

# Mothers, Peers and Gender-Role Identity

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## Abstract

We study whether a woman's labor supply as a young adult is shaped by the work behavior of her adolescent peers' mothers. Using detailed information on a sample of U.S. teenagers who are followed over time, we find that labor force participation of high school peers' mothers affects adult women's labor force participation, above and beyond the effect of their own mothers. The analysis suggests that women who were exposed to a larger number of working mothers during adolescence are less likely to feel that work interferes with family responsibilities. This perception, in turn, is important for whether they work when they have children.

Key words : Role models, identity, female labor supply, peer effects, work-family conflict.

JEL Classification: J22, Z13.

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identify is a contextual effect, that is, the impact of one specific characteristic of high school

effect is sizable but smaller than the correlation between the labor force participation of a woman and that of her own mother (i.e. 11 percent). This is consistent with findings of large contextual effects from the literature on developmental psychology and economics. For example, Gustafson, Stattin and Magnusson (1992) show that young female adolescents with low educational motivation are more susceptible to the influence of "nonconventional peers" (that is, the broader social environment including older peers, co-workers and a steady boyfriend) than to family inputs. Carrell and Hoekstra (2010) show that negative spillovers in the classroom caused by children who witnessed domestic violence at home have a large detrimental effect on students' academic outcomes and behaviors. When it comes to women's work, the cross-country analysis in McGinn et al. (2018) shows that childhood exposure to female employment within society is also important and can substitute for the influence of maternal employment on daughters' employment.

We provide evidence that the transmission mechanism of gender norms is driven by same-sex parents by showing that the effect of mothers persists when controlling for fathers' behavior. In addition, peers' fathers' working behavior has a (marginal) effect on children's employment outcomes for men, but there is no effect for women. While peer-mothers' labor supply only affects women's work decisions, especially if they have any children, the effect of peers' mothers education is not gendered. Our estimates indicate a positive and roughly equal effect of share of college educated mothers on later work choices of both daughters and sons. We also show suggestive evidence that the mechanism underlying our findings works through perceived conflict between motherhood and employment when these young women become mothers. That is, women that were exposed to a larger number of working mothers during adolescence are less likely to feel that work interferes with family responsibilities and, as a consequence, more likely to work when they have children.

Our study contributes to two different literatures. The first is the large body of work that studies the role of gender norms in shaping female labor force participation. Ferrandez, Fogli and Olivetti (2004) emphasize changes in men's attitudes towards married women working due to the increasing number of men socialized by working mothers. Other papers have emphasized the influence of own mother and the social context for changing women's beliefs about the effect of maternal employment on children (Fogli and Veldkamp, 2011), as well as changes in women's own sense of self (Ferrandez, 2013). Boustan and Collins (2014) show that the mother-daughter mechanism coupled with the racial gap in women's labor force participation under slavery contribute to explain racial differences in women's work well into the twentieth century. Farie and Vella (2013) and McGinn et al. (2018) document a high correlation between gender roles attitudes and work experience of mothers and daughters,

respectively, in the U.S. and across countries.

outcomes. Black, Devereux and Salvanes (2013) study the effects of 9th grade peer composition on dropouts, educational attainment, teenage childbearing, and earnings. Finally, Carrell, Hoekstra and Kuka (2016) study the impact of primary school peers with disruptive behaviors on non-disruptive students' short run and long run educational and labor market outcomes. AddHealth data have also been used to examine the influence on women's labor market outcomes of sibling gender (Cools and Patacchini, 2017) and the share of highly performing male peers in school (Cools and Patacchini, 2018). We contribute to this literature by analyzing the long run influence of peers' mothers labor supply choices on adult women's perceptions of the work-family balance trade-off and work choice<sup>4</sup>.

The paper is organized as follows. Section 2 describes the data. Section 3 discusses our empirical strategy, while the main results of our analysis are presented in Section 4. The underlying mechanisms are analyzed in Section 5. Finally, Section 6 concludes.

## 2 Data description

Our analysis is based on data from the National Longitudinal Survey of Adolescent Health (AddHealth).<sup>5</sup> AddHealth was designed to study the impact of the social environment (i.e. friends, family, neighborhood and school) on adolescents' behavior in the United States by collecting data on students in grades 7-12 from a nationally representative sample of roughly 130 private and public schools in the academic year 1994-95 (Wave I). The data include an in-school survey conducted on a single day between September 1994 and April 1995 and a subsequent in-home survey of a sample of students selected from the 1994-95 enrollment roster of the schools surveyed. The subset of adolescents from the Wave I in-home survey was interviewed again in 1995-96 (Wave II), in 2001-2 (Wave III), and again in 2007-08 (Wave IV). While cross sectional analysis of these data are widespread both in the sociological and economics literatures, the longitudinal information has not been heavily exploited. The

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<sup>4</sup>Our findings also speaks to the literature that uses a neighborhood approach to identify the importance of early socialization for economic outcomes (Katz et al., 2001; Kling et al., 2005; Oreopolous, 2003; Patacchini and Zenou, 2011; Fryer and Katz, 2013; Ludwig et al., 2013; Damm, 2014; Damm and Dustmann, 2014; Gibbons, Silva, and Weinhardt, 2017; Katz, 2015). The innovation relative to this literature is that we measure neighborhood influences more precisely using high school schoolmates' mothers.

<sup>5</sup>The AddHealth is a program project directed by Kathleen Mullan Harris and designed by J. Richard



In addition, following Bifulco et al. (2011), we drop 1,882 students who, as of Wave I, were not in grades 9-12 (grades 10-12 for three-year high schools). We also drop 211 students who have fewer than 28 schoolmates in their grade.<sup>7</sup> Our final sample of Wave I students with non-missing information on the main target variables and basic demographic characteristics both in Wave I and in Wave IV consists of about 2,500 female students and 2,000 male students in 72 schools. As shown in Table A3 in the appendix, the composition of our sample is roughly unaffected by the selection process.

Table 1 provides descriptive statistics by gender for the samples used in our baseline regressions. Female students make up 56 percent of our final sample, 72 percent of them are white and around 4 percent of them lived in a very poorly kept residential building while attending high school. As for their mothers, 60 percent have a high school diploma, while 26 percent have at least a college degree. Approximately 91 percent of the mothers are U.S. born. In Wave I, approximately 82 percent of students in our female sample report that their mother works for pay. By age 26 to 32 (Wave IV), 48 percent of our wave I schoolgirls are married, 60 percent of them have children. Only 3 percent of them are high-school drop outs, while 40 percent have a college degree or a higher level of educational attainment. About 76 percent of adult women in our sample work for pay for more than 10 hours per week. Perhaps not surprisingly, labor supply around age 30 varies substantially by presence of children. The share of women working for pay in Wave IV drops to 69 percent in the sub-sample of women with children, while it reaches 86 percent in the sub-sample of women with no children.

The two samples (male and female) exhibit gender differentials of the expected sign and significance. For example, 87 percent of respondents in our male sample work for pay. In contrast to what we observe for women, men with children are more likely to work for pay (92 percent) than men without children (85 percent). Men aged 26 to 32 are less likely to be married and have children than women in the same age group; this is in line with statistics for the overall population. Consistent with patterns documented for this cohort (see Goldin and Katz, 2008), women are more likely than men to have obtained a college degree by Wave IV. There is also a small gender difference in the racial composition by gender: 75 percent of men are white, 3 percentage points more than women. The characteristics of the female and male sample are otherwise similar.

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<sup>7</sup>This corresponds to the 5th percentile of the grade-size distribution in this sample, which ranges from a minimum of 7 students to a maximum of 517 students. The median grade has 205 students.



### 3 Empirical model and identification strategy

The AddHealth data include students from multiple cohorts. They are thus ideal for exploiting cross-cohort variation within a school to estimate the effect of schoolmates' mothers' work behavior and other characteristics (i.e. education) on women's working decisions 10 to 12 years later.<sup>8</sup> Our empirical model can be written as:

$$e_{igs;t+1} = \alpha_g + \alpha_s + \alpha_{sg} + e_{igs;t}^m + A e_{igs;t}^m + \sum_{k=1}^K \alpha_k x_{igs;t+1}^k + \epsilon_{igs;t+1} \quad (1)$$

where  $i$  denotes student,  $g$  denotes grades or cohorts,  $s$  denotes schools, and  $t$  denotes time. Thus,  $e_{igs;t+1}$  is the employment status as an adult (i.e. at time  $t + 1$ ) of a woman  $i$  who was in schools and grade  $g$  at time  $t$ . Specifically, it is a dummy variable taking value 1 if, as of

and residential decisions. Indeed, when parents choose the school for their children, they are



## 4 Main Results

Table 4 reports the estimation results of model (1). Except for the first column, all specifications include grade and school fixed effects. Standard errors are clustered at the school level.

The first two columns report the results of the regression that includes the two main variables of interest: a dummy for whether a woman's mother worked when she was a teenager (i.e. in Wave I) and the share of high school peers with working mothers (again from Wave I), our main contextual variable. Column (1) reports the results without any of the fixed effects, while grade and school fixed effects are added to the specification in column (2). Consistent with the literature, we find a positive association between a daughter's and a mother's likelihood of working for pay. Most importantly, we also find a positive relationship between the share of peers with working mothers and the probability of working as an adult. Both coefficients are statistically significant.

The size of the estimated coefficients and their significance do not vary substantially as we progressively add controls. Specifically, column (3) controls for daughter's characteristics, including race, marital status and presence of children at the time she makes work decisions, a measure of ability (PVT score) and educational attainment measured by whether she has a four-year college, or higher, degree. Column (4) adds controls for family background variables. These include the quality of the building where the student's family lived when she was in high school (a measure of socioeconomic background), and two additional own-mother characteristics: whether she was born in the US and whether she has a college (or

their GSS sample.

The marginal effect of the social context is roughly constant when varying the control set (ranging from 0.8 of a percentage point to 1 percentage point), confirming that our cohort composition measure is unrelated to other background variables. The magnitude of the effect is sizable. The estimate in columns (4) and (5) imply that a 7 percentage point increase in peers with working mothers (corresponding to one standard deviation, see Table 1) is associated with a 5.6 to 7 percentage point increase in the probability of working for pay at age 26-32, which is 7 to 9 percent of the average participation rate for women in our sample. This estimate is in the same ballpark of estimates of the importance of gender-role preferences for women's labor force participation from the literature. For example, Fernandez and Fogli (2009) find that for second-generation women in the United States, a one standard deviation increase in female labor force participation in the parents' source country is associated with an 8 percent increase in daughters' labor supply as measured by hours worked (a measure that includes both the intensive and the extensive margin of labor supply). It is also consistent with other estimates of 'lagged' peer effects using the same data set and empirical strategy but different outcomes. For example, Bifulco et al. (2011) find that one standard deviation increase in peers with college educated mothers increases the probability of attending college by 7.6 percentage points, which is about 8 percent relative to the baseline.<sup>1</sup>

The estimates of the control variables follow standard patterns from the literature on female labor supply. For instance, as shown in columns (3) to (5), a woman's work probability is lower for married women and for women with children, while women with a four-year college degree or higher level of educational attainment are more likely to work. As shown in columns (4) and (5), having a lower socioeconomic background is associated with a higher probability of working as a young adult. Note, however, that having a college educated

specification of the model to assess distributional effects for the main contextual variable. For example, the social context during high school years may be particularly important if a female student is exposed to an environment where the vast majority of mothers work, while it might not matter much if it is representative of the average behavior in the economy.

The results of these analyses are summarized in Table 5. All specifications include grade and school fixed effects and school-specific trends. Column (1) reports the results from Table 4, column (5), as a benchmark, while in column (2) we add two additional mother-specific contextual variables: the share of peers with US born mothers and the share of peers with college educated mother. The model in column (2) will become our baseline specification throughout the second part of the paper<sup>12</sup>. Consistent with previous studies (e.g. Bifulco et al. 2011) we find that having more peers with college educated mothers has a beneficial significant effect on long run outcomes. However, our main contextual effect remains positive and statistically significant: A one percent increase in peers with working mother increases the probability a woman works for pay later in life by 0.8 of a percentage point. That is the importance of peers' mother work hours does not decrease much relative to the estimate in column (1). This is an important finding as it suggests that peers' mother work affects adult daughters' work decisions above and beyond the contextual effect of mothers' education on the assimilation of gender-role identity norms. We will return to this point when we discuss the results of Table 7.

In the remaining columns we consider specifications in which the share of peers with working mothers enters non-linearly. We consider three alternatives. In column (3) we add an interaction term that captures whether the effect of peers' mothers differs by own mother's labor supply. As shown in the table this interaction term is small (and not statistically significant). In column (4) we add the within-grade standard deviation of the share of peers' working mothers. Adding this term captures whether the impact of peers' mothers depends on grade/cohort heterogeneity in mothers' labor force participation. This channel does not seem to be supported by the data. Finally, in column (5) we include dummies corresponding to quartiles of the distribution of peers' working mothers. The omitted category is whether this share is in the bottom quartile of the distribution. We don't find statistical difference at the second and third quartile of the distribution of peers' with working mothers. The only statistically significant effect (at the margin) is when we compare women in the top quartile to those in the bottom quartile of the distribution.<sup>13</sup> Overall, the results in columns (3) to

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<sup>12</sup>The results in column (2) of Table 5 are unchanged if instead of the share of peers with college educated mothers, we include the top three quartiles of the leave-one-out distribution of peers' mothers education (roughly corresponding to high school dropout, high school graduate or GED recipient and college graduate).

<sup>13</sup>The bottom 25th percentile of the distribution for the share of peers' working mothers is 79.27 percent,

(5) do not provide support for a strong non-linear impact of the contextual effect.

#### 4.1 Additional Evidence







analysis of post-secondary students). Based on these findings, we would expect the intergenerational mechanism to be stronger in the presence of better mother-daughter relationships in adolescence. We would also expect our contextual gender-role identity mechanisms to be stronger if students had high-intensity social interactions with peers' mothers.

AddHealth includes questions about the *quality* of child-mother relationship (as reported by the student), as well as questions about the *quantity* of social interactions with their peers' parents (as reported by the parents in the in-home survey) which we use to explore some of these mechanisms. However, because of the data limitation, we cannot assess whether, within each of these mechanisms, it is quality or quantity of contact that matters.

For the quality of mother-child interactions, each in-home interviewee in Wave I was asked to indicate whether her or his mother cared about her or him. Possible answers were: not at all, very little, somewhat, quite a bit or very much. They were also asked to indicate the extent of their agreement (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree) with the statement "When you do something wrong that is important, your mother talks about it with you and helps you understand why it is wrong." We use standard factor analysis based on these two questions to obtain a summary indicator of the quality of mother-daughter relationships (mother care)<sup>7</sup>. We then run our main specification on two different samples defined by whether the quality of mother-daughter interactions is below or above the median of the mother care indicator.

Our indicator of social closeness with peers' mothers is based on a question that asked

the overall sample. The estimate in column (1) implies that a one percentage point increase in peers with working mothers would increase the labor force participation of women with low quality relationships with their own mothers by about 10 percentage points. This is twice as large as the effect found in the overall sample. It seems plausible that a daughter whose mother is not caring might be more likely to follow alternative role models: their high school peers' mothers in our analysis. Conversely, in the high mother care sample [column (2)], the probability that a woman with a working mother works for pay is 13 percentage points higher than that of a woman whose mother was not in the labor market. This is a larger effect than that in our benchmark specification (by about 5 percentage points). Peers' mothers' work behavior does not seem to affect women who had a high-quality relationship with their own mothers.

Columns (3) and (4) display the estimates of the peers' mothers effect as a function of the social connectedness of the family of origin with peers' families in high school. The contextual impact of mother figures is not statistically significant for the sample of women with below median social closeness to high school peers [column (3)]. For this group, the correlation with own-mother's labor supply is very high. On the other hand, the strength of the contextual mechanism is larger than in the benchmark for the sample of women with above median social ties to the high school community [column (4)]. The coefficient on own mother is much smaller and not statistically significant in this sample.

The results in Table 9 provide additional suggestive evidence that mothers observed during adolescence are important role models, with the important qualification that we are looking at a quality effect for mother-daughter relationships and a quantity effect for peers' mothers.

There might, of course, be reasons other than gender norms that can rationalize these results. For example, an adult woman may derive positive utility directly via interactions with her own mother. The fact that an adult woman's work depends on whether her mother worked can thus be a sign of a continued shared experience. This mechanism, however, could be at play in the mother-daughter relationship but it would not be as plausible or common when it comes to high school peers' mothers, a group with whom an individual is unlikely to have much contact after high school.

## 5.2 Motherhood and employment

The gender-role formation mechanism that we emphasize is about perception of a conflict



For example, the questionnaire in Wave I asked the following question "On a scale from 'No chance' to 'It will happen' what do you think are the chances you will be married by age 25?" (answers range from no chance to almost certain). In Wave IV respondents were asked a question about desired fertility and two questions about potential conflicts between family and work responsibilities. The first question asked for the "total number of children that the respondent intends to have (including any children she may already have)." The first of the two work-family questions asked the respondent to "Indicate how much you would agree or disagree with this statement: Family responsibilities have interfered with my ability to work," (answers range from strongly agree to strongly disagree). The second question asked "(In the past 12 months/Since you started your current job/In the last year of your most recent job), how often on your primary job (have you spent/have you spent/did you spend) less time with your family than you wanted to because of work responsibilities?" (answers range from frequently, to never). We use these two indicators in a standard factor analysis to produce an index of work-family conflict.<sup>19</sup>

In Table 10, we first examine whether the answers to these questions differ by exposure to peers' mothers. As shown in column (1), whether mother (own or peers' mothers) worked is not correlated with expectation of marriage by age 25. This might be influenced by the standards in the society at large or by observing the decisions of women who were around age 25 at the time girls were interviewed in Wave I. The contextual effect of high school peers' mothers also appears to have no impact on intended fertility [column (2)]. The next three columns report results for the index of work-family conflict. There is no effect of peers' mothers' work when we run the regression on the overall sample [column (3)]. However, the type of conflict captured by this index is really about having a family (i.e. children), thus in columns (4) and (5) we run the regressions on two different samples by presence of children. We find a very strong effect of peers' mothers' behavior on whether women with children in Wave IV perceive a work family conflict. Women who are socialized in a context in which a large number of mothers work are less likely to perceive or report that they are conflicted about spending time at home versus at work.<sup>20</sup>

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<sup>19</sup>See appendix Table A2 for details on the construction of this indicator. Note that, the work-family questions were asked to all women, irrespective of their work status. The first question asks generally about work-family interferences. The second asks about the current job or, for individuals not currently working, the most recent job.

<sup>20</sup>Recently, Kuziemko, Pan, Shen and Washington (2018) show that for recent cohorts of women, especially the college educated, reconciling work and motherhood is harder than they expected as adolescents. Their analysis suggests that, at least in part, this is because young women underestimate the true cost of being mothers. One possible interpretation of the results in column (5) suggests that having been exposed to more working mothers might attenuate this 'surprise' effect.





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## 7 Tables and Figures

Table 1: Sample Description

	Females		Males		<i>p-value</i>
	Mean	Std. dev.	Mean	Std. dev.	
Work for pay	0.755	0.430	0.873	0.334	0.000
Work for pay conditional on:					
Children	0.685	0.465	0.920	0.271	0.000
No children	0.863	0.344	0.848	0.360	0.557
Own mother worked	0.819	0.385	0.848	0.359	0.326
% peers with working mother	0.819	0.072	0.820	0.071	0.458
Share white	0.721	0.449	0.750	0.433	0.008
Share married	0.478	0.500	0.422	0.494	0.000
Share with children	0.604	0.489	0.343	0.475	0.000
Share with less than High School	0.032	0.175	0.050	0.218	0.001
Share with High School or some College	0.571	0.495	0.582	0.493	0.003
Share with College or more	0.397	0.489	0.368	0.482	0.000
Mother with:					
Less than High School	0.141	0.348	0.117	0.321	0.008
High School/ some College	0.601	0.490	0.570	0.495	0.596
College or more	0.258	0.438	0.313	0.464	0.011
US born mother	0.906	0.292	0.893	0.309	0.015
Share living in very poorly kept residential building	0.038	0.191	0.036	0.186	0.295
PVT test score	103.242	13.153	106.067	12.680	0.000
Student share in:					
Grade 9	0.285	0.452	0.277	0.448	0.102
Grade 10	0.276	0.447	0.245	0.430	0.715
Grade 11	0.238	0.426	0.245	0.430	0.316
Grade 12	0.201	0.401	0.233	0.423	0.782
N. Obs.	2,781		2,197		
N. Schools	72		72		

**Notes** : The table reports descriptive statistics by gender for the main variables used in the analysis (see Appendix Table A2 for the detailed definition of each variable). The last column reports *p*-values for T-tests on the gender differences between means. The sample includes students in grades 9 through 12 with at least 28 peers. Individuals with missing information on any of the variables reported in the table are excluded.

**Source** : National Longitudinal Survey of Adolescent Health (AddHealth), Harris et al. (2009).

Table 2: Raw and residual variation in peers with working mother or father

Panel A: % peers with working mothers	Mean	Std.dev.	Min	Max	Obs
Females					
Raw cohort variable	0.819	0.072	0.509	0.974	2,781
Residuals: net of grade and school fixed effects	-0.000	0.026	-0.123	0.094	2,781
Residuals: net of grade and school fixed effects and school trends	-0.000	0.021	-0.116	0.133	2,781
Males					
Raw cohort variable	0.820	0.071	0.509	0.974	2,197
Residuals: net of grade and school fixed effects	-0.000	0.027	-0.130	0.096	2,197
Residuals: net of grade and school fixed effects and school trends	-0.000	0.022	-0.128	0.077	2,197
Panel B: % peers with working fathers					
Females					
Raw cohort variable	0.953	0.039	0.713	1.000	2,174
Residuals: net of grade and school fixed effects	0.000	0.017	-0.068	0.195	2,174
Residuals: net of grade and school fixed effects and school trends	0.000	0.013	-0.152	0.247	2,174
Males					
Raw cohort variable	0.955	0.035	0.713	1.000	1,931
Residuals: net of grade and school fixed effects	0.000	0.018	-0.158	0.073	1,931
Residuals: net of grade and school fixed effects and school trends	0.000	0.015	-0.176	0.171	1,931

Notes : The table reports descriptive statistics for % peers with working mothers and % peers with working fathers, before and after removing grade and school fixed effects and school trends. The sample in Panel A is defined in the notes to Table 1. The sample in Panel B includes students in grades 9 to 12 with at least 28 peers and with non-missing information on own father and peer fathers' employment status (Wave I), as well as own employment status (Wave IV).

Source : National Longitudinal Survey of Adolescent Health (AddHealth), Harris et al. (2009).



Table 3: Balancing tests for cohort composition

Dependent variable	% peers with working mothers		
	(1)	(2)	(3)
PVT	0.016 (0.113)	-0.081 (0.099)	-0.069 (0.107)
Parents born in the US	0.005 (0.003)	-0.001 (0.002)	0.000 (0.002)
Single parent family	0.002 (0.002)	0.006* (0.004)	0.005 (0.005)
White	-0.004 (0.005)	-0.001 (0.003)	0.000 (0.004)
Black	0.007** (0.003)	0.001 (0.003)	0.001 (0.003)
Parent education = 6596lege+ -1e081	-16001 (04005)	(0.003)	(0.004)

Table 4: Effects of peers with working mothers - females

	Dependent variable: Work for pay				
	(1)	(2)	(3)	(4)	(5)
Own mother worked	0.111*** (0.036)	0.092** (0.036)	0.076** (0.034)	0.081** (0.033)	0.081** (0.033)
% peers with working mother	0.006*** (0.002)	0.007* (0.004)	0.008** (0.003)	0.008** (0.003)	0.010** (0.004)
White			-0.021 (0.031)	-0.027 (0.032)	-0.030 (0.035)
Married			-0.067** (0.030)	-0.064** (0.030)	-0.066** (0.031)
Children			-0.125*** (0.029)	-0.126*** (0.028)	-0.126*** (0.029)
PVT			0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Education = College+			0.094*** (0.025)	0.104*** (0.024)	0.099*** (0.025)
Very poorly kept residential building				0.121** (0.046)	0.113** (0.048)
Mother born in the US				0.057 (0.038)	0.060 (0.040)
Mother education = College+				-0.025 (0.025)	-0.022 (0.027)
Grade xed effects	No	Yes	Yes	Yes	Yes
School xed effects	No	Yes	Yes	Yes	Yes
School trends	No	No	No	No	Yes
N. Obs.	2,781	2,781	2,781	2,781	2,781
R-squared	0.024	0.087	0.134	0.138	0.163

*Notes:* Regressions in columns (2) to (4) include grade xed effects and school xed effects. In addition, column (5) includes school linear time trends. The sample is defined in the notes to Table 1. Standard errors (in parentheses) are clustered at the school level. Significance levels are: \* 10%, \*\* 5%, \*\*\* 1%.

*Source:* National Longitudinal Survey of Adolescent Health (AddHealth), Harris et al. (2009).

Table 5: Effects of peers with working mothers - robustness checks

	Dependent variable: Work for pay				
	(1)	(2)	(3)	(4)	(5)
Own mother worked	0.081** (0.033)	0.081** (0.034)	0.230 (0.286)	0.081** (0.035)	0.081** (0.035)
% peers with working mother	0.010** (0.004)	0.008** (0.004)	0.010** (0.005)	0.008* (0.005)	
Own mother worked % peers with working mother			-0.002 (0.004)		
Standard deviation of % peers with working mother				-1.652 (35.351)	
% peers with working mother2 (25th pctile, 50th pctile)					0.037 (0.043)
% peers with working mother2 (50th pctile, 75th pctile)					0.061 (0.048)
% peers with working mother > 75th pctile					0.119* (0.064)
White	-0.030 (0.035)	-0.039 (0.034)	-0.038 (0.034)	-0.039 (0.034)	-0.038 (0.034)
Married	-0.066** (0.031)	-0.068** (0.033)	-0.068** (0.033)	-0.068** (0.033)	-0.067** (0.033)
Children	-0.126*** (0.029)	-0.130*** (0.026)	-0.130*** (0.026)	-0.130*** (0.026)	-0.130*** (0.027)
PVT	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Education = College+	0.099*** (0.025)	0.096*** (0.026)	0.096*** (0.026)	0.096*** (0.026)	0.097*** (0.026)
Very poorly kept residential building	0.113** (0.048)	0.096* (0.049)	0.096* (0.049)	0.096* (0.050)	0.096* (0.049)
Mother born in the US	0.060 (0.040)	0.070* (0.041)	0.070* (0.041)	0.070* (0.041)	0.069* (0.041)
Mother education = College+	-0.022 (0.027)	-0.026 (0.027)	-0.025 (0.028)	-0.026 (0.027)	-0.027 (0.027)
% peers with mother born in the US		-0.001 (0.006)	-0.001 (0.006)	-0.001 (0.006)	-0.001 (0.006)
% peers with mother educ = College+		0.006** (0.003)	0.006** (0.003)	0.006** (0.003)	0.006** (0.003)
Grade xed effects	Yes	Yes	Yes	Yes	Yes
School xed effects	Yes	Yes	Yes	Yes	Yes
School trends	Yes	Yes	Yes	Yes	Yes
N. Obs.	2,781	2,569	2,569	2,569	2,569
R-squared	0.163	0.168	0.168	0.168	0.168

Notes : All regressions include grade xed effects, school xed effects, and school linear time trends. The sample is defined in the notes to Table 1. In addition, columns (2) to (5) exclude students with missing information on % peers with mother born in the US and % peers with mother educ = College +. Standard errors (in parentheses) are clustered at the school level. \* 10%, \*\* 5%, \*\*\* 1%.

Source : National Longitudinal Survey of Adolescent Health (AddHealth), Harris et al. (2009).

Table 6: Placebo regressions

Cohort definition:	(1) Random group	(2) Adjacent lower cohort	(3) Adjacent upper cohort
Own mother worked	0.079** (0.034)	0.071* (0.041)	0.063 (0.039)
% peers with working mother	0.002 (0.003)	0.003 (0.005)	-0.002 (0.005)
White	-0.04 (0.034)	-0.046 (0.043)	-0.011 (0.037)
Married	-0.067** (0.034)	-0.061* (0.031)	-0.074* (0.038)
Children	-0.129*** (0.027)	-0.109*** (0.034)	-0.115*** (0.033)
PVT	0.001 (0.001)	0.001 (0.001)	0.000 (0.001)
Education = College+	0.097*** (0.026)	0.073** (0.035)	0.113*** (0.027)
Very poorly kept residential building	0.096** (0.047)	0.054 (0.063)	0.102* (0.054)
Mother born in the US	0.076* (0.041)	0.085 (0.052)	0.041 (0.049)
Mother education = College+	-0.031 (0.027)	-0.005 (0.032)	-0.028 (0.033)
% peers with mother born in the US	-0.006 (0.004)	0.018** (0.009)	0.014** (0.006)
% peers with mother educ = College+	0.000 (0.004)	-0.008 (0.006)	-0.007 (0.005)
Grade xed effects	Yes	Yes	Yes
School xed effects	Yes	Yes	Yes
School trends	Yes	Yes	Yes
N. Obs.	2,569	1,760	2,010
R-squared	0.169	0.192	0.175

*Notes:* All regressions include controls for grade xed effects, school xed effects, and school linear time trends. The sample is defined in the notes to Table 1. In addition, we excluded students with missing information on % peers with mother born in the US and % peers with mother educ = College+. Column (2) excludes students in grade 9. Column (3) excludes students in grade 12. Standard errors (in parentheses) are clustered at the school level. \* 10%, \*\* 5%, \*\*\* 1%.

*Source:* National Longitudinal Survey of Adolescent Health (AddHealth), Harris et al. (2009).

Table 7: Effects of peers with working mothers - males

	Dependent variable: Work for pay				
	(1)	(2)	(3)	(4)	(5)
Own mother worked	-0.009 (0.034)	-0.007 (0.031)	-0.009 (0.031)	-0.008 (0.032)	-0.010 (0.032)
% peers with working mother	0.002 (0.003)	0.001 (0.005)	0.001 (0.004)	0.001 (0.004)	-0.000 (0.004)
White			0.048 (0.034)	0.053 (0.034)	0.049 (0.038)
Married			0.056** (0.027)	0.055** (0.026)	0.040 (0.028)
Children			0.053* (0.027)	0.054* (0.026)	0.069** (0.028)

Table 8: Effects of peers with working fathers

	Dependent variable: Work for pay					
	(1)	(2)	(3)	(4)	(5)	(6)
Own father worked	0.116 (0.048)	0.083 (0.058)	0.122 (0.061)	0.128 (0.061)	0.018 (0.045)	-0.004 (0.054)
% peers with working father	0.001 (0.008)	-0.005 (0.008)	-0.002 (0.009)	0.000 (0.009)	0.009 (0.006)	0.022 (0.010)
Own mother worked		0.098 (0.043)	0.086 (0.043)	0.084 (0.043)		0.007 (0.040)
% peers with working mother		0.012 (0.005)	0.011 (0.006)	0.009 (0.005)		0.001 (0.007)
White		-0.043 (0.036)	-0.040 (0.044)	-0.042 (0.044)		0.045 (0.047)
Married		-0.052 (0.032)	-0.027 (0.033)	-0.025 (0.032)		0.043 (0.029)
Children		-0.166 (0.035)	-0.169 (0.036)	-0.169 (0.036)		0.052 (0.037)
PVT		0.001 (0.001)	0.001 (0.001)	0.001 (0.001)		-0.001 (0.002)
Education = College+		0.065 (0.028)	0.058 (0.030)	0.059 (0.030)		0.074 (0.027)
Very poorly kept residential building			0.075 (0.067)	0.079 (0.064)		-0.022 (0.107)
Both parents born in the US			0.073 (0.045)	0.070 (0.046)		-0.059 (0.044)
Max parents educ = College+			-0.040 (0.034)	-0.039 (0.034)		0.021 (0.027)
Household members in grade 7-12			0.000 (0.018)	-0.001 (0.018)		-0.015 (0.014)
% peers with both parents born in the US				0.005 (0.005)		0.003 (0.006)
% peers with max parents educ = College+				0.009 (0.004)		0.001 (0.004)
Mean peers' hh members grade 7-12				-0.410 (0.345)		-0.392 (0.324)
Variance peers' hh members grade 7-12				0.194 (0.167)		-0.068 (0.167)
Grade xed effects	Yes	Yes	Yes	Yes	Yes	Yes
School xed effects	Yes	Yes	Yes	Yes	Yes	Yes
School trends	Yes	Yes	Yes	Yes	Yes	Yes
N. Obs.	2174	1924	1764	1764	1931	1453
R-squared	.131	.213	.214	.219	.143	.209

Notes: All regressions control for grade xed effects, school xed effects, and school linear time trends. The sample is defined in the notes to Table 2, Panel B. In addition we excluded students with missing information on any of the control variables. Standard errors (in parentheses) are clustered at the school level. Significance levels are: \* 10%, \*\* 5%, \*\*\* 1%. Source: National Longitudinal Survey of Adolescent Health (AddHealth), Harris et al. (2009).



Table 10: Expectations and perceptions of work-family conflict

	(1) Expect to be married by age 25 (Wave I) Whole sample	(2) Children Intended (Wave IV) Whole sample	(3) Work/family conflict (Wave IV) Whole sample	(4) No child	(5) Child
Own mother worked	0.047 (0.031)	-0.040 (0.102)	-0.079 (0.072)	-0.108 (0.083)	-0.002 (0.095)
% peers with working mother	0.005 (0.004)	-0.003 (0.015)	-0.007 (0.012)	0.026 (0.017)	-0.039*** (0.014)
White	0.098** (0.045)	0.052 (0.096)	0.062 (0.085)	0.057 (0.146)	0.139 (0.103)
PVT	-0.003* (0.001)	-0.003 (0.002)	-0.000 (0.002)	0.003 (0.004)	0.001 (0.004)
Very poorly kept residential building	-0.018 (0.063)	0.524* (0.310)	-0.038 (0.137)	-0.066 (0.223)	0.086 (0.217)
Mother born in the US	-0.138** (0.054)	0.169 (0.124)	-0.106 (0.100)	-0.215* (0.108)	-0.124 (0.149)
Mother education = College+	0.046 (0.030)	0.000 (0.088)	-0.134** (0.060)	-0.060 (0.085)	-0.039 (0.088)
% peers with mother born in the US	-0.000 (0.007)	0.021 (0.021)	0.009 (0.015)	-0.013 (0.011)	0.043* (0.025)
% peers with mother educ = College+	-0.001 (0.004)	0.012 (0.012)	0.008 (0.011)	0.005 (0.013)	-0.003 (0.020)
Grade xed effects	Yes	Yes	Yes	Yes	Yes
School xed effects	Yes	Yes	Yes	Yes	Yes
School trends	Yes	Yes	Yes	Yes	Yes
N. Obs.	2,563	2,569	2,549	1,072	1,477
R-squared	0.127	0.101	0.122	0.264	0.165

Notes: All regressions include controls for grade xed effects, school xed effects, and school linear time trends. The sample



Table 11: Gender-role identity, motherhood and employment

	Dependent variable: Work for pay			
	No child		Child	
	(1)	(2)	(3)	(4)
Own mother worked	0.060 (0.043)	0.059 (0.043)	0.068 (0.049)	0.068 (0.048)
% peers with working mother	0.002 (0.005)	0.002 (0.006)	0.013** (0.006)	0.010 (0.006)
Work/family conflict		-0.008 (0.019)		-0.087*** (0.019)
White	-0.038 (0.055)	-0.038 (0.054)	-0.049 (0.045)	-0.037 (0.040)
Married	0.054 (0.033)	0.053 (0.033)	-0.133*** (0.046)	-0.135*** (0.046)
PVT	0.002 (0.001)	0.002 (0.001)	-0.001 (0.002)	-0.000 (0.002)
Education = College+	0.041 (0.034)	0.040 (0.034)	0.152*** (0.040)	0.154*** (0.039)
Very poorly kept residential building	0.110 (0.069)	0.109 (0.068)	0.053 (0.081)	0.060 (0.076)
Mother born in the US	0.085* (0.047)	0.083* (0.046)	0.044 (0.074)	0.033 (0.072)
Mother education = College+	-0.023 (0.032)	-0.023 (0.032)	-0.026 (0.044)	-0.030 (0.043)
% peers with mother born in the US	0.008 (0.006)	0.008 (0.006)	-0.003 (0.010)	0.001 (0.011)
% peers with mother educ = College+	0.002 (0.005)	0.002 (0.005)	0.008** (0.004)	0.008* (0.005)
Grade fixed effects	Yes	Yes	Yes	Yes
School fixed effects	Yes	Yes	Yes	Yes
School trends	Yes	Yes	Yes	Yes
N. Obs.	1,072	1,072	1,477	1,477
R-squared	0.287	0.287	0.180	0.211

*Notes:* All regressions include controls for grade fixed effects, school fixed effects, and school linear time trends. The sample is defined in the notes to Table 1. In addition, we dropped students with missing information on work/family conflict. Standard errors (in parentheses) are clustered at the school level. Significance levels are: \* 10%, \*\* 5%, \*\*\* 1%.

*Source:* National Longitudinal Survey of Adolescent Health (AddHealth), Harris et al. (2009).

Figure 1: Distribution of placebo regressions estimates



Note : The graph reports estimates from 500 randomized samples, where for each sample a within-school cohort composition is randomly selected. The red line represents the estimate which is obtained when using the actual cohorts of the dataset and the most extensive set of controls (Table 6, column 2).

## 8 Appendix Tables

Table A1: Correlation between own mother employment status and peer mothers' employment status

	Own mother works		
	(1)	(2)	(3)
% peers with working mother	0.007*** (0.002)	-0.004 (0.004)	-0.007 (0.004)
Mother born in the US	0.001 (0.035)	0.013 (0.037)	0.021 (0.038)
Mother education = College+	0.109*** (0.022)	0.116*** (0.023)	0.119*** (0.023)
Very poorly kept residential building	-0.020 (0.077)	-0.029 (0.082)	-0.045 (0.084)
Constant	0.173 (0.184)	1.669*** (0.530)	1.515** (0.668)
Grade xed e e cts	No	Yes	Yes
School xed e e cts	No	Yes	Yes
School trends	No	No	Yes
N. Obs.	2,569	2,569	2,569
R-squared	0.041	0.108	0.141

Notes : The regression in column 2 controls for grade xed e e cts and school xed e e cts. The regression in column 3 additionally controls for school linear time trends. The sample is defined in the notes to Table 1. In addition, we excluded students with missing information on % peers with mother born in the US and % peers with mother educ = College +. Standard errors (in parentheses) are clustered at the school level. \* 10%, \*\* 5%, \*\*\* 1%.

Source : National Longitudinal Survey of Adolescent Health (AddHealth), Harris et al. (2009).

Table A2: Data Description

Variables	Description
	Wave I
Own mother worked	Dummy variable equal to one if resident mother worked for pay
White	Dummy variable equal to one if the respondent reported being white
Black	Dummy variable equal to one if the respondent reported being black
PVT	Score on the student's Picture Vocabulary Test
Very poorly kept residential building	Based on the question: "How well kept is the building in which the respondent lives? Very well kept, fairly well kept (needs cosmetic work), poorly kept (needs minor repairs), very poorly kept (needs major repairs)." The variable was coded as one if the interviewer answered "very poorly kept" and zero otherwise
Mother education = College+	Dummy variable equal to one if the respondent's mother had at least a four-year college degree
Mother born in the US	Dummy variable equal to one if the respondent's mother was born in the US
% peers with working mother	% of peers (leave-out mean) in same school/grade who answered "yes" to the question: "Does your biological mother, stepmother, foster mother, or adoptive mother work for pay?"
% peers with mother born in the US	% peers (leave-out mean) in same school/grade who reported their mother was born in the US
% peers with mother educ = College+	% peers (leave-out mean) in same school/grade whose mother had at least a four-year college degree
Parent education = College+	Dummy variable equal to one if at least one parent had at least a four-year college degree
Parents born in the US	Dummy variable equal to one if both parents reported being born in the US
Single parent family	Dummy variable equal to one if the parent reports not being married
Siblings 7-12th grade	Number of siblings in grade 7 to 12 living in the respondent's household
Mother care	It is based on two questions from the in-home survey: "How much do you think she cares about you? Not at all, very little, somewhat, quite a bit, very much" and "When you do something wrong that is important, your mother talks about it with you and helps you understand why it is wrong. Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree." Answers were used in a standard factor analysis to produce an index of mother care. High mother care was defined as the score being above the median score.
Social closeness	Answer to the question from the parent survey: "Please think about all of your child's friends. How many parents of your child's friends have you talked to in the last four weeks? 0, 1, 2, 3, 4, 5, 6 or more." Low social closeness means having below median interactions, relative to each student's school/grade.
Expect to be married by age 25	Dummy variable equal to one if the respondent answered that she believes there is "a good chance" or she is "almost certain" she will be married by age 25
	Wave IV
Work for pay	Dummy variable equal to one if the respondent is currently working for pay at least 10 hours a week
Married	Dummy variable equal to one if the respondent reported being married (household roster)
Children	Dummy variable equal to one if the respondent reported having at least one child (household roster)
Education = College+	Dummy variable equal to one if the respondent had at least a four-year college degree
Household size	Total number of household members (household roster)
Work/family conflict	It is based on two questions: "Indicate how much you would agree or disagree with this statement: Family responsibilities have interfered with my ability to work. Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree" and "(In the past 12 months/Since you started your current job/In the last year of your most recent job), how often on your primary job (have you spent/have you spent/did you spend) less time with your family than you wanted to because of work responsibilities? Frequently, sometimes, rarely, never." Answers to the first question were re-coded into a binary indicator equal to one if the respondent answered "strongly agree" or "agree." Answers to the second question were re-coded into an indicator equal to one if the respondent answered "frequently" or "sometimes." These two indicators were used in a standard factor analysis to produce an index of work/family conflict.
Children intended	Total number of children that the respondent intends to have (including any children she may already have)

Table A3: Sample Selection Description

	Mean (Std. dev.)					
	Females			Males		
	Original longitudinal sample	Dropping grades 6-8	Dropping students with less than 28 peers	Original longitudinal sample	Dropping grades 6-8	Dropping students with less than 28 peers
Work for pay	0.738 (0.440)	0.752 (0.432)	0.755 (0.430)	0.856 (0.351)	0.872 (0.334)	0.873 (0.334)
Own mother worked	0.812 (0.391)	0.817 (0.386)	0.819 (0.385)	0.835 (0.371)	0.847 (0.360)	0.848 (0.359)
% peers with working mother	0.819 (0.079)	0.818 (0.078)	0.819 (0.072)	0.818 (0.084)	0.817 (0.077)	0.820 (0.071)
White	0.743 (0.437)	0.727 (0.446)	0.721 (0.449)	0.757 (0.429)	0.756 (0.43)	0.750 (0.433)
Married	0.446 (0.497)	0.481 (0.500)	0.478 (0.500)	0.379 (0.485)	0.429 (0.495)	0.422 (0.494)
Children	0.563 (0.496)	0.603 (0.489)	0.604 (0.489)	0.331 (0.471)	0.351 (0.477)	0.343 (0.475)
Share with less than High School	0.051 (0.221)	0.033 (0.179)	0.032 (0.175)	0.075 (0.263)	0.049 (0.216)	0.050 (0.218)
Share with High School or some college	0.590 (0.492)	0.580 (0.494)	0.571 (0.495)	0.602 (0.489)	0.588 (0.492)	0.582 (0.493)
Share with College or more	0.359 (0.480)	0.387 (0.487)	0.397 (0.489)	0.323 (0.468)	0.363 (0.481)	0.368 (0.482)
PVT	102.801 (13.345)	103.067 (13.299)	103.242 (13.153)	105.255 (13.045)	106.077 (12.734)	106.067 (12.680)
Very poorly kept residential building	0.041 (0.198)	0.038 (0.191)	0.038 (0.191)	0.037 (0.19)	0.035 (0.183)	0.036 (0.186)
Mother born in the US	0.916 (0.277)	0.906 (0.291)	0.906 (0.292)	0.913 (0.282)	0.897 (0.304)	0.893 (0.309)
Mother education = College+	0.245 (0.430)	0.252 (0.434)	0.258 (0.438)	0.293 (0.455)	0.310 (0.462)	0.313 (0.464)
Age	15.231 (1.691)	16.225 (1.192)	16.209 (1.194)	15.42 (1.747)	16.416 (1.211)	16.418 (1.213)
N. Obs.	3,988	2,901	2,781	3,083	2,288	2,197

N<sub>obs</sub> : The table reports descriptive statistics by gender for the main variables used in the analysis at each stage of the sample selection process. The original longitudinal sample includes students with non missing information on any of the variables reported in the table. In the second column we drop students that are not in grades 9 through 12. Finally, in the last column, we drop students who have less than 28 peers (5th percentile of the cohort-size distribution).

Source : National Longitudinal Survey of Adolescent Health (AddHealth), Harris et al. (2009).