

EXTENDED ABSTRACT

Educational Advantage and Earnings Lead? Assortative Mating and Spousal Pay Gap

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Abstract

With rapid increases in marriages in which women have more schooling than their husbands, we explore how educational assortative mating influences spousal pay gap at and after marriage. Using data from the *National Longitudinal Study of Youth 1979*, we build on recent work on earnings growth among men and women before and after marriage and focus, instead, on spousal earnings differences within the family. We ask whether wives' educational advantage leads to more earnings compared to their husbands. We show that wives' earnings advantage after marriage depends on whether they have children: wives with more education than their husbands have lower earnings than their husbands among those with children, even when wives work full time, but earnings advantage over their husbands prevails among wives with no children. We frame the paper around the gender specialization model and investigate wives' contributions to family income by accounting for a multitude of factors.

Extended Abstract

Rapid improvement in women's educational attainment, along with reducing gender gaps in labor force participation, jobs, and earnings, has redefined marriage markets in the United States (DiPrete and Buchmann 2013, Goldin 2006, Qian 2018). Marriages which involve husbands with more education than their wives have been declining while educational homogamy has been increasing (Schwartz and Mare 2005). In 2012, 21% of married women had more schooling than their husbands, the percent for the first time surpassing that of married women with less education than their husbands (Pew Research Center 2014). Educational assortative mating patterns have become more symmetrical—marriages in which husbands have more education are equivalent to those in which wives have more education.

Educational attainment, a strong indicator of earnings or earnings potential, is an important trait in mate selection (Qian and Lichter 2018). For a long time, marriages often involve husbands with more education than their wives, facilitating gender division of labor within the family. The emergence of hypogamous marriages (the wife with more education than her husband) may suggest two things: 1) the wife has more pay than the husband. The pay gap between college graduates and non-college graduates has increased dramatically. Women marrying down are more likely to be college graduates than those who marry homogamously (Schwartz and Han 2014). 2) the wife may have less pay than her husband even if she has more education. As age of marriage increases, actual earnings may replace education as an important trait in mate selection (Shafer and Qian 2010). Husbands who marry up may have impressed their partner by other

attributes including earnings. Alternatively, women marrying down may be selective of those who do not have earnings comparable to their educational credentials (Dribe and Nystedt 2013). Our first question is **whether wives with more education than their husbands indicate wives with more earnings than their husbands at the time of marriage.**

Do earnings grow faster for men and women after marriage? Previous studies address this question by comparing earnings among men and women before and after marriage. Men have a marriage premium because marriage allows men to specialize in non-household production and thus makes them more productive and married men are perceived to be more reliable and have more opportunities for promotion than unmarried men (Antonovics and Town 2004). This relationship is weaker among women. In fact, women are subject to marriage penalty because of the adverse effects of having children on earnings (Budig and Hodges 2010, Killewald and Bearak 2014).

Marriage premium for men and marriage penalty for women fits into the theory of gender specialization, as the spousal pay gap increases when the husband solidifies the main provider role and the wife takes on a homemaker or supporting role. This meets the expectation when the husband has more or same education or resources than the wife. It is unclear, however, how marriage premium and penalty work for couples in which the wife has more education than the husband. How do they juggle between premium and penalty when the wife has potentials to earn more than the husband? Would she be subject to marriage penalty due to main normative gender expectations (Tichenor 2005)? Our second research question asks **whether the wife's earnings lead as a result of her educational advantage disappears or even gets reversed five years after marriage.**

Marriage penalty is often associated with women's motherhood. For women with more education than their husbands, having a child increases gender specialization and marriage penalty (Killewald and Gough 2013). Among women who resume full time jobs soon after birth, this may also be true because of extra responsibilities of child care and housework (Bianchi and Milkie 2010). Furthermore, women with more education than their husbands tend to be older at the time of marriage and have an increased risk of having a child with health problems, which may augment the marriage penalty (Gutierrez 2019). In contrast, childless women may be less likely to be affected by marriage penalty and instead receive a marriage premium (Killewald 2011, Killewald and Gough 2013). Thus, **our third question explores the impact of educational assortative mating on spousal pay gap and investigates how having a child interacts with the impact.**

In this paper, our overall goal is to examine how the emergence of marriages in which the wife has more education than the husband influences pay gaps between the husband and wife after marriage. Previous research examines this question by comparing men and women before and after marriage. Yet, how to balance employment, childcare, and domestic labor at home may depend on negotiations and relative status between the husband and wife, with the backdrop of gender discrimination in workplaces. Couples in which the wife has more education than the husband can challenge normative gender roles in the family. Our theoretical and empirical approach takes a gender specialization approach. We start with the premise that the wife has more earnings at the time of marriage if she has more education than the husband. However,

marriage increases premiums for the husband and penalty for the wife. Over time, these women, especially those with children, lose edge and lag behind in earnings as a result.

Data and Methods

To fully explore the life-course dynamics of relative earnings status between spouses, we use data from the *National Longitudinal Study of Youth 1979* (NLSY79, N=12,686), an ongoing cohort-based survey of a nationally representative sample of young men and women who were aged 14-22 in 1979. Data were collected yearly from 1979 through 1993 and biennially from 1994 to present, with the retention rate at 71%. Previous research finds that the traditional mode of marriage in which the husband has more education than the wife started to fade in the early 1980s, after which the educational hypogamous marriage gained momentum and gradually outnumbered the educational hypergamous marriage (Schwartz and Han 2014). Since most respondents in the cohort of NLSY79 entered into their first marriage in the 1980s, it becomes especially relevant to see how spousal dynamics unfold among this cohort that consists of many of the earliest witnesses of the emergence of the educational hypogamous marriage in the United States.

Our analytic sample includes the respondents who remained unmarried until 1978 but have been ever married before the most recent wave 2016 (N=9,110), and who are not in the poor-white or military subsample which was discontinued in 1985 and 1990, respectively (with remaining N=7,273). We make use of the detailed marriage dates information in the “Fertility and Relationship History” data file of NLSY79 to determine the start and end dates of each person’s first marriage. We delete cases with missing first-marriage dates (N=7,248) or missing own or spouse’s educational attainment at time of first marriage (N=6,853). Finally, we drop cases if at least one partner of a couple has missing earnings in their year of first marriage or five years after first marriage and both spouses have missing earnings 1) one year after first marriage, as a substitute for earnings at time of marriage (936 such cases) or 2) in preceding year(s) of marriage, as a substitute for earnings five years after first marriage (439 such cases). Our final sample includes 5,478 couples.

We collect information at the time of marriage including educational attainment and earnings of both spouses and track their earnings and employment status over time until five years after marriage. For those who divorced within five years of marriage, we recorded the same information prior to divorce, mindful of potential high divorce rates among couples in which the wife has more education (Schwartz and Gonalons-Pons 2016). For respondents with missing data on earnings in year one and year five, we use the earnings data in the succeeding year or preceding year(s), respectively, as described above. We flag the years in which the earnings and employment data were substituted.

The dependent variable will be 1) wife being the main provider (at least 60% of the family earnings), 2) similar earnings (wife making 40% to 60% of the family earnings), and 3) husband being the main provider (wife making 0 to 40% of the family earnings). Education is classified into three categories: high school or less, some college, and college and above. We use these three categories to define whether a marriage is hypergamous (husband with more education), homogamous (husband with same education), and hypogamous (husband with less education).

Several groups of variables are included as controls, including women's family background, race/ethnicity, age at marriage, and fertility attitudes, employment status at marriage and five years of marriage, to name a few.

Much of our analyses will be in the form of predicting whether the wife is the main provider role five years after marriage (binomial or multinomial logistic regression). The main independent variable will be whether the wife has more education than the husband, as defined above. Another important independent variable will be whether the wife has at least a child within first five years of marriage. We will address potential issues of endogeneity by considering instrumental variables, such as marriage market (county) level educational compositions or fertility attitudes at the baseline. Other variables in the model include women's family background, earnings and education at the time of marriage, race/ethnicity, age at marriage, years since marriage, and whether current job is full time among others.

Preliminary Analyses

Data construction is complete and preliminary analyses are well underway. Some of the descriptive analysis are presented below, as shown in the tables **attached**.

Table 1 shows a socioeconomic gradient among women engaged in different educational pairings. Couples who are both college graduates have the highest parental income in 1979, are more likely to be non-Hispanic white, and marry at later ages. Couples in which the wife is a college graduate and the husband has no completed college have lower parental income than both-college-educated couples and have a greater share of women being black. However, noncollege educated wives in hypogamous marriages appear to come from higher income families than their non-college peers in homogamous marriages.

Table 2 shows changes in relative earnings by educational pairing. College-educated wives who marry husbands with no complete college education make less money on average at the time of marriage than college-educated wives in homogamous marriages, but turn out to make slightly more than their homogamous counterparts five years later. They are also much more likely than wives in other types of marriages to be an equal provider or even the main provider in their family. Their more active breadwinning status wanes dramatically five years later after marriage but, if compared to women in other types of marriage, they are still more economically active. Interestingly, this does not apply to wives who have no completed college education and marry down in education. These wives have a more similar profile of relative earnings trajectories as their peers in homogamous marriage.

Table 3 explores whether fertility after marriage plays a role. The upper panel shows that, five years after marriage, if the couple has no child, college-educated wives who marry a less-educated husband earn more and are more likely to be the main provider in their family than college-educated wives who also marry a college graduate. However, among couples with children, college-educated wives who marry down actually earn less than their homogamous counterparts and share a very similar relative earnings profile. The lower panel of Table 3 limits the sample to wives who are full-time year-round workers in the fifth year of marriage (or the preceding year if the data are missing in the fifth year). The general pattern does not change.

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Table 1 Women's Select Background Characteristics by Couples' Educational Pairing

	Family income in 1979	Race/Ethnicity			Age at first marriage	Number of kids expected to have in 1979	Traditional gender roles best? (1-5, 5 strongly agree)	Women happier in traditional roles? (1-5, 5 strongly agree)	N
		White	Hispanic	Black					
Both college or more	65790	0.94	0.03	0.03	26.2	2.51	2.00	1.87	507
Both some college	43805	0.76	0.08	0.16	23.5	2.48	2.09	2.06	223
Both high school or less	40103	0.81	0.07	0.12	21.2	2.36	2.35	2.22	1133
Husband more educated	47419	0.86	0.05	0.09	23.2	2.54	2.22	2.09	409
Wife with College education, more educated than husband	55699	0.88	0.02	0.10	25.8	2.48	2.11	1.98	224
Wife with no college, more educated than husband	46183	0.80	0.06	0.14	23.3	2.33	2.13	2.02	293

Note: Family income in 1979 is inflated to 2006 dollar. The last two columns contain two attitudinal questions asked in 1979 about respondent's attitude towards women's role. The first one asks whether respondent agrees with the statement "It is much better for everyone concerned if the man is the achiever outside the home and the woman takes care of the home and family". The second asks whether they agree that "Women are much happier if they stay at home and take care of their children".

Table 2 Distribution of Relative Earnings by Years since First Marriage

	At the time of marriage				About five years after marriage			
	Wife's earnings	Equal provider	Husband main provider	Wife main provider	Wife's earnings	Equal provider	Husband main provider	Wife main provider
Both college or more	28047	0.34	0.48	0.18	24223	0.14	0.62	0.24
Both some college	11095	0.26	0.66	0.08	9953	0.13	0.68	0.20
Both high school or less	17072	0.30	0.55	0.15	15630	0.15	0.63	0.22
Husband more educated	16017	0.28	0.61	0.12	12833	0.11	0.70	0.18
Wife with College education, more educated than husband	25303	0.40	0.38	0.23	24736	0.17	0.50	0.34
Wife with no college, more educated than husband	15934	0.34	0.56	0.10	16781	0.17	0.61	0.22

Note: Earnings are in 2006 dollars. Equal provider = wife's earnings occupy 40-59% of total couple earnings; Husband main provider = wife's earnings occupy less than 40% of total couple earnings; Wife main provider = wife's earnings occupy more than 60% of total couple earnings.

Table 3 Distribution of Relative Earnings by Birth After Marriage

	No births after marriage				Births after marriage			
	Wife's earnings	Equal provider	Husband main provider	Wife main provider	Wife's earnings	Equal provider	Husband main provider	Wife main provider
<i>All couples</i>								
Both college or more	32572	0.13	0.48	0.40	22360	0.14	0.65	0.21
Both some college	16397	0.15	0.53	0.32	9219	0.12	0.70	0.18
Both high school or less	15295	0.21	0.61	0.19	15684	0.15	0.63	0.22
Husband more educated	22480	0.21	0.53	0.26	11237	0.10	0.73	0.17
Wife with College education, more educated than husband	38467	0.16	0.32	0.52	21955	0.17	0.53	0.30
Wife with no college, more educated than husband	18411	0.24	0.54	0.22	16482	0.15	0.62	0.22
<i>Couples in which the wife work full-time after births, five years after marriage</i>								
Both college or more	37479	0.12	0.39	0.49	37855	0.26	0.39	0.35
Both some college	24819	0.23	0.38	0.38	18773	0.28	0.41	0.31
Both high school or less	17941	0.14	0.61	0.25	27326	0.25	0.38	0.38
Husband more educated	27758	0.31	0.40	0.29	22398	0.24	0.45	0.31
Wife with College education, more educated than husband	43223	0.19	0.24	0.57	31782	0.26	0.30	0.45
Wife with no college, more educated than husband	24965	0.37	0.43	0.19	28079	0.28	0.37	0.35

Note: Earnings are in 2006 dollars. Equal provider = wife's earnings occupy 40-59% of total couple earnings; Husband main provider = wife's earnings occupy less than 40% of total couple earnings; Wife main provider = wife's earnings occupy more than 60% of total couple earnings.