AN ESSAY ON APPLIED ECONOMICS

by
MELİZ TÜRKİLERİ

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ABSTRACT

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MELİZ TÜRKİLERİ

ECONOMICS M.A. THESIS, JUNE 2021

Thesis Supervisor: Prof. Abdurrahman Bekir Aydemir

Keywords: intergenerational mobility, education, intra-household bargaining power, decision-making

The purpose of this paper is to analyze the association between intergenerational education mobility and mothers' intra-household bargaining power. To do so, the first six waves of the Survey of Health, Ageing and Retirement in Europe are used and the analysis is conducted with the observations from 20 European countries and Israel. The results of the analysis where mother's and father's relative education level and relative predicted wage income are used as proxies to intra-household bargaining power indicate that an increase in mother's intra-household bargaining power strengthens the association between mother's years of education and the daughter's educational outcome while the increase in maternal bargaining power weakens the dependency of educational outcome of daughter's on paternal education. Even though the results of the estimation with main male sample reflect the existence of a similar pattern for sons, there is no evidence of a significant association between mother's bargaining power and intergenerational education mobility for boys when the models are replicated for a subsample of sons.

ÖZET

UYGULAMALI EKONOMİ ÜZERİNE BİR DENEME

MELİZ TÜRKİLERİ

EKONOMİ YÜKSEK LİSANS TEZİ, HAZİRAN 2021

Tez Danışmanı: Prof. Dr. Abdurrahman Bekir Aydemir

Anahtar Kelimeler: kuşaklar arası hareketlilik, eğitim, hane içi pazarlık gücü, karar verme

Bu çalışmanın amacı kuşaklar arası eğitim hareketliliği ile annelerin hane içindeki pazarlık gücü arasındaki ilişkiyi analiz etmektir. Bunu yapabilmek amacıyla, Avrupa'da Sağlık, Yaşlanma ve Emeklilik Anketi'nin ilk altı dalgası kullanılmış ve analiz 20 Avrupa ülkesi ve Israil'den elde edilen gözlemlerle gerçekleştirilmiştir. Annenin ve babanın göreli eğitim düzeyinin ve göreli tahmini maaş gelirinin hane içi pazarlık gücünün göstergeleri olarak kullanıldığı analizin sonuçları, annenin hane içi pazarlık gücündeki artışın annenin eğitim yılı ile kız çocuğunun eğitim çıktısı arasındaki ilişkiyi güçlendirdiğini, diğer yandan bu artışın kız çocuğunun eğitim çıktısının babanın eğitimine olan bağımlılığını zayıflattığını göstermektedir. Erkek örneklem ile yapılan tahminin sonuçları, erkek çocukları için benzer bir örüntünün varlığını yansıtsa da, modeller erkek örneklemin bir alt örneklemi için tekrarladığında, annenin pazarlık gücü ile kuşaklar arası eğitim hareketliliği arasında erkek çocuklar için anlamlı bir ilişki olduğuna dair herhangi bir kanıt bulunamamıştır.

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In memory of Ismail Serhat Oğuz

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CPI Consumer Price Index 11

ISCED 97 International Standard Classification of Education 1997 8

SHARE The Survey of Health, Ageing, and Retirement in Europe 2

1. INTRODUCTION

In societies where the offspring's educational achievements are highly dependent on their parents' education and socio-economic status, the persistence of inequalities across generations is a prevalent outcome. Since the low intergenerational links between parents' and offspring's educational achievement are interpreted as the availability of equal opportunities for children in a society, investigating the intensities and determinants of these links across nations is important to ensure that policies are well informed with scientific evidence. Therefore, until today numerous studies have focused on understanding the effects of parental education on children's educational outcomes by using several identification strategies (Behrman and Rosenzweig 2002; Björklund, Lindahl and Plug 2006; Black, Deveroux and Salvanes 2005; Holmlund, Lindahl, and Plug 2011; Plug 2004; Sacerdote 2007). The educational outcomes of children with similar heritable endowments are investigated by using twin parents (Behrman and Rosenzweig 2002; Holmlund, Lindahl, and Plug 2011), adopted children studies disregard the unobserved heritable endowments by breaking the genetic linkage between parents and offsprings (Björklund, Lindahl and Plug 2006; Plug 2004; Sacerdote 2007), compulsory schooling reforms, and policy changes that provide exogenous variation in parental years of schooling are used to investigate the pure effect of parental education on offspring's educational outcome (Black, Deveroux and Salvanes 2005). In light of these studies that reveal the direct effects of parental education on children's educational outcomes, investigating the factors that may alter these direct effects may provide a deeper understanding of the intergenerational persistence of inequalities.

Previous literature in intra-household decision-making behavior provides evidence of gender-specific heterogeneities in the within-family allocation of family resources (Bourguignon et al. 1993; Browning et al. 1994; Duncan 1990; Hoddinott and Haddat 1995; Lundberg, Pollak, and Wales 1997). In this regard, one may expect that gender role in families and more specifically mother's intra-household bargaining power may alter the effects of parental human capital and investment on offsprings'

educational outcomes. Based on this motivation, I analyze the association between the mothers' intra-household bargaining power and intergenerational education mobility using the first six waves of the Survey of Health, Ageing, and Retirement in Europe (SHARE). A pooled sample of 20 countries across Europe and Israel is used to conduct the analyses.[1]

I start the analysis with country-specific baseline estimates and find that the correlation between mothers' (respectively fathers') and offsprings' years of schooling are significant and display a range of 0.11 to 0.34 (respectively 0.06 to 0.30). While the transition countries are the least mobile countries based on the correlation between mothers' and offsprings' years of schooling, the order of the countries changes when they are ranked based on the correlation between fathers' and children's years of schooling. Hertz et al. (2008) estimate the country-specific correlation coefficients by using average parental education as a dependent variable, and report that the formerly communist countries have the least intergenerational education mobility whereas the Nordic countries are the most mobile nations within Europe. However, the results of the analysis that I conduct imply that the mobility rankings based on average or highest parental education may hide the gender dimension of intergenerational persistence of inequalities.

As a next step, I replicate the baseline estimates for a subsample by adding a proxy to the model to control families' financial resources. When I benefit from the variation across families that have similar economic resources during the childhood of the offspring, the correlation coefficients slightly change and remain robust. Besides, the effect of total family wage income on a child's years of schooling is significant and larger in magnitude for the countries with the highest socio-economic inequalities such as Italy, Spain, and France as expected. Next, I pool the sample of countries and extend the standard model to estimate the effects of mothers' intra-household bargaining power on intergenerational education mobility. In this model, a dummy variable that indicates the families in which the mother is more educated than the father is used to proxy the mother's within family bargaining power. Then the interactions between parents' years of education and bargaining power dummy are examined. The results provide supportive evidence that a mother's intra-household bargaining power alters the effects of maternal and paternal education on offsprings' educational outcomes. When mothers are more educated than fathers, the association between maternal education and offsprings' years of schooling is strengthened whereas the effect of paternal education on offsprings' years of schooling is diminishing. Besides changes in the effects of parental education are not equal for daughters

[1] Austria, Belgium, Germany, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Sweden, Israel, The Czech Republic, Poland, Ireland, Luxembourg, Hungary, Slovenia, Estonia, Croatia, Portugal

and sons. The increase in the effect of maternal education is higher for girls while the decrease in the effect of paternal education is more pronounced for boys. When I replicate the results for a subsample, the interaction between mothers' years of schooling and bargaining power becomes insignificant and is close to zero for sons. The latter is consistent with the previous studies (Afoakwah, Deng, and Onur 2020; Luz and Agadjanian 2015) that find no evidence of the effects of higher maternal bargaining on boys' educational outcomes.

Finally, I conduct a similar analysis with the pooled sample by defining the parents' predicted relative wage income as a proxy to capture mothers' intra-household bargaining power. In this model, a subsample is used and relative wage income is predicted based on the country-level age earning profiles and parents' job histories.[2] Since these predictions are based on the parents' retrospective employment status, the bargaining measure captures the parents' relative position during the offspring's childhood. The results of this estimation confirm the findings of the previous one with bargaining dummy and imply that the effect of mothers' years of schooling on daughters' educational outcomes is strengthened when the mothers' relative wage income increases. I could not find similar evidence for sons, however, I fail to reject the equality of the coefficients of interaction terms. Moreover, higher maternal bargaining power is associated with a lower correlation between fathers' and children's years of schooling and the diminishing effect is significant for both girls and boys.

As far as I know, this is the first study that investigates the effect of mothers' intra-household bargaining power on intergenerational education mobility. As a starting point, I believe that the results of this paper will guide further studies and encourage researchers to focus on the intersection between family decision-making behavior and intergenerational education mobility. This paper is organized as follows. Section 2 reviews the previous literature and summarizes the conceptual framework. Section 3 describes the data. Section 4 discusses the methodology and presents the results. Section 5 reports the results from the robustness checks. Finally, Section 6 concludes.

[2]See in Sections 3.3.1 and 3.4 for a detailed description of this estimation.

2. CONCEPTUAL FRAMEWORK

In the earlier literature on family decision behavior, it was argued that the family behaves as a single unit that aims to maximize a unique utility function (Becker 1974; Samuelson 1956). According to this approach, there are no heterogeneous preferences across the partners, and the family behaves as a single agent that confronts a pooled budget constraint. *In Theory of Social Interaction*, Becker (1974) models a family with an altruistic head who concerns not only their consumption but also the welfare of the remaining members of the family. He argues that a coherent family function is identical to that of the family head. Therefore, consumption or the welfare of any family member is not affected by the change in the within-family allocation of resources. As a second approach that is widely discussed in the literature, a game-theoretical model has been adopted to the family decision process, and the marriage is redefined as a cooperative game (Manser and Brown 1980; Mcelroy and Horney 1981). Manser and Brown (1980) define a two-person world that allows family members to have heterogeneous preferences. In this framework, single-state utilities with respect to individuals' threat points are defined, and none of the family members accept an outcome that provides less utility than their single-state utilities. The result of this study suggests that identical changes in partners' exogenous full income do not have the same effect on household demands. Thus, the neoclassical household utility model that implies pooled income assumption is criticized. Similarly, McElroy and Horney (1981) reveal out that the maximum utility that partners' can obtain outside of the household affects the Nash objective function, moreover, the optimal bundle responds differently to identical changes in male and female non-wage income.

Later empirical studies have suggested contradictory results to the pooled income models across a wide range of geographies (Bourguignon et al. 1993; Browning et al. 1994; Duncan 1990; Hoddinott and Haddat 1995; Lundberg, Pollak, and Wales 1997). Duncan (1990) benefits from Brazilian survey data to test the common preference model and reports that a mother's unearned income has a significantly bigger

impact on the children's health outcomes such as child survival probability, nutrition intake, and child weight. Bourguignon et al. (1993) test the pooled income hypothesis in the case of France and find out that the spouses' income has significantly different effects on the total expenditures of various consumption goods. Another study reveals that for families residing in Côte d'Ivoire, the budget share of food increases with the increasing wives' share of cash income whereas the budget share of alcohol and cigarettes decreases (Hoddinott and Haddat 1995). In the U.K context, Lundberg, Pollak, and Wales (1997) benefit from an exogenous shock that alters the recipients of the child allowance program in the late 1970s. They reject the pooled budget hypothesis and find that transferring resources from husbands to wives increases the spending on women's and children's clothing. Bobonis (2009) find a similar result when he benefits from an exogenous income variation that is provided by the Mexican Progresa Program. On the other hand, Phipps and Burton (1998) bring a different perspective to the previous findings and support the evidence that where the families pool their resources for some categories of consumption such as housing, they could not develop a similar decision-making process for the other consumption categories. Their results imply that the increase in a mother's income is associated with an increase in child care consumption, while there is not any evidence for a similar effect when the father's income increases.

The empirical studies that provide evidence against the pooled income hypothesis lead to another discussion of whether there exists a parental gender bias in the investments in children. Especially in the parental time investment studies, the results indicate the existence of higher time investment on a same-sex child. Lundberg (2005) rationalizes these results from two different perspectives. Parents could believe that their time input is more beneficial for the development of same-sex children or they purely enjoy the time that they spend with those children. Bryant and Zick (1996) investigate the parent-child shared time in several activities in the U.S context, they find that parents tend to spend more time with same-sex children in activities that could be classified as a reflection of traditional gender roles. To illustrate, mothers tend to spend more time with their daughters for the activities such as family care while the fathers tend to spend more time with sons in the activities such as maintenance.

Along with the parental time investment literature, there exist studies that emphasize gender asymmetries of parental preferences and their effects on children's education and health outcomes. Duncan (1994) investigates the effects of parental education on children's height by benefitting the household surveys from Ghana, Brazil, and the United States. He finds that the relationship between parental education and children is stronger for mother-daughter pairs than the mother-son

pairs. On the contrary, the effect of paternal education is bigger for the sons than the daughters. Besides, he examines the effects of maternal education when the mother is more educated than the father. The results indicate that in Ghana, the effects of maternal education on daughters' height are significantly higher for these mothers compared to other mothers. However, he could not find any evidence that supports a similar argument for sons. Moreover, he reports that the mothers' nonlabor income does not have any effect on their sons' height in Brazil, while it significantly increases the daughter's height. Duflo (2003) examine the effects of a pension program that targeted the elder black population in South Africa, the result of the study implies that grandmother's pension has a significant and large positive effect on granddaughters' anthropometric status while the results report a little effect for the grandsons. In another study from Ghana, where the effect of womens' intrahousehold bargaining power on children's education outcomes is investigated, it is found that daughters' grade repetition significantly reduces with higher maternal bargaining power whereas this effect is insignificant for boys (Afoakwah, Deng, and Onur 2020). By defining a measure for decision-making autonomy, Luz and Agadjanian (2015) report that daughters' primary school enrollment is positively correlated with the mother's decision-making autonomy in rural Mozambique, and this effect remains robust when they control for the conventional bargaining proxies such as the mother's education level and maternal income. However, similar to the other studies they point to insignificant effects of a mother's decision-making autonomy on a boy's schooling.

3. DATA

The Survey of Health, Ageing, and Retirement in Europe (SHARE) (Börsch-Supan et al. 2013), was used to conduct this study. SHARE is a cross-national panel data that provides detailed information about an individual's socioeconomic status, health condition, social and family networks. It is a representative sample of individuals aged 50 and older, and it covers 26 countries across Europe. From 2004 to 2019, seven waves of the longitudinal study were conducted, and nearly 140,000 individuals across Europe participated (Bergmann et al. 2019). Moreover, the SHARE contains special waves that provide detailed information about the respondents' life histories. Wave 3 and Wave 7, named SHARELIFE, have been designed to draw a picture of the important events that shape the respondents' life. These special waves contain questions ranging from individuals' work history to childhood. There are several advantages of the SHARE that encourage me to use for the study. First of all, it provides a wide range of information that is comparable across different countries in Europe. Secondly, not only individuals aged 50 and older but also their spouses were surveyed regardless of the spouses' age. It allowed me to match the partners and constitute a new dataset where children are the key observation units. Finally, the SHARE provides a special dataset, Job Episodes Panel, that was generated by combining the information of the SHARELIFE surveys of wave 3 and wave 7 (Brugiavini et al. 2019). This special dataset was formed as a retrospective panel that recorded information about respondents' employment status, education status, marital status, and place of residence for the whole life cycle. Therefore, it was a useful resource to track parental background and the retrospective family income.

3.1 Offsprings' Demographic Information

The regular SHARE waves are a combination of various questionnaires such as "Demographics and Networks", "Children", "Cognitive Function", "Employment and

Pensions" etc. The Children Questionnaire of the waves reports a wide range of information about the respondent's children. However, different from the other questionnaires, the Children Questionnaire is only answered by the family respondent who is randomly selected from a given family, and the response of the other partner is recorded as a missing value. Therefore, I only kept the observations that were provided by the family respondents. In the second step, I merged this data with the gv-isced dataset of the SHARE that transforms country-specific education level to International Standard Classification of Education 1997 (ISCED 97) code. It was recommended to exclude the regular panel of wave 7 by the SHARE, because of the high number of missing information. Therefore, only the first six waves of the SHARE were used in this study. In the first two waves, the highest education level, employment status, and relationship with the family respondent are available up to the maximum of four selected children. This selection procedure was not fully randomized, therefore I decided to create a new dataset that combined demographic information of children from all surveys where the family was interviewed.

"Coupleid" is a key variable that indicates a specific couple in the SHARE and the key is unchanged across the waves if the partners are not separated. Thus, I used the coupleid, child's gender, and child's year of birth as key variables that indicate a specific child in my new dataset as the SHARE suggested. By using coupleid as a key variable, I eliminated the observations with single parents and the final number of observations decreases to 122.643 children and 48.069 couples. Moreover, I defined my final variables about children based on the information that comes from the latest available wave. There are two advantages of creating a new children dataset, first of all, it enabled me to get information for all children that the family mentioned across different waves of the survey. Secondly, the highest education level completed was derived based on the information from the latest wave where the couple provided information about that children.

3.2 Parents' Demographic Information

Demographics and Networks datasets of the waves provide a wide range of information about respondent's country of residence, country of birth, year of birth, gender, marital status, highest education level completed, years of schooling, and the number of children. Furthermore, for the individuals who migrated to the current country of residence from another country, migration year is also collected. Since the country-specific highest education level is reported in the demographics

and network dataset, I used gv-isced data to transform country-specific education level to ISCED 97 code of education. Similar to the procedure that I followed in Section 3.1, I merged the demographics dataset with the technical one that reports key id variable for the family respondent and also indicates the cases where the observation belongs to the baseline interview of the panel data. After following a similar procedure for all six waves, I merged them by using country of residence and individual key id information. (Mergeid is the unique key identifier for individuals and does not change across waves.) The final dataset, named main demographics dataset, includes demographic variables of 199.978 individuals who attended at least one of the first six waves of the SHARE.[3]

The structure of the main demographics dataset provides a cross-wave comparison of unchanged information such as year of birth and gender, the consistency of the variables across waves is also captured by creating new dummy variables. Regarding the consistency of variables, only three of the 199.978 respondents reported inconsistent information for their year of birth. On the other hand, while 465 of them reported inconsistent information for the highest education level completed, these inconsistencies raised to 930 for the years of schooling information. In the first wave of the SHARE, years of schooling were not directly collected from respondents. Unlike the following waves, the years of schooling information in the first wave of the survey was imputed by the SHARE. The latter could be one of the reasons for high inconsistencies in respondents' years of schooling information across different waves of the survey. To be able to solve this problem, I imputed years of schooling variable both for parents and children based on the procedure that I am going to explain in the following section.

3.2.1 Years of Schooling Imputation

The main demographics dataset that reports the demographic information of 119.978 individuals was used to create imputed years of schooling variable. However, individuals that report inconsistent information about their completed years of schooling or ISCED 97 coding of education level across the different waves of the SHARE were dropped from the sample. Observations where the reported years of schooling information was recorded as implausible or unknown across all waves that a responded attended, were also excluded from the sample. Thus, the new years of schooling variable were imputed based on the 117.740 observations in the final dataset. The

[3] 199.978 indicates all individuals in the main demographics and networks dataset and the observations is not only restricted to the parents. Therefore, family respondent id, partners id, and the coupleid of the individuals in this dataset are used to match parents demographic information with the children.

country-specific median level of the reported years of schooling was imputed for every level of ISCED 97 coding. I used country and ISCED 97 coding of education level in the children dataset to match the children with the imputed years of schooling. Since the children dataset of the SHARE waves reports only ISCED 97 coding of education level, imputation of the offspring's years of schooling was inevitable. Besides, even though the parents' reported years of schooling are available in the demographic and network questionnaires, I decided to use imputed years of education values also for parents because of the inconsistencies are described in Section 3.2.

3.3 Job Episode Panel

The Jop Episode Panel (Brugiavini et al. 2019) is the special dataset that is provided by the SHARE. It contains retrospective information about the respondent's working status, type of employment, the first after-tax monthly wage of every new job, and the last after-tax monthly wage of the main job. Moreover, for the ones who still have a job, the current after-tax monthly wage is also recorded. Respondents' information that is provided in this special panel dataset was derived from the SHARELIFE survey of waves 3 and 7. Since the SHARELIFE questionnaire was not conducted with every respondent who attended at least one of the regular panel interviews, the Jop Episode Panel provides information for 91.743 unique individuals and 6,169,132 individual-year points.

I benefited from this panel dataset to create country-level age-earning profiles. To be able to do that, I extracted 286.746 individual-year points that report at least one of the first wage, last wage, or current wage information. By using country of residence information, I restricted the sample to individual-year points that the observations belong to the following countries: Austria, Belgium, Germany, Netherlands, Sweden, Spain, Italy, France, Denmark, Greece, Switzerland, Israel Ireland, Luxembourg, Poland, Portugal, Czech Republic, Hungary, Slovenia, Estonia, and Croatia. Since only these twenty-one countries attended the first six waves of the SHARE study, remaining observations that match with the other countries are dropped from the dataset.

Zero wage earners and the individuals who report themselves as self-employed or unemployed were also excluded from the sample. In the SHARELIFE survey, first wage and last wage information are reported along with the currency unit. Since the national currency units were coded based on the respondents' answers, there were

cases with missing currency information. These observations were also dropped from the sample and the total number of observations decreased to 150.142 individual-year data points.

As discussed above, in the dataset, wage information is reported along with the currency unit. Since the observations come from a wide range of time intervals, there are cases with old national currency units or national currency units of other countries. To be able to derive consistent results within a country, observations with national currency units of other countries were transformed to euro by using the exchange rate corresponding to the year of observation[4] As a second step, by using the national currency unit - euro exchange rates, I transformed these observations to the ones with national currency units of that country. For the euro area member countries, previous national currency units were used as the current national currency units, since most of the observations for these countries come from the period before they joined the euro-zone. Once I derived the after-tax monthly wage in the national currency unit, I adjusted them by using the consumer price index (CPI) (base=2010). However, availability of the exchange rates and consumer price index introduced a new constraint for the observations from the earlier periods. When the CPI was not available for a given country-year match, I dropped these observations from the sample. Similarly, observations that were not reported in the national currency were also not included in the sample if there was no exchange rate information for that country-year match. These constraints were especially binding for the observations from the transition countries. The oldest observation that I was able to adjust with the CPI was from the 70s for Poland and Hungary. The time interval was more restricted for Estonia, Slovenia, Croatia, and the Czech Republic. It was not possible to adjust wage information for these countries when the observations belong to the pre-90s or pre-80s. Therefore, transition countries were excluded from the job episode panel. Moreover, Israel was also excluded from the sample of the job episode panel since the redenomination processes prevent us to derive consistent results. Because of the exclusion of transition countries and Israel from the sample, the total number of observations decreased to 103.564 individual-year data points.

The number of working hours is not collected in the SHARE. Besides, I am not able to derive year-specific information indicating whether the respondent works as a full-time employee. However, the job episode panel has a variable that shows if the respondent always works as a part-time employee in a specific job. By using this information, I eliminated all the observations belonging to a specific job where

[4]Following currency units were used as national currency units: ATS for Austria, BEF for Belgium, DKK for Denmark, FRF for France, DEM for Germany, GRD for Greece, IEP for Ireland, ITL for Italy, LUF for Luxembourg, NLG for the Netherlands, PTE for Portugal, ESP for Spain, SEK for Sweden and CHF for Switzerland. The exchange rates are derived from the statistics that are provided by EUROSTAT (n.d.).

the respondent always worked as a part-time employee. As I mentioned before, observations were dropped from the sample when the country-year-specific CPI or exchange rate was not available. Then, the sample was restricted to the observations where the respondents are aged between 16-66 with non-missing information of their highest education level completed. Since the job episode panel does not provide information for the respondents' education level, individuals in the panel were matched with the main demographics dataset that provides information on reported ISCED 97 codes of highest education level completed, and imputed years of schooling information.[5] Finally, observations in the top 1% or 0.5% of the monthly after-tax wage distribution of a given country were dropped from the sample to exclude the outliers.[6] These sample restrictions lead to 75.989 observations in the job episode panel to model country-specific age earning profiles.

3.3.1 Age Earning Profiles

Country-specific age earning profiles are used to predict parental income variables as mentioned in Section 3.3. To estimate these profiles, information on individuals' gender, age, marital status, years of schooling, CPI adjusted after-tax monthly wage, country of residence, and their highest education level completed are needed. Therefore, 75.989 observation from the job episode panel is used for these estimations. A dummy variable that indicates whether the individual has a cohabitant partner or spouse in a given year was generated. Since the children of the cohabitant partners are also included in the main study, I preferred to define a single indicator for both married individuals and the individuals with a cohabitant partner. Eq.(3.1) was estimated for country-specific subsamples with different education categories. I generated a new education variable indicating three levels of education. Individuals with the first 3 levels of ISCED 97 (0-1-2) coding of education are categorized as the ones with low education. The 3rd and 4th levels of ISCED 97 were recoded as medium education level, and the 5th and 6th levels of ISCED 97 were categorized as high education level. For every country in the sample, based on the respondents' gender and education level, I created six different subsamples: female with low education, male with low education, female with medium education etc. Then,

[5] See Section 3.2 for detail of the main demographics dataset.

[6] Top 1% of the wage distributions are excluded from the samples where belong to Luxembourg, Netherlands, France, Greece, Italy, Spain, and Portugal while only 0.5% of the wage distributions are trimmed for Austria, Belgium, Denmark, Germany, Ireland, Sweden, and Switzerland.

I estimated the following model for these country-specific subsamples.

$$logW_i = a + \gamma S_i + A_i + A_i^2 + M_i + u_i \tag{3.1}$$

Here, W_i is the natural logarithm of monthly after-tax wage of individual i, S_i is the imputed years of schooling of the individual i, A_i indicates the age of individ-ual i, A_i^2 is the quadratic age term and the M_i indicates whether the individual is married or has a cohabitant partner. The resulting country-specific age earning profiles are reported in Appendix A from Figure A.1 to Figure A.14. A closer look into the figures indicates the findings that are consistent with the previous litera-ture. A diminishing investment over an individual's working life is reflected with the concavity of earning profiles, differentials among education levels become more pronounced with increasing age, and the earnings increases with higher education level (Mincer 1974).

3.4 Parent-Children Dataset

By using id variables for family respondent and their partners, I merged the data on offspring's demographic information (Section 3.1) with the main demographic dataset (Section 3.2). This step helped me to obtain a child's demographic information along with their parents' demographic information. After the observations that have missing information on offspring's gender, year of birth, or education level were dropped from the sample, observations in the parent-children dataset decreased to 113.337 children. Moreover, I generated an age control variable that indicates the cases where the difference between the child's year of birth and parents' year of birth is less than the thirteen years, and based on this indicator, I dropped the implausible observations from the sample. Moreover, the respondent's demographic information includes the migration year for the individuals who were born in a country that is different than their current residence. Benefiting from the parents' year of migra-tion variable and child's year of birth, I created a variable that distinguishes the observations where the child's country of birth is different than the parents' cur-rent country of residence. Since the years of schooling variable matched with the children based on their parent's current country of residence, keeping migrant chil-dren in the sample may introduce measurement problems. Therefore, the children who were born in another country than their parents' current country of residence were excluded from the sample. Finally, the sample was restricted to the children who are older than 24 years old and those who are the own children of both of the

parents. The final parent-children dataset includes 67.392 observations from the 21 countries.[7] For the 27.065 children whose parents' job history records are available in the SHARE job episode panel, parents' after-tax monthly log wage was predicted for the years when the child is aged 6 to 15. Since age-earning profiles were used for the prediction, I generated age variables for the parents by using their year of birth information and the years when the child is aged 6 to 15. As I mentioned in Section 3.3.1, age-earning profiles were estimated based on gender and education level-specific subsamples. Therefore, I re-coded the parents' highest education level (ISCED 97) within 3 levels such as low, medium and high education levels.

According to the parents' age, gender, education level, and imputed years of schooling, I estimated their after-tax monthly log wage for each year the child was between the ages of 6 and 15. Besides, for these years, I was able to derive information on whether the child's parents were employed, by benefiting the original job episode panel that is provided by SHARE. For the following adjustment, I transformed parents' predicted after-tax monthly log wages to after-tax monthly wages. Then, in the year when the mother or father was not employed, I re-coded the estimated monthly wage as zero for that specific parent. On the other hand, as I mentioned in Section 3.3, the job episode panel does not provide information on whether a respondent worked as a part-time employee in a given year. However, if an individual always works as a part time employee in a given job, then they are recorded as part time employee in years corresponding the whole job duration. For those years when the mother or father was reported as a part-time employee, I used country and gender specific correction rates to adjust the monthly wages.[8]

To be able to generate parents' total wage, I assume that an individual who was reported as a full-time employee in the job episode panel for a specific year worked for 12 months without any interruption in that year. Based on this assumption, a parent's total annual wage was calculated for each year. Then, I generated a mother's total wage income as a summation of her annual wages across the years when the child was between the ages of 6 and 15. A similar calculation was done to generate a father's total wage income. Finally, the total family wage income was imputed as a summation of the mother's and father's total wage incomes. However, a parent's total wage income is reported along with the national currency unit, therefore, to provide consistency the total family wage income was transformed to the euro by using the country-specific exchange rates in 2010.

[7] Austria, Belgium, Germany, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Sweden, Israel, Czech Republic, Poland, Ireland, Luxembourg, Hungary, Slovenia, Estonia, Croatia, Portugal

[8] I used average number of usual weekly hours of work in main job for full time employees and average number of usual weekly hours of work in main job for part time employees (EUROSTAT n.d.) to calculate country and gender specific part time/ full time correction rates.

3.4.1 Final Sample Size and Proxies for Bargaining Power

Usually, the available data sets for intergenerational education mobility estimation do not provide a direct measure of intra-household bargaining power or more especially within family decision-making autonomy. Therefore, the previous studies that use the bargaining power measures in their models rely on the past researches on the determinants of intra-household decision-making autonomy. Several studies show that a women's share in total family income (Bernasek and Bajtelsmit 2002), their wage income (Anderson and Eswaran 2009; Elder and Rudolf 2003), and their education level (Bertocchi, Brunetti and Torricelli 2014; Lührmann and Maurer 2008) are important determinants of their intra-household bargaining power. Based on these results, I generated two bargaining power variables that are interpreted as the proxies for the mother's intra-household bargaining power.

In the first version, I used a dummy variable that indicates the families where the mother is more educated than the father. For a second version, I benefited from a ratio of mother's predicted total wage income to father's predicted total wage income. The way I created the variables introduced some complications. In the parent-child dataset, there were observations where the father's income was zero. Also, there are cases where both the father's and mother's earnings are estimated as zero. These observations are excluded from analysis when the bargaining measure proxy is defined as relative wage income. Compared, the main sample includes 67.392 children, for the models that control the total family wage income or use the relative wage income as the bargaining power measure, a subsample composed of 26.373 children is used. This subsample was formed from the children who were born in Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Ireland, Luxembourg, and Portugal. In the final section, for the robustness purpose, observations from Luxembourg, Portugal, and Ireland are also excluded from the sample and some of the models are re-estimated with the remaining 24.887 observations.

Panel A of Table 3.1 provides the descriptive statistics of demographic characteristics of the main sample. 51% of the observations in the main sample belongs to boys and the mean age is the 38.5 for the main sample where the key observation units are children. The mean years of schooling among mother's and father's are close to each other with 10.1 and 10.5 years respectively while the average years of schooling indicates a higher value for children in the main sample compared to their parents (12.6 years). Panel B of Table 3.1 reports the further statistics on highest education completed. While the fraction of the fathers with a degree below the upper secondary education is 44.2%, 20.3% of the fathers have a degree of tertiary

education. As expected the fraction of mothers with a degree of tertiary education is lower compared to the fathers. On the other hand, when the fractions of completed education levels are compared across generations, the fraction of the male with high education level increases from 20.3% to 34.5%, and the fraction of the female with high education level increases from 15.7% to 41.3%. The latter implies that the gender gap in completed education levels has evolved in favor of women.

Table 3.1 Descriptive Statistics

Panel A - Demographic characteristics					
	Observation	Mean	Std. Dev.	Min	Max
Age	67392	38.529	8.869	24	71
Male	67392	.51	.5	0	1
Children's education	67392	12.642	3.074	0	21.5
Mother's education	67392	10.089	3.527	0	21.5
Father's education	67392	10.538	3.629	0	21.5
Panel B – Highest education completed					
	Observation	Low	Medium	High	
Male children	34,337	18.10	47.45	34.45	
Female children	33,055	15.33	43.37	41.30	
Mothers	67,392	50.85	33.42	15.72	
Fathers	67,392	44.23	35.52	20.25	

Notes Descriptive statistics belong to main sample are reported in this table. The key observation units are children in this sample. In Panel B, low education level corresponds to a degree below upper secondary education or non-education, medium education level corresponds to upper secondary or post-secondary non tertiary education, and high education level implies the first or second stage of tertiary education.

* p<0.1, ** p<0.05, *** p<0.01

4. METHODOLOGY AND RESULTS

4.1 Baseline Estimates

Intergenerational education mobility provides a picture of the intergenerational transmission of inequalities in a given society. Therefore, studies that investigate intergenerational education mobility aim to estimate the effects of parents' education on the offspring's educational outcome. In the previous studies, regression and correlation coefficients have been used to capture this effect. However, since the correlation coefficient is based on the standardized measure of child's and parents' years of schooling, the correlation coefficient provides more reliable estimates for the between-country comparisons. The reason behind that, the standardization eliminates the cross-country differences in the child's and parents' distributions of education level (Aydemir and Yazıcı 2019). To provide a cross-country comparison, I estimate a baseline model both for regression and correlation coefficients for every country in my main sample.

$$S_{it} = a + \gamma_t + \gamma_p + \beta_1 S_{m,it} + \ \beta_2 S_{f,it} + G_{it} + u_{it} \tag{4.1}$$

In Eq.(4.1), S_{it} denotes years of schooling of child i from birth cohort t, $S_{m,it}$ and $S_{f,it}$ indicates mother's and father's years of schooling respectively. G_{it} is the control for the child's gender. γ_t and γ_p are the vectors that capture the child's and the parents' birth cohort fixed effects, respectively.[9] u_{it} is the error term and the standard errors are clustered at child's birth cohort level. Observations in the study include a wide range of birth cohorts. The oldest child in the study was born in 1936 while the youngest one was born in 1991. To be able to eliminate the time trend effects in the estimation, I capture these trends with a child and parents birth cohort fixed effects and benefit from the variation within birth cohorts. In this model, β_1 indicates

[9]Parents' birth cohorts are formed over 10 year periods while the 5 year time intervals are used to create child's birth cohorts. Mother's and father's birth cohorts are added to the models separately.

the change in the child's years of schooling when the mother's years of schooling increases by one year. Similarly, β_2 capture the same effect for paternal education.

Along with the regression coefficients β_1 and β_2, I also estimate country-level correlation coefficients. Therefore, I standardized measures of the child's and parents' years of schooling. For every country, I compute mean (μ_c) and standard deviation (σ_c) of child's years of schooling distribution. Then, I adjust a child's years of schooling S_{it}, by using the following transformation S^d_{it}=(S_{it}-μ_c)/σ_c. S^d_{it} indicates the child's adjusted years of schooling. I follow the same procedure to standardize mother's and father's years of schooling. Then, I estimate Eq.(4.2).

$$S^d_{it} = a^d + \gamma_t + \gamma_p + \beta^d_1 S^d_{m,it} + \beta^d_2 S^d_{f,it} + G_{it} + u_{it} \tag{4.2}$$

Here, S^d_{it} is the adjusted years of schooling of child i from birth cohort t, $S^d_{m,it}$ and $S^d_{f,it}$ are mother's and father's adjusted years of schooling, respectively. β^d_1 denotes the standard deviation change in a child's years of schooling rank when a one standard deviation increase occurs in the mothers' years of schooling rank. β^d_2 captures a similar effect for the one standard deviation increase in the father's years of schooling rank.

Table 4.1 presents both the regression and correlation coefficients associated with the parents' years of schooling, at the country level. All the regression and correlation coefficients are highly significant and this result suggests that mothers' and fathers' years of schooling are positively associated with the child's educational outcome in all countries in the sample. However, there are variations between countries both in the magnitude of the effects and the relative effects of maternal and paternal education. Table 4.2 reports the educational mobility rankings of the countries. According to the effects of maternal education, Switzerland has the highest mobility since the correlation coefficient has the lowest level with 0.11. On the other hand, this magnitude increases to 0.34 for Hungary and indicates the lowest intergenerational education mobility based on the effects of maternal education. This result implies that a 1 standard deviation increase in the mother's years of schooling rank is associated with a 0.11 standard deviation increase in a child's years of schooling rank in Switzerland while the same increase in the mother's rank is associated with a 0.34 standard deviation increase in a child's years of schooling rank in Hungary. On the other hand, the mobility ranking of the countries based on the coefficients of paternal education show that Ireland has the highest education mobility with a correlation coefficient of 0.058 and Luxembourg has the lowest mobility with 0.298.

Table 4.1 Intergenerational Education Mobility by Countries

	(1) AUSTRIA	(2) GERMANY	(3) SWEDEN	(4) NETHERLANDS	(5) SPAIN	(6) ITALY	(7) FRANCE	(8) DENMARK	(9) GREECE	(10) SWITZERLAND	(11) BELGIUM
Correlation Coefficient											
Maternal Education	0.173***	0.209***	0.201***	0.176***	0.234***	0.232***	0.238***	0.226***	0.201***	0.106***	0.257***
	(0.016)	(0.010)	(0.011)	(0.017)	(0.004)	(0.006)	(0.004)	(0.008)	(0.006)	(0.017)	(0.019)
Paternal Education	0.180***	0.251***	0.220***	0.282***	0.269***	0.268***	0.250***	0.188***	0.210***	0.251***	0.223***
	(0.012)	(0.021)	(0.012)	(0.007)	(0.004)	(0.011)	(0.009)	(0.025)	(0.016)	(0.027)	(0.017)
Regression Coefficient											
Maternal Education	0.224***	0.199***	0.150***	0.159***	0.264***	0.246***	0.204***	0.138***	0.146***	0.138***	0.219***
	(0.021)	(0.010)	(0.008)	(0.015)	(0.005)	(0.006)	(0.003)	(0.005)	(0.005)	(0.022)	(0.016)
Paternal Education	0.198***	0.249***	0.157***	0.233***	0.275***	0.269***	0.202***	0.139***	0.139***	0.285***	0.181***
	(0.013)	(0.020)	(0.008)	(0.005)	(0.004)	(0.011)	(0.007)	(0.018)	(0.011)	(0.030)	(0.014)
Observations	3232	4328	3589	3507	7034	5238	4507	2968	3550	2275	4763
R-squared	0.102	0.167	0.155	0.162	0.218	0.217	0.195	0.124	0.205	0.100	0.190
Child's Birth Cohort FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Gender	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Parents' Birth Cohort FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes In the correlation coefficient part results of Eq.(4.2) is reported, and the coefficients indicate the results of Eq.(4.1) in the regression coefficient part. All standard errors are clustered at child's birth cohort level. Both mother's and father's birth cohort fixed effects are added to the model.

* p<0.1, ** p<0.05, *** p<0.01

Table 4.1 Intergenerational Education Mobility by Countries (cont.)

	(12) ISRAEL	(13) LUXEMBOURG	(14) IRELAND	(15) PORTUGAL	(16) CZECH	(17) POLAND	(18) HUNGARY	(19) SLOVENIA	(20) ESTONIA	(21) CROATIA
Correlation Coefficient										
Maternal Education	0.225***	0.179***	0.325***	0.283***	0.276***	0.267***	0.340***	0.186***	0.264***	0.288***
	(0.026)	(0.018)	(0.056)	(0.042)	(0.028)	(0.016)	(0.010)	(0.033)	(0.021)	(0.012)
Paternal Education	0.205***	0.298***	0.058***	0.241***	0.258***	0.198***	0.259***	0.240***	0.218***	0.180***
	(0.012)	(0.046)	(0.014)	(0.030)	(0.027)	(0.021)	(0.014)	(0.033)	(0.008)	(0.015)
Regression Coefficient										
Maternal Education	0.178***	0.182***	0.149***	0.325***	0.306***	0.247***	0.292***	0.173***	0.250***	0.186***
	(0.020)	(0.018)	(0.026)	(0.048)	(0.031)	(0.015)	(0.008)	(0.031)	(0.020)	(0.008)
Paternal Education	0.177***	0.267***	0.024***	0.264***	0.279***	0.168***	0.239***	0.223***	0.193***	0.131***
	(0.011)	(0.041)	(0.006)	(0.033)	(0.029)	(0.018)	(0.013)	(0.030)	(0.007)	(0.011)
Observations	3039	681	517	1566	4682	1959	1557	3010	4076	1314
R-squared	0.160	0.228	0.148	0.268	0.227	0.191	0.302	0.172	0.222	0.176
Child's Birth hort	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Gender	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Parents' Birth Cohort FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes In the correlation coefficient part results of Eq.(4.2) is reported, and the coefficients indicate the results of Eq.(4.1) in the regression coefficient part. All standard errors are clustered at child's birth cohort level. Both mother's and father's birth cohort fixed effects are added to the model.

* p<0.1, ** p<0.05, *** p<0.01

A closer look at Table 4.2 reveals an interesting caveat that reporting the mobility rankings based on average parental education or highest parental education may hide the gender-based variation in the mobility rankings of countries since there exist significant heterogeneity in the effects of maternal and paternal education on offsprings' educational outcome within a country.

Table 4.2 Intergenerational Education Mobility Rankings by Countries

Country	**Maternal Education**		**Paternal Education**	
	Correlation Coefficient	**Rank**	**Correlation Coefficient**	**Rank**
Switzerland	0.106***	1	0.251***	15
Austria	0.173***	2	0.180***	2
Netherlands	0.176***	3	0.282***	20
Luxembourg	0.179***	4	0.298***	21
Slovenia	0.186***	5	0.240***	11
Sweden	0.201***	6	0.220***	9
Greece	0.201***	7	0.210***	7
Germany	0.209***	8	0.251***	14
Denmark	0.226***	9	0.188***	4
Israel	0.225***	10	0.205***	6
Italy	0.232***	11	0.268***	18
Spain	0.234***	12	0.269***	19
France	0.238***	13	0.250***	13
Belgium	0.257***	14	0.223***	10
Estonia	0.264***	15	0.218***	8
Poland	0.267***	16	0.198***	5
Czech	0.276***	17	0.258***	16
Portugal	0.283***	18	0.241***	12
Croatia	0.288***	19	0.180***	3
Ireland	0.325***	20	0.058***	1
Hungary	0.340***	21	0.259***	17

Notes Correlation coefficients are derived from Table 4.1.
* p<0.1, ** p<0.05, *** p<0.01

4.1.1 Baseline Estimates with Family Wage Income

Controlling for the family income is not a common approach in intergenerational education mobility estimates. Data limitation could be one explanation for this. Most of the surveys that are used in intergenerational education mobility estimations such as the European Social Survey, Income and Living Conditions Surveys, etc., do not provide any retrospective information on family income for the years corresponding to the offspring's childhood. The novelty of my dataset, allows me to estimate the intergenerational education mobility measures controlling for the predicted total family wage income. Eq.(4.3) is estimated for a subsample of the observations from the countries: Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Ireland, Luxembourg, and Portugal.[10]

$$S_{it}^{d} = a^{d} + \gamma_t + \gamma_p + \beta_1^{d} S_{m,it}^{d} + \beta_2^{d} S_{f,it}^{d} + G_{it} + \log(I_{it}) + u_{it} \tag{4.3}$$

In Eq.(4.3), S_{it}^{d} is the adjusted years of schooling of child i from birth cohort t, $S_{m,it}^{d}$ and $S_{f,it}^{d}$ are mother's and father's adjusted years of schooling, respectively. β_1^{d} and β_2^{d} have the same interpretation with the coefficients of Eq.(4.2) controlling for the family income. I_{it} denotes total predicted family wage income of the parents during a 10 year period when the child i between the ages of 6 and 15. To be able to compare the models for the same sample, I re-estimate Eq.(4.2) along with Eq.(4.3) for the subsample of countries that is described in Section 3.4.1.

Table 4.3 represents the correlation coefficients of Eq.(4.2) and Eq.(4.3). The coefficients for family income are not significant for Austria, Belgium, Sweden, and Ireland while in the remaining countries parental income is positively associated with a child's years of schooling. To illustrate, in Italy, a 10% increase in total predicted family wage income is associated with a 0.03 standard deviation increase in child's years of schooling rank. When I add the family income to Eq.(4.2), the coefficient of maternal education decreases from 0.255 to 0.191 while the coefficient of paternal education decreases from 0.267 to 0.241 for Italy. The results indicate that even after controlling for potential family earnings, parental education is still significant.

[10] Only the children whose parent's job histories are available in the original job episode panel are included to subsample. Besides, children who was born in Israel, Poland, Hungary, Estonia, Slovenia, Croatia, and The Czech Republic are excluded since the age earning profiles are not estimated for these countries.

Table 4.3 Mobility with Family Wage Income by Countries

	(1) AUSTRIA	(2) GERMANY	(3) SWEDEN	(4) NETHERLANDS	(5) SPAIN	(6) ITALY	(7) FRANCE	(8) DENMARK	(9) BELGIUM
Estimates based on Eq.(4.2)									
Maternal Education	0.197***	0.195***	0.178***	0.194***	0.245***	0.225***	0.196***	0.230***	0.255***
	(0.018)	(0.009)	(0.019)	(0.012)	(0.012)	(0.010)	(0.010)	(0.007)	(0.016)
Paternal Education	0.192***	0.246***	0.208***	0.280***	0.255***	0.267***	0.263***	0.185***	0.173***
	(0.017)	(0.023)	(0.014)	(0.011)	(0.003)	(0.016)	(0.011)	(0.004)	(0.019)
R- squared	0.109	0.158	0.121	0.178	0.221	0.224	0.206	0.131	0.178
Estimates based on Eq.(4.3)									
Maternal Education	0.182***	0.188***	0.168***	0.186***	0.238***	0.191***	0.146***	0.213***	0.234***
	(0.020)	(0.008)	(0.023)	(0.012)	(0.014)	(0.005)	(0.016)	(0.007)	(0.005)
Paternal Education	0.160**	0.237***	0.202***	0.265***	0.233***	0.241***	0.214***	0.172***	0.152***
	(0.045)	(0.021)	(0.014)	(0.014)	(0.006)	(0.022)	(0.016)	(0.006)	(0.032)
Total Family Wage Income	0.173	0.070*	0.097	0.122**	0.128**	0.296***	0.366***	0.135***	0.165
	(0.172)	(0.036)	(0.066)	(0.037)	(0.041)	(0.046)	(0.080)	(0.015)	(0.111)
R-squared	0.111	0.158	0.122	0.179	0.222	0.233	0.215	0.132	0.181
Observations	1825	2360	1854	1190	4260	3363	2191	1791	2755
Child's Birth Cohort FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Gender	YES	YES	YES	YES	YES	YES	YES	YES	YES
Parents' Birth Cohort FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes Coefficients reports the results of the estimations of Eq.(4.2) and Eq.(4.3). All the estimations are reported based on a subsample defined in Section 3.4.1. Maternal (Paternal) Education indicates the effect of a mother's (father's) standardized years of schooling on the child's standardized years of schooling. All standard errors are clustered at child's birth cohort level.

* p<0.1, ** p<0.05, *** p<0.01

Table 4.3 Mobility with Family Wage Income by Countries (cont.)

	(10) IRELAND	(11) LUXEMBOURG	(12) PORTUGAL	(13) GREECE	(14) SWITZERLAND
Estimates based on Eq.(4.2)					
Maternal Education	0.323**	0.155***	0.196***	0.203***	0.109***
	(0.092)	(0.032)	(0.017)	(0.020)	(0.011)
Paternal Education	0.064*	0.312***	0.303***	0.194***	0.235***
	(0.029)	(0.067)	(0.012)	(0.022)	(0.024)
R-squared	0.150	0.256	0.241	0.190	0.097
Estimates based on Eq.(4.3)					
Maternal Education	0.312**	0.148***	0.171***	0.193***	0.103***
	(0.085)	(0.031)	(0.017)	(0.018)	(0.009)
Paternal Education	0.040	0.287**	0.299***	0.185***	0.218***
	(0.025)	(0.073)	(0.011)	(0.025)	(0.029)
Total Family Wage Income	0.162	0.154**	0.097**	0.099**	0.203*
	(0.119)	(0.054)	(0.023)	(0.039)	(0.087)
R-squared	0.152	0.259	0.243	0.191	0.100
Observations	311	359	816	2081	1217
Child's Birth Cohort FE	YES	YES	YES	YES	YES
Gender	YES	YES	YES	YES	YES
Parents' Birth Cohort FE	YES	YES	YES	YES	YES

Notes Coefficients reports the results of the estimations of Eq.(4.2) and Eq.(4.3). All the estimations are reported based on a subsample defined in Section 3.4.1. Maternal (Paternal) Education indicates the effect of a mother's (father's) standardized years of schooling on the child's standardized years of schooling. All standard errors are clustered at child's birth cohort level.

* p<0.1, ** p<0.05, *** p<0.01

4.2 Intergenerational Education Mobility and Bargaining Power

The main purpose of the study is to investigate the effects of intra-household bargaining power on intergenerational education mobility. In the estimations, intra-household bargaining power is defined via alternative measures that proxies a mother's bargaining power within a family. In Section 4.2.1, this bargaining measure distinguishes the families based on the mothers' and fathers' relative years of education. On the other hand, in Section 4.2.2 a bargaining measure is defined as the relative wage income of the partners. For the notation simplicity, I do not use superscript d to denote adjusted years of schooling. However, in the remaining sections, child's and parents' adjusted years of schooling information are used in the regression models.

4.2.1 Education Mobility and Parents' Relative Education Level

As I explain in Section 3.4.1 a bargaining power dummy is defined to indicate the families where the mother's years of schooling are more than the father's years of schooling. I add interaction terms between the bargaining dummy and parents' years of schooling to capture the effects of bargaining power on intergenerational education mobility. Besides, the bargaining dummy is also added to the regression equation as a control variable.

$$\begin{aligned} S_{itc} = a + \gamma_t + \gamma_p + \phi_c + \rho B_{itc} + \beta_1 S_{m,itc} + \ \beta_2 S_{f,itc} \\ + \beta_3 \left(S_{m,itc} * B_{itc}\right) + \ \beta_4 (S_{f,itc} * B_{itc}) + u_{it} \end{aligned} \tag{4.4}$$

In Eq.(4.4), S_{itc} is the adjusted years of schooling of child i who is born in country c from birth cohort t. γ_t and γ_p are birth cohort fixed effects for child and parents, respectively. ϕ_c is the vectors for the child's country of birth fixed effects. $S_{m,itc}$ and $S_{f,itc}$ are the mother's and father's adjusted years of schooling. B_{itc} is the bargaining dummy that indicates the child's mother has more years of schooling than the child's father. Therefore, ρ shows the standard deviation change in a child's years of schooling rank when the mother is more educated than the father. $S_{m,itc}{}^{*}B_{itc}$ and $S_{f,itc}{}^{*}B_{itc}$ denotes the interaction terms between parents' years of schooling and bargaining measure. Therefore, $\beta_1 + \beta_3$ could be interpreted as the change in a child's years of schooling rank when the mother's years of schooling rank increases by one standard deviation for a family where the mother is more educated than the father. $\beta_2 + \beta_4$ captures a similar effect for paternal education.

Time trends and country-specific shocks are controlled in Eq.(4.4) by adding the child's birth cohort and country of birth fixed effects. However, the model does not allow for heterogeneous time trends across the countries. On the other hand, there could be unobserved shocks that may have affected the child's years of schooling for a birth cohort in a certain country. To control these shocks, I add a set of interactions between the country of birth and a child's year of birth fixed effects. Then the Eq.(4.4) becomes the following model:

$$\begin{aligned} S_{itc} = a + \gamma_t + \gamma_p + \phi_c + \gamma_t * \phi_c + \rho B_{itc} + \beta_1 S_{m,itc} + \beta_2 S_{f,itc} \\ + \beta_3 \left(S_{m,itc} * B_{itc}\right) + \beta_4 (S_{f,itc} * B_{itc}) + u_{itc} \end{aligned} \tag{4.5}$$

Here, $\gamma_t * \phi_c$ denotes the interactions between the child's year of birth and country of birth fixed effects. u_{itc} is an error term and the standard errors are clustered by the interaction between the child's country of birth and year of birth. The results of Eq.(4.5) are reported along with the results of Eq.(4.4) for three groups: all

children, girls and boys. A gender dummy is also added to the models when the sample is all children. The estimation results of Eq.(4.4) are presented in the first three columns of Table 4.4 while the remaining three columns report the estimation results for Eq.(4.5). The results obtained from the whole sample are reported in the first and fourth columns. In the second and fifth columns, results are reported for a subsample that includes daughters, while in the third and sixth columns, the estimation results are derived from the sons' observations.

Table 4.4 Education Mobility and Parents' Relative Education Level

	(1) **All Children**	(2) **Daughters**	(3) **Sons**	(4) **All Children**	(5) **Daughters**	(6) **Sons**
Maternal Education	0.200***	0.217***	0.184***	0.202***	0.218***	0.185***
	(0.005)	(0.003)	(0.007)	(0.008)	(0.010)	(0.011)
Paternal Education	0.266***	0.250***	0.281***	0.263***	0.249***	0.279***
	(0.008)	(0.009)	(0.008)	(0.007)	(0.009)	(0.010)
Bargaining Power	-0.006	0.006	-0.014	-0.003	0.010	-0.013
	(0.009)	(0.009)	(0.013)	(0.024)	(0.030)	(0.033)
Maternal	0.059***	0.067***	0.050**	0.056***	0.064***	0.048*
Education*Bargaining	(0.012)	(0.012)	(0.015)	(0.019)	(0.022)	(0.024)
Paternal	-0.066***	-0.052***	-0.077***	-0.061***	-0.049*	-0.073**
Education*Bargaining	(0.015)	(0.013)	(0.020)	(0.021)	(0.026)	(0.030)
Observations	67392	33055	34337	67392	33055	34337
R-squared	0.171	0.184	0.164	0.176	0.189	0.169
Gender Control	YES	NO	NO	YES	NO	NO
Parent's Birth C. FE	YES	YES	YES	YES	YES	YES
Birth Cohort FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Birth Cohort*Country FE	NO	NO	NO	YES	YES	YES

Notes Coefficients report the results of the estimations of Eq.(4.4) and Eq.(4.5). Bargaining power is defined as a dummy variable that indicates that the mother's years of schooling are higher than the father's years of schooling. In the first 3 columns, standard errors are clustered at the child's birth cohort level while in the remaining columns they are clustered at the child's birth cohort fixed effects* country of birth fixed effects. Columns 1 and 4 indicates the results for all children while the remaining columns report results for daughters and sons subsamples.

* p<0.1, ** p<0.05, *** p<0.01

In the third row of Table 4.4, the effect of bargaining power on a child's years of schooling is reported. The fourth and fifth columns present my parameters of interest, interaction terms between parents' years of schooling and the bargaining power dummy. There is not any direct effect of bargaining power on a child's years of schooling, however, interaction terms imply significant effects both for daughters and boys. It is plausible that the mothers' within family bargaining power alters the effects of both maternal and paternal education on offsprings' years of schooling. According to the second column of Table 4.4, for the families where mother is more educated than the father, 1 standard deviation increase in a mother's years of

schooling is associated with a 0.28 standard deviation increase in daughter's years of schooling rank. The effect decreases to 0.22 when the mother does not have higher years of schooling than the father. Similarly, the third column indicates that when the mother is more educated than the father, 1 standard deviation increase in a mother's years of schooling is associated with a 0.23 standard deviation increase in the son's years of schooling rank. Again, this effect decreases to 0.18 for the remaining families.

On the other hand, the results in the fifth row of Table 4.4, imply another story for fathers. When the mother is more educated, 1 standard deviation increase in a father's years of schooling is associated with a 0.20 standard deviation increase in both daughter's and son's years of schooling rank, however, in the remaining families, this effect increases to 0.25 for girls and 0.28 for boys.

Association between parental education and offspring's education is affected in a similar direction for both daughters and sons when the mother's bargaining power increases. However, intensities of these effects are dependent on the parent-child pair. The increase in the effects of maternal education on a child's years of education is stronger for a daughter than a son, oppositely, the decrease in the effects of paternal education on a child's years of education is stronger for a son. From fourth column to sixth column in Table 4.4, an interaction term between a child's years of schooling and country of birth is added to the model to allow country-specific time trends in the estimation. Even if I control for the within-country time trends, the interaction terms between parents' years of schooling and bargaining dummy remain significant and indicate similar results to the Eq.(4.4).

4.2.1.1 Parents' relative education and family wage income

For a subsample of children whose parents' job histories are available in the job episode panel, and born in countries other than Israel and Transition Countries, Eq.(4.4) and Eq.(4.5) are re-estimated by adding predicted total family wage income as a control. In Eq.(4.6) and Eq.(4.7), S_{itc} is the adjusted years of schooling of child i. $S_{m,itc}$ and $S_{f,itc}$ indicate the mother's and father's adjusted years of schooling respectively. I_{itc} is predicted total family wage income that the parents may earn during a 10 year period when the child is between the ages of 6 and 15.

$$\begin{aligned} S_{itc} = a + \gamma_t + \gamma_p + \phi_c + \rho B_{itc} + \beta_1 S_{m,itc} + \ \beta_2 S_{f,itc} \\ + \beta_3 \left(S_{m,itc} * B_{itc}\right) + \ \beta_4 (S_{f,itc} * B_{itc}) + \log(I_{itc}) + u_{it} \end{aligned} \tag{4.6}$$

Different from the Eq.(4.6), an interaction term between child's year of birth and child's country of birth fixed effects are added to the Eq.(4.7).

$$\begin{aligned} S_{itc} = a + \gamma_t + \gamma_p + \phi_c + \gamma_t * \phi_c + \rho B_{itc} + \beta_1 S_{m,itc} + \beta_2 S_{f,itc} \\ + \beta_3 \left(S_{m,itc} * B_{itc}\right) + \beta_4 (S_{f,itc} * B_{itc}) + \log(I_{itc}) + u_{itc} \end{aligned} \tag{4.7}$$

I first report the results of Eq.(4.4) and Eq.(4.5) for the subsample that I use to estimate Eq.(4.6) and Eq.(4.7) to provide a better comparison between the models.

Table 4.5 Mobility and Parents' Relative Education Level for a Subsample

	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.179***	0.182***	0.179***	0.183***	0.185***	0.182***
	(0.006)	(0.005)	(0.008)	(0.010)	(0.014)	(0.013)
Paternal Education	0.264***	0.257***	0.269***	0.260***	0.254***	0.266***
	(0.007)	(0.012)	(0.007)	(0.010)	(0.015)	(0.014)
Bargaining Power	0.005	-0.027	0.032	0.009	-0.023	0.033
	(0.017)	(0.017)	(0.028)	(0.037)	(0.058)	(0.059)
Maternal	0.066***	0.132***	-0.000	0.059**	0.127***	-0.005
Education*Bargaining	(0.016)	(0.012)	(0.028)	(0.029)	(0.037)	(0.042)
Paternal	-0.054**	-0.095***	-0.016	-0.046	-0.086**	-0.014
Education*Bargaining	(0.017)	(0.013)	(0.030)	(0.034)	(0.041)	(0.053)
Observations	26373	12796	13577	26373	12796	13577
R-squared	0.162	0.175	0.155	0.167	0.183	0.161
Gender Control	YES	NO	NO	YES	NO	NO
Parent's Birth C. FE	YES	YES	YES	YES	YES	YES
Birth Cohort FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Birth Cohort*Country FE	NO	NO	NO	YES	YES	YES

Notes Coefficients report the results of the estimations of Eq.(4.4) and Eq.(4.5) for a subsample. Only the children whose parents' job histories are available in the job episode panel are included in these estimations. Bargaining power is defined as a dummy variable that indicates the mother's years of schooling are higher than the father's years of schooling. In the first 3 columns, standard errors are clustered at the child's birth cohort level while in the remaining columns they are clustered at the child's birth cohort fixed effects*country of birth fixed effects.

* p<0.1, ** p<0.05, *** p<0.01

In Table 4.5, the first three columns report the estimation results of Eq.(4.4) for the subsample. Similar to Table 4.4, the third row of Table 4.5 indicates the coefficients of the bargaining power are not significant for both daughters and sons. In this sample, for the daughters (second column) who belong to families where mothers are more educated than fathers, 1 standard deviation increase in mother's years of schooling rank is associated with a 0.31 standard deviation increase in daughters' years of schooling rank while the 1 standard deviation increase in father's years of schooling rank is associated with a 0.16 standard deviation increase in daughter's

years of schooling rank. Therefore, when the mothers' bargaining power increases, the degree of persistence between mothers' years of schooling and daughters' years of schooling is getting stronger (from 0.18 to 0.31) while the degree of persistence between fathers' and daughters' years of schooling is weakening. The coefficient for paternal education decreases from 0.26 to 0.16.

Note that, the coefficients of the interaction terms between parents' years of schooling and a daughters' years of schooling are significant, whereas those for the sons are insignificant (third and sixth columns). Besides, the coefficient of the interaction between mothers' years of schooling and bargaining dummy become negative for sons while the same coefficient indicates a positive effect in the third row of Table 4.4. All interactions between parents' years of education and bargaining dummy remain similar when I add an interaction between a child's birth cohort and country of birth fixed effects (fourth column to sixth column in Table 4.5).

The families where the mothers are more educated than the fathers could have other unobserved characteristics that are associated with both childs' years of schooling and the parents' years of schooling. To illustrate, these families may always be in the highest percentiles of the income distributions. Therefore, in the estimates that I do not control the family income, the bargaining power dummy and interaction terms between bargaining power and parents' years of schooling could capture other unobserved factors. Controlling the total family wage income for years that coincide with the child's growing ages is a meaningful effort to rely on the within variation among the families with similar economic conditions. Table 4.6 provides the results for the estimation of Eq.(4.6) and Eq.(4.7).

The sixth row of Table 4.6 reports the coefficients of predicted total family wage income. These results imply that a 10% increase in predicted total family wage income is associated with a 0.018 standard deviation increase in a daughter's years of schooling rank and a 0.016 standard deviation increase in a son's years of schooling rank. All the coefficients are highly significant and the effects remain similar when I control for the time trends at country levels (fourth and sixth columns of Table 4.6). When the coefficients of interaction terms of Tables 4.5 and 4.6 are compared, there are slight differences in the estimates. The coefficient of the interaction between bargaining power and maternal education decreases from 0.132 (third column in Table 4.5) to 0.129 (third column in Table 4.6) for daughters while the interaction between bargaining power and paternal education decreases from -0.095 to -0.097. Moreover, differences in the estimates are less pronounce for boys. The coefficients of the interaction terms between maternal education and bargaining power proxy are insignificant in both Tables 4.5 and 4.6 for male subsample.

Table 4.6 Education Mobility with Family Wage Income for a Subsample

	(1) **All Children**	(2) **Daughters**	(3) **Sons**	(4) **All Children**	(5) **Daughters**	(6) **Sons**
Maternal Education	0.163***	0.165***	0.164***	0.165***	0.167***	0.165***
	(0.006)	(0.004)	(0.009)	(0.010)	(0.014)	(0.013)
Paternal Education	0.243***	0.235***	0.249***	0.238***	0.231***	0.245***
	(0.008)	(0.016)	(0.005)	(0.011)	(0.015)	(0.014)
Bargaining Power	0.007	-0.027	0.036	0.011	-0.022	0.037
	(0.017)	(0.016)	(0.028)	(0.038)	(0.060)	(0.059)
Maternal	0.062***	0.129***	-0.004	0.055*	0.123***	-0.009
Education*Bargaining	(0.016)	(0.014)	(0.028)	(0.029)	(0.038)	(0.042)
Paternal	-0.053**	-0.097***	-0.013	-0.045	-0.088**	-0.010
Education*Bargaining	(0.017)	(0.013)	(0.031)	(0.035)	(0.042)	(0.054)
Total Family Wage Income	0.174***	0.181***	0.162***	0.182***	0.189***	0.168***
	(0.009)	(0.026)	(0.013)	(0.028)	(0.037)	(0.032)
Observations	26373	12796	13577	26373	12796	13577
R-squared	0.165	0.178	0.157	0.170	0.185	0.163
Gender Control	YES	NO	NO	YES	NO	NO
Parent's Birth C. FE	YES	YES	YES	YES	YES	YES
Birth Cohort FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Birth Cohort*Country FE	NO	NO	NO	YES	YES	YES

Notes Coefficients report the results of the estimations of Eq.(4.6) and Eq.(4.7) for a subsample. Only the children whose parents' job histories are available in the job episode panel are included in these estimations. Predicted total family wage income is used as a control in these models. Bargaining power is defined as a dummy variable that indicates the mother's years of education are higher than the father's years of education. In the first 3 columns, standard errors are clustered at the child's birth cohort level while in the remaining columns they are clustered at the child's birth cohort fixed effects*country of birth fixed effects.

* p<0.1, ** p<0.05, *** p<0.01

The results of Section 4.2.1.1 imply a consistent story that when the mothers' bargaining power increases, this change alters the effect of parents' years of schooling on offspring's years of schooling. The effects of maternal education increase whereas the effects of paternal education on a child's educational outcome decreases. However, when I exclude the observations from Israel and Transition Countries and also focus on a subsample of children whose both parents' retrospective job histories are available in the job episode panel, the effect of bargaining power on the intergenerational education mobility disappears for sons.

4.2.2 Education Mobility and Parent's Relative Wage Income

Alternative ways to proxy a mother's bargaining power are investigated, and a new proxy that is generated as explained in Section 3.4.1. is used in the following models. In Eq.(4.8) and Eq.(4.9), S_{itc} is adjusted years of schooling of child i. $S_{m,itc}$ and $S_{f,itc}$ indicate the mother's and father's adjusted years of schooling, respectively.

I_{itc} is predicted total family wage income that the parents may earn during a 10 year period when the child is between the ages of 6 and 15.

$$\begin{aligned} S_{itc} = a + \gamma_t + \gamma_p + \phi_c + \rho^n B^n_{itc} + \beta_1 S_{m,itc} + \ \beta_2 S_{f,itc} \\ + \beta_3 \left(S_{m,itc} * B^n_{itc}\right) + \ \beta_4 (S_{f,itc} * B^n_{itc}) + \log(I_{itc}) + u_{it} \end{aligned} \tag{4.8}$$

B^n_{itc}, is the ratio of the mother's predicted total wage income to the father's predicted total wage income. β_3 and β_4 are my parameters of interest in Eq.(4.8) and Eq.(4.9). An interaction between child's birth cohort fixed effects and child's country of birth fixed effects is also added to the following model:

$$\begin{aligned} S_{itc} = a + \gamma_t + \gamma_p + \phi_c + \gamma_t * \phi_c + \rho^n B^n_{itc} + \beta_1 S_{m,itc} + \ \beta_2 S_{f,itc} \\ + \beta_3 \left(S_{m,itc} * B^n_{itc}\right) + \ \beta_4 (S_{f,itc} * B^n_{itc}) + \log(I_{itc}) + u_{itc} \end{aligned} \tag{4.9}$$

Table 4.7 Education Mobility and Parents' Relative Wage Income

	(1) **All Children**	(2) **Daughters**	(3) **Sons**	(4) **All Children**	(5) **Daughters**	(6) **Sons**
Maternal Education	0.187***	0.207***	0.169***	0.189***	0.208***	0.170***
	(0.003)	(0.007)	(0.008)	(0.011)	(0.017)	(0.014)
Paternal Education	0.227***	0.201***	0.251***	0.225***	0.199***	0.249***
	(0.006)	(0.007)	(0.007)	(0.011)	(0.015)	(0.013)
Bargaining Power	-0.074**	-0.115**	-0.044*	-0.065*	-0.100**	-0.036
	(0.028)	(0.047)	(0.019)	(0.034)	(0.045)	(0.037)
Maternal	0.035**	0.047***	0.026	0.030	0.042	0.023
Education*Bargaining	(0.013)	(0.012)	(0.023)	(0.021)	(0.031)	(0.025)
Paternal	-0.061**	-0.058**	-0.062**	-0.059***	-0.055**	-0.062**
Education*Bargaining	(0.017)	(0.023)	(0.018)	(0.017)	(0.023)	(0.027)
Total Family Wage Income	0.209***	0.235***	0.180***	0.212***	0.236***	0.182***
	(0.009)	(0.025)	(0.017)	(0.030)	(0.047)	(0.032)
Observations	26373	12796	13577	26373	12796	13577
R-squared	0.165	0.177	0.157	0.170	0.184	0.163
Gender Control	YES	NO	NO	YES	NO	NO
Parent's Birth C. FE	YES	YES	YES	YES	YES	YES
Birth Cohort FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Birth Cohort*Country FE	NO	NO	NO	YES	YES	YES

Notes Coefficients report the results of the estimations of Eq.(4.8) and Eq.(4.9) for a subsample. Only the children whose parents' job histories are available in the job episode panel are included in these estimations. Bargaining power is defined as a ratio of the mother's predicted total wage income to the father's predicted total wage income. In the first 3 columns, standard errors are clustered at the child's birth cohort level while in the remaining columns they are clustered at the child's birth cohort fixed effects*child's country of birth fixed effects .

* p<0.1, ** p<0.05, *** p<0.01

The sixth row of Table 4.7, reports the coefficients of predicted total family wage

income. All the coefficients in this row are highly significant and suggest that the total family wage income is positively associated with the child's years of schooling. For daughters, a 10% increase in the total family wage income increases the daughters' years of schooling rank by 0.024 standard deviations whereas the same increase in the family wage income is associated with the 0.018 standard deviation increase in a son's years of schooling rank. Moreover, the coefficients of the interaction terms between bargaining power and parents' years of schooling support the previous results in Table 4.4 (fourth and fifth rows). The coefficient is positive for the interaction term between a mother's years of schooling and bargaining power. This result implies that the relationship between the mother's years of schooling and the daughter's years of schooling is stronger when the relative wage income of the mother increases. However, the association between the father's years of schooling and the daughter's years of schooling is weaker (second column). The coefficients in the third column also support the same direction of the associations for the sons. Nevertheless, the coefficient in fourth row of this column reports an insignificant association between the mother's years of schooling and bargaining power, although the direction of this relationship is as expected. When I add the interaction terms between a child's birth cohort and country of birth fixed effects, the coefficient of the interaction between a mother's years of schooling and bargaining power becomes insignificant for daughters similar to sons (fifth column to sixth column).

A closer look at Table 4.7, reveal an interesting caveat, different from the results of previous estimations, the coefficients of bargaining power in the third row report a negative and significant association between bargaining power and a child's years of schooling, and the effect is higher in a magnitude for daughters.

5. ROBUSTNESS CHECK

For the estimations in Section 4.2.1, bargaining power is defined as a dummy variable that indicates mothers are more educated than fathers. However, one might question whether the results in this section depend on the way the variable is defined. Therefore, I conduct a robustness exercise by re-estimating Eq.(4.6) and Eq.(4.7) by defining the bargaining power as the ratio of mothers' years of education to fathers' years of education. The results of this estimation are presented in Table B.1 in Appendix B. The fourth and fifth rows of Table B.1 present supportive results to the argument that the relationship between the mother's years of schooling and the daughter's years of schooling is stronger when the relative ratio between mother's and father's years of education increases. However, the results in third and sixth columns of B.1 do not imply a significant relationship between bargaining power and mobility for sons.

Another issue is related to the sample of the study. Children of self-employed parents are not excluded from the sample even though the country-specific age-earning profiles are estimated based on only wage earners. This raises the question of whether the estimation results remain robust when the children of the self-employed parents are excluded from the sample. As a robustness check, I identify the families in which at least one of the parents worked as self-employed during the child's growing ages. Even if that parent was self-employed only one year between the child's ages of 6 to 15, children of these parents are excluded from the sample. Then I estimate Eq.(4.8) and Eq.(4.9) for this restricted sample. Table 5.1 reports the results of this estimation. Both the bargaining power and interaction terms between parents' years of schooling and bargaining power are highly significant for daughters. Besides, when I exclude the children of the self-employed parents from the sample, the magnitudes of the coefficients of interaction terms are increasing both for daughters and sons. Similar to the third column of Table 4.7, the coefficient of the interaction term between the mother's years of schooling and the bargaining measure is insignificant only for boys.

Table 5.1 Mobility and Relative Wage without Self-Employed Parents

	(1) **All Children**	(2) **Daughters**	(3) **Sons**	(4) **All Children**	(5) **Daughters**	(6) **Sons**
Maternal Education	0.187***	0.210***	0.165***	0.188***	0.210***	0.165***
	(0.005)	(0.009)	(0.009)	(0.011)	(0.017)	(0.013)
Paternal Education	0.243***	0.207***	0.275***	0.240***	0.206***	0.273***
	(0.010)	(0.010)	(0.011)	(0.011)	(0.016)	(0.011)
Bargaining Power	-0.067**	-0.123***	-0.025	-0.063*	-0.115**	-0.021
	(0.019)	(0.031)	(0.018)	(0.035)	(0.047)	(0.038)
Maternal	0.050***	0.071***	0.037	0.048**	0.069**	0.035
Education*Bargaining	(0.013)	(0.015)	(0.020)	(0.022)	(0.032)	(0.027)
Paternal	-0.084***	-0.083***	-0.083***	-0.081***	-0.083***	-0.081***
Education*Bargaining	(0.016)	(0.019)	(0.020)	(0.019)	(0.025)	(0.029)
Total Family Wage Income	0.191***	0.224***	0.153***	0.194***	0.227***	0.156***
	(0.004)	(0.027)	(0.034)	(0.026)	(0.043)	(0.035)
Observations	20349	9877	10472	20349	9877	10472
R-squared	0.172	0.182	0.168	0.177	0.191	0.174
Gender Control	YES	NO	NO	YES	NO	NO
Parent's Birth C. FE	YES	YES	YES	YES	YES	YES
Birth Cohort FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Birth Cohort*Country FE	NO	NO	NO	YES	YES	YES

Notes Coefficients report the results of the estimations of Eq.(4.8) and Eq.(4.9) for a subsample where the chilren of self-employed parents are excluded. Besides, only the children whose parents' job histories are available in the job episode panel are included in these estimations.Bargaining power is defined as a ratio of the mother's predicted total wage to the father's predicted total wage. The details of the wage prediction is provided in Sections 3.3.1 and 3.4. In the first 3 columns, standard errors are clustered at the child's birth cohort level while in the remaining columns they are clustered at the child's birth cohort fixed effects*country of birth fixed effects fixed effects.

* p<0.1, ** p<0.05, *** p<0.01

In Sections 4.2.1 and 4.2.1.1, a subsample is used for the estimations. As I mentioned before, only the children whose parents' job histories are available in the job episode panel are included in this subsample. Moreover, the children who were born in Israel or Transition Countries are also excluded from the subsample since the age-earning profiles could not be estimated for these countries. On the other hand, although an age earning profile is estimated for Portugal, the implied profile is not plausible for individuals with a medium education level.[11]. Also, the number of observations for Ireland and Luxembourg is relatively low in the subsample. Thus, for a robustness purpose, I restrict observations to a new subsample that excludes the children from Portugal, Luxembourg, Ireland, Israel, and Transition Countries. Then, I repeat the estimations from Eq.(4.6) to Eq.(4.9) for the new subsample, the results are reported in Tables B.2 and B.3 in Appendix B. All the effects remain robust and indicate similar results to those in Tables 4.6 and 4.7.

[11] See Figure A.12 in Appendix A

Finally, I use a pooled sample with observations from 21 countries for this study. Thus, it is natural to question whether a particular country is driving the main results. To provide a closer look at them, I estimate a similar model to Eq.(4.4) for each country in my sample. The estimation strategy is described, and the related results are reported in Tables C.1 to C.21 in Appendix C. The findings support the main conclusion of Section 4.

6. CONCLUSION

The main contribution of this paper is to reveal the association between intergenerational education mobility and mother's intra-household bargaining power. In this study, mothers' bargaining power is proxied with parents' relative education level and parents' relative predicted wage income respectively. The results of all the models that use different proxies show that an increase in mothers' bargaining power alters the effects of parental education on offsprings' years of schooling. When a mother is more educated than the father or the mother's relative predicted wage income increases, the educational outcome of the daughter depends more on her mother's years of schooling whereas the association between paternal education and daughter's years of schooling is weakening. Even though a similar pattern also exists for boys, the coefficients of interaction terms between maternal education and bargaining power measures become insignificant when the models are replicated for a subsample. Besides, the results of the models with parents' relative education level imply when mother is more educated than father, changes in the effects of parental education are bigger in magnitude for same-sex children. These findings are in line with a bulk of previous literature that provides evidence on parental gender bias in investments in children.

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APPENDIX A

In this appendix, I report the estimations of the country-specific age earning profiles that I described in Section 3.3.1

Figure A.1 Age Earning Profiles in Austria

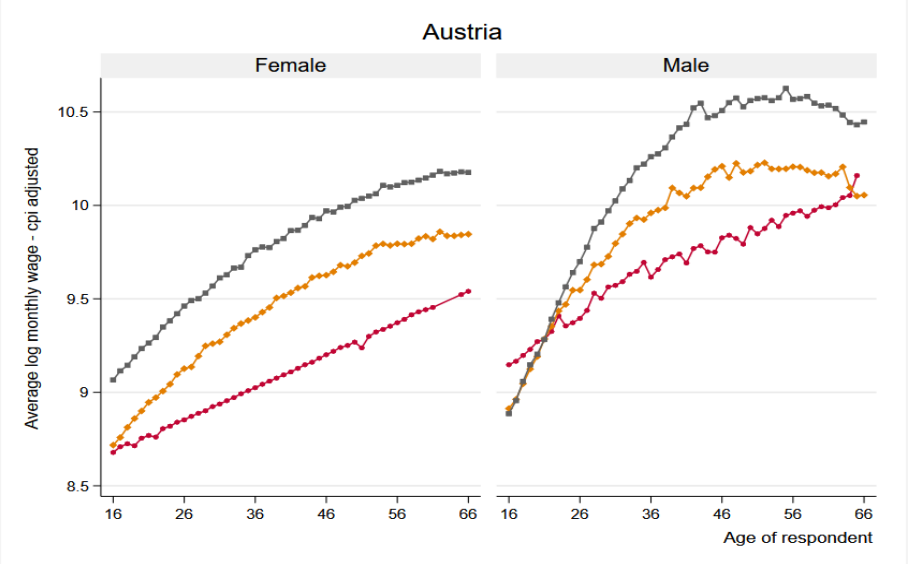
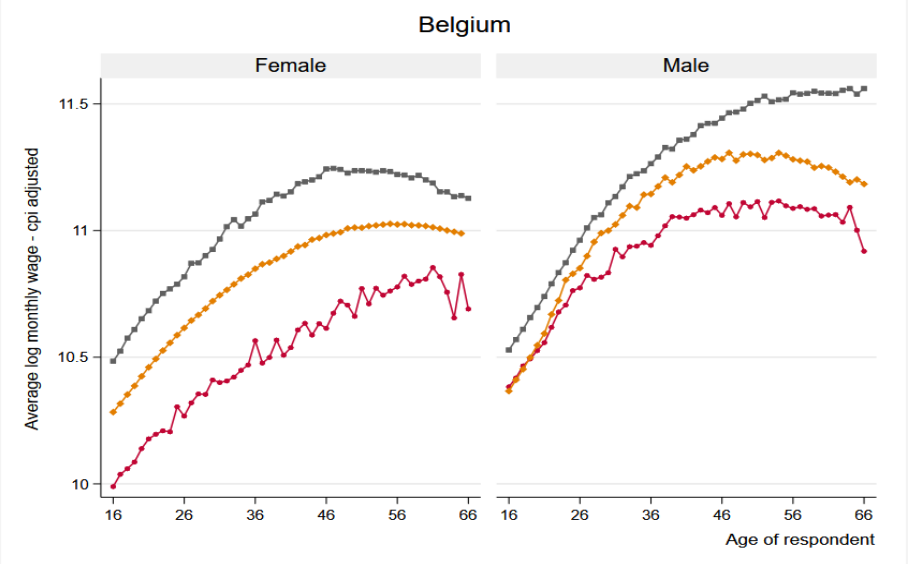


Figure A.2 Age Earning Profiles in Belgium



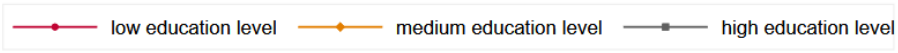


Figure A.3 Age Earning Profiles in Switzerland

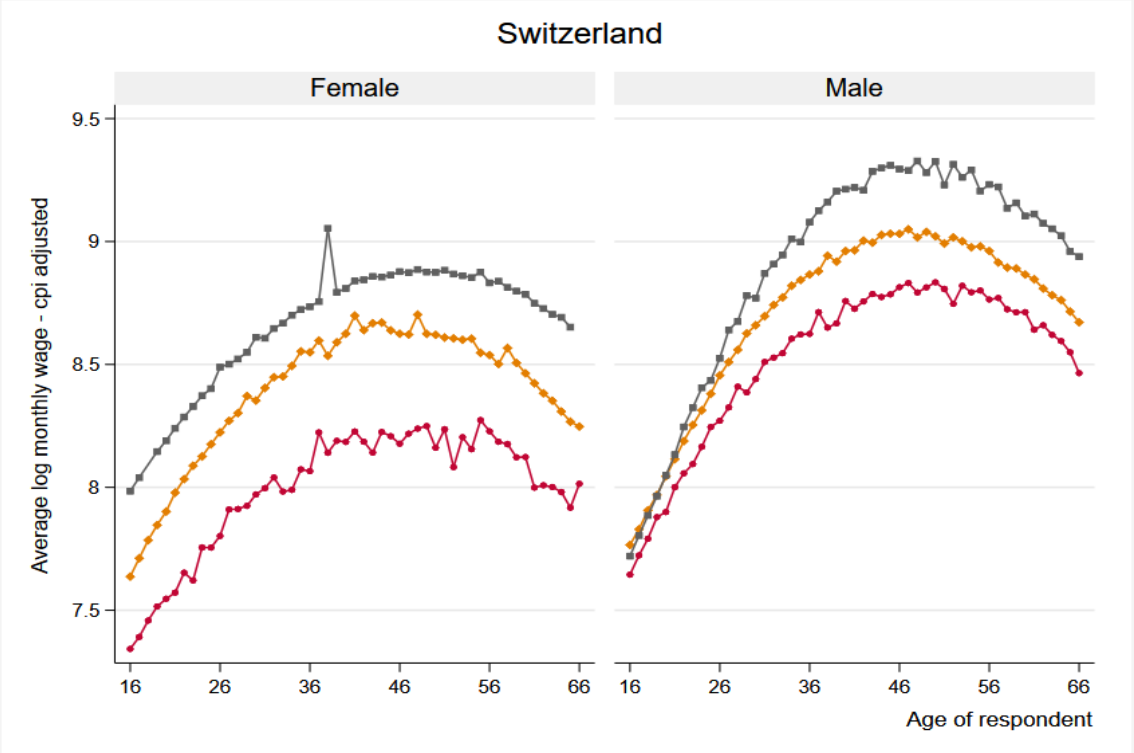
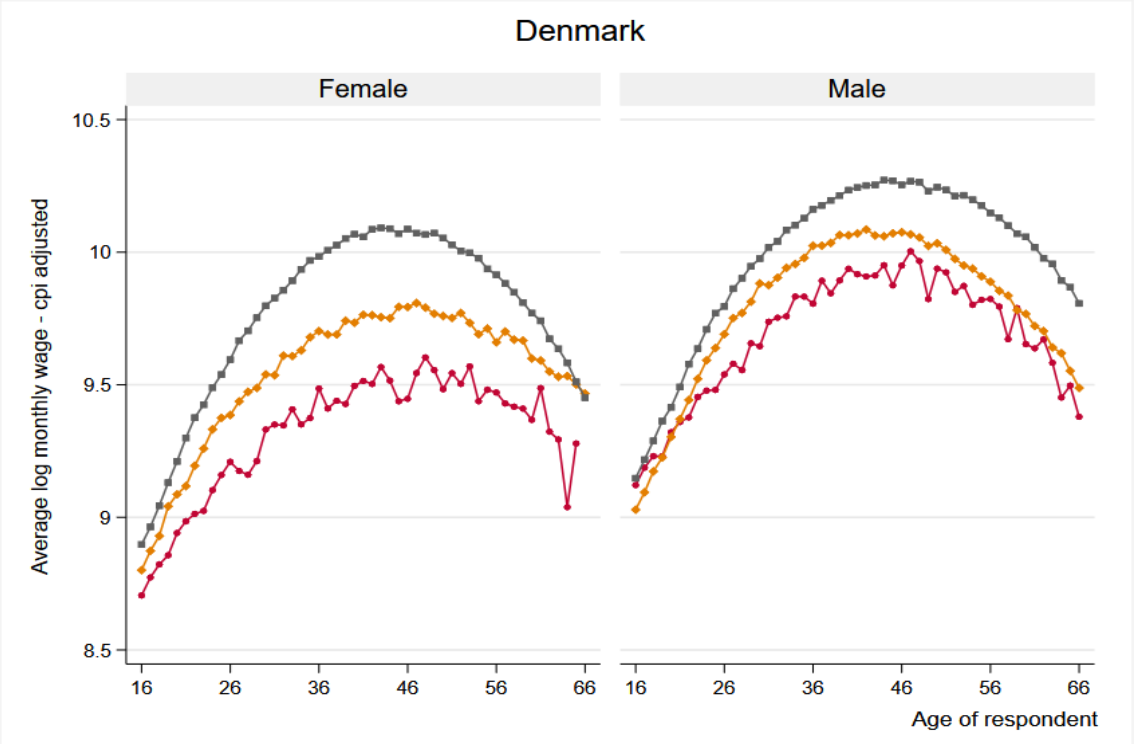


Figure A.4 Age Earning Profiles in Denmark



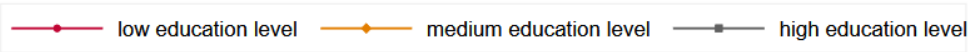


Figure A.5 Age Earning Profiles in France

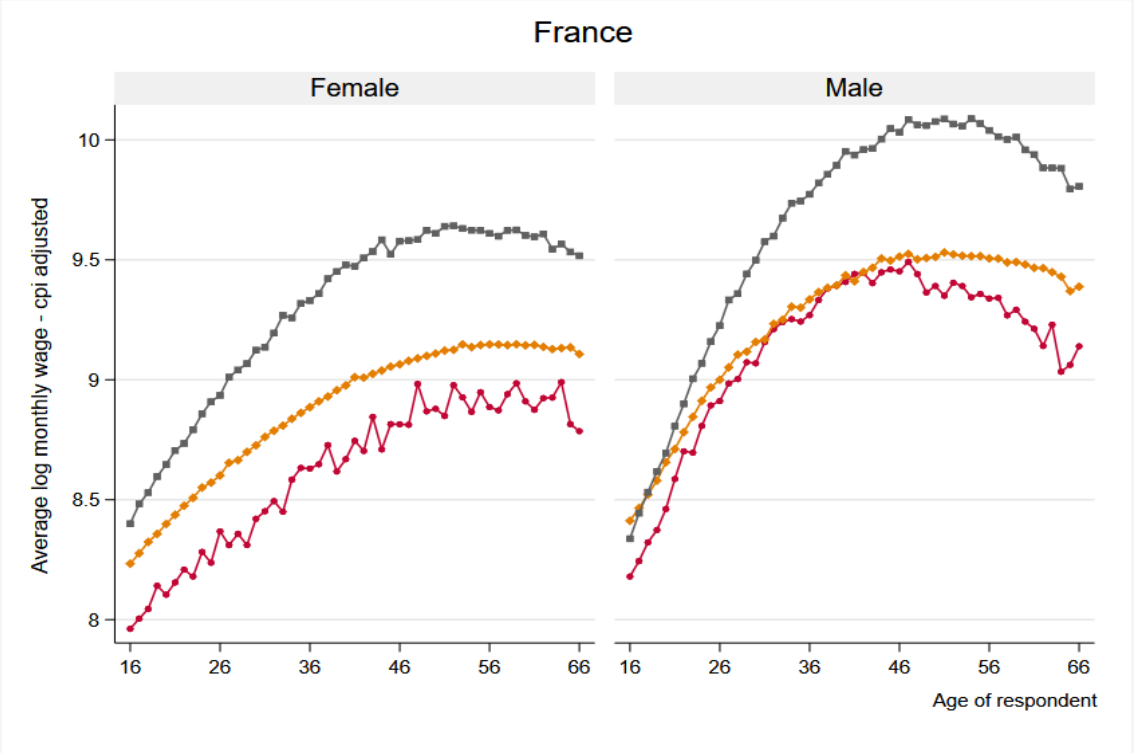
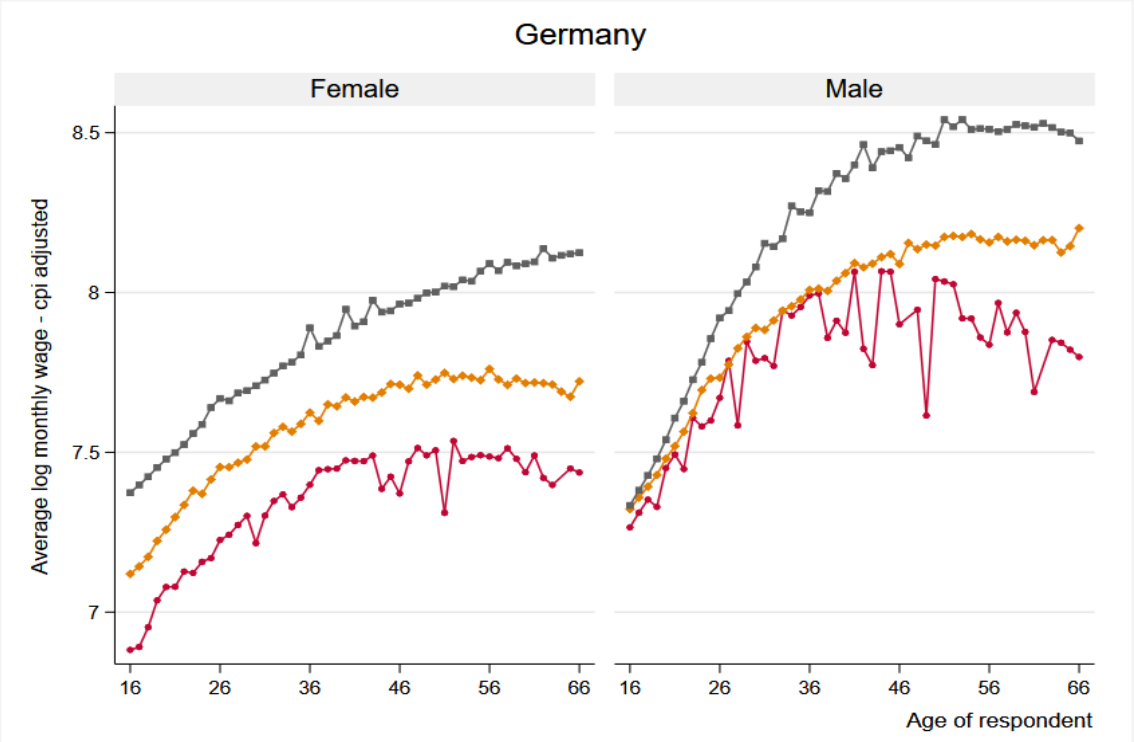


Figure A.6 Age Earning Profiles in Germany



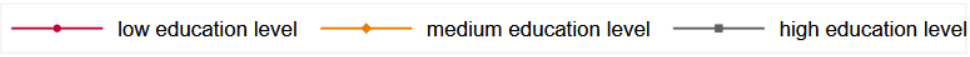


Figure A.7 Age Earning Profiles in Greece

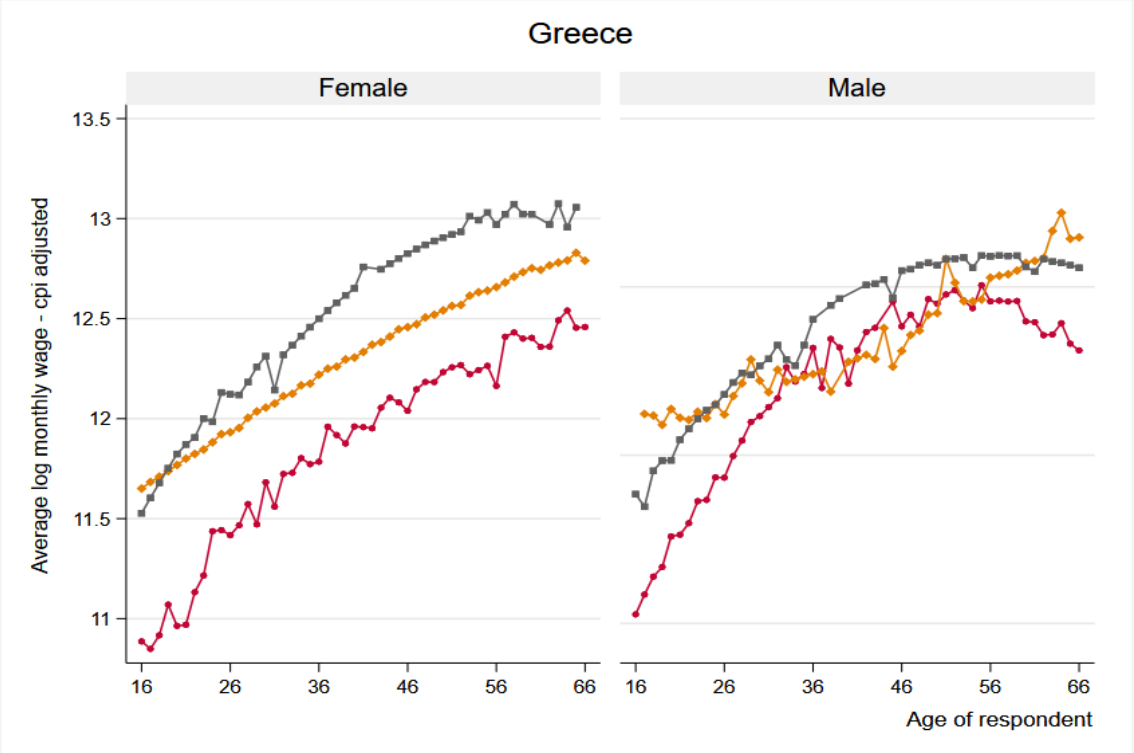
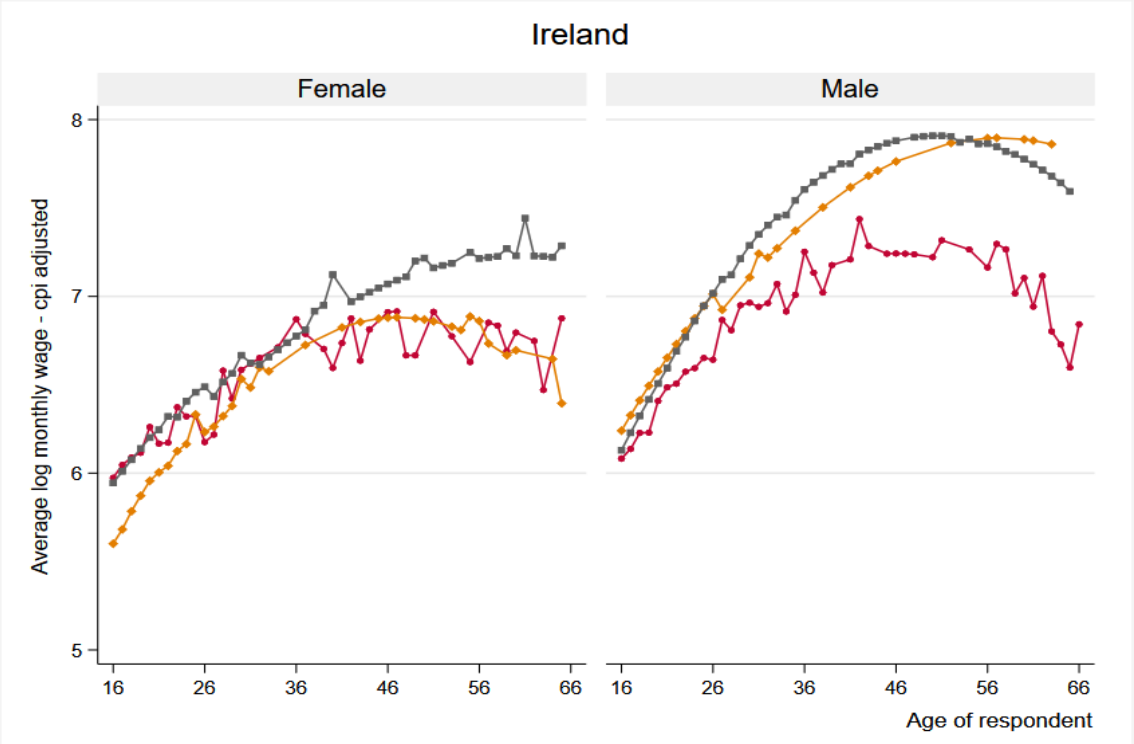


Figure A.8 Age Earning Profiles in Ireland



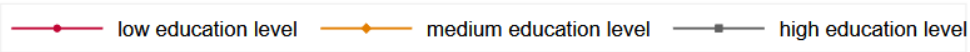


Figure A.9 Age Earning Profiles in Italy

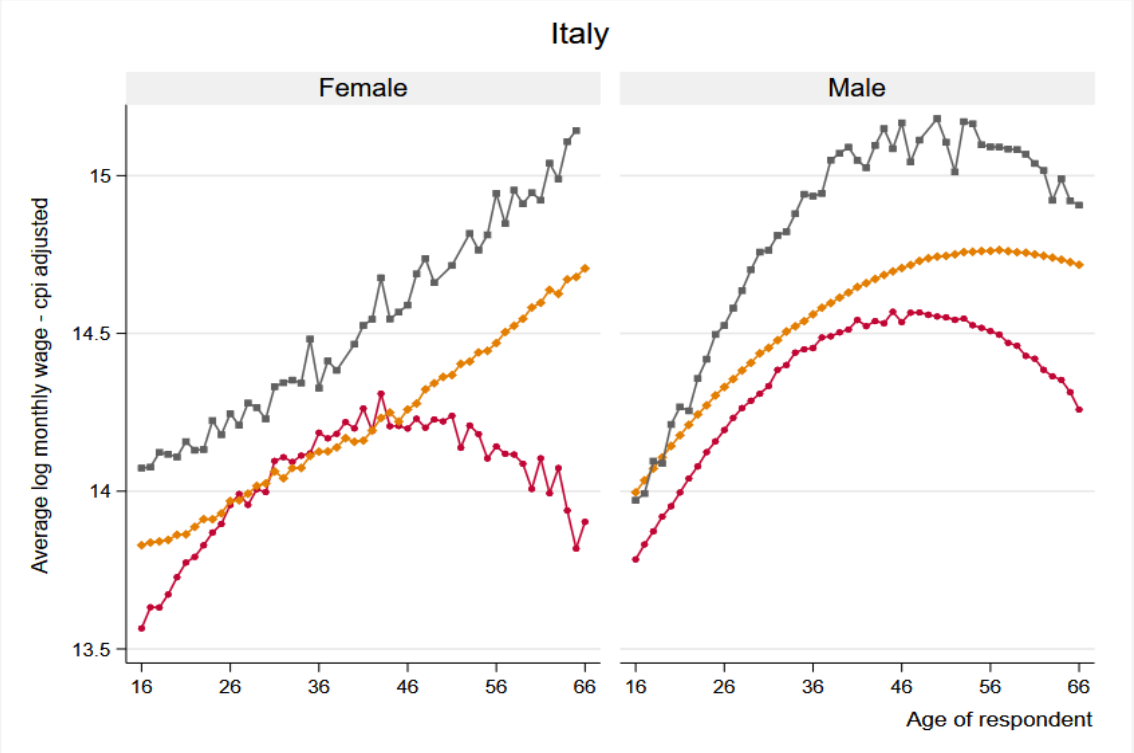
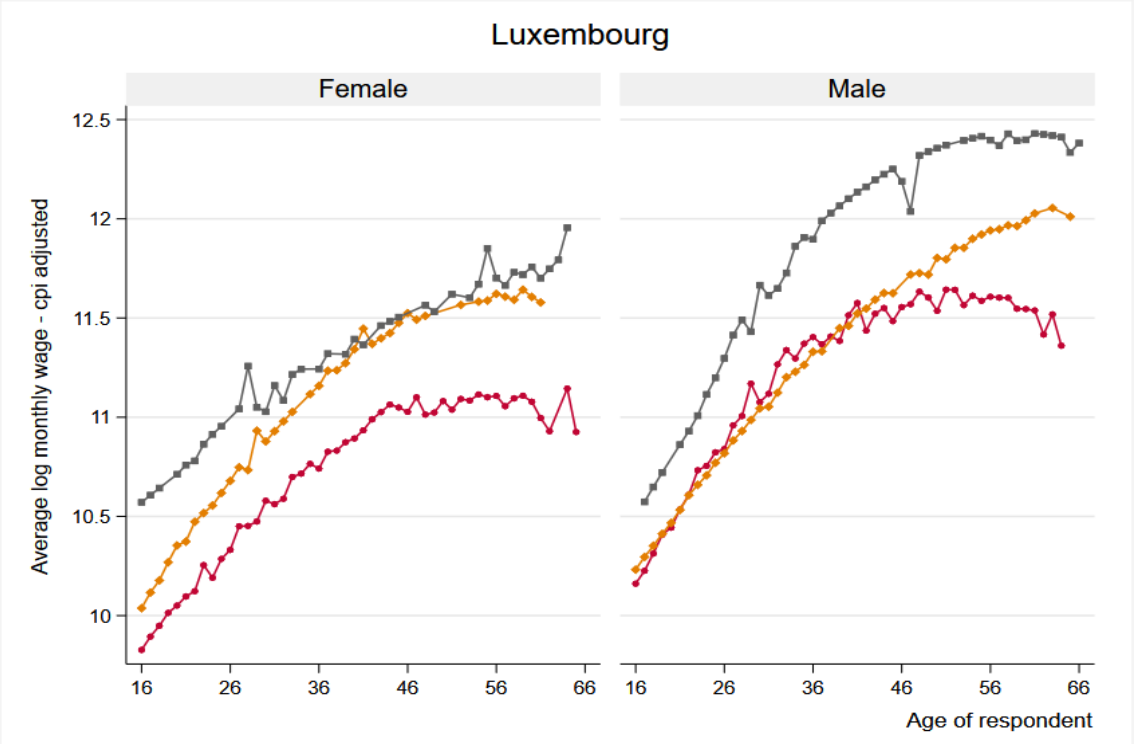


Figure A.10 Age Earning Profiles in Luxembourg



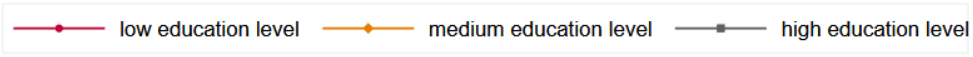


Figure A.11 Age Earning Profiles in Netherlands

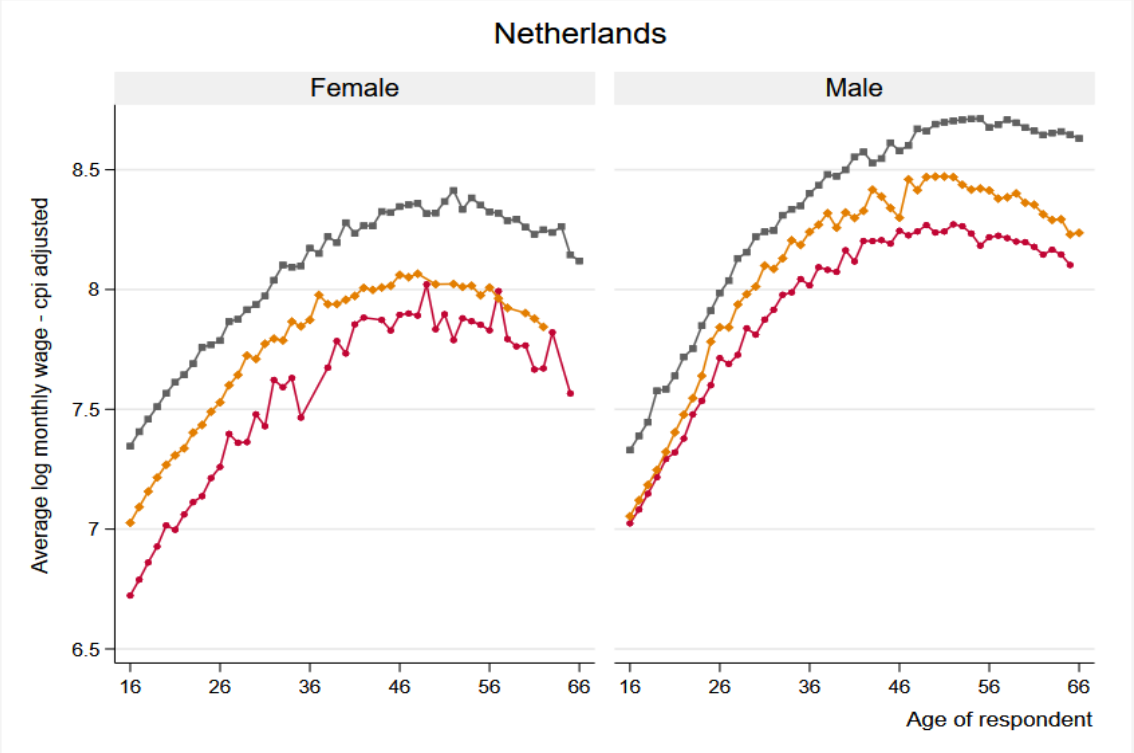
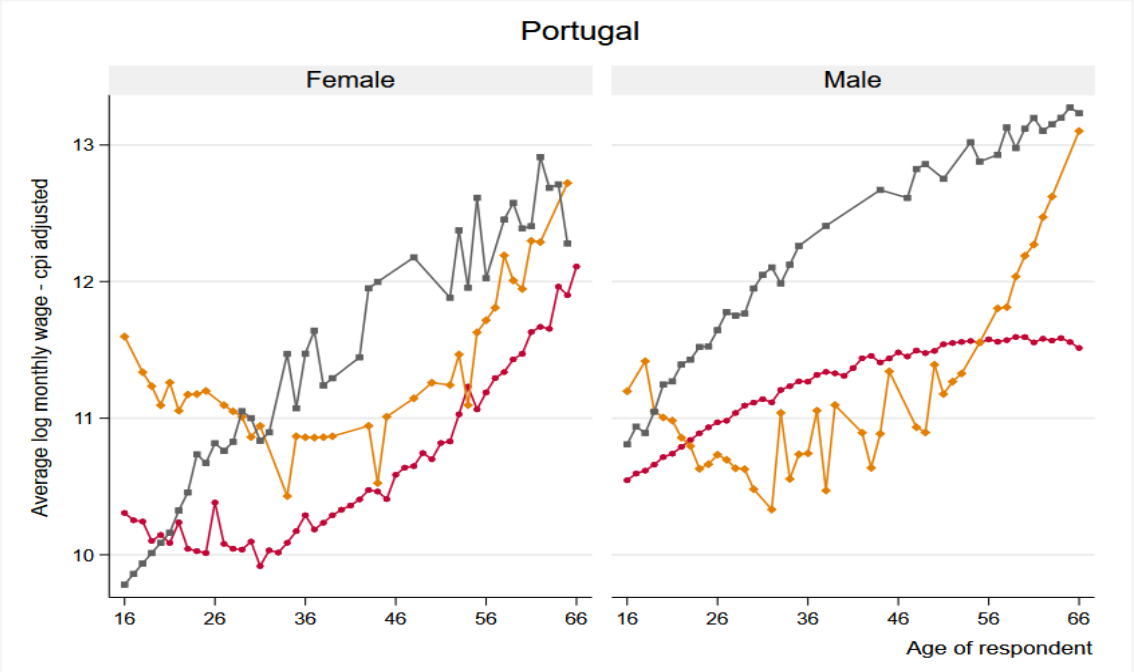


Figure A.12 Age Earning Profiles in Portugal



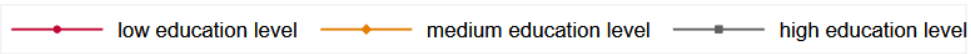


Figure A.13 Age Earning Profiles in Spain

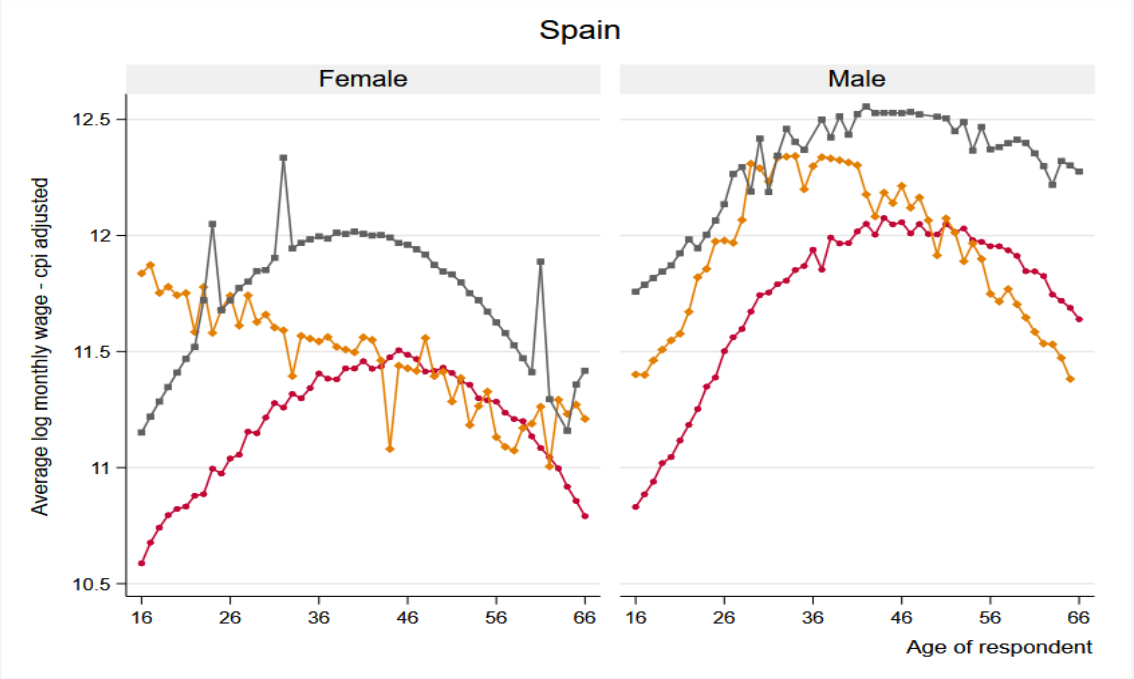
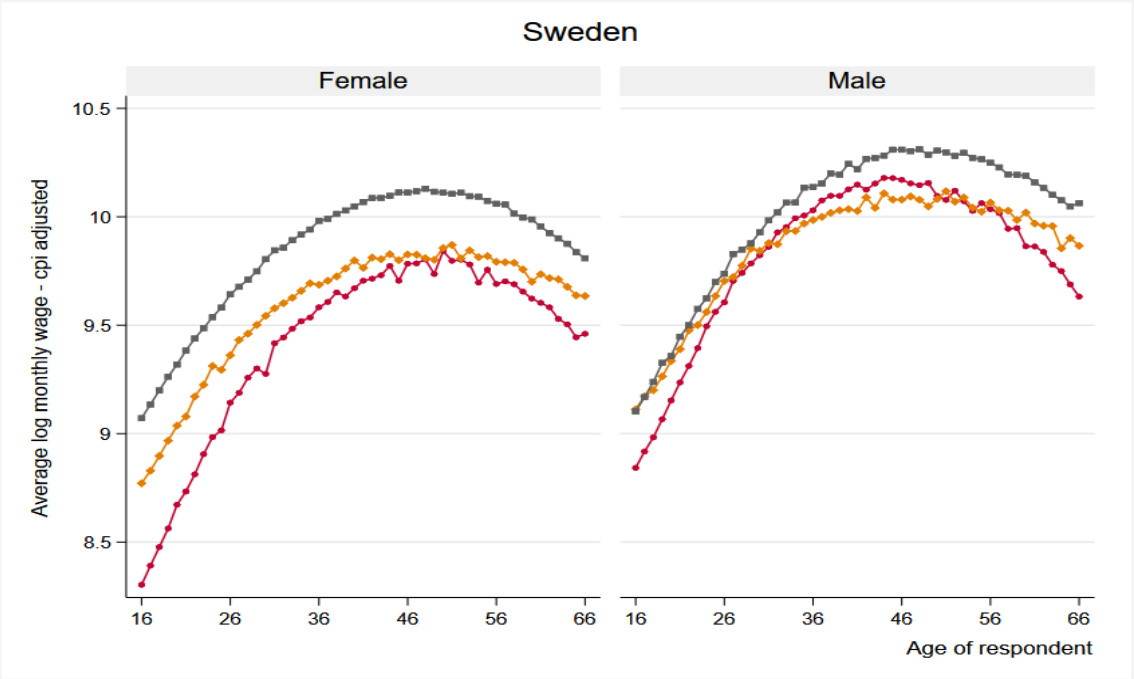
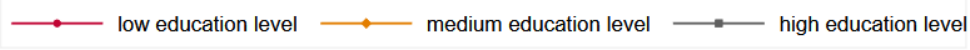


Figure A.14 Age Earning Profiles in Sweden





APPENDIX B

In this appendix, I report the tables that are explained in Section 5.

Table B.1 Education Mobility and Parents' Relative Years of Education

	(1) **All Children**	(2) **Daughters**	(3) **Sons**	(4) **All Children**	(5) **Daughters**	(6) **Sons**
Maternal Education	0.159***	0.145***	0.174***	0.162***	0.148***	0.178***
	(0.015)	(0.008)	(0.029)	(0.023)	(0.031)	(0.028)
Paternal Education	0.274***	0.271***	0.276***	0.267***	0.263***	0.273***
	(0.012)	(0.027)	(0.025)	(0.022)	(0.033)	(0.030)
Bargaining Power	-0.028	-0.052	-0.003	-0.020	-0.049	0.006
	(0.040)	(0.106)	(0.048)	(0.055)	(0.099)	(0.066)
Maternal	0.038***	0.075**	0.000	0.032*	0.072***	-0.005
Education*Bargaining	(0.004)	(0.026)	(0.027)	(0.017)	(0.024)	(0.022)
Paternal	-0.064***	-0.088***	-0.040	-0.058**	-0.083**	-0.038
Education*Bargaining	(0.017)	(0.021)	(0.029)	(0.026)	(0.033)	(0.035)
Total Family Wage Income	0.177***	0.185***	0.162***	0.185***	0.194***	0.169***
	(0.009)	(0.026)	(0.014)	(0.027)	(0.036)	(0.033)
Observations	26332	12777	13555	26332	12777	13555
R-squared	0.164	0.177	0.156	0.169	0.185	0.162
Gender Control	YES	NO	NO	YES	NO	NO
Birth Cohort*Country FE	NO	NO	NO	YES	YES	YES

Notes Only the children whose parents'job histories are available in the job episode panel are included in these estimations. Bargaining power is defined as a ratio of mother's years of schooling to father's years of schooling. In the first 3 columns, standard errors are clustered at the child's birth cohort level while in the remaining columns they are clustered at the child's birth cohort fixed effects*country of birth fixed effects.Parents' birth cohort fixed effects, child's birth cohort fixed effects and child's country of birth fixed effects are controlled in all the columns.

* p<0.1, ** p<0.05, *** p<0.01

Table B.2 Mobility and Relative Education Level for a Restricted Subsample

	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.162***	0.164***	0.163***	0.165***	0.166***	0.165***
	(0.004)	(0.003)	(0.007)	(0.009)	(0.014)	(0.013)
Paternal Education	0.242***	0.230***	0.251***	0.236***	0.226***	0.247***
	(0.010)	(0.018)	(0.005)	(0.011)	(0.015)	(0.014)
Bargaining Power	0.013	-0.026	0.047	0.018	-0.021	0.049
	(0.019)	(0.019)	(0.029)	(0.039)	(0.062)	(0.061)
Maternal	0.057**	0.126***	-0.010	0.050*	0.120***	-0.015
Education*Bargaining	(0.017)	(0.019)	(0.026)	(0.029)	(0.039)	(0.043)
Paternal	-0.046	-0.095***	-0.002	-0.039	-0.087**	0.000
Education*Bargaining	(0.027)	(0.018)	(0.040)	(0.035)	(0.043)	(0.055)
Total Family Wage Income	0.179***	0.196***	0.158***	0.188***	0.205***	0.165***
	(0.013)	(0.031)	(0.017)	(0.030)	(0.039)	(0.035)
Observations	24887	12050	12837	24887	12050	12837
R-squared	0.163	0.176	0.155	0.168	0.183	0.161
Gender Control	YES	NO	NO	YES	NO	NO
Birth Cohort*Country FE	NO	NO	NO	YES	YES	YES

Notes: Correlation coefficients report the results of estimations of Eq.(4.6) and Eq.(4.7) for a restricted subsample that Luxembourg, Ireland, and Portugal are excluded from the subsample that is defined in Section 3.4.1. Parents' birth cohort fixed effects, child's birth cohort fixed effects, and country of birth fixed effects are controlled.

* p<0.1, ** p<0.05, *** p<0.01

Table B.3 Mobility and Relative Wage Income for a Restricted Subsample

	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.189***	0.202***	0.180***	0.191***	0.204***	0.181***
	(0.006)	(0.007)	(0.007)	(0.013)	(0.018)	(0.016)
Paternal Education	0.224***	0.195***	0.250***	0.221***	0.193***	0.248***
	(0.006)	(0.006)	(0.008)	(0.011)	(0.015)	(0.013)
Bargaining Power	-0.100**	-0.140**	-0.075**	-0.090***	-0.125***	-0.068*
	(0.034)	(0.053)	(0.026)	(0.034)	(0.045)	(0.036)
Maternal	0.030*	0.058***	-0.001	0.025	0.052	-0.005
Education*Bargaining	(0.014)	(0.012)	(0.012)	(0.025)	(0.032)	(0.029)
Paternal	-0.066***	-0.062**	-0.068**	-0.063***	-0.060**	-0.067**
Education*Bargaining	(0.015)	(0.022)	(0.019)	(0.017)	(0.024)	(0.027)
Total Family Wage Income	0.233***	0.270***	0.203***	0.237***	0.272***	0.206***
	(0.013)	(0.034)	(0.017)	(0.032)	(0.049)	(0.034)
Observations	24887	12050	12837	24887	12050	12837
R-squared	0.163	0.176	0.156	0.168	0.183	0.162
Gender Control	YES	NO	NO	YES	NO	NO
Birth Cohort*Country FE	NO	NO	NO	YES	YES	YES

Notes: Correlation coefficients report the results of estimations of Eq.(4.8) and Eq.(4.9) for a restricted subsample that Luxembourg, Ireland, and Portugal are excluded from the subsample that is defined in Section 3.4.1. Parents' birth cohort fixed effects, child's birth cohort fixed effects, and country of birth fixed effects are controlled

* p<0.1, ** p<0.05, *** p<0.01

APPENDIX C

In this appendix, I report the country-level estimations for the following regression equations.

$$\begin{aligned} S_{it} = a + \gamma_t + \gamma_p + \rho B_{it} + \beta_1 S_{m,it} + \ \beta_2 S_{f,it} \\ + \beta_3 \left(S_{m,it} * B_{it}\right) + \ \beta_4 (S_{f,it} * B_{it}) + u_{it} \end{aligned} \tag{C.1}$$

Here, S_{it} denotes years of schooling of child i from birth cohort t, $S_{m,it}$ and $S_{f,it}$ indicates their mother's and father's years of schooling respectively. B_{it} is a bargaining power dummy indicates the mother is more educated than the father. γ_t and γ_p are the child's and parents' birth cohort fixed effects.

$$\begin{aligned} S^d_{it} = a^d + \gamma_t + \gamma_p + \rho B_{it} + \beta^d_1 S^d_{m,it} + \ \beta^d_2 S^d_{f,it} \\ + \beta_3 \left(S^d_{m,it} * B_{it}\right) + \ \beta_4 (S^d_{f,it} * B_{it}) + u_{it} \end{aligned} \tag{C.2}$$

In the above equation, S^d_{it} is the adjusted years of schooling of child i from birth cohort t, $S^d_{m,it}$ and $S^d_{f,it}$ are their mother's and father's adjusted years of schooling, respectively.

Table C.1 Education Mobility and Bargaining Power in Austria

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.191***	0.186***	0.194***	0.148***	0.144***	0.150***
	(0.018)	(0.031)	(0.019)	(0.014)	(0.024)	(0.015)
Paternal Education	0.217***	0.248***	0.193***	0.197***	0.225***	0.176***
	(0.014)	(0.004)	(0.024)	(0.013)	(0.004)	(0.022)
Bargaining Power	0.124	0.123	0.032	0.149**	0.047	0.246*
	(0.240)	(0.387)	(0.105)	(0.053)	(0.094)	(0.114)
Maternal	-0.014	0.108***	-0.113**	-0.011	0.084***	-0.088**
Education*Bargaining	(0.030)	(0.011)	(0.041)	(0.023)	(0.008)	(0.032)
Paternal	0.032	-0.104***	0.156**	0.029	-0.094***	0.142**
Education*Bargaining	(0.028)	(0.021)	(0.049)	(0.025)	(0.019)	(0.045)
Observations	3232	1590	1642	3232	1590	1642
R-squared	0.103	0.129	0.099	0.103	0.129	0.099
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.2 Education Mobility and Bargaining Power in Belgium

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.193***	0.230***	0.157***	0.227***	0.270***	0.185***
	(0.015)	(0.030)	(0.014)	(0.017)	(0.035)	(0.016)
Paternal Education	0.202***	0.144***	0.262***	0.249***	0.177***	0.323***
	(0.015)	(0.033)	(0.018)	(0.019)	(0.040)	(0.022)
Bargaining Power	-0.426	-1.644**	0.693	0.083**	0.336***	-0.161
	(0.428)	(0.548)	(0.553)	(0.028)	(0.087)	(0.094)
Maternal	0.030	-0.082**	0.141**	0.035	-0.096**	0.166**
Education*Bargaining	(0.029)	(0.030)	(0.048)	(0.034)	(0.035)	(0.057)
Paternal	0.025	0.289***	-0.230***	0.030	0.355***	-0.283***
Education*Bargaining	(0.043)	(0.045)	(0.056)	(0.053)	(0.056)	(0.069)
Observations	4763	2321	2442	4763	2321	2442
R-squared	0.191	0.208	0.187	0.191	0.208	0.187
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.3 Education Mobility and Bargaining Power in Croatia

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.189***	0.206***	0.153***	0.293***	0.319***	0.237***
	(0.016)	(0.019)	(0.019)	(0.025)	(0.029)	(0.029)
Paternal Education	0.147***	0.144***	0.174***	0.202***	0.198***	0.239***
	(0.018)	(0.023)	(0.023)	(0.025)	(0.032)	(0.032)
Bargaining Power	1.455	1.506	1.770	0.161	0.359	-0.245
	(1.317)	(0.833)	(2.457)	(0.257)	(0.192)	(0.481)
Maternal	-0.107	-0.154	0.026	-0.165	-0.239	0.040
Education*Bargaining	(0.134)	(0.110)	(0.235)	(0.207)	(0.171)	(0.364)
Paternal	0.003	0.084	-0.230	0.004	0.116	-0.317
Education*Bargaining	(0.086)	(0.075)	(0.118)	(0.118)	(0.103)	(0.162)
Observations	1314	689	625	1314	689	625
R-squared	0.178	0.203	0.171	0.178	0.203	0.171
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.4 Education Mobility and Bargaining Power in the Czech Republic

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.285***	0.276***	0.292***	0.257***	0.249***	0.264***
	(0.027)	(0.048)	(0.013)	(0.024)	(0.044)	(0.012)
Paternal Education	0.298***	0.288***	0.306***	0.275***	0.266***	0.283***
	(0.026)	(0.031)	(0.027)	(0.024)	(0.029)	(0.025)
Bargaining Power	0.180	1.409	-0.865	0.048	0.036	0.040
	(0.379)	(1.467)	(1.006)	(0.063)	(0.096)	(0.062)
Maternal	0.019	0.051	-0.001	0.017	0.046	-0.001
Education*Bargaining	(0.040)	(0.084)	(0.036)	(0.037)	(0.075)	(0.032)
Paternal	-0.023	-0.157	0.079	-0.022	-0.145	0.073
Education*Bargaining	(0.074)	(0.160)	(0.081)	(0.069)	(0.148)	(0.075)
Observations	4682	2320	2362	4682	2320	2362
R-squared	0.228	0.215	0.250	0.228	0.215	0.250
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.5 Education Mobility and Bargaining Power in Denmark

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.116***	0.111***	0.120***	0.189***	0.181***	0.195***
	(0.017)	(0.018)	(0.018)	(0.028)	(0.029)	(0.029)
Paternal Education	0.180***	0.194***	0.168***	0.245***	0.264***	0.228***
	(0.040)	(0.046)	(0.043)	(0.054)	(0.062)	(0.059)
Bargaining Power	-0.376	-0.425	-0.207	-0.162**	-0.127	-0.188
	(0.466)	(1.180)	(1.131)	(0.057)	(0.170)	(0.176)
Maternal	0.150**	0.143*	0.146	0.244**	0.233*	0.238
Education*Bargaining	(0.062)	(0.064)	(0.160)	(0.100)	(0.103)	(0.261)
Paternal	-0.140**	-0.125***	-0.152	-0.190**	-0.170***	-0.207
Education*Bargaining	(0.047)	(0.025)	(0.098)	(0.064)	(0.033)	(0.133)
Observations	2968	1454	1514	2968	1454	1514
R-squared	0.128	0.143	0.116	0.128	0.143	0.116
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.6 Education Mobility and Bargaining Power in Estonia

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.188***	0.195***	0.180***	0.199***	0.207***	0.190***
	(0.027)	(0.026)	(0.027)	(0.028)	(0.028)	(0.028)
Paternal Education	0.247***	0.230***	0.264***	0.278***	0.260***	0.298***
	(0.024)	(0.026)	(0.021)	(0.027)	(0.029)	(0.023)
Bargaining Power	-0.417*	0.142	-0.924***	-0.028	0.025	-0.063
	(0.181)	(0.379)	(0.205)	(0.042)	(0.041)	(0.049)
Maternal	0.140***	0.088	0.184***	0.148***	0.093	0.194***
Education*Bargaining	(0.031)	(0.050)	(0.028)	(0.033)	(0.053)	(0.030)
Paternal	-0.118*	-0.098	-0.127**	-0.133*	-0.111	-0.144**
Education*Bargaining	(0.052)	(0.058)	(0.039)	(0.058)	(0.066)	(0.044)
Observations	4076	1994	2082	4076	1994	2082
R-squared	0.224	0.184	0.195	0.224	0.184	0.195
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.7 Education Mobility and Bargaining Power in France

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.185***	0.215***	0.159***	0.216***	0.251***	0.186***
	(0.016)	(0.016)	(0.041)	(0.019)	(0.019)	(0.048)
Paternal Education	0.218***	0.219***	0.213***	0.270***	0.271***	0.264***
	(0.013)	(0.020)	(0.044)	(0.016)	(0.024)	(0.054)
Bargaining Power	-0.078	0.788	-1.081*	-0.084***	-0.128	-0.037
	(0.355)	(0.706)	(0.520)	(0.021)	(0.140)	(0.140)
Maternal	0.080	0.051	0.107*	0.093	0.060	0.125*
Education*Bargaining	(0.045)	(0.082)	(0.048)	(0.052)	(0.096)	(0.056)
Paternal	-0.088**	-0.147**	-0.014	-0.108**	-0.182**	-0.017
Education*Bargaining	(0.029)	(0.049)	(0.047)	(0.036)	(0.060)	(0.058)
Observations	4507	2260	2247	4507	2260	2247
R-squared	0.195	0.215	0.181	0.195	0.215	0.181
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.8 Education Mobility and Bargaining Power in Germany

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.192***	0.240***	0.148***	0.201***	0.251***	0.155***
	(0.018)	(0.017)	(0.024)	(0.019)	(0.018)	(0.025)
Paternal Education	0.263***	0.269***	0.252***	0.265***	0.271***	0.255***
	(0.026)	(0.026)	(0.027)	(0.027)	(0.026)	(0.028)
Bargaining Power	1.092*	0.911	1.995***	0.003	-0.295	0.506*
	(0.550)	(0.716)	(0.489)	(0.252)	(0.274)	(0.252)
Maternal	-0.009	0.109	-0.230	-0.009	0.114	-0.241
Education*Bargaining	(0.132)	(0.132)	(0.137)	(0.138)	(0.139)	(0.143)
Paternal	-0.074	-0.218	0.145	-0.074	-0.219	0.146
Education*Bargaining	(0.163)	(0.198)	(0.180)	(0.164)	(0.199)	(0.181)
Observations	4328	2147	2181	4328	2147	2181
R-squared	0.168	0.206	0.142	0.168	0.206	0.142
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.9 Education Mobility and Bargaining Power in Greece

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.099***	0.094***	0.105***	0.136***	0.129***	0.144***
	(0.013)	(0.014)	(0.028)	(0.017)	(0.019)	(0.038)
Paternal Education	0.181***	0.177***	0.186***	0.273***	0.267***	0.281***
	(0.007)	(0.019)	(0.020)	(0.010)	(0.029)	(0.029)
Bargaining Power	0.280	-0.036	0.688	0.093	-0.022	0.195
	(0.389)	(0.494)	(0.506)	(0.051)	(0.077)	(0.113)
Maternal	0.058	0.129*	-0.009	0.079	0.177*	-0.012
Education*Bargaining	(0.041)	(0.061)	(0.050)	(0.056)	(0.084)	(0.068)
Paternal	-0.054	-0.121	-0.006	-0.082	-0.183	-0.009
Education*Bargaining	(0.036)	(0.071)	(0.062)	(0.055)	(0.107)	(0.094)
Observations	3550	1740	1810	3550	1740	1810
R-squared	0.207	0.248	0.184	0.207	0.248	0.184
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.10 Education Mobility and Bargaining Power in Hungary

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.238***	0.285***	0.196*	0.278***	0.332***	0.229*
	(0.039)	(0.014)	(0.071)	(0.046)	(0.016)	(0.083)
Paternal Education	0.297***	0.263***	0.323***	0.322***	0.284***	0.349***
	(0.028)	(0.008)	(0.046)	(0.030)	(0.009)	(0.050)
Bargaining Power	1.382**	0.776**	1.860**	0.337	0.410***	0.264
	(0.339)	(0.242)	(0.665)	(0.190)	(0.074)	(0.286)
Maternal	-0.070**	-0.098*	-0.057	-0.082**	-0.115*	-0.067
Education*Bargaining	(0.023)	(0.036)	(0.060)	(0.027)	(0.042)	(0.070)
Paternal	0.008	0.105**	-0.063	0.008	0.113**	-0.068
Education*Bargaining	(0.046)	(0.032)	(0.096)	(0.049)	(0.035)	(0.103)
Observations	1557	748	809	1557	748	809
R-squared	0.307	0.315	0.307	0.307	0.315	0.307
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.11 Education Mobility and Bargaining Power in Ireland

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.199**	0.177***	0.215*	0.436**	0.388***	0.470*
	(0.059)	(0.038)	(0.087)	(0.129)	(0.083)	(0.190)
Paternal Education	-0.052	-0.029	-0.060	-0.124	-0.070	-0.144
	(0.047)	(0.018)	(0.089)	(0.113)	(0.044)	(0.214)
Bargaining Power	-1.049	-1.046	-0.794	-0.182**	-0.100	-0.337
	(0.734)	(1.021)	(0.914)	(0.053)	(0.089)	(0.220)
Maternal	-0.017	-0.025	0.019	-0.037	-0.054	0.041
Education*Bargaining	(0.102)	(0.037)	(0.204)	(0.223)	(0.080)	(0.446)
Paternal	0.091	0.104	0.022	0.217	0.250	0.052
Education*Bargaining	(0.091)	(0.052)	(0.163)	(0.218)	(0.124)	(0.390)
Observations	517	260	257	517	260	257
R-squared	0.158	0.166	0.186	0.158	0.166	0.186
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.12 Education Mobility and Bargaining Power in Israel

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.183***	0.218***	0.146***	0.230***	0.275***	0.184***
	(0.016)	(0.032)	(0.023)	(0.021)	(0.041)	(0.029)
Paternal Education	0.175***	0.145***	0.204***	0.202***	0.168***	0.237***
	(0.021)	(0.008)	(0.031)	(0.024)	(0.010)	(0.035)
Bargaining Power	-0.367	-1.226***	0.268	-0.123**	-0.100	-0.127
	(0.222)	(0.144)	(0.570)	(0.041)	(0.123)	(0.080)
Maternal	0.065**	0.109	0.030	0.082**	0.137	0.038
Education*Bargaining	(0.026)	(0.062)	(0.077)	(0.032)	(0.079)	(0.097)
Paternal	-0.066	-0.021	-0.093*	-0.076	-0.024	-0.107*
Education*Bargaining	(0.035)	(0.085)	(0.047)	(0.041)	(0.099)	(0.055)
Observations	3039	1454	1585	3039	1454	1585
R-squared	0.160	0.182	0.147	0.160	0.182	0.147
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.13 Education Mobility and Bargaining Power in Italy

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.209***	0.176***	0.232***	0.197***	0.166***	0.219***
	(0.008)	(0.020)	(0.010)	(0.008)	(0.019)	(0.010)
Paternal Education	0.297***	0.322***	0.280***	0.296***	0.320***	0.279***
	(0.016)	(0.026)	(0.013)	(0.015)	(0.026)	(0.013)
Bargaining Power	0.131	-0.488	0.675	-0.053*	-0.138***	0.006
	(0.169)	(0.357)	(0.605)	(0.025)	(0.036)	(0.058)
Maternal	0.092***	0.207***	0.007	0.087***	0.195***	0.006
Education*Bargaining	(0.015)	(0.019)	(0.033)	(0.014)	(0.018)	(0.031)
Paternal	-0.131***	-0.206***	-0.089**	-0.131***	-0.205***	-0.089**
Education*Bargaining	(0.018)	(0.022)	(0.031)	(0.018)	(0.022)	(0.031)
Observations	5238	2486	2752	5238	2486	2752
R-squared	0.218	0.236	0.203	0.218	0.236	0.203
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.14 Education Mobility and Bargaining Power in Luxembourg

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.088***	0.160*	0.015	0.086***	0.158*	0.015
	(0.010)	(0.066)	(0.056)	(0.010)	(0.064)	(0.055)
Paternal Education	0.381***	0.285***	0.478***	0.425***	0.318***	0.533***
	(0.037)	(0.038)	(0.030)	(0.041)	(0.042)	(0.033)
Bargaining Power	2.974***	3.497**	3.436	-0.367***	0.244	-0.778**
	(0.211)	(1.058)	(2.003)	(0.070)	(0.190)	(0.245)
Maternal	0.322***	-0.031	0.551	0.317***	-0.030	0.541
Education*Bargaining	(0.035)	(0.281)	(0.346)	(0.035)	(0.276)	(0.340)
Paternal	-0.641***	-0.201	-0.997***	-0.714***	-0.224	-1.112***
Education*Bargaining	(0.057)	(0.213)	(0.214)	(0.063)	(0.237)	(0.238)
Observations	681	324	357	681	324	357
R-squared	0.251	0.242	0.301	0.251	0.242	0.301
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.15 Education Mobility and Bargaining Power in Netherlands

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.163***	0.145**	0.176***	0.181***	0.161**	0.195***
	(0.020)	(0.040)	(0.036)	(0.022)	(0.045)	(0.040)
Paternal Education	0.216***	0.229***	0.206***	0.262***	0.278***	0.250***
	(0.009)	(0.022)	(0.017)	(0.011)	(0.026)	(0.021)
Bargaining Power	-1.000***	-1.771**	-0.484	0.135	0.016	0.187
	(0.105)	(0.534)	(0.508)	(0.081)	(0.073)	(0.093)
Maternal	-0.027	0.111	-0.118	-0.030	0.123	-0.131
Education*Bargaining	(0.032)	(0.057)	(0.066)	(0.035)	(0.064)	(0.073)
Paternal	0.136**	0.051	0.185***	0.165**	0.062	0.224***
Education*Bargaining	(0.048)	(0.054)	(0.042)	(0.059)	(0.065)	(0.051)
Observations	3507	1723	1784	3507	1723	1784
R-squared	0.164	0.188	0.154	0.164	0.188	0.154
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.16 Education Mobility and Bargaining Power in Poland

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.232***	0.288***	0.175**	0.251***	0.311***	0.189**
	(0.028)	(0.057)	(0.058)	(0.030)	(0.061)	(0.063)
Paternal Education	0.170***	0.134**	0.211***	0.200***	0.158**	0.249***
	(0.027)	(0.037)	(0.039)	(0.032)	(0.044)	(0.046)
Bargaining Power	-0.277	-0.958	0.208	0.365	-0.019	0.746**
	(0.503)	(1.390)	(0.615)	(0.292)	(0.406)	(0.203)
Maternal	-0.123	-0.011	-0.237**	-0.132	-0.012	-0.256**
Education*Bargaining	(0.165)	(0.267)	(0.086)	(0.178)	(0.288)	(0.092)
Paternal	0.228	0.104	0.374*	0.269	0.123	0.441*
Education*Bargaining	(0.174)	(0.205)	(0.169)	(0.205)	(0.242)	(0.200)
Observations	1959	961	998	1959	961	998
R-squared	0.194	0.190	0.191	0.194	0.190	0.191
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.17 Education Mobility and Bargaining Power in Portugal

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.277**	0.213**	0.356**	0.241**	0.186**	0.310**
	(0.079)	(0.078)	(0.095)	(0.068)	(0.068)	(0.083)
Paternal Education	0.292***	0.337***	0.236***	0.266***	0.308***	0.216***
	(0.053)	(0.085)	(0.041)	(0.049)	(0.077)	(0.037)
Bargaining Power	-2.276**	-2.315*	-2.254*	-0.373	-0.360	-0.396*
	(0.917)	(1.154)	(1.029)	(0.193)	(0.252)	(0.156)
Maternal	0.412	0.540	0.288	0.359	0.470	0.251
Education*Bargaining	(0.220)	(0.303)	(0.185)	(0.191)	(0.264)	(0.161)
Paternal	-0.274	-0.377	-0.180	-0.251	-0.345	-0.164
Education*Bargaining	(0.195)	(0.281)	(0.114)	(0.178)	(0.257)	(0.104)
Observations	1566	790	776	1566	790	776
R-squared	0.271	0.275	0.247	0.271	0.275	0.247
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.18 Education Mobility and Bargaining Power in Slovenia

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.150***	0.229***	0.072**	0.161***	0.247***	0.077**
	(0.029)	(0.040)	(0.023)	(0.032)	(0.043)	(0.025)
Paternal Education	0.241***	0.163***	0.320***	0.260***	0.176***	0.345***
	(0.027)	(0.013)	(0.048)	(0.029)	(0.014)	(0.052)
Bargaining Power	-0.065	-0.756	0.504	0.206*	0.170	0.264
	(0.131)	(0.837)	(0.604)	(0.084)	(0.096)	(0.163)
Maternal	-0.046	-0.056	-0.035	-0.050	-0.060	-0.038
Education*Bargaining	(0.040)	(0.045)	(0.051)	(0.043)	(0.048)	(0.055)
Paternal	0.104	0.168	0.055	0.112	0.182	0.059
Education*Bargaining	(0.058)	(0.123)	(0.131)	(0.063)	(0.132)	(0.142)
Observations	3010	1504	1506	3010	1504	1506
R-squared	0.173	0.175	0.152	0.173	0.175	0.152
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.19 Education Mobility and Bargaining Power in Spain

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.233***	0.226***	0.241***	0.206***	0.200***	0.213***
	(0.010)	(0.018)	(0.031)	(0.009)	(0.016)	(0.027)
Paternal Education	0.301***	0.275***	0.325***	0.294***	0.268***	0.318***
	(0.006)	(0.014)	(0.018)	(0.006)	(0.013)	(0.017)
Bargaining Power	0.307	-0.098	0.709**	0.080	0.072	0.094
	(0.179)	(0.449)	(0.286)	(0.050)	(0.067)	(0.084)
Maternal	0.007	0.083	-0.072*	0.006	0.073	-0.063*
Education*Bargaining	(0.030)	(0.051)	(0.035)	(0.027)	(0.045)	(0.031)
Paternal	-0.009	-0.033	0.021	-0.008	-0.032	0.021
Education*Bargaining	(0.036)	(0.032)	(0.042)	(0.035)	(0.031)	(0.041)
Observations	7034	3413	3621	7034	3413	3621
R-squared	0.218	0.221	0.217	0.218	0.221	0.217
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.20 Education Mobility and Bargaining Power in Sweden

	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.146***	0.157***	0.136***	0.195***	0.209***	0.182***
	(0.017)	(0.038)	(0.033)	(0.023)	(0.051)	(0.045)
Paternal Education	0.167***	0.128***	0.200***	0.234***	0.180***	0.281***
	(0.017)	(0.025)	(0.017)	(0.024)	(0.035)	(0.024)
Bargaining Power	0.423**	-0.425	1.153***	0.030	0.034	0.038
	(0.165)	(0.237)	(0.286)	(0.023)	(0.111)	(0.109)
Maternal	-0.017	0.012	-0.045	-0.023	0.015	-0.061
Education*Bargaining	(0.028)	(0.034)	(0.032)	(0.037)	(0.046)	(0.043)
Paternal	-0.016	0.035	-0.053	-0.022	0.049	-0.074
Education*Bargaining	(0.027)	(0.048)	(0.058)	(0.038)	(0.067)	(0.081)
Observations	3589	1787	1802	3589	1787	1802
R-squared	0.155	0.148	0.164	0.155	0.148	0.164
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01

Table C.21 Education Mobility and Bargaining Power in Switzerland

	Regression Coefficient			Correlation Coefficient		
	Regression Coefficient			Correlation Coefficient		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Children	**Daughters**	**Sons**	**All Children**	**Daughters**	**Sons**
Maternal Education	0.110***	0.175***	0.045*	0.085***	0.134***	0.035*
	(0.018)	(0.024)	(0.022)	(0.013)	(0.019)	(0.017)
Paternal Education	0.278***	0.276***	0.277***	0.245***	0.244***	0.244***
	(0.009)	(0.052)	(0.033)	(0.008)	(0.046)	(0.029)
Bargaining Power	-1.752*	1.318	-2.442	-0.656***	-0.809***	-0.558***
	(0.774)	(0.855)	(1.753)	(0.083)	(0.166)	(0.056)
Maternal	0.468***	0.540***	0.451***	0.359***	0.414***	0.346***
Education*Bargaining	(0.084)	(0.128)	(0.063)	(0.064)	(0.098)	(0.049)
Paternal	-0.462**	-0.631***	-0.332	-0.407**	-0.557***	-0.293
Education*Bargaining	(0.140)	(0.123)	(0.254)	(0.124)	(0.109)	(0.224)
Observations	2275	1090	1185	2275	1090	1185
R-squared	0.113	0.144	0.107	0.113	0.144	0.107
Gender Control	YES	NO	NO	YES	NO	NO

Notes: Child's and parents' birth cohort fixed effects are controlled in all columns. Standard errors are clustered at the child's birth cohort level. Bargaining Power is a dummy variable that indicates the mother is more educated than the father. Clustered standard errors are in parentheses.

* p<0.1, ** p<0.05, *** p<0.01