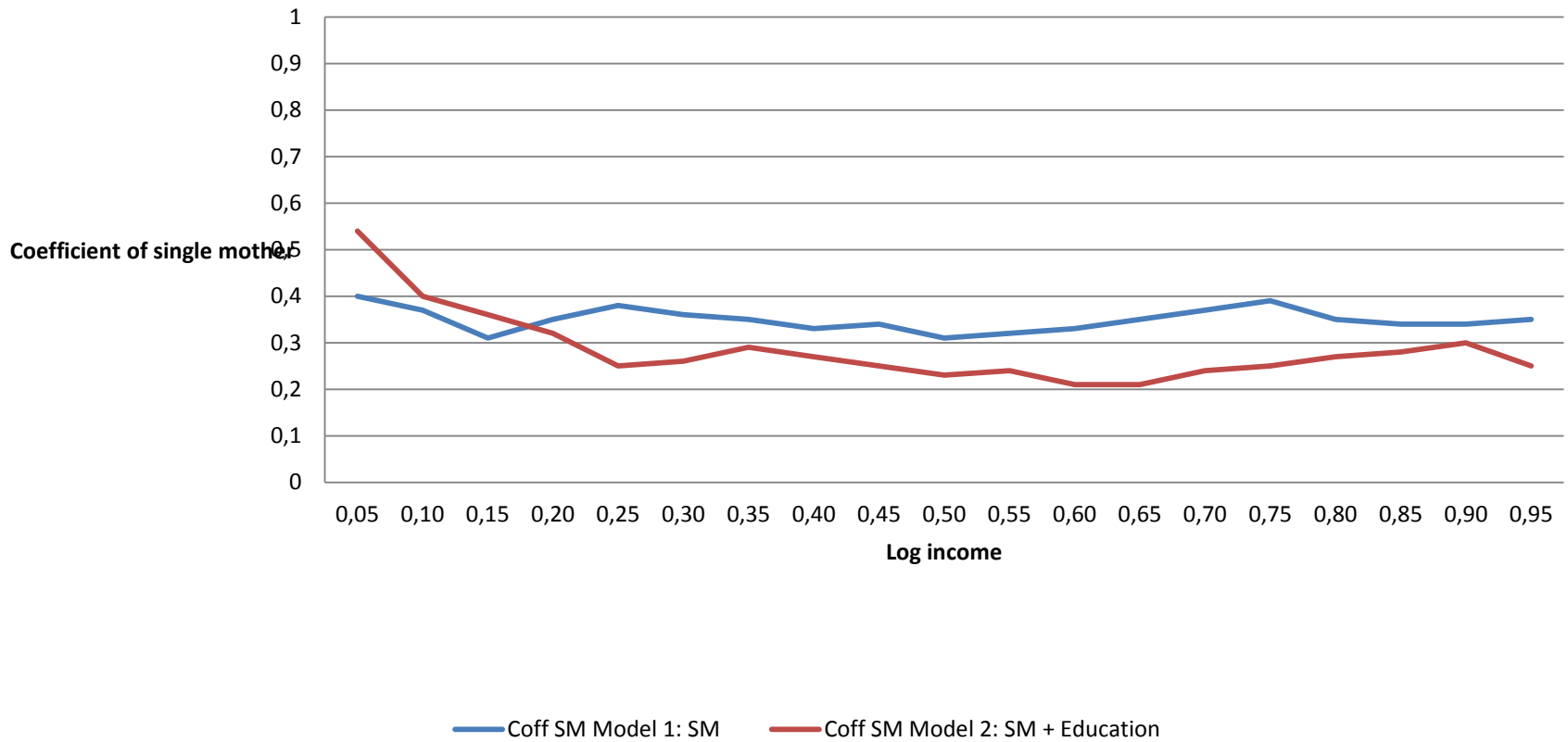
Consequences: the same demographic transformation (composition of single mother families) has more negative consequences in 2011 than in 2005 SINCE EDUCATION IS MORE IMPORTANT IN THE ECONOMIC CRISIS.

Graph 1: Coefficient of single mother family by different points of the dependent variable log of income comparing two models with and without education in 2005



Graph 2 : Coefficient of single mother family by different points of the dependent variable log of income comparing two models with and without education in 2011

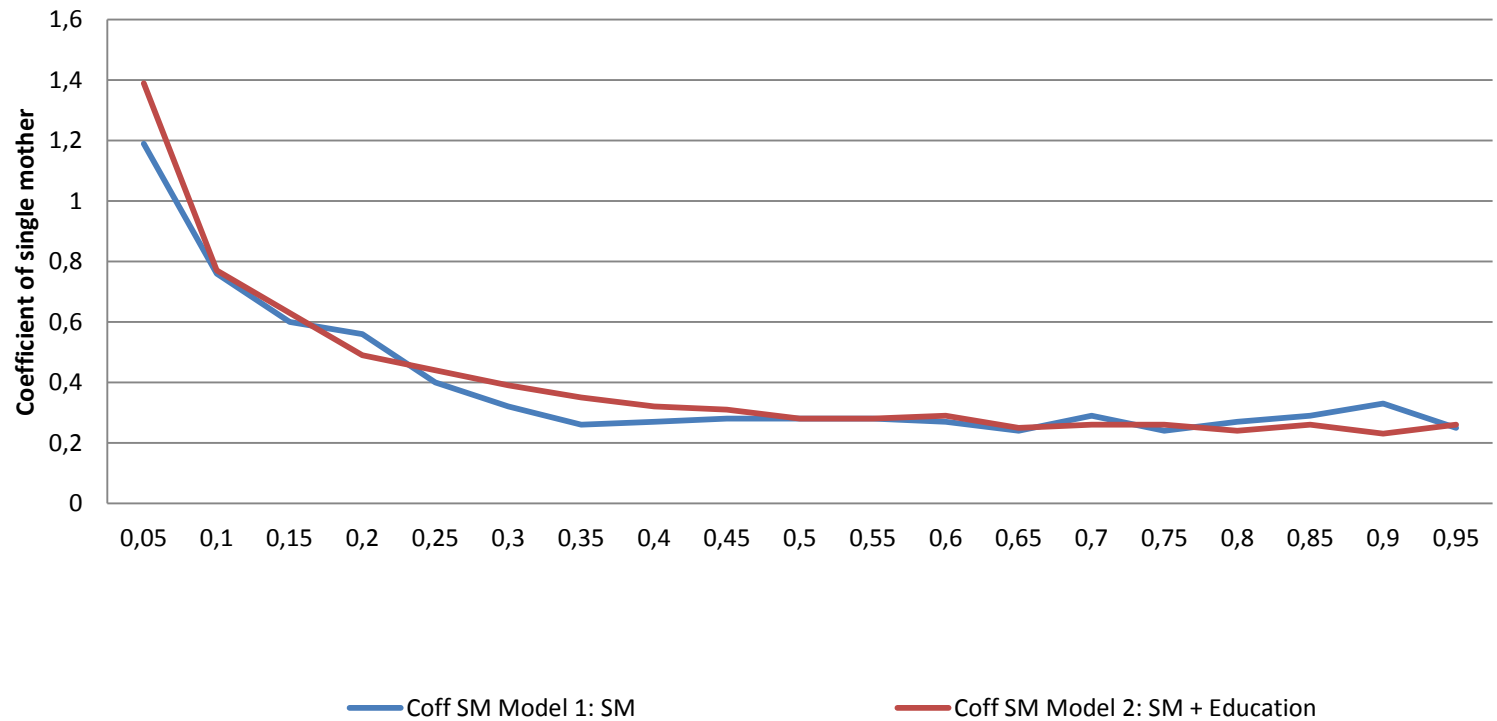
SPAIN 2011



| | ITALY 2005 | | | | | | | | |
|----------------------|-----------------|-----------------|-------------|-----------------|-----------------|-------------|-----------------|-----------------|------------|
| | Quantile 25 | | | Median | | | Quantile 75 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,40*** | -0,44*** | -10% | -0,28*** | -0,28*** | 0% | -0,24*** | -0,26*** | -7% |
| Medium | | 0,36*** | | | 0,34*** | | | 0,30*** | |
| High | | 0,70*** | | | 0,69*** | | | 0,65*** | |
| Low | | Ref | | | Ref | | | Ref | |
| | ITALY 2011 | | | | | | | | |
| | Quantile 25 | | | Median | | | Quantile 75 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,46*** | -0,46*** | 0% | -0,28*** | -0,33*** | -18% | -0,31*** | -0,34*** | -6% |
| Medium | | 0,29*** | | | 0,30*** | | | 0,23*** | |
| High | | 0,65*** | | | 0,55*** | | | 0,47*** | |
| Low | | Ref | | | Ref | | | Ref | |

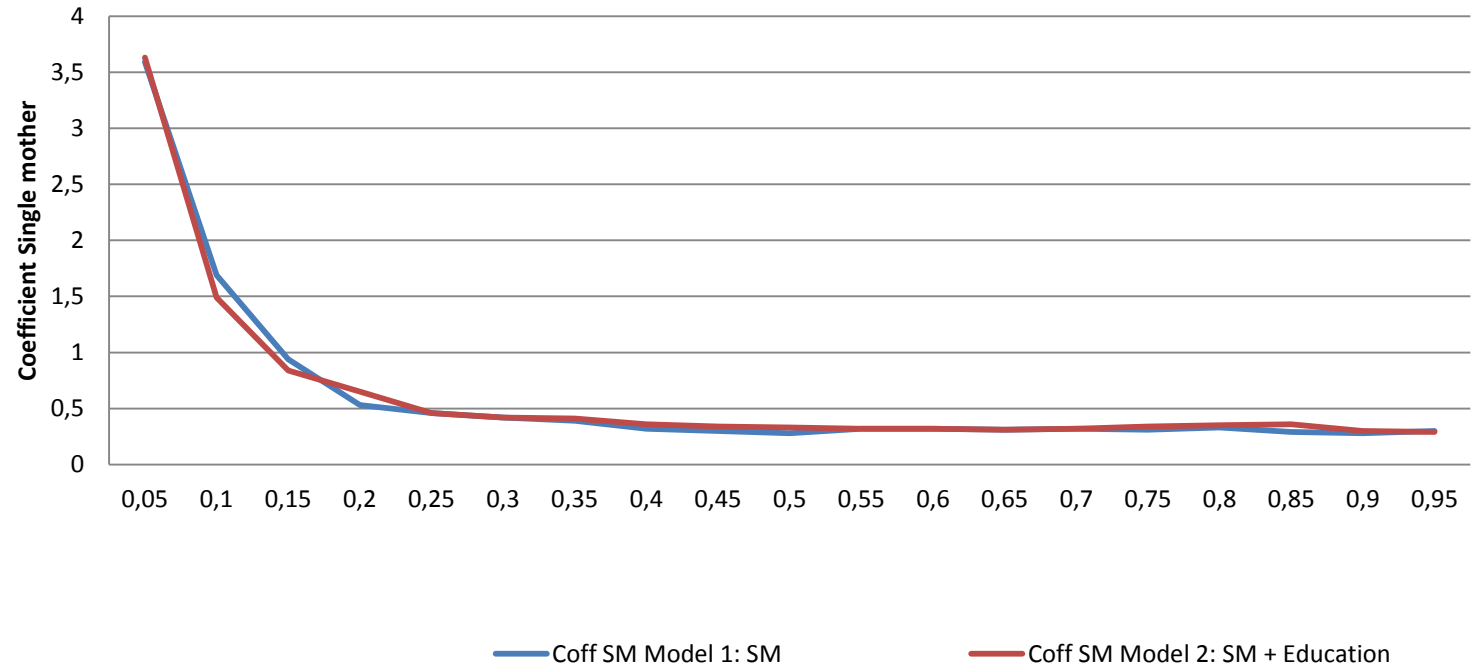
Graph 3: Coefficient of single mother family by different points of the dependent variable log of income comparing two models with and without education in 2005

Italy 2005



Graph 4: Coefficient of single mother family by different points of the dependent variable log of income comparing two models with and without education in 2011

Italy 2011



Italy

- In both years, the effect of single mother **decreases** when income also increases.
- In 2005, the effect of education is **similar** across quantiles.
- In both years, mother's education **does not explain or even reduce the magnitude** of single mother coefficient.

Spain Cohort: Born or after before 1970

| Coefficients | Cohort: Born after 1970 | | | | | |
|---------------|--------------------------|----------|-------|----------------|----------|-------|
| | Poverty | | | Logincome: OLS | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | 0,88*** | 0,69*** | 22% | -0,39*** | -0,26*** | 33% |
| Medium | | -1,02*** | | | 0,47*** | |
| High | | -1,67*** | | | 0,76*** | |
| Low | | Ref | | | Ref | |
| | Cohort: Born before 1970 | | | | | |
| Coefficients | Poverty | | | Logincome: OLS | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | 0,78*** | 0,72*** | 8% | -0,35*** | -0,30*** | 14% |
| Medium | | -0,67*** | | | 0,30*** | |
| High | | -1,62*** | | | 0,73*** | |
| Low | | Ref | | | Ref | |

Spain Cohort: Born or after before 1970

| | Cohort: Born after 1970 | | | | | | | | |
|----------------------|--------------------------|----------|-------|----------|----------|-------|-------------|----------|-------|
| | Quantile 25 | | | Median | | | Quantile 75 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,33*** | -0,27*** | 18% | -0,34*** | -0,21*** | 38% | -0,38*** | -0,25*** | 34% |
| Medium | | 0,38*** | | | 0,35*** | | | 0,31*** | |
| High | | 0,66*** | | | 0,63*** | | | 0,56*** | |
| Low | | Ref | | | Ref | | | Ref | |
| | Cohort: Born before 1970 | | | | | | | | |
| | Quantile 25 | | | Median | | | Quantile 75 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,34*** | -0,33*** | 3% | -0,27*** | -0,23*** | 15% | -0,29*** | -0,19*** | 34% |
| Medium | | 0,22*** | | | 0,26*** | | | 0,27*** | |
| High | | 0,61*** | | | 0,67*** | | | 0,66*** | |
| Low | | Ref | | | Ref | | | Ref | |

Mother's cohort : Age of birth before and after 1970

In a previous paper we found that the negative relationship between education and the probability of being a single mother is greater in young cohorts in Spain

Here, we find that the part of the effect of single motherhood that is explained by mother's education is greater among young women than among older women especially in poverty and quantile 25 and the median.

Italy Cohort: Born or after before 1970

| Coefficients | Cohort: Born after 1970 | | | | | |
|---------------|--------------------------|----------|-------|----------------|----------|-------|
| | Poverty | | | Logincome: OLS | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | 0,78*** | 0,84*** | -8% | -0,68*** | -0,68*** | 0% |
| Medium | | -0,93*** | | | 0,40*** | |
| High | | -1,97*** | | | 0,72*** | |
| Low | | Ref | | | Ref | |
| | Cohort: Born before 1970 | | | | | |
| Coefficients | Poverty | | | Logincome: OLS | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | 0,88*** | 1,07*** | -25% | -0,66*** | -0,69*** | -4% |
| Medium | | -1,18*** | | | 0,36*** | |
| High | | -2,23*** | | | 0,79*** | |
| Low | | Ref | | | Ref | |

Italy Cohort: Born or after before 1970

| | Cohort: Born after 1970 | | | | | | | | |
|---------------|--------------------------|----------|-------|----------|----------|-------|-------------|----------|-------|
| | Quantile 25 | | | Median | | | Quantile 75 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,45*** | -0,40*** | 11% | -0,28*** | -0,28*** | 0% | -0,26*** | -0,27*** | -4% |
| Medium | | 0,27*** | | | 0,32*** | | | 0,21*** | |
| High | | 0,62*** | | | 0,57*** | | | 0,47*** | |
| Low | | Ref | | | Ref | | | Ref | |
| | Cohort: Born before 1970 | | | | | | | | |
| | Quantile 25 | | | Median | | | Quantile 75 | | |
| | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff | Model 1 | Model 2 | %Diff |
| Single mother | -0,43*** | -0,47*** | -9% | -0,28*** | -0,32*** | -14% | -0,30*** | -0,32*** | -7% |
| Medium | | 0,36*** | | | 0,31*** | | | 0,28*** | |
| High | | 0,66*** | | | 0,57*** | | | 0,59*** | |
| Low | | Ref | | | Ref | | | Ref | |

- In Italy,

For old cohorts, mother's education **reduces the magnitude** of single mother coefficient (poverty).

But this pattern is not so clear in young cohorts.

Main conclusions of our paper

Several researchers have alerted us to the potential consequences of socioeconomically uneven family change on children's well-being and living conditions.

We have demonstrated that that this demographic change has negative consequences on children's well-being and living conditions

We confirm our hypotheses:

- In Spain, mother's education increases the magnitude of single mother coefficient.
- In Italy, mother's education decreases or does not reduce the magnitude of single mother coefficient specially old cohorts.

- In Spain, the negative effects of the relationship between education and single mother are greater during the economic crisis and among younger cohorts.
- Consequently, the negative consequences of the transformation of the composition single mother families also depends on the context.