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The Intergenerational Correlation of Employment: Mothers as Role Models?[*]

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Abstract

Linking data from the National Longitudinal Survey of Youth 1979 (NLSY79) and the NLSY79 Children and Young Adults, we document a substantial positive correlation of employment status between mothers and their offspring in the United States. After controlling for ability, education, fertility and wealth, offspring of permanently employed mothers have an 11 percentage-point higher probability to be employed in each given year than those of never employed mothers. The intergenerational transmission of maternal employment is stronger to daughters but significant also to sons. Investigating potential mechanisms, we provide suggestive evidence for a role model channel, through which labor force participation may be transmitted. Offspring seem to emulate the example of their mother when they observe her working. By contrast, we are able to rule out alternative candidate explanations such as network effects, occupation-specific human capital and local conditions of the labor market.

JEL Code: J21, J22, J62

Keywords: intergenerational transmission, role model, female employment

1 Introduction

For several decades, the intergenerational correlation of labor market outcomes has been a subject of interest among both academics and policy-makers. As a key determinant of socio-economic mobility, the correlation of labor earnings between subsequent generations has received particular attention. An extensive literature documents that earnings of individuals are highly correlated with those of their parents (see the comprehensive surveys by Solon, 1999; Bowles and Gintis, 2002; Black and Devereux, 2011; Björklund and Jäntti, 2011). The focus of this literature is on the identification and quantification of channels through which the *potential* to earn is transmitted. Such channels include, among others, the genetic inheritance of cognitive skills, higher investments into children's education by parents with higher income, and parents' social networks, which the offspring can take advantage of.

However, labor earnings do not exclusively depend on the potential to earn but also on exerted work effort. In general, labor earnings are the product of the wage rate and the time the individual is working. The former can be seen as a sufficient statistic for earnings potential. Interestingly, much less attention has been given to the latter component, labor supply.

In this paper we focus on a particular measure of working time: the fraction of individual's lifetime spent in employment, or the extensive margin of labor supply. Employment is an important labor market outcome not only from the perspective of socio-economic mobility. Also from a macroeconomic point of view, the aggregate employment rate is a key predictor of GDP and, to the extent that the employed pay income taxes while the non-employed receive welfare benefits, it crucially affects governments' public finances.

Using the standard method to measure intergenerational correlations, we document that the fraction of individuals' working-age life spent in employment is highly correlated with their mothers'. This correlation remains significant even after controlling for the main determinants of the intergenerational correlation of earnings. Importantly, also the employment transmission from mothers to sons, while lower than to daughters, is significantly positive. This – to our knowledge novel – fact cannot be explained by the transmission of gender roles with which previous studies explained the documented positive correlation between mothers' and daughters' labor supply. In this paper we argue that another, complementary, mechanism is at work: Offspring emulate the example of

their mother when they observe her working, a role model effect that works across both genders.

We obtain our results by linking data from the National Longitudinal Survey of Youth 1979 (NLSY79) and the Children and Young Adults (CNLSY79) cohort. These data are designed to link mothers from a representative sample born in the US between 1957 and 1964 with their offspring. Since more mothers than fathers are at the margin between labor force participation and non-participation, we believe the focus on mother-offspring pairs is reasonable given our goal. Exploiting the longitudinal structure of the data, we first estimate the permanent component of employment status along the life cycle for both, mothers and offspring. This permanent component measures how much of their active life individuals spend in employment. The information included in this component is different from the permanent component of earnings, which is typically based only on periods of employment, that is periods within which earnings are observed.

We find a robust, statistically significant and positive correlation of employment status. The unconditional correlation is 0.19, implying that, relative to an offspring of a never employed mother, the offspring of a permanently employed mother has a 19 percentage-point higher probability of employment in each given year. After controlling for relevant factors including ability (measured by standard test scores), education, wealth, and some other relevant covariates, the incremental employment probability of the offspring remains at 11 percentage points. This is what we call *residual* correlation of employment.

Exploring gender differences, we find a residual employment correlation between mothers and daughters of 0.17. Importantly, we find that also the intergenerational employment correlation between mothers and sons, while lower, is significantly positive with a point estimate of 0.07. This implies that the transmission of mothers' employment status cannot exclusively be explained by the transmission of gender roles, which several papers argue to be a crucial determinant for the labor supply transmission from mothers to daughters (Farré and Vella, 2013; Johnston et al., 2014; McGinn et al., 2019; Olivetti et al., 2020; Binder, 2021).[1]

Recently, Kleven et al. (2019) document a big child penalty for women in terms of

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[1]In the introduction we focus on the difference of the present paper to this literature. In Sections 4.4 and 6.1 we refer to the small literature that documents a positive correlation between fathers' and sons' labor supply (Altonji and Dunn, 1991; Toledo, 2010; Macmillan, 2014).

several labor market outcomes. Specifically, upon arrival of the first child, a woman's labor market participation significantly drops relative to her male peers'. One may hence be tempted to attribute the difference between the employment correlation of mother-daughter and mother-son pairs to the combination of this child penalty and correlated fertility choices between mothers and their daughters. However, focusing on mother-daughter pairs, we find only an insignificantly lower correlation between mothers and childless daughters relative to mothers and daughters with children. Furthermore, having children does not have a differential effect on mother-daughter and mother-son pairs: the gender difference in the employment correlation is about the same, irrespective of whether one considers mother-offspring pairs in which the offspring has children her/himself or not.

The positive and strong intergenerational correlation of employment has important implications not only for the analysis of social mobility but, potentially, also for the optimal design of tax-transfer policies. It is particularly important in light of several existing policies, such as the Earned Income Tax Credit (EITC) in the United States, which aim to encourage labor force participation. This is especially the case since we find the correlation to be high for low-educated and low-income mothers, the target group of the these policies. Our results suggest that there may be a, perhaps unintended, dynamic fiscal benefit of such policies through increased labor market participation of future generations.

However, before such conclusions can be drawn, an understanding of the channels determining this correlation is needed. If the intergenerational transmission of employment was not affected by mothers' behavior but rather the result of a direct transmission of preferences for work,[2] none of the government's costs of a policy encouraging parental employment will be recovered through higher participation of their offspring. In such a situation, the offspring will have the same attitude towards work independent of the existence of such a policy. However, the very opposite is true if the offspring emulate the *behavior* of their mothers. Then a policy that increases maternal employment, even if it is currently costly, may amortize through increased participation of future generations. We transparently trace out the distinction between these channels by means of a simple two-generation model.

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[2] By direct preference transmission we refer to a situation in which the mother transmits her preference for work to her offspring independently of her work behavior.

Using a correlational study to argue in favor or against a specific channel is always difficult as alternative explanations may be compatible with the observed correlations. Nevertheless, we provide several pieces of evidence suggesting that indeed the role model effect is a potentially important force behind the observed working behavior and that therefore, from a public finances' point of view, policies that move mothers into the labor force may result in increased revenues from future generations. First, exploiting certain survey questions, we construct measures for work preferences that represent the disutility of work. While we find that maternal disutility of work has a small direct impact on the offspring's employment, the coefficient on maternal employment remains unaffected. This suggests that actually observing the mother working is important for the offspring to develop a more positive attitude towards work. Second, we disentangle the direct transmission of preferences from the role model channel by controlling for employment in periods before the offspring's birth, and in which the mother does not cohabit with her offspring. These measures serve as proxies for mothers' work preferences. It turns out that the correlation is mainly driven by periods after the offspring's birth, or in periods of cohabitation, in which it is arguably easier for the offspring to emulate the behaviour of the mother. Third, we study, instead of employment, the intergenerational correlation of working long hours (defined as more than 40 hours a week). Also this correlation is significantly positive and largely unaffected by the inclusion of covariates. As working long hours is another indicator of work effort, it supports our evidence favoring a role model.

Our presented evidence of a role model channel is suggestive as our data does not allow us to causally identify the effect of maternal employment on offspring's work preferences. In principle, the observed intergenerational correlation of employment could be also driven by other factors that are both correlated with employment and transmitted across generations. In this context we studied the effect of welfare benefits, health limitations, as well as some social problems (drug abuse, mental health issues). While we find these to be correlated across generations, they do not seem to drive the intergenerational correlation of employment. Of course, these factors are not exhaustive and in particular social problems are only imperfectly measured in survey data.

Finally, we study some additional alternative explanations for this residual correlation, such as the effect of networks, occupation-specific human capital, or local conditions of

the labor market. Particularly, we analyze the heterogeneity in the intergenerational correlation of employment across mother-offspring pairs that do or do not share industries, occupations, or regional labor markets. The lack of difference across groups shows that these explanations are unlikely to drive the intergenerational correlation of employment status.

Related literature. Our paper contributes to many different branches of the empirical literature studying the transmission of preferences for work across generations. Methodologically, we use tools of the well-established literature on the intergenerational correlations of labor market outcomes (Solon, 1992, 1999; Haider and Solon, 2006; Grawe, 2006; Lee and Solon, 2009; Nybom and Stuhler, 2016, 2017; Mazumder, 2005).

The gender literature has analyzed the transmission of preferences for work from the perspective of gender roles. An important part of this literature uses the so-called epidemiological approach. This approach considers the intergenerational transmission of cultural traits when outcomes of second-generation migrants and those of the parents' country of origin are correlated. Fernandez (2007) as well as Fernandez and Fogli (2009) interpret such correlation in female labor force participation as cultural transmission of women's roles. A similar interpretation is given to the link between mothers and daughters-in-law in Fernandez et al. (2004), that emerges as sons of working mothers have an inclination for choosing a working wife. Another, more structural, strand of the gender literature also looks at cultural transmission. For instance, Fernandez (2013) explains the S-shape in the female labor force participation during the second half of the 20th century with a model that introduces learning across generations about the returns to female work. These studies deal with the transmission of society-wide preferences. We instead analyze preference transmission within the family, from mothers to their offspring.

Importantly, our paper does not limit attention to the transmission of gender roles, as we do not only find a significant employment correlation for mother-daughter pairs but also for mother-son pairs. Nevertheless, there is a tight connection between our paper and studies that attribute the positive correlation between mothers' and daughters' labor supply to their positively correlated views on what a mother's role in the family is (Farré and Vella, 2013; Johnston et al., 2014; McGinn et al., 2019; Olivetti et al., 2020; Binder, 2021). In line with these studies, we find that mothers and daughters have highly correlated views on whether or not women's role in the family is at home as caretaker of

children. However, we show that the mothers' view on women's role in the family is not as good a predictor of daughters' attitude towards work as the labor force participation of the mother itself. That is, working mothers with the same preference for work as non-working mothers tend to have daughters with more positive attitudes towards work and hence with a higher probability of being employed, suggesting a role model channel that goes beyond the direct transmission of preferences. Such a role model effect may be the reason why also sons' employment behavior is correlated with the employment decisions of their mothers, a finding that cannot be explained with gender roles.

A related literature documents the transmission of preferences more generally. For example, attitudes towards risk or patience have been shown to be correlated across generations (e.g., Dohmen et al., 2012; Alan et al., 2017; Brenøe and Epper, 2022; Zumbuehl et al., 2021). These have further been shown to affect various decisions such as labor market participation, investment, as well as educational and occupational choices (Dohmen et al., 2012; Golsteyn et al., 2014; Sunde et al., 2022; Bonin et al., 2007; Fouarge et al., 2014; Skriabikova et al., 2014). All of these may impact labor supply. In our paper, we focus on preferences for work, controlling for some of the most salient factors that mediate the influence of broader preference transmission on the decision to work.

Finally, a strand of literature documents that parental welfare benefit reception results in an increased probability of the offspring claiming the benefits themselves. In the context of the Norwegian disability insurance (DI) system, Dahl et al. (2014) exploit variation in the leniency of appeal judges, who are randomly assigned to decide on cases when individuals were originally denied DI. The authors find that when a parent is allowed DI at the appeal stage, their adult offspring's DI participation rate increases by 12 percentage points over the following 10 years. This number is remarkably similar to what we find for employment. Furthermore, their results are consistent with our suggested mechanism. In particular, in both their paper and ours, differential outcomes of the offspring are not explained by differences in what parents want – all parents in their paper apply for DI – but rather by differences in what parents actually do. Two similar recent contributions are Dahl and Gielen (2021), who use a regression discontinuity design induced by a reform of DI in the Netherlands, which tightened eligibility criteria, and Hartley et al. (2017), who exploit cross-state variation in the timing of welfare and income support program reforms in the US. We see our contribution complementary to these

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papers. On the one hand, the quasi-experimental design in these three papers allows them to make causal inferences. But, on the other hand, the findings of these papers are very specific to the respective institutional setting and restricted to the receipt of certain kinds of welfare benefit. In contrast, we document the correlation of employment between mothers and their offspring for a representative sample of the US population. The evidence from these papers does not allow for inferences on the transmission of employment, an important labor market outcome.

Outline. The remainder of the paper is structured as follows. In Section 2, we present the data, followed by the empirical strategy in Section 3. Section 4 documents the main results. In Section 5, we present a two-generational model of preference transmission and present evidence in favor of a role model channel driving the results, while in Section 6 we discuss why other potential channels are unlikely to be important drivers. Finally, Section 7 concludes.

2 Data

We use the National Longitudinal Survey of Youth 1979 cohort (NLSY79) and the Children and Young Adults cohort (CNLSY79). These data are widely used in the analysis of inequality and labor market research. The NLSY79 surveys a representative sample of individuals born in the US between 1957 and 1964. Respondents are 14 to 22 years old in 1979 and are followed since then. The last observed year is 2018, when they are 56 to 62 years old. The frequency is annual between 1979 and 1994, and biannual thereafter. The offspring of the women in this cohort are surveyed on a biannual basis since 1986, constituting the CNLSY79. They are linked to the original cohort by a unique identifier provided by the US Bureau of Census.[3]

We restrict the analysis to the cross-sectional sub-sample of the NLSY79 that is designed as a representative sample of the US population in 1979. We exclude other sub-samples that oversample particular groups of the population to avoid weighting the estimates. We restrict to observations during ages 25 to 45 for both cohorts to keep the

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[3]Although in the NLSY79, only mothers (and not fathers) can be linked to CNLSY79 data, this does not challenge the objective of our paper. As we focus on the extensive margin of the labor supply decision, using maternal employment information is reasonable because female labor force participation is typically lower (through more elastic labor supply) than male labor force participation, particularly during the period of observation of the first cohort. Further details on the data can be found in Appendix A.1.

representativeness of the lifetime employment experience (the oldest individuals in the second cohort are 45 years old in 2018). We obtain a final sub-sample of 1,922 mothers paired to 3,748 offspring.

The data are particularly rich. They provide detailed information on labor market outcomes, education, and further demographic and socio-economic characteristics. Importantly, they contain widely used indicators of ability, which is a key confounder for the estimation of intergenerational transmission of labor market outcomes: the Armed Forces Qualification Test (AFQT) for the mothers and the Peabody Individual Achievement Test (PIAT) for the offspring. Our baseline ability measure is a measure of cognitive skills. Specifically, we follow Abbott et al. (2019) and measure children's cognitive skills as the first principal component among the PIAT math, reading recognition and reading comprehension scores.[4]

We use information on wealth (net worth), computed as assets (savings, home and vehicle ownership) minus debts (credit cards, students loans, mortgages, vehicle loans, and others).[5]

Table 1 provides descriptive statistics of the data (additional descriptives are summarized in Table B.13 in the Appendix). For most variables, we report the means across individual averages for those observations over the 25 to 45 years old range in our sample. The last two columns refer to the sample of mothers and their offspring, and the first one shows the characteristics of the total sample of women in the NLSY79 cohort for reference. All monetary values are deflated using the Consumer Price Index (CPI) and expressed in prices of 1980.

The average age is 33 for mothers and 28 for the offspring. The sample of mothers is representative of women with children by design. As compared with the total sample of women in the NLSY79, mothers are slightly less educated and live in poorer households. Women are 24 years old on average when they give birth. The offspring's cohort is relatively younger than the mothers' by construction, as reflected in the age and other characteristics associated to the life cycle (for example, the proportion married and cohabiting is lower in the offspring's cohort, and the wealth level as well). The offspring are slightly more educated than mothers. Mothers are observed on average for 14 waves,

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[4]In an alternative specification, we include non-cognitive skills in the ability measure (see Section 4.5).

[5]We winsorize the values of total wealth at the 1st and 99th percentile in each year to eliminate extreme values.

Table 1: Summary statistics for women and mother-offspring pairs in NLSY79 and CNLSY79

	Women	Mothers	Offspring
Demographics			
Age	32.9	33.2	28.4
	(1.7)	(1.1)	(2.1)
Female	100%	100%	50%
Married/cohabiting	68%	77%	32%
Number of children	1.9	2.5	1.2
	(1.4)	(1.2)	(1.4)
Maternal age at birth		24.2	
		(4.6)	
Education and Ability			
Years of education	13.7	13.3	14.8
	(2.6)	(2.4)	(2.5)
High-school drop-out	7%	8%	9%
High-school	40%	45%	22%
Some college	26%	26%	26%
College	28%	21%	42%
Percentile in cognitive test	48.8	44.9	
	(28.5)	(28.1)	
math			54.1
			(27.5)
reading recognition			59.1
			(29.4)
reading comprehension			48.1
			(27.3)
Age at test	18.0	18.1	13.1
	(4.0)	(4.0)	(1.5)
Labor Market Outcomes			
Employment	79%	76%	85%
Hours/week	37.7	36.5	41.0
	(8.2)	(8.3)	(10.4)
Hourly wage (in USD)	8.1	7.6	8.9
	(8.2)	(9.3)	(11.3)
Annual earnings (in 1,000 USD)	12.8	11.1	15.4
	(9.0)	(7.7)	(10.7)
Wealth and Income			
Net worth (in 1,000 USD)	50.8	47.4	9.9
	(84.3)	(79.5)	(17.7)
Family income (in 1,000 USD)	33.5	31.8	28.2
	(35.4)	(35.1)	(23.2)
Welfare participation	16%	21%	7%
Health limitations for work	7%	7%	5%
Number of interviews	13.2	14.0	3.2
	(3.1)	(2.0)	(1.5)
Individuals	3,040	1,922	3,748

Notes: Averages across individual means (standard deviations in parentheses). For employment, welfare participation and health limitations, averages over individual mean proportions across the observation period are reported. Number of children, and proportions of the various education levels refer to individuals' maximum level attained over the observation period. The age at the cognitive test for the offspring corresponds to the math component–it is very similar for the reminder two components. Monetary variables are in 1980 USD.

and offspring for 3.2 waves.[6]

Questions about employment status vary across waves in the survey. As we do not have the same variables for both cohorts our choice of the particular question used in our analysis balances two objectives: (i) we want to have a measure that is as homogeneous as possible between the samples of mothers and offspring; (ii) at the same time, the questions should be consistent along the different waves and minimize the number of non-responses. We consider mothers to be employed if they declare that they worked for 10 or more weeks in the year before the interview. We categorize offspring as employed if their earnings in the year before the interview were equivalent to at least two months of a part-time job at the minimum salary.[7] The employment rate is 76% for mothers and 85% for the offspring cohort.

Employed mothers and offspring work on average 37 and 41 hours a week at an hourly wage rate of $7.6 and $8.9 (in 1980 USD), respectively. Earnings conditional on employment amount to $11,100 and $15,400 annually. Net worth is higher for the mothers' than for the offspring's cohort ($47,400 vs. $9,900), a difference potentially due to the composition of the offspring's sample explained above, as well as because most offspring had not inherited yet at the time they were surveyed. No such differences are observed in family income across cohorts, though ($31,800 and $28,200, respectively). Higher welfare participation is observed for mothers (21% of the periods) than for the offspring (7%), and health limitations for work affect 7% of mothers' observations and 5% of offspring's.[8] The average percentile of maternal cognitive test scores is 45, while it is 54, 59 and 48 for math, reading recognition and comprehension respectively, for offspring.

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[6]Attrition rates in both the NLSY79 and CNLSY79 are remarkably low; see methodological information for the NLSY79 and the CNLSY79. An early study by Aughinbaugh (2004) documented that despite non-random attrition among mothers linked to the CNLSY79, there is no impact on the estimation of many intergenerational linkages mainly due to the small magnitude of such attrition. These data have been used prominently for the study of intergenerational linkages (see e.g., Abbott et al., 2019; Carneiro et al., 2013; Farré and Vella, 2013; Classen, 2010), lending us confidence about their usefulness in our setting.

[7]The lower bound for earnings corresponds to 2 months of work (9 weeks) in a part-time job (20 hours a week) at the minimum salary ($4.25 in the first year of our sample, 1994, deflated). We introduce the lower bounds in order to exclude casual jobs. The results are robust to removing them, as well as to taking alternative measures of employment.

[8]We consider a mother a welfare participant, if she receives a positive amount of at least one of the following benefits: (i) unemployment insurance (UI, own or spouse), (ii) AFDC, (iii) Food Stamps, (iv) Supplementary Security Income (SSI). Due to less information in the CNLSY79, we consider an offspring a welfare participant if they receive either UI (own and spouse) or SSI. Health limitation are self-reported by both mothers and offspring. They can prevent individuals from having a job or limit the amount of work. Thus, both employed and non-employed individuals are potentially considered limited due to their health.

Mothers take the test when they are 18 years old and offspring when they are 13.

Decomposition of Individuals According to their Labor Market Status. In Table 2 we summarize the fraction of time mothers and offspring spend in employment (upper panel), where we also distinguish between sons and daughters. The lower panel further decomposes the fraction of years in which individuals are not employed into times in education (college), unemployment, or *inactivity*, where the latter is simply the residual.[9] We observe that this last category makes up for most of the time in non-employment (94% for mothers and 86% for offspring). As mentioned above, our sample comprises only of individuals aged 25 or older implying that most of them have finished their education. The unemployment numbers are even lower due to our very generous measure of employment that considers any individual in a given calendar year as employed once they worked for at least two months. Together with the relatively dynamic labor market in the United States (according to the Bureau of Labor Statistics, the median unemployment duration is around 9 weeks) this renders most of active labor market participants as employed by design.[10] In sum, we believe that most individuals who do not fall into our employment category, are not employed due to an active labor supply decision rather than due to labor demand effects.[11] In Section 4.5 we discuss several robustness checks regarding our outcome measure.

3 Empirical strategy

We follow the literature on intergenerational correlations of labor market outcomes to quantify the persistence in employment status across generations. The unit of observation is the mother-offspring pair i and our main regression specification relates the permanent component of employment – which can be interpreted as the fraction of the lifetime spent in employment – of the mother l_{Mi} to the permanent component of employment of the

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[9]More specifically, we impose a hierarchical structure in the sense that in any given year an individual can belong to only one of the categories, where we first check, if they satisfy the requirement to be considered employed, then whether they were in college and then whether they were unemployed.

[10]Unfortunately, the only measure of unemployment that is consistent across the NLSY79 and the CNLSY79 is whether individuals received unemployment benefits since the past calendar year. Thus, this potentially misses some individuals who are not eligible for benefits but actively searching for jobs. On the other hand some individuals who are not actively searching but are eligible for unemployment benefits will be wrongly assigned as unemployed.

[11]We document in Table B.14 in the Appendix that the non-employed generally have alternative sources of funds, such as the income of spouses or other cohabiting family members, welfare benefits, or simply savings/wealth.

Table 2: Decomposition of Labor Market Status

Proportion of periods	Mothers	Offspring	Sons	Daughters
Employed	76%	85%	88%	82%
Not employed	24%	15%	12%	18%
Out of non-employed				
In Education	4%	11%	9%	13%
Unemployed	2%	3%	4%	2%
Inactive	94%	86%	87%	85%

Note: We report the average of life-time averages. *In Education* refers to those who are enrolled in college and not assigned as employed. *Unemployed* are those who are neither employed nor in education and received unemployment benefits sometime since the past calendar year. *Inactive* are neither employed, nor in college nor unemployed.

offspring l_{Ci}. The reduced-form specification is

$$l_{Ci} = \alpha + \beta l_{Mi} + \phi_M X_{Mi} + \phi_C X_{Ci} + \epsilon_i. \tag{1}$$

Our coefficient of interest, β, summarizes the intergenerational persistence of employment. X_{Mi} and X_{Ci} are control variables for mothers and offspring, respectively. We consider different specifications and control for several confounders, including education (maximum level attained), ability, wealth (permanent component of winsorized value, standardized), the number of children of individuals in both generations, and the age of the mother at birth.

Computation of permanent components. Equation (1) relies on measures of lifetime employment status. The literature on intergenerational correlations is quite rich in terms of how to compute these lifetime or long-run measures. Given the nature of our data, we take an approach that allows for the use of information from all periods. Using standard methods in the literature (see, e.g., Lindahl et al., 2015; Zimmerman, 1992; Toledo, 2010), we obtain these lifetime or permanent components of employment as the fixed effects in a statistical model for the probability of being employed in each period under observation.[12]

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[12]Using multiple periods has been shown to reduce measurement error (see, for example, Solon, 1992; Mazumder, 2005; Haider and Solon, 2006). This strategy is simpler than a factor model that explicitly models such error (see, for example, Lochner et al., 2018). Lee and Solon (2009) recommend an efficient approach by using all the offspring's observations in a version of the intergenerational equation (1). Our approach also uses all the information of the offspring, but in a two-step procedure that we deem accurate according to the Frisch-Waugh-Lovell theorem.

We specify a linear probability model,

$$l_{kit} = l_{ki} + \sum_{n=1}^{2} \pi_{nk} A_{kit}^n + \lambda_{kt} + \upsilon_{kit}, \qquad (2)$$

which we run for both generations $k \in \{M, C\}$. Specifically, we assume that the probability of individual i to be employed in year t is a function of a second-order polynomial of the individual's age A_{kit}, a year fixed effect λ_{kt}, and an individual fixed effect l_{ki}. This individual fixed effect represents the permanent component of employment status, abstracting from life-cycle fluctuations (absorbed by age effects), and from business-cycle fluctuations (absorbed by year effects). One can interpret the permanent component of employment as the proportion of lifetime each individual is in employment.[13]

Regression versus correlation coefficient. An alternative to the regression coefficient β for measuring persistence in labor market outcomes across generations is the correlation coefficient,[14]

$$\rho = \beta \frac{\sigma_M}{\sigma_C}, \qquad (3)$$

where σ_M (σ_C) denotes the standard deviation of mothers' (offspring's) employment. Because the variability of mothers' and offspring's employment is very similar, there is not a big difference between the reported regression coefficients and the correlation coefficients.[15] We hence present only the regression coefficients throughout the main text and refer to the coefficient of interest, β, as the correlation of intergenerational employment status. More details about methodological issues in measuring the intergenerational persistence of labor market outcomes can be found in Appendix A.2.

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[13]If one does not include any covariates, the permanent components are the averages of years, in which the individuals are employed. Otherwise, the interpretation is the following. Consider individuals A and B with permanent components l_{kA} and $l_{kB} < l_{kA}$. Everything else equal, individual A is employed by $l_{kA} - l_{kB}$ percentage points of her lifetime longer than individual B. In any case, running our regressions with simple averages rather than permanent components does not substantially affect any of our results. Our results are also robust to conditioning on socio-demographics such as child birth, the presence of offspring below the age of three differentiated by childcare take-up, the presence of older offspring, education, couple formation or dissolution, etc. For details see Appendix A.3.

[14]Note that the correlation coefficient is conditional on covariates X_{Mi} and X_{Ci} if included in the regression.

[15]The standard deviations of the permanent components l_{Mi} and l_{Ci} are $\sigma_M = 0.29$ and $\sigma_C = 0.30$.

4 Results

4.1 The Intergenerational Correlation of Employment

In this section, we document the intergenerational correlation of employment status for the United States. Table 3 shows the regression coefficients for maternal employment and covariates estimated using equation (1). Standard errors are clustered at the mother level to account for possible correlation in siblings' error terms.

The first column (without controls) shows an unconditional correlation of employment of 0.19. Relative to their peers with never employed mothers, offspring of mothers, who are employed throughout their working-age life, are on average employed an additional 19 percent of their own active life.[16]

In the remaining specifications, we further include covariates that typically influence the outcome variable, i.e. employment. In specification (2) we control for ability and education, of both mother and offspring; in specification (3) we include net worth to control for potential wealth effects on labor supply; and in specification (4) we additionally control for the number of offspring of both generations and the age of the mother at birth using dummies.[17]

Our main result is robust across all three specifications. While, relative to the unconditional correlation, the coefficient on the mother's employment declines from 0.19 to 0.11, it remains statistically significant at the 1% level. This means that, controlling for the factors which the literature on intergenerational transmission found to be important, a large and significant residual intergenerational correlation of employment remains. Specifically, each additional year of maternal employment is associated with, on average, higher offspring's employment of almost six weeks.

Across all specifications, the mother's ability does not have an influence on the offspring's employment. By contrast, the mother's education does. The main predictors, however, are ability and education of the offspring. Contrary to the mother's education level we see that the correlation between the offspring's education level and their em-

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[16]As a comparison, estimates for the intergenerational elasticity of income for the US have oscillated around 0.4 in early work based on survey data (Solon, 1992; Zimmerman, 1992) to above 0.5 in recent work using administrative data (Chetty et al., 2014). Smaller figures correspond to other outcomes related to employment; for example, Toledo (2010) estimates 0.2 intergenerational correlation in hours, and Macmillan (2014) finds a father-son correlation of 0.1 for non-employment.

[17]Results are robust to adding an even richer set of controls including gender, race, occupation, industry, region, and whether individuals live in urban or rural areas. Results are available upon request.

Table 3: Baseline regression

Dependent variable: Employment - offspring (l_{Ci})

Specification	(1)	(2)	(3)	(4) Baseline
Employment - mother l_{Mi}	0.19*** (0.022)	0.11*** (0.021)	0.11*** (0.021)	0.11*** (0.022)
Ability - mother		-0.02 (0.022)	-0.02 (0.023)	-0.02 (0.023)
Ability - offspring		0.25*** (0.044)	0.25*** (0.044)	0.24*** (0.045)
High-school - mother		0.08*** (0.028)	0.08*** (0.028)	0.07** (0.028)
Some college - mother		0.08*** (0.028)	0.08*** (0.028)	0.07** (0.028)
College - mother		0.05* (0.030)	0.05 (0.030)	0.04 (0.030)
High-school - offspring		0.06** (0.028)	0.06** (0.028)	0.04 (0.027)
Some college - offspring		0.12*** (0.027)	0.12*** (0.027)	0.11*** (0.027)
College - offspring		0.16*** (0.027)	0.16*** (0.027)	0.14*** (0.027)
Net worth - mother			0.00 (0.004)	0.00 (0.004)
Net worth - offspring			0.00 (0.005)	0.01 (0.006)
Control mother's age at birth and number of children	NO	NO	NO	YES
Observations	3,748	3,208	3,201	3,201
Adjusted R^2	0.03	0.10	0.10	0.11

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Mothers' age at birth and mothers' and offspring's number of children are introduced non-linearly (a set of dummies for each variable). Different numbers of observations across columns are due to missing data. Results are almost the same when restricting all regressions to those observations where all covariates are available. The same holds for subsequent tables.

ployment is monotonically increasing. A simple explanation is that wages, and hence the opportunity cost of non-employment, are increasing in both the offspring's ability and education.

In specification (4) we additionally control for the number of children of both genera-tions and the age of the mother at birth using dummies. This is the specification we will

use in everything that follows, unless stated otherwise. However, the inclusion of these controls does not have a significant impact on any of the other estimated coefficients. The coefficient on maternal employment is equal to 0.11 across all specifications (2)-(4).

4.2 Gender Differences and the Importance of Grandchildren

Next, we study how the intergenerational correlation of lifetime employment differs across mother-daughter and mother-son pairs. These intergenerational correlations could be affected by fertility choices, particularly among mother-daughter pairs. For this reason, we also analyze how the presence of grandchildren (offspring's children) affect these correlations. Formally, we partition the sample in two different ways:

(i) $\mathcal{G}_1 = \{$sons, daughters$\}$

(ii) $\mathcal{G}_2 = \{$sons w/o child, sons w/ child, daughters w/o child, daughters w/ child$\}$

For partition $k \in \{1, 2\}$ the estimated models follow the specification

$$l_{Ci} = \alpha + \sum_{G \in \tilde{\mathcal{G}}_k} \alpha_G \mathbb{I}_{i \in G} + \beta l_{Mi} + \sum_{G \in \tilde{\mathcal{G}}_k} \beta_G \mathbb{I}_{i \in G} l_{Mi} + \phi_M X_{Mi} + \phi_C X_{Ci} + \epsilon_i, \qquad (4)$$

where the first group of each partition is our reference group (for example, sons in partition $\mathcal{G}_1$) and $\tilde{\mathcal{G}}_k$ denotes the partition without this first group (for example, $\tilde{\mathcal{G}}_1 = \{$daughters$\}$). The indicator variable $\mathbb{I}_{i \in G}$ takes the value one when offspring i belongs to group G and zero otherwise. In the following we discuss the coefficient β_G and/or the marginal effect $\beta + \beta_G$ of mother's employment on the employment of their offspring in the corresponding group G.

The first column of Table 4 shows the results of estimating equation (4) with $\mathcal{G}_1 = \{$daughters, sons$\}$. The coefficient on the interaction between employment of mothers and the daughter dummy is positive and statistically significant. The intergenerational correlation of employment is 0.17 for girls and 0.07 for boys.[18] The stronger link between mothers and daughters in terms of employment is interesting in light of the findings in the literature on intergenerational correlations of earnings that report lower estimates

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[18]Note that the coefficient for boys coincides with the marginal effect, as boys are the reference group in the regression. The numbers are the regression coefficients. The corresponding correlation coefficients (see equation (3)) are 0.15 and 0.07, respectively. The difference across genders increases as a consequence of disparities in standard deviations of lifetime employment.

for daughters than for sons (see, for example, Chadwick and Solon, 2002; Olivetti and Paserman, 2015). It is also suggestive of a role model effect, as role models are intuitively more likely to be gender specific. Nevertheless, the correlation between mothers' and sons' employment is still significantly positive, suggesting that the role model effect exceeds a pure transmission of gender roles.

Table 4: Gender differences

Dependent variable: Employment - offspring (l_{Ci})

	Baseline specification	Marginal effect
Employment - mother	0.06**	0.06**
	(0.027)	(0.027)
Employment - mother × Daughter	0.11***	0.17***
	(0.039)	(0.030)
Daughter	-0.08***	
	(0.039)	
Controls	YES	
Observations	3,201	
Adjusted R^2	0.13	

Notes: Standard errors clustered at the mother level in parentheses; standard errors calculated using the delta method for the marginal effects. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth.

In a recent study, Kleven et al. (2019) find that the presence of children is an important determinant for the observed gender inequality in the labor market. In particular, the authors find that while labor market participation is on parallel trends for males and females as long as they are childless, upon arrival of the first child the labor market participation of women drops relative to their male peers and remains low from then on. They argue that women's preferences over family and career are shaped by the gender roles they are exposed to during their childhood. It could hence be the case that the higher employment correlation between mothers and daughters is due to correlated fertility choices and the fact that only female labor supply is affected by children. Table 5 hence shows the results for the second decomposition, in which mother-son and mother-daughter pairs are split up further into those with and those without grandchildren (offspring's children). We observe that the mother-offspring correlations are slightly higher when

the offspring themselves have children. However, we observe that this is the case for both daughters and sons. Furthermore, the employment correlation between mothers and daughters without children remains significantly positive at 0.13.

Table 5: Gender differences

Dependent variable: Employment - offspring (l_{Ci})

	Baseline specification	Marginal effect
Employment - mother	0.06	0.06
	(0.040)	(0.040)
Employment - mother × Son with child	0.03	0.09***
	(0.050)	(0.033)
Employment - mother × Daughter without child	0.07	0.13***
	(0.057)	(0.044)
Employment - mother × Daughter with child	0.12***	0.18***
	(0.055)	(0.039)
Son with child	0.03**	
	(0.013)	
Daughter without child	-0.01	
	(0.013)	
Daughter with child	-0.11***	
	(0.015)	
Controls	YES	
Observations	3,201	
Adjusted R^2	0.14	

Notes: Standard errors clustered at the mother level in parentheses; standard errors calculated using the delta method for the marginal effects. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth.

In sum, while gender roles may be an important contributor for the high correlation between mothers' and daughters' employment, they cannot account for the whole correlation. If the whole effect was due to gender identity and the associated preferences for work, we would not observe the significantly positive correlation between the employment of mothers and sons. Neither would we observe the significantly positive correlation between mothers and childless daughters.

## 4.3 Heterogeneity with Respect to Socioeconomic Status

In this section, we study the heterogeneity of the intergenerational correlation with respect to socioeconomic status. Specifically, we partition the sample according to the (highest) formal education of the mother and according to the mother's family income quintile:

(iii) $\mathcal{G}_3 = \{$some high-school, complete high-school, some college, complete college$\}$

(iv) $\mathcal{G}_4 = \{$income quintile 1,... , income quintile 5$\}$

Using these partitions we again run the regression (4).

Figure 1: Transmission of employment status by maternal education
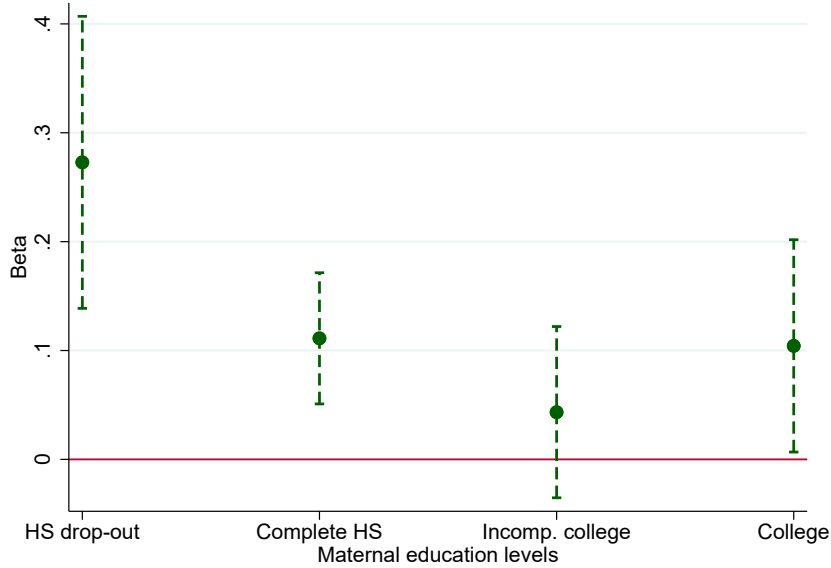
Notes: Standard errors clustered at mother level calculated using the delta method. 95% confidence level intervals. The dependent variable is the permanent component of the employment status of the offspring. We use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. The maternal education is the maximum attained and observed education level.

Maternal education. The intergenerational correlation of employment status is stronger the more disadvantaged the educational background of the mother. Figure 1 depicts the marginal effects of mothers' employment for each education level in $\mathcal{G}_3$. It is the highest and significantly positive for mothers with no degree (0.27) or a high-school degree (0.11). It is only insignificantly positive for mothers who attended college but did not complete it. Interestingly, if they obtained a college degree, the coefficient of 0.10 is

again significantly positive.[19]

Figure 2: Transmission of employment status by maternal family income quintiles
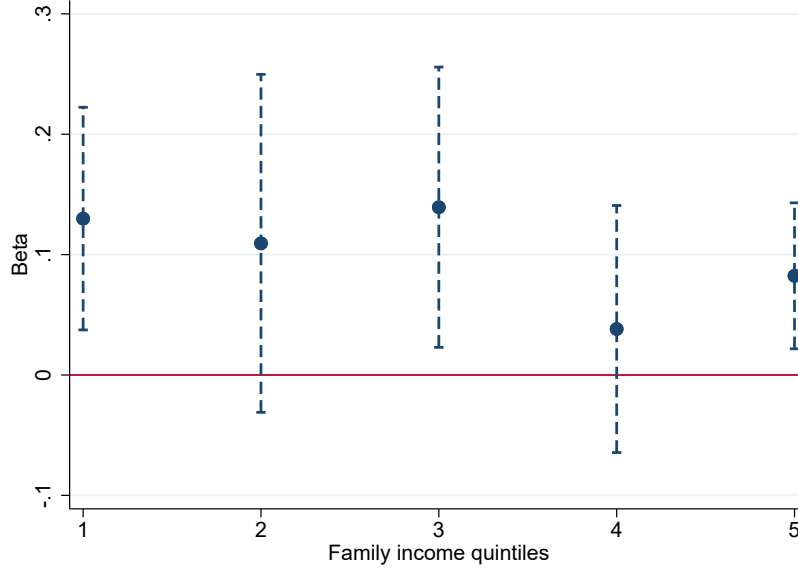

Notes: Standard errors clustered at mother level calculated using the delta method. 95% confidence level intervals. The dependent variable is the permanent component of the employment status of the offspring. We use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Quintiles of maternal family income correspond to the quintile observed in the majority of the survey years.

Maternal family income. Figure 2 shows the marginal effects of mothers' employment on the offspring for each income quintile. The intergenerational transmission of employment seems to be present across the whole income distribution. In particular, the regression coefficient is significant and above 0.09 for the first, third and fifth maternal income quintile.[20] This pattern is similar for daughters and sons, as Figure B.6 in the Appendix shows. In particular, mothers from low-income families tend to transmit their employment status to their daughters at least as much as mothers with higher family income. By contrast, Olivetti et al. (2020) find that gender roles are transmitted more at

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[19]The corresponding regression results are reported in Table B.15 in the Appendix. As mentioned above, we document regression- rather than correlation coefficients. However, because the dispersion in employment is similar across generations once the mother has at least a high school degree, the respective correlation coefficients are very similar to the regression coefficients. The employment correlation between mothers who dropped out of high school and their offspring is somewhat lower than the regression coefficient (0.19 instead of 0.27) but it remains highest among the different education levels. Thus, the overall pattern is similar when looking at correlation- rather than regression coefficients.

[20]Also the correlation coefficients for these quintiles are above 0.09. However, due to different dispersions across generations when we condition on family income the correlation coefficients differ somewhat from the regression coefficients. From the first to the last quintile they are: 0.09, 0.04, 0.12, 0.05, and 0.09.

the top of the income distribution. This discrepancy supports our claim that the residual employment correlation we document is not entirely the result of a transmission of gender roles.

4.4 Intensive Margin

While the focus of our study is on the extensive margin of labor supply, to put these results into perspective, we now include a measure of the intensive margin of labor supply: weekly working hours. Specifically, we construct the permanent components of hours in an analogous way as we did for employment. Weekly hours are computed from information on hours and weeks worked in the year prior to the interview for the mother and complemented with information on hours and weeks worked since the last interview. In both cases, weekly hours will be set to zero if hours are not declared and weeks worked are zero. Hours are not available for mothers in 2018. For the offspring, weekly hours are the total hours per week in all jobs at the time of the interview and equal to zero if weekly hours are not declared and the individual reports being not employed at the time of the interview. The first two columns in Table 6 repeat the estimates of β for employment status (specification (1) and (4) in Table 3).

Table 6: Margins of labor supply

Dependent variable: Employment - offspring (l_{Ci})

	Employment				Log weekly hours			
Employment - mother	0.19***	0.11***	0.12***	0.08**				
	(0.022)	(0.022)	(0.032)	(0.033)				
Log weekly hours - mother					0.17***	0.08***	0.07*	0.04
					(0.024)	(0.024)	(0.041)	(0.039)
Controls	NO	YES	NO	YES	NO	YES	NO	YES
Sample (quint. emp.-mother)	Q1-Q5		Q2-Q5		Q1-Q5		Q2-Q5	
Observations	3,748	3,201	2,997	2,595	3,849	3,282	3,076	2,657
Adjusted R^2	0.03	0.11	0.00	0.06	0.02	0.12	0.00	0.10

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In columns were the sample is indicated as *Q2-Q5* we restrict the sample to mother-offspring pairs in which the mothers' permanent employment component is in the top 80% (i.e., excluding mothers *marginally attached* to the labor market). In columns with controls we use the same covariates as in the baseline specification. The higher number of observations in the regression for hours is due to the different response rate of variables used to measure employment and hours worked.

The middle two columns show the analogous coefficients of a regression using log

hours worked per week instead of employment (we include the periods of non-employment with zero hours worked).[21] Both the unconditional and the conditional correlation are of the same order of magnitude as the ones for employment. However, the positive intergenerational correlation in working hours is entirely driven by mothers, who are in the lowest employment quintile. Specifically, in the last two columns we restrict the sample to mother-offspring pairs for whom the mother's permanent employment component is above the twentieth percentile. We observe that when restricting the sample in this way, the intergenerational correlation of working hours becomes insignificant (once controls are added). This is not the case for employment, as the correlations remain highly significant even after excluding mothers whose permanent employment component is in the first quintile.

Long Hours. In Table B.17 in the Appendix we also study the intergenerational correlation of working long hours. Specifically, we run our baseline regression but instead of maternal and offspring's employment we use a measure of long working hours. In any given survey year, we consider an individual having worked long-hours if he/she was working 60 or more hours per week for at least two months. We calculate a permanent component of this measure analogously to our employment measure. We observe that the intergenerational correlation of long working hours is highly significant and of the same magnitude (coefficient 0.10) as the intergenerational correlation of employment. Interestingly, the regression coefficient with and without controls for long hours are not substantially different. This speaks about the (lack of) importance of factors such as ability and education to mediate the intergenerational correlation of long working hours. This is different from the case of employment.

It is useful to relate our results to the (very small) literature on the intergenerational correlation of labor supply using hours worked as main variable. Altonji and Dunn (1991) use a similar methodology as we do, but much older data from the National Longitudinal Survey of Labor Market Experience. Specifically, their offspring generation is, on average, about ten years older than our mothers' generation. Contrary to us, the authors find no significant correlation between mothers' working hours and those of their offspring – both daughters and sons – after appropriately controlling. They also do not find a substantial

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[21]Zero hours were treated by adding a very small constant, 0.001, to hours data before taking the logarithm. Results remain unaffected if we use the inverse hyperbolic sine transformation of hours, as shown in Table B.16 in the Appendix.

intergenerational correlation in hours between fathers and their daughters. Only the father-son correlation in hours is significantly positive in their data, a result that is also confirmed by Toledo (2010).

In sum, using more recent data, we document a significant intergenerational correlation in the labor supply of mothers and of their offspring, both at the extensive and the intensive margin. Furthermore, we show that the correlation in working hours is driven by mother-offspring pairs, where the mother is only marginally attached to the labor market, that is where the mother's lifetime spent in employment is in the lowest quintile. Hence, the transmission in labor force participation from mothers to their offspring is mainly driven through the extensive margin of labor supply.

4.5   Robustness

Different Methodologies.   The main result of a positive and significant correlation between maternal and offspring's lifetime employment is robust to several changes in the specification. Variants in the specification are presented in more detail in the Appendix (Section A.3 explains additional details of some exercises, and the tables with results are shown in Section B.1). First, as is usual for the estimation of earnings correlations, we estimate equation (1) with logs of the permanent components (Table B.18). Second, following Chetty et al. (2014), we estimate rank-rank regressions for average employment status of mothers and offspring (Table B.19).[22] Third, we adopt two alternatives in computing the permanent components: (i) simple averages of the employment status as the permanent component (without controlling for life-cycle or business-cycle fluctuations) as in the early literature (for example, Solon, 1992); and (ii) including controls for demographic events into the calculation of the permanent components (Table B.20). When controlling for demographics, we also include birth events and the presence of offspring in the household (below the age of three as well as older). The robustness of our results provides further evidence that the intergenerational correlation of fertility profiles is not a key driving force behind the intergenerational correlation of employment. Finally, Table B.21 shows that the results are robust to the use of other measures of employment, including one without any lower limit to be considered employed, and one with the employment

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[22]Rank-rank correlations are more robust to life-cycle bias according to Nybom and Stuhler (2017).

status at the time of the interview.[23]

Welfare Benefits and Health Limitations. As mentioned in the introduction, there is a growing literature documenting that welfare benefit reception is correlated across generations (Dahl et al., 2014; Dahl and Gielen, 2021; Hartley et al., 2017). In Table B.22 we also document a significantly positive intergenerational correlation of benefit receipt with our data (first column). Yet, controlling for welfare reception does not significantly change the intergenerational employment correlation, though the point estimate is somewhat reduced (second column). Furthermore, the interaction term between employment of the mother and welfare reception is not statistically significant, which rules out that the correlation of employment is mainly driven by welfare reception. Another concern may be the correlation in employment could be coming from healthy mothers and offspring working more and health being passed on from one generation to the next. While we do find a significantly positive intergenerational correlation in health limitations (third column), controlling and interacting for those does again not significantly change the employment correlation (last column).

Social Problems. Similarly, various social problems that affect labor supply could be correlated across generations. If they affect employment decisions, this might be a driver for the intergenerational correlation in employment. In this respect, the NLSY79 and the CNLSY79 record whether, and to what degree, respondents suffer from depression. Furthermore, data on the use of certain drugs, in most survey years only marijuana, is collected. Finally, the NLSY79 and CNLSY79 accurately observe whether the respondent is incarcerated at the time of the interview.[24] We observe that these social problems are indeed somewhat more prevalent among non-employed individuals, in particular males (see Table B.23). Furthermore, Table B.24 documents a strong and highly significant (conditional) intergenerational correlation in depression (0.07) and drug use (0.18).[25] Yet, this data does not provide any indication that these social problems are the drivers behind the intergenerational correlation of employment. Specifically, when we repeat our main regression but (i) drop individuals who report any of these problems (Table B.25) or (ii)

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[23]Further robustness exercises, such as including a rich set of controls for industry, occupation, location, gender and race, and excluding individuals, who are observed only at ages younger than 30 or at most twice, also confirm the findings of the baseline estimation. They are not included in the paper but are available upon request.

[24]See Appendix A.5 for more details on these variables and the measures for social problems we create.

[25]There are virtually no incarcerated mothers in the sample.

control for these problems among both mothers and offspring (Table B.26) our coefficient of interest remains statistically significant and of similar magnitude as in the baseline regression. Furthermore, while offspring depression and – naturally – incarceration negatively affects their own employment, maternal social problems (depression/drug use) do not seem to reduce offspring employment at all. Separating the analysis by gender, one observes that although these social problems, especially drug use and incarceration, seem to reduce sons' employment by more than daughters', the coefficient on maternal employment remains stable.

However, the results with regards to drug use should be interpreted with caution because consumption of light drugs like marijuana is unlikely to have the same impact on labor market behavior as consumption of heavier drugs, such as heroin. Furthermore, to the extent that the latter are recorded, self-reported survey data are prone to mismeasurement.

In general, it should be noted that these three variables do not constitute an exhaustive list of all potential social problems that could affect labour supply. We will discuss these potential issues more thoroughly in the conclusion.

Quality of Work. One may also wonder whether controlling for measures of work quality affects the intergenerational employment correlation. We do not find an indication of that. While the quality of a job depends also on non-monetary aspects, the hourly wage is arguably the most objective measure to compare different quality of jobs. In Table B.27 we control for the permanent component of the hourly wage of both mothers and offspring (first two columns). We observe that the intergenerational correlation of employment is not significantly different when adding these controls.

Spousal employment. Another concern may be that the unexplained association between employment of mothers and offspring is due to the influence of the father. Unfortunately, the NLSY79 is not designed to match fathers to their offspring. However, the data provide information on the employment status of spouses as reported by mothers, which we use as a proxy for fathers' employment. Specifically, we compute the permanent components for spousal employment analogously as we did for mothers.

The first column of Table B.28 repeats the baseline result for the sub-sample in which we also observe the spousal employment status (specification (4) in Table 3). Column two shows the regression output when we regress offspring employment on the spouse's

employment status. The coefficient on spousal employment status is significant (at the 10% confidence level) and comparable to the mother's coefficient in magnitude. In the third column, we include both the maternal and spousal employment status and observe that the coefficient on maternal lifetime employment is almost the same as in the baseline specification, whereas the coefficient on spousal employment remains similar in magnitude, but turns insignificant. Finally, when we also introduce an interaction term between mothers' and spouses' employment status (fourth column), this coefficient is insignificant, suggesting that there is no complementarity in the transmission of mothers' employment status and the one of their spouses.

Self-employment. It is also interesting to study the intergenerational correlation of self-employment, a particular form of employment. In Table B.29 we repeat our baseline regressions but with the permanent components of mothers' and children's self-employment status instead of employment, where we define the permanent component of self-employment analogously to our definition of the employment measure with the additional restriction that mothers, respectively offspring, report to be self-employed at the date of the interview. The resulting correlation of 0.05, though significant, is lower than the one for employment. Hence, our main result is not driven by self-employment.

Different Measures of Ability and Education. The main variables that mediate the correlation of employment are ability and education, as shown in Table 3. Our baseline measure of children's ability captures only cognitive skills. Specifically, following Abbott et al. (2019) we use the first principal component of the PIAT math, reading recognition and reading comprehension scores. In Table B.30 we instead create our ability measure by using the first principal component of these three scores plus the five measures from the behavioral problems index (antisocial, anxiety, headstrong, hyperactive, and peer conflicts). Abbott et al. (2019) employ the latter for their measure of non-cognitive skills. Furthermore, in Table B.31 we perform the same analysis as in the main text but rather than using a continuous ability score, we use a categorical variable that places both mothers and offspring into their respective ability quartile. This way we allow for potential non-linearities in the effect of ability on offspring employment. With regards to education, our baseline regression considers four education levels. In Table B.32 we instead employ a finer categorization according to the years of schooling of both mothers and their offspring. Our main result is robust to any of these different specifications.

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Broader Measures of Labor Activity. As discussed in Section 2, most of those individuals in our sample who are not employed (according to our measure), are neither in education nor searching for work but are really inactive. However, as further robustness checks, we conduct our main regression but, instead of employment, we study the intergenerational transmission of labor force participation (i.e. the sum of employment and unemployment, Table B.33) and an even broader measure of activity (labor force participation or education, Table B.34). Finally, in Table B.35 we use our baseline definition of employment but restrict the sample to those individuals who are out of college. In all cases does our coefficient of interest remain highly significant and has a value of at least 0.09.

4.6 Taking Stock

Our result of a high employment correlation between mothers and offspring, including sons, is extremely robust. The fact that the transmission of employment status is strong for low-income earners is particularly interesting in light of existing income tax credits for low-income families with children, such as the EITC in the United States. Such programs directly encourage labor force participation of eligible recipients. If participation of these recipients is transmitted to their offspring (and hence their offspring's children, etc.), it may indirectly generate higher labor income tax revenues in the following generations. Hence, there may be a dynamic fiscal benefit of such programs. However, before drawing normative conclusions from our – so far positive – analysis, it is necessary to get a better understanding of the precise mechanism through which employment status is transmitted. This is the focus of the remainder of this paper.

5 Transmission of Work Preferences

In this section we discuss in how far the transmission of attitudes toward work could explain the observed results. To fix ideas, we first present a simple two-generations model that transparently traces out the differences between *direct preference transmission* and the role model effect we have in mind. We then present suggestive evidence that indeed a role model effect explains a substantial part of the intergenerational employment correlation.

5.1 Two-Generations Model

The model is a simple two-generations framework based on Solon (1999). The main addition to it is that the offspring's preferences towards work are (potentially) affected by parental labor force participation.

There is a continuum of mother-offspring pairs, where we denote mothers by M and offspring by C (child). Mothers are altruistic but discount their offspring's expected utility by a factor $\alpha \in [0, 1)$. They decide on consumption c_M, labor supply l_M, and human capital investment H for their offspring. The offspring decide on consumption c_C and labor supply l_C. For simplicity, we assume that the offspring do not have any children themselves. Agents are heterogeneous in ability e_k and disutility of labor θ_k.[26] Abilities are correlated across generations, accounting for genetic inheritance.

The mothers' optimization problem is given by

$$V_M(\theta_M, e_M, v_M) = \max_{c_M, l_M, H} \frac{c_M^{1-\sigma}}{1-\sigma} - \theta_M \frac{l_M^{1+\chi}}{1+\chi} + \alpha \mathbb{E}\big[V_C(\theta_C, w_C)\big]$$

$$\text{s.t.} \quad c_M + pH = w_M \, l_M$$

$$\log(w_M) = \log(e_M) + v_M$$

$$\log(\theta_C) = \kappa_0 - \kappa_1 \log(l_M) + \kappa_2 \log(\theta_M) + \eta_C. \tag{5}$$

We assume that utility is additively separable in consumption and labor. The parameter $\sigma > 0$ is the coefficient of relative risk aversion and $\chi > 0$ is the inverse of the Frisch elasticity of labor supply. Mothers finance consumption c_M and investment in their offspring's human capital H, a unit of which costs p. Their labor earnings are $w_M l_M$. The wage of the mother is determined through ability e_M and a random term v_M, which captures labor market luck.

The last equation (5) is the process of intergenerational transmission of preferences for work, which highlights the channels, which we want to distinguish. Specifically, the mother may directly transmit her preferences (κ_2) or she may affect the offspring's preferences through her employment behavior (κ_1).

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[26]Whereas differences in productivity among offspring are captured explicitly by both e_C (ability) and H (education), e_M represents for parents a combination of abilities and education, the latter not being modeled.

The offspring's optimization problem is given by

$$V_C(\theta_C, w_C) = \max_{c_C, l_C} \frac{c_C^{1-\sigma}}{1-\sigma} - \theta_C \frac{l_C^{1+\chi}}{1+\chi}$$

$$\text{s.t.} \quad c_C = w_C \, l_C$$

$$\log(w_C) = \log(e_C) + \psi \log(H) + v_C$$

$$\log(e_C) = \lambda \log(e_M) + u_C.$$

The offspring finance their consumption with labor earnings. Wages w_C of the offspring depend on their ability, e_C, on the acquired human capital H (which has a return ψ), and on v_C, which captures labor-market luck. The last equation states that ability is partially inherited. To be specific, the parent's and offspring's ability are linked via an AR(1) process with persistence $\lambda \in (0, 1)$.

Note that in the model, l_M and l_C are continuous variables, of which we think as the time share in employment over the whole lifetime. This maps well into our empirical analysis, in which we employ the permanent component of employment status.

The Solution. We focus on the solution of the offspring's problem because it enables us to summarize the relevant model predictions. To be specific, we take maternal decisions and realizations of shocks as given. Then, the first-order condition for labor supply l_C can be written as

$$\log(l_C) = -\frac{1}{\sigma + \chi} \log(\theta_C) + \frac{1 - \sigma}{\sigma + \chi} \log(w_C).$$

Using the constraints of the optimization problems this equation is equivalent to

$$\log(l_C) = \alpha + \beta_1 \log(l_M) + \beta_2 \log(\theta_M) + \gamma \log(e_C) + \delta \log(H) + \epsilon, \tag{6}$$

where the coefficients α, β, γ and δ are functions of structural model parameters and the error term ϵ is a convex combination of the error terms v_M, η_C, v_C and u_C.

Importantly, employment decisions conditional on human capital and ability are related across generations through the coefficients

$$\beta_1 = \frac{\kappa_1}{\sigma + \chi} \quad \text{and} \quad \beta_2 = -\frac{\kappa_2}{\sigma + \chi}.$$

The coefficient β_1 captures the role model effect. It measures to what extent maternal labor supply affects the labor supply of the offspring by generating a more positive attitude towards work. By contrast, the coefficient β_2 determines the role of *direct preference transmission*. It captures the part of the intergenerational correlation in work preferences that is unaffected by mothers' labor supply decisions. This is the main difference of equation (6) to those that we estimated in Section 4.1, where we did not use any measures for work preferences that would account for this channel.[27] Thus β_1 potentially absorbed such direct transmission in the estimations above.

The differentiation between the two channels is important for policy analysis or dynamic scoring. For example, when evaluating the desirability of in-work benefits, only in the presence of a role model channel will such benefits lead to higher income tax revenue raised from future generations. By contrast, if preference transmission does not operate through a role model, for example if the offspring learn from what parents express or if genes play a role, such policies may increase the employment of mothers, but this increase will not spill over to their offspring and hence will have no effect on future income tax revenue.

Figure 3: Direct preference channel versus role model channel
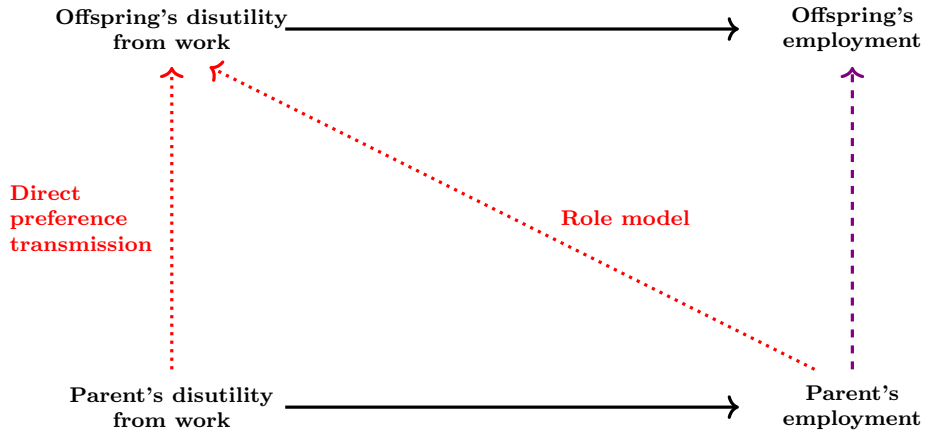
Figure 3 schematically illustrates the two channels. We observe a link between par-

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[27]Another difference is that while the specification in the model is in logs, we use a linear empirical specification. Using the linear relationship has the advantage of avoiding arbitrary transformations of the data. Not all permanent components are above 0. Hence, to be able to use the log-specification, we need to shift all permanent components to ensure that they are above 0. But these shifts complicate the interpretation of the coefficients because they are not invariant to the size of the shift. Furthermore, the interpretation of results is very intuitive in the linear setup. However, as we discuss in detail in Section 4.5 the results are very robust across a battery of different specifications, including regressions run with variables in logs rather then levels.

ents' and offspring's employment choices (dashed purple line), and we infer that, after controlling for relevant observed factors (mainly ability, education, and wealth), there is a relation with preferences for work generating this link (dotted red lines). The relation may arise either through direct preference transmission (relating parents' preferences and offspring's preferences directly) or through a role model (parents' employment choices influence offspring's preferences) or through a combination of both.

5.2   Evidence for a Role Model Effect

Disentangling the two potential channels is a difficult task because preferences are not directly observable. Moreover, cultural norms that developed through the course of history imply that the reasons why women want to work or not may differ from those of their male peers. As we discussed in the introduction, a large literature has identified gender role attitudes as a crucial determinant of female labor supply. In particular, several studies found that daughters of mothers with more traditional gender norms tend to exhibit lower employment rates than daughters of more progressive mothers. By contrast, it is unclear to what extent, even in which direction, these norms affect male labor supply.[28] In the following, we construct several measures of work preferences from survey questions in the NLSY79 and CNLSY79. It turns out that most variation in responses is generated by questions which relate to respondents' general views on whether women should work or not. However, given the asymmetric impact of gender role attitudes on different sexes, the measures that exploit these questions represent work preferences only for women. We then evaluate these measures by their ability to predict (own) employment, after which we study the contribution of the two potential channels above to the intergenerational transmission of employment.

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[28]The transmission of gender role attitudes could have an opposite effect on males than on females. For example, Fernandez et al. (2004) find that wives of men whose mothers worked are themselves more likely to work. If this means that these men need to reduce their labor supply in order to take over some of the responsibilities at home, mothers with progressive gender role attitudes could have a negative impact on their sons' labor supply. By contrast, one of two explanations Fernandez et al. (2004) offer is that sons of working mothers may have developed "greater household productivity", which might allow them to maintain the same labor supply as husbands of stay-at-home wives. Overall, the impact of gender role attitudes on male labor supply is not clear, which is why we complement the gender role measures with a gender neutral measure which is particularly useful to reflect male work preferences.

5.2.1 Measures of Gender Neutral and Female Work Preferences

Several questions in the NLSY79 and the CNLSY79 are related to work preferences. In the following, we briefly summarize how we create measures for the *disutility of work*, while we provide more details in Appendix A.4.

The first set of questions relate to individuals' intention to work in the future and are asked in repeated survey waves:

(i) Would the respondent like to work at age 35?

(ii) If the respondent had enough money (by age 35) to live comfortably without working, would the respondent work anyway?

The frequency with which respondents answer these questions positively generates our *gender-neutral* measure of work preferences (GN). Unfortunately, this measure has relatively little variation due to its forward looking nature, the fact that respondents can only answer these questions with "yes" or "no" (with a high concentration in yes), and because the questions are only included in few survey waves.

However, there is a set of questions in the (C)NLSY79 that elicits gender role attitudes, which, as discussed above, are an important determinant of *female* work preferences (F). Arguably, the following two questions are the best to elicit work preferences of female respondents and we use them in the following analysis:[29]

(iii) Women's place is in the home, not in the office or shop.

(iv) Women are much happier if they stay at home and take care of the children.

Relative to the gender neutral questions above, the main advantage of these questions is that they elicit preferences based on the contemporaneous setting and do not ask about decisions that will be taken in the future. In addition, the answers are more stable over time and not binary: respondents can indicate whether they "strongly agree", "agree", "disagree" or "strongly disagree". We follow the strategy of Farré and Vella (2013) in creating a one-dimensional quantitative variable from these qualitative responses. Specifically, we assign values from -4 (strongly disagree) to -1 (strongly agree) for the answers

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[29]We provide a robustness analysis in Appendix A.4, where we create an index for gender role attitudes using the wider set of questions relating to these attitudes. Controlling for this index does not affect our results (see Table B.39).

to both of these questions.[30] We average each question across survey years and we extract the first principal component of these two questions. Since the same questions do not contain information on men's work preferences we label this measure as *female* (F).

Additionally, for women we calculate a combination of both measures as the first principal component between the gender-neutral measure and the questions (iii) and (iv) about the female work preferences. We label this measure as *female-combined* (FC).

Table 7: Evaluation of work preferences effect on employment

Dependent variable: Employment - mother or offspring (l_{Mi}, l_{Ci})

Dependent variable	Maternal employment	Maternal employment	Daughters' employment	Offspring employment
Disutility of work (FC) - Mother	-0.08*** (0.015)			
Disutility of work (GN) - Mother		-0.03 (0.033)		
Disutility of work (F) - Mother		-0.08*** (0.016)		
Disutility of work (FC) - Offspring			-0.05*** (0.015)	
Disutility of work (GN) - Offspring				-0.07*** (0.025)
Disutility of work (GN) - Offspring × Daughters				-0.04 (0.040)
Disutility of work (F) - Offspring				0.02 (0.016)
Disutility of work (F) - Offspring × Daughters				-0.08*** (0.023)
Daughters				-0.39*** (0.087)
Controls	maternal	maternal	offspring	offspring
Observations	3,688	3,688	1,650	3,258
Adjusted R^2	0.22	0.22	0.16	0.13

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. We use the same covariates as in the baseline specification but restrict them for mothers (offspring) to the maternal (offspring's) controls: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children respectively, and mother's age at birth. Three measures of disutility of work: (i) gender-neutral (GN), (ii) female (F) and (iii) female-combined (FC). For further details on the measures of disutility of work, see Appendix A.4.

In Table 7 we regress employment on various combinations of these measures of disutility of work. The first column regresses mothers' employment on the combined measure of disutility of work. This measure is significantly negatively correlated with maternal employment as expected. In the second column, we regress maternal employment on the two components of this combined measure. Only the female measure is significant. The third column performs the same regression as the first but for daughters instead of

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[30]Farré and Vella (2013) use values from 1 (strongly agree) to 4 (strongly disagree). We multiply by −1 in order to be consistent with the model above, i.e. to capture disutility of – rather than preference for – work. Similarly, in the gender neutral measure we use −1 when the respondent answers "yes" and zero otherwise.

mothers. For daughters, our combined measure of disutility of work is again significantly negatively correlated with employment. Finally, the last column regresses all offspring's employment on the gender neutral- as well as on the female measure of disutility of work. Additionally, we interact both measures with a daughter dummy. We observe that the gender neutral measure is significantly negatively correlated with offspring employment. The coefficient on the interaction of this measure with the daughter's dummy is insignificant indicating that, indeed, the gender-neutral measure does not imply a differential effect for sons' and daughters' employment. Finally, the coefficient on the female measure is significantly negative only if interacted with the daughter's dummy, while by itself it is insignificant. Overall, these results confirm that our preference measures are meaningful, in the sense that higher disutility of work is indeed associated with lower employment (of the gender to which the respective measure applies).

Table 8: Direct preference channel versus role model channel

Dependent variable: Disutility of work - daughter (θ_{Ci})

Employment Mother	-0.27***		-0.16***	-0.09*
	(0.053)		(0.056)	(0.050)
Disutility of work - Mother		0.26***	0.23***	0.22***
		(0.028)	(0.030)	(0.027)
Controls	NO	NO	NO	YES
Observations	1,875	1,875	1,875	1,875
Adjusted R^2	0.02	0.06	0.07	0.11

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In the last column, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Female-combined (FC) measure for disutility of work. For further details, see Appendix A.4.

Disentangling the channels. We now want to understand whether offspring from mothers with high disutility of work are employed less because of a direct transmission of work preferences, or whether their mothers' employment decisions affect their preference for work. Specifically, using our combined measure for work preferences, in Table 8 we estimate equation (5) (in levels) and thereby attempt to disentangle the two channels that are depicted in Figure 3 above. In the first two columns we observe that the daughters' disutility of work is significantly correlated with both their mother's employment and

their mother's disutility of work. Regressing the daughters' disutility of work on both simultaneously shows that both correlations remain significant. In particular, when controling for maternal disutility of work, the correlation between the daughters' disutility of work and the mothers' employment remains significantly negative. This suggests that the employment decision of mothers itself affects daughters' attitudes towards work and hence their employment.

Table 9: Direct preference transmission vs. role model: Measures of work preferences

Dependent variable: Employment - offspring (l_{Ci})

Specification	Entire sample			Only daughters
	Baseline	Maternal preferences (disutility of work)	Full Model	Full Model
Employment - mother	0.11***		0.12***	0.17***
	(0.022)		(0.021)	(0.032)
Disutility of work - mother		0.01	0.03**	0.01
		(0.011)	(0.012)	(0.016)
Controls	YES	YES	YES	YES
Observations	3,201	3,201	3,201	1,605
Adjusted R^2	0.11	0.10	0.11	0.18

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Female-combined (FC) measure for mothers' disutility of work.

Using our constructed measure for disutility of work θ_{Mi} we can control for mothers' work preferences in our main regression, that is we can run the regression[31]

$$l_{Ci} = \alpha + \beta_1 l_{Mi} + \beta_2 \theta_{Mi} + \phi_M X_{Mi} + \phi_C X_{Ci} + \epsilon_i. \tag{7}$$

Table 9 shows the results. The first column repeats the baseline estimation for comparison. The second column introduces our (female-combined) measure of maternal disutility of work and excludes employment of the mother. The third column shows the results of including maternal work preferences in our baseline specification, i.e. the estimation results of equation (7). While the coefficient on employment of the mother does not change

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[31]The equation is more general than the equation (6) as the set of controls is richer. However, estimating equation (6) (without additional controls) does not significantly change our coefficients of interest.

significantly, the coefficient on the maternal disutility of work is close to zero. Finally, column four shows the same estimation as in column three but restricts the sample to mother-daughter pairs. The results are qualitatively the same, and the previous finding of a higher coefficient of maternal employment for daughter's employment behavior is confirmed. Again, the coefficient on mother's work preferences is close to zero, this time not even significant.

Importantly, while our measure of maternal disutility of work is significantly negatively correlated with the employment behavior of mothers, it does not affect the employment behavior of their offspring. Furthermore, including this measure in the baseline specification does not substantially affect the coefficient on the mother's employment. These results suggest that the role model channel is an important driver of the intergenerational correlation of employment, while there seems less direct transmission of work preferences.

5.2.2 Exploiting Variation in Maternal Employment Pre- and Post Childbirth

An additional test for the presence of a role model channel, which we perform in Table 10, is to include separately in the regression the labor market behavior of the mother before and after giving birth to the respective offspring. To this end we need to restrict the sample to mother-offspring pairs, for which we observe the mother prior to and after child birth. Given our lower cutoff age of 25 and the fact that more than half of the mothers in the sample gave birth prior to that, this reduces the sample size to 1,317.[32] However, also with this restricted sample the baseline regression in column one yields the same coefficient on maternal employment of 0.11. In the second (third) column we perform the same regression but when the permanent employment component for mothers is calculated using only the years after (prior) to the birth of the respective offspring, whereas in the last column we include both. We observe that only the coefficient on post-birth maternal employment is significant and not significantly different from the baseline. By contrast, the coefficient on pre-birth maternal employment is small and insignificant. This is again consistent with a role model channel, that obviously operates only once the offspring is alive.

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[32]When reducing the cutoff age to 20, results are unaffected.

Table 10: Direct preference transmission vs. role model: Pre- and post birth maternal employment behavior

Dependent variable: Employment - offspring (l_{Ci})

Specification	Baseline	Post-birth only	Pre-birth only	Both
Employment Mother (all years)	0.11***			
	(0.034)			
Employment Mother post-birth		0.09***		0.08***
		(0.029)		(0.029)
Employment Mother pre-birth			0.04	0.02
			(0.028)	(0.028)
Observations	1,317	1,317	1,317	1,317
Adjusted R-squared	0.12	0.12	0.11	0.12

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification. Pre- and post birth maternal employment measures are specific to all mother-offspring pairs, thus generally differ across siblings. Only pairs with maternal observations before and after the birth of the offspring are included.

5.2.3 Exploiting Variation in Cohabitation to Measure Work Preferences

Another piece of evidence, supporting the existence of a role model channel, results from controlling for mothers' permanent component of employment based on periods when they do not live together with the offspring. This measure serves as another proxy for mothers' work preferences that would be transmitted directly. The idea is that a role model channel is at work only when offspring actually observe the behavior of their mothers, which is facilitated during cohabitation. We document the results in Table 11.

First, we separately compute two permanent components of maternal employment, one using only observations from years in which the mother cohabits with the offspring and the other one using only those years where mother and offspring live in different households or where the child was not yet born. For a mother-offspring pair to be in the sample, it requires observations of maternal employment in periods of cohabitation and in periods of non-cohabitation, leaving us with a sample of 2,748 mother-offspring pairs. Repeating the baseline regression for that sample (with one permanent component calculated using all maternal observations) results in a coefficient on maternal employment of 0.13, slightly higher but not significantly different from the one based on the whole sample. In the second column we see that the coefficient on maternal employment

Table 11: Direct preference transmission vs. role model: Periods of (non-)cohabitation

Dependent variable: Employment - offspring (l_{Ci})

Specification	Baseline 1	Cohabitation	Baseline 2	Cohab.×Age
Employment Mother (EM)	0.13***		0.11***	
	(0.024)		(0.023)	
EM cohabitation		0.09***		
		(0.022)		
EM non-cohabitation		0.03*		
		(0.020)		
EM cohab. when child age 0-5				0.01
				(0.017)
EM cohab. when child age 6-18				0.08***
				(0.024)
EM all other periods				0.02
				(0.021)
Observations	2,748	2,748	2,574	2,574
Adjusted R-squared	0.11	0.11	0.12	0.12

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification. All maternal employment measures are specific to each mother-offspring pair, thus generally differ across siblings. Only pairs with observations in cohabitation and non-cohabitation (incl. years before birth) are included in columns one and two. Only pairs with observations in (1) cohabitation when child aged 0–5, (2) cohabitation when child aged 6–18 and (3) all other periods (i.e. non-cohabitation which includes pre-birth or cohabitation when child aged > 18) are included in columns three and four.

during periods of cohabitation is 0.09 and highly significant. By contrast, the coefficient on maternal employment during times of non-cohabitation is only 0.03, significant only marginally (at the 10% level).

We perform a similar analysis, this time computing three rather than two measures of maternal employment. Specifically, we compute three distinct permanent components. The first (second) uses data only from years where the offspring was cohabiting with the mother and at most five years old (between six and eighteen years old). The third uses only maternal employment data from years where the offspring was either older than eighteen years old or not cohabiting with the mother (including the years prior to the offspring's birth). This requires maternal observations for all three of these sub-periods and thus reduces the sample further to 2,574. Again, repeating the baseline regression with this sample we obtain a coefficient value of 0.11 (third column). In the last column

we see that only the coefficient on maternal employment during cohabitation and child age between six and eighteen is significant. Since this seems to be the relevant age where role models are formed, it is again consistent with our proposed channel.[33]

6   Ruling Out Other Potential Mechanisms

While the presented evidence suggests that a role model channel is responsible for the observed intergenerational correlation in employment status, there are other factors that may well explain this correlation. In this section we briefly discuss other candidate mechanisms and provide evidence that neither of them is likely to be the driving force behind the results.

6.1   Local Conditions of the Labor Market

We start by evaluating whether local conditions of the labor market could explain our correlation. So far, our argumentation has revolved around labor supply decisions. However, the estimated correlation could also be driven by market conditions that are determined by labor demand: if mothers and offspring live in the same region, both generations face similar labor market conditions, i.e. similar separation and job-finding probabilities. Macmillan (2014) finds such local labor market conditions to be an important contributor to the observed positive correlation in non-employment between fathers and sons.

The general version of the NLSY79 contains three different geographic variables but not a precise regional identifier. We hence undertake the following strategy. First, we condition our analysis on the mother-offspring pair living in the same broadly defined

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[33]In Table B.40 in the Appendix we make an even finer categorization (at the cost of reducing the sample further) by computing the permanent components in cohabitation times separately for child age 6–11 and for 12–18. We observe that in this case only the latter is significant. Furthermore, in Table B.41 in the Appendix we study to what extent the transmission of employment differs across siblings, who experience different employment behavior of their mother. Specifically, we repeat the analysis of Table 11 but include mother-fixed effects. We find a coefficient during cohabitation times similar in magnitude to the coefficient when mothers' fixed effects were not included, but it is not statistically significant. While this is an interesting exercise, it by design exploits only very little (within-mother) variation and thus results in rather high standard errors. The reasons are twofold: First, many mothers exhibit relatively constant employment behavior throughout their life cycle. Second, even if employment of mothers varies over the life cycle, most siblings are born not too far from each other, such that they again observe very similar maternal employment behavior. In addition, to meaningfully employ mother-fixed effects we need to observe at least two mother-offspring pairs for each mother both during times of cohabitation and non-cohabitation. This demanding requirement reduces the sample size to 2,039 mother-offspring pairs and 845 mothers.

region (Northeast, North Central, South or West). Second, we define a variable that indicates if both the mother and the offspring live in the same region as well as in an urban or rural area and in a Standard Metropolitan Statistical Area (SMSA).[34] We assign residence according to the category observed in the majority of survey years, and we compute the intergenerational correlation of employment distinguishing mother-offspring pairs for which their categories coincide or not. Formally, we again estimate equation (4) using the partitions

(vii) $\mathcal{G}_7 = \{$different region, same region$\}$

(viii) $\mathcal{G}_8 = \{$different region-SMSA-urban/rural, same region-SMSA-urban/rural$\}$

Columns three and four of Table 12 present the estimates. Residence in the same region does not significantly affect the employment correlation. Importantly, the estimates for mother-offspring pairs, who do not share the same region, remain significantly positive and are not significantly different from our baseline estimates. Our geographic definitions are coarse, since the data do not allow us to map individuals into very granular localities. However, those mother-offspring pairs which by definition live far apart from each other exhibit the same significantly positive intergenerational correlation of employment as the whole population.

6.2   Networks or Occupation-Specific Human Capital

Parents might help their offspring find a job through their connections, or even transmit occupation-specific human capital or preferences leading to correlations in job-finding probabilities across generations.[35] In order to test whether those mechanisms are plausible explanations for the residual intergenerational correlation of employment, we do the following: we split the sample between mother-offspring pairs who are employed in the same type of business (proxied by industry and sector) or have the same type of job (proxied by industry and occupation). Industry, sector and occupation are assigned

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[34]92% of the mother-offspring pairs share the region of residence. Only 30% of the observations correspond to pairs living in the same combination of geographical variables.

[35]The role of nepotism and preferences for occupations in the intergenerational correlation of earnings has been documented in the literature. See, for example, Corak and Piraino (2011) and Lo Bello and Morchio (2022).

Table 12: Intergenerational correlation of employment status by (i) same industry-sector, (ii) same industry-occupation, (iii) same region, (iv) same region-SMSA-urban/rural, and (v) same region-SMSA-urban/rural and industry-occupation

Dependent variable: Employment - offspring (l_{Ci})

| | *Networks/Occupation* | | *Regional Labor Markets* | | *Both* |
	Industry-sector	Industry-occupation	Region	Region-SMSA-urban/rural	Region-SMSA-urban/rural industry-occupation
Employment - mother	0.09***	0.11***	0.24***	0.13***	0.11***
	(0.024)	(0.022)	(0.077)	(0.030)	(0.025)
Employment - mother × Same	0.03	-0.05	-0.13	-0.00	-0.03
	(0.051)	(0.084)	(0.079)	(0.049)	(0.153)
Same	-0.01	-0.00	-0.03**	0.00	-0.02
	(0.012)	(0.021)	(0.016)	(0.011)	(0.043)
Controls	YES	YES	YES	YES	YES
Observations	3,161	3,163	3,197	2,489	2,461
Adjusted R^2	0.10	0.10	0.11	0.12	0.11

Notes: Standard errors clustered at the mother level in parentheses; standard errors calculated using the delta method for the marginal effects. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Industry, sector, occupation, region, SMSA and urban/rural are assigned as the category that is observed in the majority of the survey years.

to the individuals according to the category observed in most of the survey years.[36] In particular, we estimate equation (4) using the partitions

(v) $\mathcal{G}_5 = \{$different industry-sector, same industry-sector$\}$

(vi) $\mathcal{G}_6 = \{$different industry-occupation, same industry-occupation$\}$

The first two columns of Table 12 show the results. They suggest that the correlation of employment is not different for mother-offspring pairs who share the same type of business or job. This evidence does not support a story of employment correlations driven by networks or (occupation-)specific human capital transmission.

Finally, as a refinement of the previous two exercises the last column estimates equation (4) using the partition

(ix) $\mathcal{G}_9 = \{$different and same region-SMSA-urban/rural-industry-occupation$\}$,

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[36]Industries according to the three-digit Census classifications are grouped in 14 aggregate categories, and a similar aggregation is done for occupations to 18 categories. The sectors considered are private, public, self-employment, and family businesses. We exclude the observations of never employed individuals, who account for only 2% of the mothers' and only 7% of the offspring's cohort.

which requires the offspring to share all of these attributes with the mother to be considered in the *same* category. Intuitively, this refinement works as a proxy for networks within the local labor market. Again, our coefficient of interest is not significantly affected. In sum, while the (C)NLSY79 only provides imperfect measures of shared local labor markets or networks, they do not seem to be the reason behind the positive intergenerational correlation in employment.

7 Conclusion

This paper contributes to the literature on the intergenerational correlation of labor market outcomes. Differently from most of the existing literature, we focus on the extensive margin of labor supply. Using the NLSY79 and the CNLSY79 we document a robust, statistically significant, and positive intergenerational correlation of employment status between mothers and their offspring. The correlation is higher for mother-daughter pairs but significant also for mother-son pairs, implying that correlated gender identity roles cannot be the sole driving force. The correlation is particularly high for mothers with low socioeconomic status.

While the analysis of this paper is a purely positive one, it has potentially important normative implications. For example, in-work benefits, such as the EITC in the United States, paid to the currently working generation may indirectly increase the employment – and thus income tax revenue – of future generations. This is especially the case if these programs are targeted to low-income families with children. More generally, dynamic scoring of any redistributive policy that affects incentives to work should take this transmission channel into account. This discussion is also relevant when designing policies for the recovery after a prolonged shock such as COVID-19, which has particularly affected women (Alon et al., 2022). The policies in response to it may have effects on future generations.

However, a comprehensive policy analysis requires a clear understanding of the mechanism through which employment status is transmitted across generations. We show that the results are consistent with a theory of work culture and provide suggestive evidence that in their employment decisions, mothers act as a role model for their offspring. We are able to rule out network effects, occupation-specific human capital, and local labor

markets as driving forces behind the result.

While our results point to the existence of a role model channel, we would like to re-emphasize that our data does not allow for causal claims. In principle, other factors, not observed in our dataset, could be transmitted from mothers to offspring, and influence the intergenerational correlation of employment. In this respect, various social problems, which potentially affect individuals' employment decisions or capabilities – like more severe mental health issues, different forms of addiction, or criminal behaviour – come to mind. These problems can be measured only imperfectly (if at all) in survey data, which relies on accurate self-reporting. Not only can such social problems directly contribute to the intergenerational correlation of employment, they may also interact with our proposed role model channel. For example, offspring from parents with social problems may not only 'inherit' their problems but may also emulate the ways, in which parents deal with these problems. Similarly, unobserved personal traits – like perseverance, grit, confidence, or reliability – may affect labour supply. To the extent that they are correlated across generations they too may impact the intergenerational correlation of employment. However, a positive correlation in any such trait may again be the result of parents acting as role models for their children. We encourage future research to take on the difficult task of causally identifying and disentangling these potential contributors to the observed intergenerational correlation in employment.

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Appendix

A Details on the empirical analysis

A.1 Details on the data

NLSY79 and CNLSY79. The data is collected and provided freely by the Bureau of Labor Statistics (BLS) in the US. The NLSY79 consists of three sub-samples: (i) the cross-sectional sample (6,111 individuals) is a representative sample of the US population in 1979, (ii) the supplemental sample (5,295 individuals) over-samples disadvantaged groups (Hispanic or Latino, black and poor people), and (iii) the military sample (1,280 individuals) over-samples the population participating in the army. As explained in the main text, we use only the cross-sectional sample and restrict ages to 25 to 45 years old. Figure B.1 provides an example for a mother-offspring pair in the data.

It is worth noting some features of the sample we use for the analysis. Figure B.2 shows the distribution of the number of interviews. The mode for mothers is 14, with around 75% of the mass concentrated between 14 and 17 interviews. For the offspring, the mode is 3, and 66% have 3 or more interviews. The left panel of Figure B.3 shows the distribution of the age of mothers at birth. Of the observations, 75% come from mothers who gave birth between 19 and 29 years old. The right panel of Figure B.3 shows the same distribution, broken down by number of interviews of the offspring. Mothers of offspring with more interviews were younger when their offspring were born. Figure B.4 shows the employment-age profiles of mothers and offspring. Employment rates decline and become more volatile with age because older offspring are fewer and belong to mothers who were younger at birth, something the empirical strategy accounts for when computing the permanent components. The number of offspring observations is particularly small for some age ranges (see Table B.42) leading to noisy average employment rates which does not pose a threat to our estimation strategy as we include age fixed effects in the computation of the permanent components.

Ability is measured in the 1979 cohort by the Armed Services Vocational Aptitude Battery (ASVAB), which was collected around 1980 when mothers were between 15 and 23 years old. The scores correspond to the AFQT, which is a composite of test results in arithmetic reasoning, word knowledge, paragraph comprehension, and numerical op-

erations. We use the version of the AFQT revised in 2006 to control for differences in cohorts within the NLSY79. Similar measures of cognitive abilities have been collected for the offspring cohort since 1986. In particular, we use the latest measurement for each offspring of the Peabody Individual Achievement Test (PIAT) for Math, considered the most appropriate measure of ability among the test scores available in the data for the younger cohort (Abbott et al., 2019). These measures may capture not only genetic ability, but also some components of scholastic skills. This is not a problem for our analysis, as we are interested in accounting for productivity jointly with education.

Another relevant variable in the analysis, wealth, is introduced as net worth, i.e. assets minus debts. The variable is provided by the BLS for the NLSY79 cohort, and we follow the definition in the CNLSY79, where such a computed variable is not provided. In terms of assets, we include savings in liquid accounts and in financial assets, the market value of the main house and other properties, and the market value of own vehicles. The debts comprise credit card balances, outstanding mortgage value and other property debts, debts for vehicles, and other debts. The net worth variable constructed by the BLS uses imputed assets and debts when there is no response, and values are top-coded. No such procedures are followed in the offspring's cohort, and also there are some slight changes in the definitions of assets and debts over time.

Earnings is also a variable used throughout the analysis. We use an annual measure, the most comparable variable across cohorts: wages and salaries received during the last calendar year. Earnings are top-coded for both the parents' and offspring's cohorts. We construct weekly hours of work, dividing total annual hours by total number of weeks worked during the last calendar year for the mothers' cohort. For the offspring's cohort, we use weekly hours worked in all jobs at the time of the interview.

Industries are available according to different versions of the three-digit US Census classification. For the comparison of industries across generations, they are grouped into 14 categories: agriculture, forestry, fisheries; mining; construction; manufacturing of non-durables; manufacturing of durables; transportation, communications, and other public utilities; wholesale trade; retail trade; finance, insurance, and real estate; business and repair services; personal services; entertainment and recreation services; professional and related services; public administration. Similarly, the classification of occupations also corresponds to three-digit US Census classification. They are collapsed into 18 categories:

management, business, and financial operations; computer and mathematical; architecture and engineering; life, physical, and social services; community and social services; legal; education, training, and library; arts, design, entertainment, sports, and media; health-care practitioners and technical and support; protective service; food preparation and serving related; building and grounds cleaning and maintenance; personal care and service; sales and related; office and administrative support; farming, forestry, and fishing; construction and extraction, installation, repair and maintenance, and production; transportation and material moving. The variable accounting for sectors refers to private, public, self-employment, and family businesses.

The geographical information on the publicly available version of the NLSY79 is not very detailed. The variables are limited to region (Northeast, North Central, South, or West), urban or rural, and an indicator of residence in an SMSA, which are highly populated areas. Whenever we need to construct a measure of location, we use a combination of these three variables.

A.2 Methodological challenges in the measurement of intergenerational persistence of labor market outcomes

The data we use feature desirable characteristics for coping with some estimation issues identified in the literature on the intergenerational correlation of earnings. First, Zimmerman (1992) and Solon (1992) show that early estimations based on single-year measures of parents' and offspring's outcomes are subject to substantial measurement error. This is because single-year measures are subject to transitory deviations from the long-run means. This means that single-year measures are not good proxies for lifetime or permanent components, which yields attenuation bias as a consequence. This problem is particularly relevant for parental outcomes, the explanatory variables in the intergenerational equations. Mazumder (2005) estimates the potential reduction in the bias by increasing the number of observations. The longitudinal nature of the NLSY79 allows for the use of several observations for both generations, particularly in the case of mothers, who are observed on average in 14 waves in our sample (only 4% of the sample has fewer than 10 interviews).

Second, the lack of heterogeneity in the samples aggravates the measurement error

(Solon, 1992, 1999).[37] We use a representative sample of the US population in 1979, namely the cross-sectional sub-sample of the NLSY79, which is several times bigger than cohorts formed from the Survey Research Center (SRC) component, the analogous of the PSID typically employed in empirical studies of intergenerational earnings' correlations (see, for example, Solon, 1992).

Finally, the literature emphasizes a life-cycle bias that arises when parents' and offspring's observations are not representative of their lifetime outcomes due to non-stable trajectories along the life (Haider and Solon, 2006; Grawe, 2006; Nybom and Stuhler, 2016, 2017). Measurement error is not homogenous along the life cycle, with higher noise for early and late years (Mazumder, 2005). To mitigate this problem, the literature recommends using observations for ages between 30 and 50 (Black and Devereux, 2011). Our sample restriction to individuals between 25 and 45 years old and the netting out of age effects from the permanent components are intended to mitigate this bias.

It is worth noting that the offspring in the CNLSY79 is younger and with fewer observations on average than the mother's cohort in the NLSY79 (see Figure B.2). About two-thirds of the offspring observations have at least three interviews and only 16% have just one interview. Furthermore, almost 60% of the offspring cohort included in our analysis is observed at least once after their 30th birthday, the age at which the literature suggests stability of labor market outcomes (see, for example, Chetty et al., 2014; Mazumder, 2005; Nybom and Stuhler, 2016, 2017). Restricting the sample to those individuals observed at least three times and at least once after the 30th birthday does not change the estimates.

A.3 Details on the robustness exercises

In order to provide scale-invariant estimates of the persistence in employment, we follow the literature by providing a log-log and a rank-rank specification. It is worth noting that for the log-log specification, we take the logarithm of the permanent components, which are the fixed effects backed out in the estimation of (2). As these permanent components include negative values, to take the natural logarithm we add a constant such that the minimum value for each generation is 0.001. For the rank-rank specification, we sort

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[37]The interaction between, on the one hand, transitory fluctuations and measurement error, and, on the other hand, the homogeneity in the sample, is discussed in Solon (1989).

individuals within each generation in ascending order in terms of proportion of periods employed during the 25 to 45 years old window. We assign each individual their position, divided by the total number of individuals (when an employment value is repeated, we average across positions corresponding to that value).

For the robustness exercise, in which we control for demographic events when computing the permanent components, we estimate the following slightly modified model,

$$l_{kit} = l_{ki} + \sum_{n=1}^{2} \pi_{nk} A_{kit}^n + \lambda_{kt} + Demo'_{kit}\varsigma + \upsilon_{kit},$$

where $k \in \{M, C\}$ and $Demo_{kit}$ are controls for demographic events: births, couple formation and dissolution, job loss and finding by partner, presence of offspring 0 to 3 years old in the household with/without child care, and presence of older offspring in the household. We also include controls for education level, region, urban area, living in own dwelling, conjugal status, and whether the partner works.

The alternative variables used to measure employment status are (i) the baseline employment measure without including the requirement of a minimum time or earnings; and (ii) employment status at the time of the interview–recently constructed by the NLSY79 team.

A.4 Details on the measures of work preferences

In this part of the Appendix we first explain the construction of our three measures of work preferences in more detail. We then discuss the difficulty to distinguish work preferences from gender role attitudes and we show that our results are robust even when considering a wider set of variables to measure gender role attitudes.

A.4.1 Three measures of work preferences

As discussed in the main text, we consider three different measures for disutility of work. To be consistent with our theoretical framework, we consider the disutility of work.

Measure 1: GN

Our gender neutral measure exploits respondents' answers to the following two questions that are asked in the (C)NLSY79:

(i) Would the respondent like to work at age 35?

(ii) If the respondent had enough money (by age 35) to live comfortably without work-ing, would the respondent work anyway?

Question (i) is available for 1979–1984 in the NLSY79, and 1994–1998 in the CNLSY79. Question (ii) is only available for 1979 in the NLSY79, and for 2000–2018 in the CNLSY79. Given the relatively low response rates to these questions, we use the following strategy: We assign the value minus one (zero) to the disutility of work whenever both questions are answered with yes (no) or the respondent answered one question with yes (no) and did not answer the second question. We assign a value of -0.5 to respondents who answered one question with yes and the other with no.

Measure 2: F

For our simple measure of female work preferences we exploit respondents' answers to the following questions, which are included in survey years 1979, 1982, 1987, and 2004 for mothers (NLSY79) and in 1994, 1996, 1998, 2002, 2006, 2010, 2014, 2016, and 2018 for offspring (CNLSY79).

(iii) Women's place is in the home, not in the office or shop.

(iv) Women are much happier if they stay at home and take care of the children.

These questions are answered qualitatively. We follow the strategy of Farré and Vella (2013) and assign a value of 1 when the respondents *strongly agree*, 2 for *agree*, 3 for *disagree* and 4 for *strongly disagree*. Whenever there is variation in the individual's re-sponses, we average them across years. We take the first factor of the principal component of the two questions. The percentage of variance retained is 79% for mothers, and 73% for offspring. We multiply the resulting number by -1 in order to capture disutility of – rather than preference for – work, in line with our model.

Measure 3: FC

Finally, for our combined measure of female work preference we use the first factor of the principal component of the two questions related to gender roles (F) and the index for their work preferences at age 35 (GN). The percentage of variance retained in this way is 55% for mothers and 49% for offspring.

Figure B.7 depicts the distribution of the resulting FC variable. It is slightly skewed to the right, which means that there is an over-representation of mothers with low disutility

of work, which is in agreement with a considerably high employment rate (76%). Figure B.8 shows the distribution of the daughters' FC measure, with a similar shape.

Employment by Terciles of Work Disutility. Furthermore, we take terciles of the variable, which gives us three classes that we describe as low, medium, and high disutility of work. Summary statistics for the maternal disutility of work FC by terciles are shown in Table B.36, respectively for daughters in Table B.37.

In the two panels of Table B.38 we partition the sample of, respectively, mothers and daughters into terciles of disutility of work. The upper panel divides the sample of mothers by the terciles of the combined female measure (FC) of maternal work preferences. The first column shows the average share of years for which mothers in the respective terciles are employed. Mothers with low disutility of work (first tercile) are employed on average 83% of the time, those with medium disutility (second tercile) are employed 77% of the time and those with high disutility of work (third tercile) are employed only 66% of the time. The second column shows the employment of the daughters in the respective groups. Daughters of mothers with low disutility of work are employed 85% of the time, those of mothers with medium disutility of work 84% of the time, and those of mothers with high disutility of work only 78% of the time. Hence, mothers' disutility of work seems to affect daughters' employment. The last column does the same for sons. Given that most sons work, there is less variation than for daughters, though also sons of mothers in the third tercile are employed slightly less than those of mothers in the first and second tercile (87% vs. 89%).

The lower panel of Table B.38 partitions the sample of mother-daughter pairs by the terciles of daughters' disutility of work, again using the female-combined measure. Daughters with low disutility of work are employed 89% of the time, those with medium disutility of work 83% and those with high disutility of work only 74%. We observe the same qualitative intergenerational employment behavior for both generations. Specifically, mothers of daughters with lower disutility of work tend to be employed longer. In sum, the measures we construct seems to capture preferences for work well. Specifically, women with higher disutility of work, tend to be employed less.

A.4.2 Female work preferences vs. gender role attitudes

The questions in the NLSY79 and the CNLSY79 which we use to measure the disutility of work for women are part of a wider set of questions that other authors have employed as measures of gender norms. In their paper on the intergenerational transmission of gender role attitudes, Farré and Vella (2013) use the following more comprehensive set of questions to construct an "attitudes index" (compare their Tables 1 and 3):

1. A woman's place is in the home, not in the office or shop.

2. A woman who carries out her full family responsibilities does not have time for outside employment.

3. The employment of wives leads to more juvenile delinquency.

4. It is better for everyone concerned if the man is the achiever outside the home and the woman takes care of the home and family.

5. Men should share the work around the house with women, such as doing dishes, cleaning and so forth.

6. Women are much happier if they stay at home and take care of their children.

In our view, the distinction between gender role attitudes and (female) work preferences is blurry. One reason is that gender role attitudes of women to a large degree shape their preferences for work. Yet, out of the six questions above, we considered the first and last question to be more directly measuring the preference for work than the others, which is the reason why we used those in our measure of female work preferences. However, since this judgement is to some extent subjective and in order to check for robustness, in the following we control for a wider set of attitudes using all of the six questions in our analysis. Specifically, in Table B.39 we add as further controls an index that captures the degree to which mothers (left panel) and daughters (right panel) exhibit a traditional gender role attitude. This index is created using the same strategy of Farré and Vella (2013) using the four remaining questions (2.-5. above) which we did not already use in our measure of female work preferences (F). We observe in columns 2-4 of Table B.39 that mothers' gender role attitudes, as measured by this index, do not significantly impact the

employment behavior of their offspring. By contrast, in column 5 we observe that daughters with traditional gender role attitudes exhibit lower employment rates, as one would expect. However, in either case controlling for gender role attitudes does not significantly change the coefficient on maternal employment, which remains highly significant, equal to 0.12 for the whole sample, and 0.16 when restricting the sample to mother-daughter pairs (relative to, respectively, 0.11 and 0.17 in our baseline specification).

A.5 Details on the measures of social problems

In this part of the Appendix we explain the data on depression, drug use and incarceration that is available in the NLSY79 and in the CNLSY79, and we explain in more detail how we use this data to construct corresponding measures of these *social problems*.

A.5.1 Depression

The NLSY79 and CNLSY79 uses a measure of depression derived from the Center for Epidemiologic Studies Depression Scale (CES-D), which is widely used to measure symptoms of depression (Germinario et al., 2022). Respondents are asked about several symptoms of depression and about the frequency with which the respective symptom occurred within the week prior to the interview. For each of these questions the answers range from 0 (not at all) to 3 (almost every day). These answers are then aggregated up to a seven-item scale, which categorizes individuals by their depressive symptom severity (from no depression at all to severe depression). This scale is readily available both in the NLSY79 and in the CNLSY79. We consider an individual as depressive when in at least 25% of survey years they have a combined score of in the 'top' 25%.

A.5.2 Drug Consumption

Following De Simone (2002), we construct an indicator of whether drugs were consumed in the year prior to the survey. Information about drug consumption is available in the NLSY79 for survey years 1980, 1984, 1988, 1992, 1994 and 1998. In the CNLSY79 marijuana consumption is reported in every survey, other drugs only for some years. For each individual we construct a binary variable that takes the value of one when in at least 25% of the surveys where drug consumption was measured they report to have consumed drugs.

A.5.3 Incarceration

The NLSY and CNLSY ask for the residence at the time of the interview. We consider an individual incarcerated if their residence is at jail or similar (prison, juvenile detention center, detention, etc.). For each individual we construct a binary variable that takes the value one when they are incarcerated at least 25% of the times they are interviewed.

B Additional Tables and Figures

B.1 Additional Tables

Table B.13: Additional summary statistics for women and mother-offspring pairs in NLSY79 and CNLSY79

	Women	Mothers	Offspring
White	80%	78%	75%
Black	13%	15%	16%
Hispanic	7%	8%	8%
Migrant	5%	4%	0%
Public sector employees	11%	10%	4%
Private sector employees	85%	85%	92%
Self-employed	4%	4%	2%
Part-time	18%	21%	14%
Marginal job (incl. self-employed and odd jobs)	20%	23%	14%
Father at home			63%
Living in own dwelling	92%	94%	77%
Partner works	64%	71%	41%
Offspring 0 to 3 y.o. not in child care	19%	24%	24%
Offspring 0 to 3 y.o. in child care	7%	8%	4%
Offspring 4 to 5 y.o.	16%	21%	15%
Offspring 6 to 12 y.o.	40%	54%	25%
Offspring 13 to 15 y.o.	15%	22%	5%
Offspring 16 to 18 y.o.	11%	17%	3%
Births	13%	17%	16%
Couple dissolution	4%	4%	6%
Couple formation	5%	5%	17%
Partner job loss	5%	5%	5%
Partner job finding	6%	5%	8%
Individuals	3,040	1,922	3,748

Notes: Percentages for observations in the 25 to 45 years old range in our sample; the sector of employment corresponds to the category most often observed for each individual; similar criterium applies for the variable regarding the father living at home; the numbers for living in own dwelling, partner works, offspring of different ages, births, couple dissolution and formation, and partner job loss and job finding represent the proportion of observations for which these variables take the value 1 (the event occurs).

Table B.14: Alternative sources of funds for the non-employed

	Mothers		Sons		Daughters	
	Share	Mean mount	Share	Mean amount	Share	Mean amount
Earning spouse	72%	22,161	22%	6,945	55%	20,841
Welfare reception	38%	4,231	17%	3,432	14%	4,128
Positive Wealth	71%	67,105	42%	20,889	56%	21,636
Family income			26%	4,034	26%	5,338
Any alternative funds	96%		90%		98%	

Notes: Averages across all periods of non-employment; Monetary variables in 1980 USD; mean amounts conditional on being positive; incomes per year; spouses are considered earners if they worked for at least 10 weeks in the year preceding the survey; welfare amounts correspond to the calendar year for the mothers, and to an the last observed monthly value annualized for the offspring; respondent is considered to have wealth if positive assets are reported; family income is considered to be received when an employed adult, other than the spouse, cohabits with the respondent (only available for offspring); respondents are considered to receive 'any alternative funds' if at least one of the potential funding sources (spouse, welfare, wealth, family income) available.

Table B.15: Heterogeneity: Intergenerational correlation of employment status by (i) family income (quintiles) and (ii) mother's education level

Dependent variable: Employment - offspring (l_{Ci})

	Baseline	Family income	Maternal education
Employment - mother	0.11***	0.13***	0.27***
	(0.022)	(0.047)	(0.068)
Employment - mother × Quintile 2		-0.02	
		(0.087)	
Employment - mother × Quintile 3		0.01	
		(0.076)	
Employment - mother × Quintile 4		-0.09	
		(0.069)	
Employment - mother × Quintile 5		-0.05	
		(0.056)	
Employment - mother × High-school			-0.16**
			(0.075)
Employment - mother × Some college			-0.23***
			(0.080)
Employment Mother × College			-0.17**
			(0.083)
Income - Quintile 2		0.01	
		(0.022)	
Income - Quintile 3		0.04	
		(0.022)	
Income - Quintile 4		0.03	
		(0.020)	
Income - Quintile 5		0.04*	
		(0.020)	
High-school			0.03
			(0.029)
Some college			0.03
			(0.030)
College			-0.00
			(0.031)
Controls	YES	YES	YES
Observations	3,201	3,201	3,201
Adjusted R^2	0.11	0.11	0.12

Notes: Standard errors clustered at the mother level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Quintiles of maternal family income correspond to the quintile of family income observed most often. The maternal education is the maximum attained education level.

Table B.16: Margins of labor supply

Dependent variable: Employment - offspring (l_{Ci})

	Employment				IHS weekly hours			
Employment - mother	0.19***	0.11***	0.12***	0.08**				
	(0.022)	(0.022)	(0.032)	(0.033)				
IHS weekly hours - mother					0.16***	0.09***	0.04	0.04
					(0.024)	(0.024)	(0.038)	(0.037)
Controls	NO	YES	NO	YES	NO	YES	NO	YES
Sample (quint. emp.-mother)	Q1-Q5		Q2-Q5		Q1-Q5		Q2-Q5	
Observations	3,748	3,201	2,997	2,595	3,849	3,282	3,076	2,657
Adjusted R^2	0.03	0.11	0.00	0.06	0.02	0.13	0.00	0.10

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In columns were the sample is indicated as *Q2-Q5* we restrict the sample to mother-offspring pairs in which the mothers' permanent employment component is in the top 80% (i.e., excluding mothers *marginally attached* to the labor market). In columns with controls we use the same covariates as in the baseline specification. The higher number of observations in the regression for hours is due to the different response rate of variables used to measure employment and hours worked.

Table B.17: Regression for long hours

Dependent variable: Long hours - offspring

Specification	(1)	(2)	(3)	(4)
Long hours - mother	0.09***	0.07**	0.08**	0.10***
	(0.029)	(0.032)	(0.031)	(0.031)
Ability - mother		0.09***	0.05*	0.02
		(0.030)	(0.031)	(0.031)
Ability - offspring		0.32***	0.29***	0.28***
		(0.052)	(0.052)	(0.053)
High-school - mother		0.08***	0.08***	0.07**
		(0.028)	(0.028)	(0.028)
Some college - mother		0.01	0.01	-0.03
		(0.025)	(0.024)	(0.023)
College - mother		0.08***	0.06*	0.01
		(0.030)	(0.029)	(0.028)
High-school - offspring		-0.00	-0.00	-0.01
		(0.023)	(0.023)	(0.023)
Some college - offspring		-0.02	-0.03	-0.03
		(0.024)	(0.023)	(0.024)
College - offspring		0.02	-0.00	-0.01
		(0.024)	(0.024)	(0.024)
Net worth - mother			0.02*	0.01
			(0.009)	(0.009)
Net worth - offspring			0.06***	0.03***
			(0.008)	(0.008)
Control mother's age at birth and number of children	NO	NO	NO	YES
Observations	3,849	3,289	3,282	3,282
Adjusted R^2	0.00	0.05	0.08	0.11

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Mothers' age at birth and mothers' and offspring's number of children are introduced non-linearly (a set of dummies for each variable).

Table B.18: Robustness: Log-log regressions

Dependent variable: Log-employment - offspring ($\log(l_{Ci})$)

Specification	(1)	(2)	(3)	(4)
Log-employment - mother	0.17***	0.11***	0.11***	0.10***
	(0.030)	(0.031)	(0.031)	(0.031)
Ability - mother		-0.09	-0.09	-0.08
		(0.070)	(0.072)	(0.072)
Ability - offspring		0.72***	0.72***	0.72***
		(0.144)	(0.144)	(0.144)
High-school - mother		0.22***	0.23***	0.21**
		(0.086)	(0.086)	(0.088)
Some college - mother		0.20**	0.20**	0.20**
		(0.089)	(0.090)	(0.092)
College - mother		0.15	0.15	0.17*
		(0.094)	(0.095)	(0.097)
High-school - offspring		0.19**	0.19**	0.15
		(0.090)	(0.091)	(0.090)
Some college - offspring		0.37***	0.37***	0.34***
		(0.091)	(0.091)	(0.090)
College - offspring		0.47***	0.47***	0.42***
		(0.088)	(0.089)	(0.088)
Net worth - mother			0.01	0.01
			(0.015)	(0.014)
Net worth - offspring			-0.01	0.02
			(0.017)	(0.019)
Control mother's age at birth and number of children	NO	NO	NO	YES
Observations	3,748	3,208	3,201	3,201
Adjusted R^2	0.02	0.08	0.08	0.09

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressors, apart from employment of the mother, are the same as in Table 3.

Table B.19: Robustness: Rank-rank regressions

Dependent variable: Employment rank - offspring

Specification	(1)	(2)	(3)	(4)
Employment rank - mother	0.12***	0.06***	0.06***	0.06***
	(0.015)	(0.015)	(0.015)	(0.015)
Ability - mother		0.02	0.01	-0.01
		(0.018)	(0.018)	(0.018)
Ability - offspring		0.17***	0.17***	0.15***
		(0.032)	(0.032)	(0.033)
High-school - mother		0.07***	0.07***	0.06***
		(0.018)	(0.018)	(0.018)
Some college - mother		0.08***	0.07***	0.06***
		(0.019)	(0.019)	(0.019)
College - mother		0.05***	0.05**	0.03
		(0.021)	(0.021)	(0.021)
High-school - offspring		0.04*	0.04*	0.02
		(0.018)	(0.018)	(0.018)
Some college - offspring		0.08***	0.08***	0.07***
		(0.018)	(0.018)	(0.018)
College - offspring		0.11***	0.10***	0.09***
		(0.018)	(0.018)	(0.018)
Net worth - mother			0.00	-0.00
			(0.004)	(0.003)
Net worth - offspring			0.02***	0.01**
			(0.004)	(0.004)
Control age at birth - mother	NO	NO	NO	YES
Observations	3,748	3,208	3,201	3,201
Adjusted R^2	0.03	0.10	0.10	0.13

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressors, apart from employment of the mother, are the same as in Table 3.

Table B.20: Robustness: Alternative measures of the permanent components

Dependent variable: Alternative permanent component employment - offspring $(\overline{l_{Ci}})$

	Simple averages		Demographics	
Employment - mother (averages)	0.19***	0.11***		
	(0.022)	(0.022)		
Employment - mother (demographics)			0.20***	0.13***
			(0.024)	(0.025)
Controls	NO	YES	NO	YES
Observations	3,748	3,201	3,276	2,788
Adjusted R^2	0.04	0.12	0.03	0.07

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. We use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. In the first and second columns we use simple averages for l_{Ci} and l_{Mi}. In the third and fourth columns we add to the standard estimation of the permanent components demographic events as additional controls.

Table B.21: Robustness: Alternative survey questions for employment status of offspring and mothers

Dependent variable: Alternative data measure of employment - offspring $(\widehat{l_{Ci}})$

	Alternative measure of offspring employment	
	Alternative 1	Alternative 2
Employment - mother (different measure)	0.11***	0.07***
	(0.021)	(0.021)
Controls	YES	YES
Observations	3,201	3,283
Adjusted R^2	0.10	0.12

Notes: Robust standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. The employment variables in each column are the following: Alternative 1: mothers with a positive number of weeks employed in the last year and offspring with positive earnings in the last year (no minimum time or earnings); Alternative 2: employment status at the day of the interview (constructed by the Bureau of Labor Statistics).

Table B.22: Robustness: Welfare reception and health limitations

Dependent Variable (all for offspring)	Welfare reception	Employment	Health limit.	Employment
Employment Mother		0.07***		0.12***
		(0.023)		(0.022)
Employment Mother × Welfare reception (most periods)		0.08		
		(0.058)		
Welfare reception Mother (most periods)		-0.04**		
		(0.021)		
Welfare reception Mother (perm. comp.)	0.04***			
	(0.014)			
Employment Mother × Health limitations (most periods)				-0.00
				(0.093)
Health limitations Mother (most periods)				-0.02
				(0.027)
Health limitations Mother (perm. comp.)			0.06***	
			(0.020)	
Observations	3,283	3,201	2,960	3,165
Adjusted R-squared	0.03	0.12	0.03	0.11
Controls	YES	YES	YES	YES

Notes: Robust standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. In the first and third column, we regress the permanent component of offspring welfare reception, respectively health limitation, on the corresponding maternal permanent component. In columns two and four, we repeat our baseline regression but add a binary variable that indicates weather the mother, respectively, received welfare benefits or had health limitations, in the majority of survey years. We also interact this variable with maternal employment.

Table B.23: Incidence of social problems

Proportion of individuals	Mothers		Sons		Daughters	
	Employed	Not employed	Employed	Not employed	Employed	Not employed
Depression	45%	55%	30%	42%	41%	46%
Drug consumption	33%	34%	29%	49%	24%	25%
Incarceration	0%	0%	0%	10%	0%	1%

Table B.24: Intergenerational correlation of social problems

	Depression	Drug consumption
Depression Mother	0.07***	
	(0.021)	
Drug abuse Mother		0.18***
		(0.020)
Controls	YES	YES
Observations	2,878	3,281
Adjusted R^2	0.02	0.08

Notes: Standard errors clustered at the mother level in parentheses; standard errors calculated using the delta method for the marginal effects. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification of the intergenerational correlation of earnings: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. No mothers are incarcerated, hence we cannot compute the correlation of incarceration.

Table B.25: Robustness: excluding individuals with social problems

Dependent variable: Employment - offspring (l_{Ci})

	Without depressive	Without drug consumers	Without incarcerated
Employment Mother	0.07**	0.15***	0.11***
	(0.034)	(0.031)	(0.021)
Controls	YES	YES	YES
Observations	1,010	1,596	3,180
Adjusted R^2	0.06	0.12	0.11
	Sons		
Employment Mother	0.08*	0.07*	0.07***
	(0.042)	(0.039)	(0.028)
Controls	YES	YES	YES
Observations	562	713	1,577
Adjusted R^2	0.06	0.13	0.10
	Daughters		
Employment Mother	0.09*	0.22***	0.17***
	(0.057)	(0.045)	(0.031)
Controls	YES	YES	YES
Observations	448	883	1,603
Adjusted R^2	0.13	0.16	0.18

Notes: Standard errors clustered at the mother level in parentheses; standard errors calculated using the delta method for the marginal effects. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Mother-offspring pairs are excluded whenever either the mother or the child (or both) are (1) depressive, (2) consume drugs, (3) are in jail, or (4) any of those, in at least 25% of survey years.

Table B.26: Robustness: controlling for social problems

Dependent variable: Employment - offspring (l_{Ci})

| | Depression | Drug use | Incarceration | Any social problem | | |
		all offspring		all offspring	sons	daughters
Employment Mother	0.12***	0.11***	0.11***	0.12***	0.08***	0.17***
	(0.022)	(0.022)	(0.021)	(0.022)	(0.029)	(0.032)
Depressive Mother	-0.01			-0.01	-0.01	-0.01
	(0.011)			(0.011)	(0.014)	(0.017)
Depressive Offspring	-0.03**			-0.03**	-0.02	-0.00
	(0.011)			(0.011)	(0.015)	(0.016)
Drug consumption Mother		-0.00		-0.00	-0.00	0.02
		(0.012)		(0.012)	(0.016)	(0.017)
Drug consumption Offspring		-0.01		-0.01	-0.04***	-0.02
		(0.011)		(0.012)	(0.014)	(0.017)
Incarceration Offspring			-0.41***	-0.47***	-0.55***	-0.19***
			(0.073)	(0.074)	(0.087)	(0.055)
Controls	YES	YES	YES	YES	YES	YES
Observations	2,827	3,199	3,201	2,825	1,413	1,412
Adjusted R-squared	0.12	0.11	0.13	0.14	0.17	0.18

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors clustered at the mother level in parentheses; standard errors calculated using the delta method for the marginal effects. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Controlling for any social problem includes dummies for observations with observations for depressive, drug consumption, and incarceration (hence the lower number of observations).

Table B.27: Robustness: Controlling by hourly wages

Dependent variable: Employment - offspring (l_{Ci})

VARIABLES	Cont. hrly. wage	Cont. hrly. wage	Low-wage	Low-wage
Employment - mother	0.10***	0.08***	0.12***	0.10***
	(0.018)	(0.020)	(0.037)	(0.036)
Hourly wage - mother	-0.00	-0.00		
	(0.004)	(0.007)		
Hourly wage - offspring	0.02***	0.01***		
	(0.003)	(0.003)		
Employment - mother × low wage			0.06	0.02
			(0.048)	(0.045)
Low wage			-0.03***	0.00
			(0.011)	(0.012)
Observations	2,920	2,527	3,698	3,170
Adjusted R-squared	0.03	0.06	0.03	0.11
Controls	NO	YES	NO	YES

Notes: Robust standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. We use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Hourly wages are in 10 USD, 1980 prices. For mothers, hourly wages are calculated dividing the annual salary in the year before the interview by the total hours worked in the respective year. For the offspring, hourly wages correspond to the hourly wages of the main job at the time of the interview. Hourly wages are only observed when individuals are working. *Low-wage* refers to mothers that are observed to be in the bottom two quintiles of the hourly wage distribution in most periods. The lower number of observations in columns two and three compared to columns four and five is because wages are never observed for some individuals due to non-response or not working.

Table B.28: Robustness: Spousal employment status

Dependent variable: Employment - offspring (l_{Ci})

	(1)	(2)	(3)	(4)
Employment - mother	0.11***		0.10***	0.10***
	(0.022)		(0.022)	(0.022)
Employment - spouse		0.13*	0.11	0.06
		(0.073)	(0.072)	(0.075)
Emp. - mother × Emp. - spouse				-0.26
				(0.238)
Controls	YES	YES	YES	YES
Observations	3,206	3,206	3,206	3,206
Adjusted R^2	0.11	0.10	0.11	0.11

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. The regressions correspond to the triplets spouse-mother-offspring for which a spouse is reported. Note that not all mothers report having a spouse in all the waves, nor are their spouses the same across waves.

Table B.29: Robustness: Self-employment

Dependent variable: Self-employment - offspring (l_{Ci})

	Self-employment	Self-employment
Self-employment Mother	0.04**	0.05**
	(0.019)	(0.022)
Controls	NO	YES
Observations	3,169	2,725
Adjusted R-squared	0.00	0.05

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth.

Table B.30: Robustness: Non-cognitive skills included in the ability measure

Dependent variable: Employment - offspring (l_{Ci})

Specification	(1)	(2)	(3)	(4)
Employment - mother l_{Mi}	0.19***	0.11***	0.11***	0.11***
	(0.022)	(0.021)	(0.021)	(0.022)
Ability - mother		0.02	0.02	0.01
		(0.022)	(0.022)	(0.022)
Ability - offspring		0.16***	0.15***	0.15***
		(0.031)	(0.031)	(0.032)
High-school - mother		0.09***	0.09***	0.07**
		(0.028)	(0.028)	(0.028)
Some college - mother		0.08***	0.08***	0.07**
		(0.028)	(0.028)	(0.029)
College - mother		0.05*	0.05	0.04
		(0.030)	(0.031)	(0.031)
High-school - offspring		0.06**	0.06**	0.04
		(0.028)	(0.028)	(0.027)
Some college - offspring		0.13***	0.13***	0.11***
		(0.027)	(0.027)	(0.027)
College - offspring		0.16***	0.16***	0.14***
		(0.026)	(0.026)	(0.027)
Net worth - mother			0.00	0.00
			(0.004)	(0.004)
Net worth - offspring			0.00	0.01
			(0.005)	(0.006)
Control mother's age at birth and number of children	NO	NO	NO	YES
Observations	3,748	3,187	3,180	3,180
Adjusted R^2	0.03	0.10	0.10	0.11

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. This table reproduces the baseline regression with the exception that offspring ability is measured as the first principle component factor of PIAT math, reading recognition, and reading comprehension scores as well as the five measures from the behavioral problems index to measure non-cognitive ability.

Table B.31: Robustness: Non-linear ability

Dependent variable: Employment - offspring (l_{Ci})

Specification	(1)	(2)	(3)	(4)
Employment - mother l_{Mi}	0.19***	0.11***	0.11***	0.11***
	(0.022)	(0.021)	(0.021)	(0.021)
Ability - mother Q2		0.01	0.01	0.01
		(0.020)	(0.020)	(0.020)
Ability - mother Q3		0.01	0.01	0.01
		(0.019)	(0.019)	(0.020)
Ability - mother Q4		0.00	-0.01	-0.01
		(0.020)	(0.020)	(0.020)
Ability - offspring Q2		0.06***	0.06***	0.06***
		(0.019)	(0.019)	(0.019)
Ability - offspring Q3		0.07***	0.07***	0.06***
		(0.019)	(0.019)	(0.019)
Ability - offspring Q4		0.09***	0.09***	0.09***
		(0.018)	(0.018)	(0.018)
High-school - mother		0.08***	0.08***	0.07**
		(0.028)	(0.028)	(0.028)
Some college - mother		0.08***	0.08***	0.07**
		(0.028)	(0.028)	(0.029)
College - mother		0.05*	0.05*	0.05
		(0.030)	(0.030)	(0.030)
High-school - offspring		0.06**	0.06**	0.05*
		(0.028)	(0.028)	(0.028)
Some college - offspring		0.12***	0.12***	0.11***
		(0.027)	(0.027)	(0.027)
College - offspring		0.16***	0.16***	0.14***
		(0.027)	(0.027)	(0.027)
Net worth - mother			0.00	0.00
			(0.004)	(0.004)
Net worth - offspring			0.00	0.01
			(0.005)	(0.006)
Control mother's age at birth and number of children	NO	NO	NO	YES
Observations	3,748	3,208	3,201	3,201
Adjusted R^2	0.03	0.10	0.10	0.11

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. This table reproduces the baseline regression with the exception that a categorical variable is used for ability that places mothers and offspring in their respective ability quartile. The baseline category is the first (lowest) quartile.

Table B.32: Robustness: Years of schooling (dummies) as education measure

Dependent variable: Employment - offspring (l_{Ci})

Specification	(1)	(2)	(3)	(4)
Employment - mother l_{Mi}	0.19***	0.11***	0.11***	0.11***
	(0.022)	(0.021)	(0.021)	(0.021)
Ability - mother		-0.02	-0.02	-0.02
		(0.022)	(0.023)	(0.023)
Ability - offspring		0.25***	0.25***	0.24***
		(0.045)	(0.045)	(0.045)
Net worth - mother			0.00	0.00
			(0.004)	(0.004)
Net worth - offspring			0.00	0.01
			(0.005)	(0.006)
Control mother's age at birth and number of children	NO	NO	NO	YES
Observations	3,748	3,208	3,201	3,201
Adjusted R^2	0.03	0.10	0.10	0.11

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. This table reproduces the baseline regression with the exception that a different categorical variable (years of schooling) for education is used. The coefficients on these categories are omitted for reasons of space but can be provided upon request.

Table B.33: Robustness: Intergenerational correlation of labor force participation

Specification	(1)	(2)	(3)	(4)
Labor force participation - Mother	0.18***	0.11***	0.11***	0.11***
	(0.022)	(0.021)	(0.021)	(0.021)
Ability Mother		-0.02	-0.02	-0.03
		(0.022)	(0.023)	(0.023)
Ability Child		0.24***	0.24***	0.23***
		(0.043)	(0.043)	(0.044)
Complete HS P		0.09***	0.09***	0.07***
		(0.027)	(0.027)	(0.027)
At least 1 yr. college P		0.08***	0.08***	0.07**
		(0.028)	(0.028)	(0.028)
Complete college P		0.05*	0.05*	0.05
		(0.030)	(0.030)	(0.030)
Complete HS C		0.06**	0.06**	0.04
		(0.028)	(0.028)	(0.028)
At least 1 yr. college C		0.12***	0.12***	0.11***
		(0.027)	(0.027)	(0.027)
Complete college C		0.15***	0.15***	0.13***
		(0.026)	(0.027)	(0.027)
Net worth Mother			0.00	0.00
			(0.004)	(0.004)
Net worth Child			0.00	0.01
			(0.005)	(0.006)
Control mother's age at birth and numb. of children	NO	NO	NO	YES
Observations	3,748	3,208	3,201	3,201
Adjusted R-squared	0.03	0.10	0.10	0.11

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. This table reproduces the baseline regression with the difference that the outcome variable is offspring's labor force participation (i.e. employment plus unemployment) and the dependent variable (maternal employment) is also replaced with maternal labor force participation.

Table B.34: Robustness: Intergenerational Correlation of Activity

Specification	(1)	(2)	(3)	(4)
Labor force participation or education - Mother	0.19***	0.08***	0.09***	0.09***
	(0.023)	(0.022)	(0.022)	(0.022)
Ability Mother		-0.01	-0.02	-0.02
		(0.023)	(0.024)	(0.023)
Ability Child		0.33***	0.33***	0.32***
		(0.045)	(0.045)	(0.046)
Complete HS P		0.09***	0.09***	0.08***
		(0.026)	(0.026)	(0.027)
At least 1 yr. college P		0.09***	0.09***	0.08***
		(0.028)	(0.028)	(0.029)
Complete college P		0.06**	0.05*	0.05
		(0.030)	(0.030)	(0.030)
Complete HS C		0.07**	0.07**	0.06**
		(0.027)	(0.027)	(0.027)
At least 1 yr. college C		0.16***	0.16***	0.15***
		(0.027)	(0.027)	(0.027)
Complete college C		0.21***	0.21***	0.19***
		(0.026)	(0.026)	(0.026)
Net worth Mother			0.01	0.01*
			(0.005)	(0.005)
Net worth Child			0.01	0.01*
			(0.006)	(0.007)
Control mother's age at birth and numb. of children	NO	NO	NO	YES
Observations	3,850	3,290	3,283	3,283
Adjusted R-squared	0.03	0.14	0.14	0.15

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. This table reproduces the baseline regression with the difference that the outcome variable is offspring's activity (i.e. employment plus unemployment plus college education) and the dependent variable is analogously defined for mothers.

Table B.35: Robustness: Excluding observations where individuals are in education

Specification	(1)	(2)	(3)	(4)
Employed - Mother	0.19***	0.10***	0.10***	0.10***
	(0.023)	(0.022)	(0.022)	(0.022)
Ability Mother		-0.02	-0.03	-0.04
		(0.023)	(0.024)	(0.024)
Ability Child		0.27***	0.26***	0.25***
		(0.046)	(0.046)	(0.047)
Complete HS P		0.09***	0.09***	0.07***
		(0.027)	(0.027)	(0.028)
At least 1 yr. college P		0.10***	0.09***	0.08***
		(0.028)	(0.028)	(0.029)
Complete college P		0.07**	0.07**	0.05
		(0.031)	(0.031)	(0.031)
Complete HS C		0.06**	0.06**	0.04
		(0.028)	(0.028)	(0.028)
At least 1 yr. college C		0.13***	0.13***	0.11***
		(0.028)	(0.028)	(0.028)
Complete college C		0.16***	0.16***	0.14***
		(0.027)	(0.027)	(0.027)
Net worth Mother			0.00	0.00
			(0.004)	(0.004)
Net worth Child			0.02***	0.01**
			(0.006)	(0.006)
Control mother's age at birth and numb. of children	NO	NO	NO	YES
Observations	3,579	3,058	3,051	3,051
Adjusted R-squared	0.03	0.11	0.11	0.13

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. This table reproduces the baseline regression with the difference that all observations where individuals are in college education are dropped.

Table B.36: Descriptive statistics for mothers' disutility of work by terciles

	min	max	mean	sd	Observations
Low disutility of work	-4.46	-3.66	-3.92	0.207	639
Medium disutility of work	-3.66	-3.27	-3.46	0.109	647
High disutility of work	-3.27	-1.22	-2.87	0.334	636
All observations	-4.46	-1.22	-3.42	0.490	1,922

Notes: Disutility of work computed from questions on women's roles: (i) Women's place is in the home, not in the office or shop, and (ii) Women are much happier if they stay at home and take care of the offspring; and from questions on expectations to work at age 35. For further details on the combined-female measure (FC) of disutility of work, see Appendix A.4.

Table B.37: Descriptive statistics for daughters' disutility of work by terciles

	min	max	mean	sd	Observations
Low disutility of work	-4.74	-4.02	-4.29	0.193	608
Medium disutility of work	-4.02	-3.57	-3.79	0.131	608
High disutility of work	-3.57	-1.42	-3.19	0.382	607
All observations	-4.74	-1.42	-3.76	0.519	1,823

Notes: Disutility of work computed from questions on women's roles: (i) Women's place is in the home, not in the office or shop, and (ii) Women are much happier if they stay at home and take care of the offspring; and from questions on expectations to work at age 35. For further details on the combined-female measure (FC) of disutility of work, see Appendix A.4.

Table B.38: Employment (proportion of periods employed) of mothers and offspring by terciles of disutility of work

	Employment		
	Mothers	Daughters	Sons
Mothers' disutility of work			
1st Tercile	0.83	0.85	0.89
2nd Tercile	0.77	0.84	0.89
3rd Tercile	0.66	0.78	0.87
Daughters' disutility of work			
1st Tercile	0.77	0.89	
2nd Tercile	0.74	0.83	
3rd Tercile	0.68	0.74	

Notes: Employment of mothers and offspring correspond to the averages across years and individuals. Female-combined (FC) measure of disutility of work for mothers and daughters, gender-neutral (GN) measure of disutility of work for sons. For further details see Appendix A.4.

Table B.39: Direct preference transmission vs. role model: Measures of work preferences

Dependent variable: Employment - offspring (l_{Ci})

Specification	Entire sample			Only daughters	
	Baseline	Maternal preferences (disutility of work)	Full Model	Full Model	Full Model + daughter's gender roles
Employment - mother	0.11*** (0.022)		0.12*** (0.022)	0.17*** (0.032)	0.16*** (0.032)
Disutility of work - mother		0.01 (0.017)	0.01 (0.017)	0.01 (0.025)	0.01 (0.025)
Traditional gender roles - mother		0.01 (0.015)	0.02 (0.015)	0.00 (0.023)	0.01 (0.015)
Traditional gender roles - daughter					-0.04** (0.016)
Controls	YES	YES	YES	YES	YES
Observations	3,201	3,201	3,201	1,605	1,586
Adjusted R^2	0.11	0.10	0.12	0.17	0.18

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Combined-female measure (FC) for maternal disutility of work.

Table B.40: Direct preference transmission vs. role model: Periods of cohabitation during different child ages

Dependent variable: Employment - offspring (l_{Ci})

Specification	Baseline	0-5	6-11	12-18	Non-Cohab.	Full
Employment Mother (EM)	0.10*** (0.023)					
EM cohab. when child age 0-5		0.05*** (0.015)				0.02 (0.018)
EM cohab. when child age 6-11			0.06*** (0.017)			0.02 (0.022)
EM cohab. when child age 12-18				0.08*** (0.018)		0.06*** (0.022)
EM all other periods					0.04** (0.020)	0.01 (0.021)
Observations	2,431	2,431	2,431	2,431	2,431	2,431
Adjusted R-squared	0.12	0.11	0.12	0.12	0.11	0.12

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. In all columns, we use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Periods of non-cohabitation are specific for each mother-offspring pair. Only pairs with both periods of cohabitation and non-cohabitation are included.

Table B.41: Direct preference transmission vs. role model: Variation across siblings

Dependent variable: Employment - offspring (l_{Ci})

Specification	Cohabitation
Employment mother: cohabitation	0.09
	(0.133)
Employment mother: non-cohabitation	0.07
	(0.046)
Observations	2,039
Number of Mothers	845
Adjusted R-squared	0.04

Notes: Standard errors clustered at the mother level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Mother fixed effect regression. We use the same covariates for children as in the baseline specification. Only mother-offspring pairs with at least two siblings and both periods of cohabitation and non-cohabitation are included.

Table B.42: Employment by age: descriptive statistics

Age	Mothers			Sons			Daughters		
	Avg.	Std. Err.	Obs.	Avg.	Std. Err.	Obs.	Avg.	Std. Err.	Obs.
25	0.74	0.01	1762	0.89	0.01	835	0.82	0.01	796
26	0.74	0.01	1761	0.88	0.01	744	0.85	0.01	776
27	0.74	0.01	1781	0.90	0.01	761	0.81	0.01	732
28	0.74	0.01	1777	0.86	0.01	637	0.83	0.01	680
29	0.73	0.01	1799	0.90	0.01	668	0.81	0.02	669
30	0.73	0.01	1752	0.89	0.01	559	0.82	0.02	587
31	0.73	0.01	1701	0.87	0.04	69	0.75	0.05	72
32	0.73	0.01	1550	0.71	0.08	31	0.77	0.07	35
33	0.73	0.01	1467	0.88	0.02	425	0.75	0.02	411
34	0.76	0.01	1244	0.87	0.02	337	0.79	0.02	367
35	0.77	0.01	1180	0.71	0.18	7	0.50	0.29	4
36	0.77	0.01	1012	0.67	0.33	3	–	–	0
37	0.78	0.01	924	0.90	0.02	218	0.78	0.03	208
38	0.79	0.01	892	0.83	0.03	154	0.78	0.03	162
39	0.80	0.01	896	–	–	0	–	–	0
40	0.79	0.01	884	–	–	0	–	–	0
41	0.81	0.01	880	0.84	0.05	62	0.81	0.05	67
42	0.78	0.01	888	0.76	0.09	25	0.65	0.08	34
43	0.81	0.01	935	–	–	0	–	–	0
44	0.80	0.01	888	–	–	0	–	–	0
45	0.80	0.01	904	0.67	0.21	6	1.00	–	2

B.2 Additional Figures

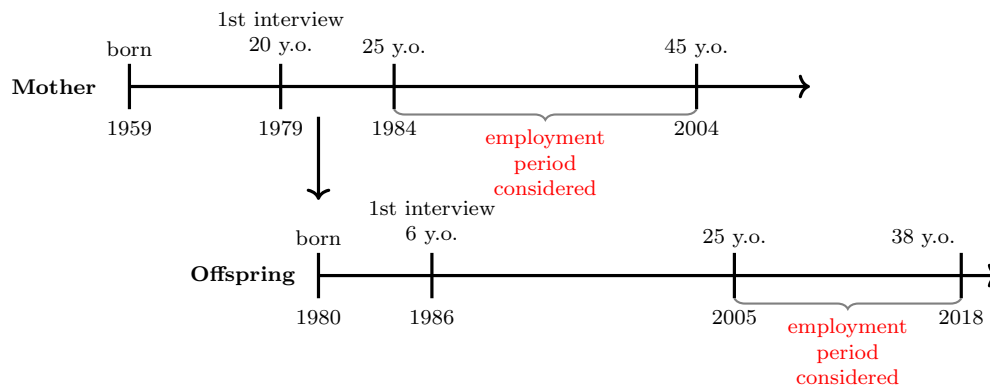Figure B.1: Visual example of a mother-offspring pair

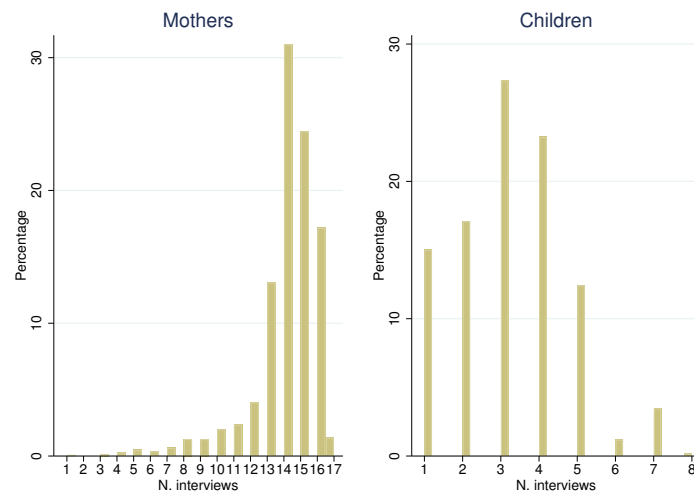Figure B.2: Number of interviews of mothers (left) and offspring (right)

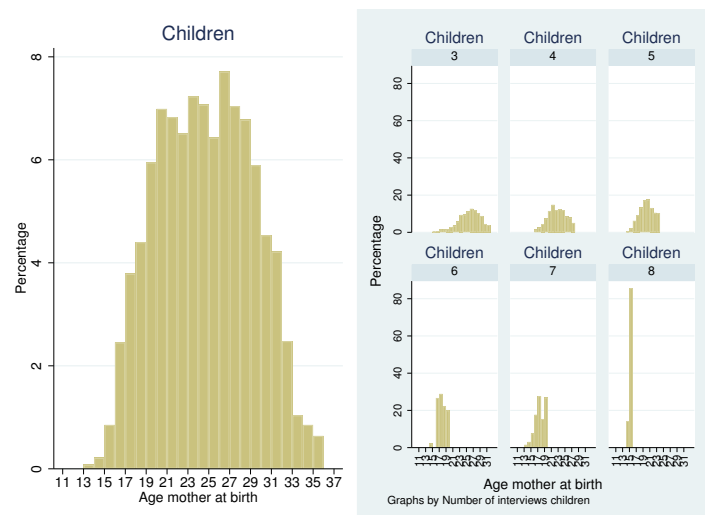Figure B.3: Age of mothers at birth of offspring

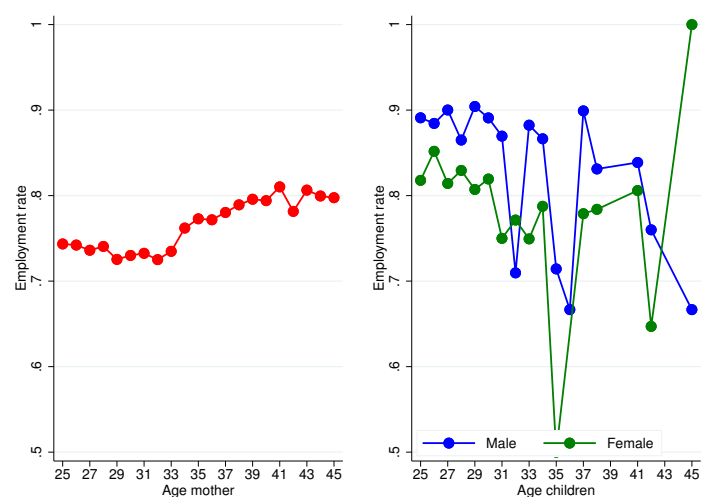Figure B.4: Employment-age profiles of mothers (left) and offspring (right)

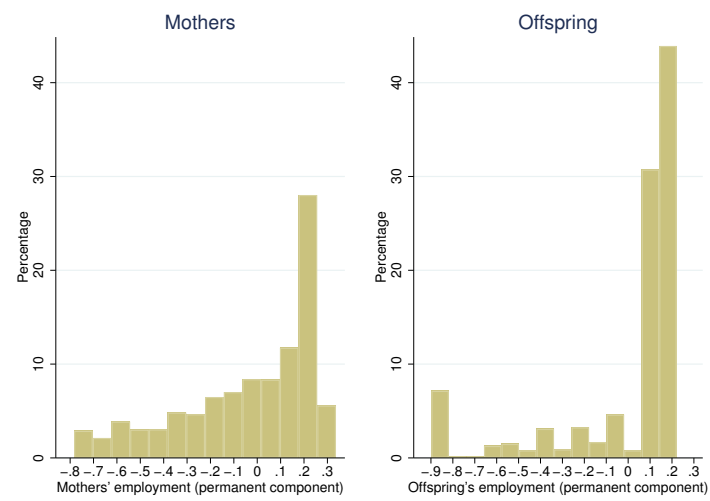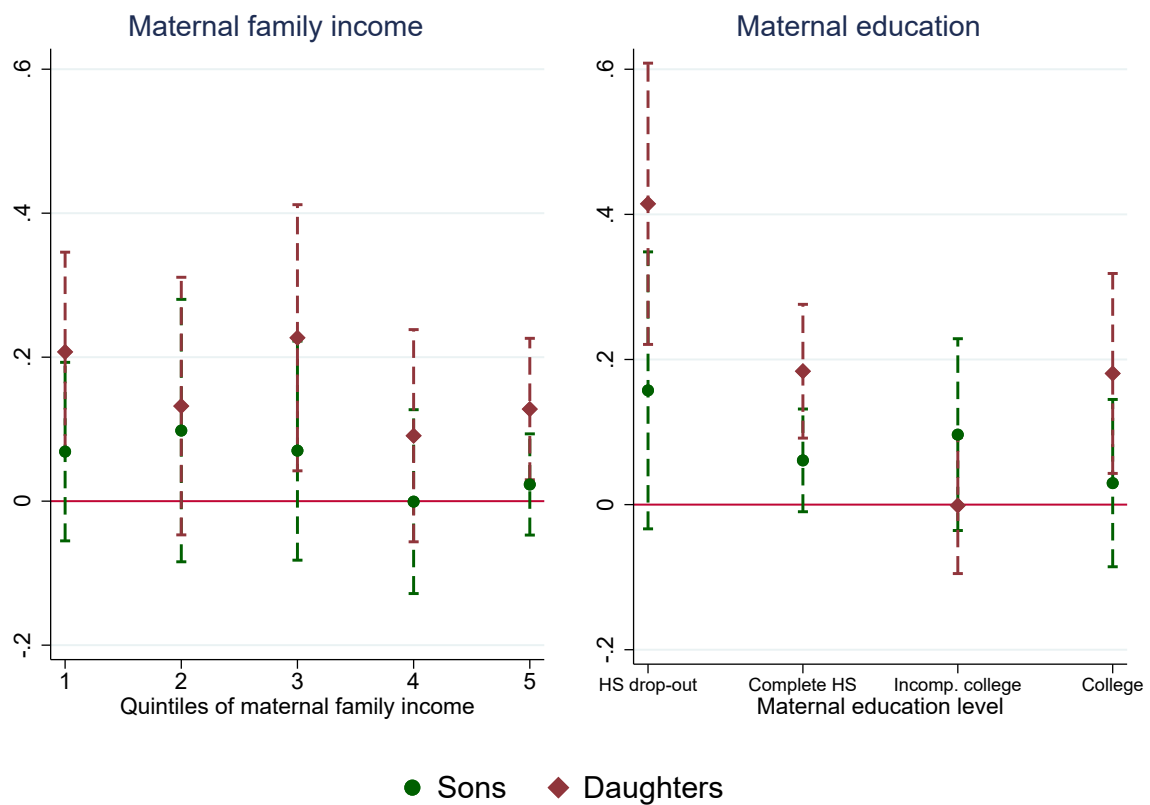Figure B.5: Permanent component of employment of mothers (left) and offspring (right)

Figure B.6: Intergenerational correlation of employment status by maternal family income (left) and maternal education (right) for sons and daughters
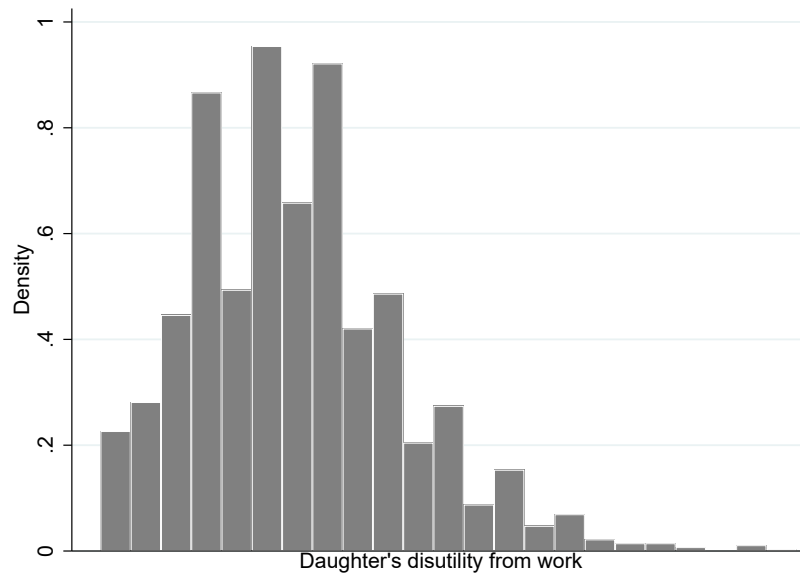

Notes: Standard errors clustered at mother level calculated using the delta method. 95% confidence level intervals. The dependent variable is the permanent component of the employment status of the offspring. We use the same covariates as in the baseline specification: ability, education dummies (high-school, some college, college), net worth, dummies for mothers' and offspring's number of children, and mother's age at birth. Quintiles of maternal family income correspond to the quintile observed in the majority of the survey years. The maternal education is the maximum attained and observed education level.

Figure B.7: Distribution of maternal disutility of work
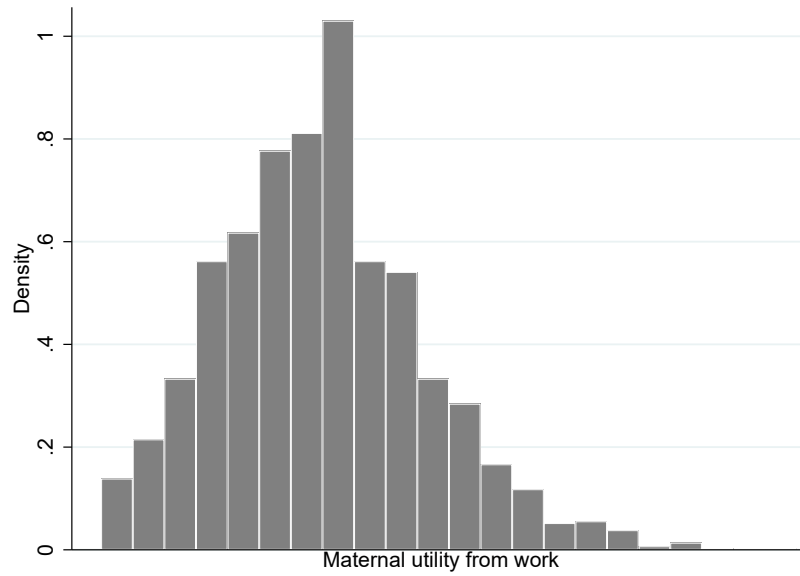
Notes: Disutility of work computed from questions on women's roles: (i) Women's place is in the home, not in the office or shop, and (ii) Women are much happier if they stay at home and take care of the offspring; and from questions on expectations to work at age 35. For further details on the measure of disutility of work, see Appendix A.4. We plot the distribution of the individual averages (over questions and years).

Figure B.8: Distribution of daughters' disutility of work

Notes: Disutility of work computed from questions on women's roles: (i) Women's place is in the home, not in the office or shop, and (ii) Women are much happier if they stay at home and take care of the offspring; and from questions on expectations to work at age 35. For further details on the measure of disutility of work, see Appendix A.4. We plot the distribution of the individual averages (over questions and years).