

**Positive Assortative Mating
And Spouses as Complementary Factors of Production:
A Theory of Labor Augmentation**

by

Peter Groothuis
Associate Professor
Department of Economics
Appalachian State University
Boone, NC 28607

and

Paul E. Gabriel
Associate Professor
School of Business Administration
Loyola University Chicago
Chicago, IL 60611

*We would like to thank Dan Black and Rich Hill for useful comments. We would also like to thank Jana Groothuis and Susan Schmitz for useful comments and for years of augmenting our productivity. All errors, however, remain ours.

**Positive Assortative Mating
And Spouses as Complementary Factors of Production:
A Theory of Labor Augmentation**

Abstract

This paper develops a model of intellectual labor augmentation to explain both the marriage wage premium and educational assortative mating. We suggest that husbands and wives are complementary factors of production where a spouse's education and skills augment their partner's productivity and earnings potential. We test this proposition using data from the 2000 U.S. Census of Population and the 2003 Current Population Survey. Our results indicate that for working couples the marriage premium for husbands and wives is directly related to the education level of their spouses -- suggesting that positive assortative mating may be attributable to the labor market effects of intellectual augmentation of married households.

Introduction

The marriage premium literature finds that married men earn more than single men, even after controlling for differences in education, race, region or other observable characteristics (Chun and Lee 2001, Korenman and Neumark 1992, Loh 1996, and Daniel 1995). In recent studies using panel data, to control for unobservable characteristics, the wage premium is diminished but still persists (Daniel 1995, and Cohen 1999). An additional finding in Loh (1996) is that a wife's education enhances her husband's wage premium, although the reverse is not necessarily true. Over time, social scientists have developed numerous theories to explain the marriage wage premium for men. These range from the preferential treatment of married workers to the "bringing-home-the-bacon" specialization model (Reed and Hartford, 1988; Gorman, 1999).

The traditional "bringing-home-the-bacon" model suggests that specialization occurs in a marriage when a husband concentrates his efforts in market work and his wife focuses primarily on home production. This pattern of specialization suggests that individuals maximize their well-being by marrying partners very different from themselves. One difficulty with the specialization model is that it is inconsistent with long-term labor market trends. In the United States, for example, the past thirty years have witnessed a significant increase in the proportion of married couples where both spouses work for pay -- a trend that also applies to married couples with younger children (U.S. Department of Labor, 1999).

The assortative mating literature, on the other hand, claims that women and men are more likely to marry spouses at the same socioeconomic level in terms of education

and professional background (see Mare 1991; Quain 1998, Suen and Lui 1999). Mare (1991) traces this pattern from the 1930 through the 1990s in the United States. Quain (1998) finds that from 1970-1990 educational assortative mating existed for both marriage and cohabitation. The assortative mating literature suggests that when choosing a spouse individuals look for partners who share common productivity traits or desires for household public goods (Lam 1988).

We suggest that both the wage premium and assortative mating can be explained by intellectual interaction between spouses that can augment each other's productivity. In other words, a spouse can provide efforts that enhance the earnings potential of their partner. In the next section we review the literature on both the marriage wage premium and assortative mating. Following the literature review, we present a formal model that develops the potential interactions between a person's human capital and the productivity and earnings of his or her spouse. Section 4 presents the empirical results, and we conclude with a discussion of current trends in the labor market in light of spousal labor market augmentation.

Literature Review

Even a cursory survey of the extensive marriage premium literature yields a consistent empirical outcome: married men earn significantly more than their non-married counterparts, whereas the opposite appears to be true for married women. Daniel (1995) illustrates that the male marriage premium is found in different cultures, over previous centuries, and throughout a person's worklife. Estimates of this premium have ranged from Neumark's (1988) 15% to Bartlett and Callahan's (1984) 32%. Chun and

Lee (2001) find that the wage premium is 12.6% but ranges from 3.4% for husbands with wives who work full time to 31.4% for husbands with wives not in the labor force.

Summaries of the extensive documentation of the marriage premium exist in Nakosteen and Zimmer (1987), Kenny (1983), and Bartlett and Callahan (1984).

Although the empirical evidence of the male marriage premium is considerable, there is much less agreement on the reasons for its existence. Korenman and Neumark (1990) offer three possibilities for this difference: First, married men are more productive than unmarried workers, perhaps due to higher motivation and attachment to the labor force; second, employers display favoritism for married men over unmarried men; and third, married men possess characteristics that are more desirable in marriage and labor markets. They find that when controlling for human capital differences, hourly wage premiums seem to be the result of faster wage growth for married men as compared to never-married men. Their analysis of company personnel files indicates that married men hold higher paying jobs within the firm, but do not tend to earn more than their unmarried colleagues within the same job category. Married men also receive higher performance ratings, thus increasing their chances of promotion.

Cohen (1999), using data from the 1995-97 Current Population Survey, examines gender, race and ethnic differences in the marriage premium as well as the cohabitation premium. He finds that marital status is more of a factor for white women than for any other demographic group. Never married white women earn more than married, previously married, or cohabiting white women. Additionally, never married white women earn as much as white men. This pattern is reversed for black women with the

never married earning least. Hispanic women show no significant differences in income by marital status.

Loh (1996), building on Becker's (1975) theoretical work on the family, tests the following three propositions concerning the marriage wage premium: 1) working men with nonworking wives have a larger premium than unmarried men or men with working wives because they have greater opportunities to accumulate human capital; 2) the positive marriage premium should occur for both self-employed and salaried workers as long as they are married; and 3) currently married men "who cohabitated with their present wife before marriage, should have a higher premium, all else being equal".

His empirical analysis of NLSY data fails to find support for the first proposition: Men with working wives have a higher, not lower, marriage premium. Even more surprising, men earn more when their wives are more educated, even when those wives do not work outside the home. Loh suggests several reasons why this might be true. They might have fewer children but expend higher monetary outlays per child. Therefore, the higher wife's education becomes a proxy for a decreased demand for children. Loh, however, found no support for this proposition.

The second reason Loh suggests to explain the positive influence of wife's education on husband's wages is that high wage men marry more educated women. Further analysis does not support this explanation either. The third reason Loh suggests for the higher wages of husbands of more educated wives is that they have better opportunities. Perhaps the presence of a better-educated spouse allows for better career decisions leading to higher wages. Loh, on further analysis, finds that the differences between wives are more important in explaining the marriage premium than the

differences between the husbands themselves. Loh also found that his prediction concerning self-employed men was not supported. In fact, unmarried self-employed men earned more than married self employed men. Similarly, Loh's prediction concerning the benefits of cohabitation on men's wages after marriage is not supported.

We are left then with the interesting finding that as a wife's education increases, so does the husband's wage. Loh states that the source of the higher wage appears to lie in unobserved heterogeneity among men in the sample. The paper suggested one other possibility, namely, "that more educated wives improve the resource allocation decisions of the husbands". We suggest that the primary mechanism by which a spouse enhances his or her partner's earnings potential is through intellectual labor augmentation, which is consistent with the notion of assortative mating.

In the assortative mating literature, Mare (1991) suggests that a consistent pattern of like marrying like has existed over time. Although this may be affected by the amount of time between leaving school and when the person marries, it remains a consistent finding. In fact, homogamy in mating increases from 1930 to 1980. According to Mare, this may result from the increasing competition for high wage earning wives. The similarity in education would also predict the similarity in labor force opportunities. Thus we would expect education to be an important factor in assortative mating. Watkins and Meredith (1980), in fact, find that this is the most important variable in spouse selection.

In addition to positive assortative mating by education, others have found positive assortative mating by work status and earnings potential. Kalmijn (1994) finds that cultural assortative mating, as measured by occupational schooling (i.e., lawyers marrying

lawyers), plays a central role in the spousal selection process. Nakosteen and Zimmer (2001) claim that assortative mating also serves to enhance an individual's earnings potential. The results from their study suggest that spouses appear to match on the basis of unobserved earning traits, and that individuals who have a tendency to be highly productive in the labor market tend to marry similar individuals. These forms of positive assortative mating are consistent with the notion of labor augmentation.

Suen and Lui (1999) ask the question, "how efficient is the marriage market in optimizing marital output?". Their conclusion is that it is fairly efficient. Since couples match education and wage characteristics and thus maximize their total output, augmentation in both time and intellectual interaction are likely to take place. With similar jobs and education, the ability to discuss and evaluate courses of action should be maximized. Although direct evidence of this does not exist, the higher wages of men with more educated wives certainly suggest it as a possibility – a possibility we explore in this paper.

The Model

In this section we develop a model of labor augmentation that is consistent with both the marriage wage premium and the assortative mating literature. Following Suen and Lui (1999) we consider a husband and wife who enter into marriage have a joint production function:

$$(1) \quad Z_{ij} = Z(F_i, M_j),$$

where Z_{ij} is the joint production when female i marries male j . In an efficient market males and females sort themselves to maximize their well-being (Becker 1973). In the traditional "specialization-and-exchange" model the cross partial in the production

function, $\partial^2 Z_{ij} / \partial F_i \partial M_j$ is negative. The negative relation implies that inputs are substitutes and negative assortative mating should occur (i.e., one spouse with high education who specializes in market production and one with low education who specializes in home production). This is the traditional homemaker/bread-winner paradigm.

On the other hand, the assortative mating literature suggests the opposite type of sorting: that is, highly-educated individuals tend to be matched with highly-educated spouses (Mare 1991; Suen and Lui 1999). If positive assortative mating is also an efficient marriage market then the cross partial, $\partial^2 Z_{ij} / \partial F_i \partial M_j$ is positive. In this sorting equilibrium the positive cross partial implies that spouses are complementary factors (Suen and Lui 1999). This implies that a husband with a high education is more productive when he marries a wife of high education and vice versa. This model also suggests that the wife's productivity rises with matched characteristics of the husband.

If this complementary relation is present, a wage premium should develop for both the husband and wife to reflect the benefits of marriage. Yet, empirically the wage premium has generally only been found for husbands. We suggest this may develop because of labor augmentation where a spouse enhances a partner's productivity by providing his or her own time and effort on the other's work.

Following Daniel (1995), we hypothesize that a spouse can use their time in three ways: first, they can engage in market work; second, they can augment their spouse's productivity; and third, they can pursue leisure activities. Spouses that choose to augment their partner's productivity raise their partner's earnings potential and thereby create a wage premium. For example, a husband's wage premium can be interpreted a

wife's payment for productivity enhancement. Examples of labor augmentation include spouses who proofread their partner's presentations, serve as sounding boards, or provide other forms of professional support.

Daniel (1995) suggests that "just as a worker's market human capital affects her ability to perform a job, augmentation capital affects her ability to augment productivity." If spouses are complementary factors of production, as suggested by Suen and Liu (1999), labor augmentation will develop because of positive assortative mating. Daniel (1999) conjectures that "the ability of one spouse to augment the productivity of the other may depend upon the match between the couple's characteristics or jobs—one lawyer might be better at augmenting the productivity of another lawyer." We suggest that this type of labor augmentation capital develops due to the positive assortative mating that occurs in efficient marriage markets.

Empirically, the earnings potential of an individual(i) can be modeled as a function of their productivity (MP_i), which in turn is influenced by their own characteristics (X_i), and by the characteristics of their spouse (X_S). This model can be expressed as,

$$(2) \quad W_i = MP_i [X_i (X_S)],$$

where W_i is their market wage, MP_i is marginal product, X_i is a set of characteristics that influence productivity, and X_S is the matched spouse's characteristics that enhances their productivity.

Following the works of Becker (1975) and Mincer (1974), we can specify the earnings model in (2) as separate human capital wage equations for males and females,

modified to incorporate both the husband's and wife's characteristics. The wage equations can be written as:

$$(3) \quad \text{Wages}_{\text{Male}} = \beta_0 + \beta_1 \text{Education}_{\text{Male}} + \beta_2 \text{Education}_{\text{Female}} \\ + \beta_3 (\text{Education}_{\text{Male}} \times \text{Education}_{\text{Female}}) + \\ + \beta_4 \text{SAMEIND} + \beta_5 \text{SAMEOCC} + X\beta + \epsilon$$

$$(4) \quad \text{Wages}_{\text{Female}} = R + R_1 \text{Education}_{\text{Female}} + R_2 \text{Education}_{\text{Male}} \\ + R_3 (\text{Education}_{\text{Female}} \times \text{Education}_{\text{Male}}) + \\ + R_4 \text{SAMEIND} + R_5 \text{SAMEOCC} + XR + \epsilon$$

where β and R represent coefficients to be estimated, Education measures years of schooling completed, **SAMEIND** is a dummy variable equal to one if both husband and wife work in the same industry and **SAMEOCC** is a dummy variable equal to one if both husband and wife work have the same occupation, and X is a vector of other personal traits that are linked statistically to earnings.¹ To test for the presence of labor augmentation we can estimate the coefficients in equations (3) and (4) and determine the partial effect of a spouse's education on a worker's earnings.

In particular, the marginal effect of another year of schooling for a husband in the household consists of two effects. First, the direct effect of the husband's education on the husband's own wage can be expressed as:

$$(5) \quad \partial \text{Wages}_{\text{Male}} / \partial \text{Education}_{\text{Male}} = \beta_1 + \beta_3 \text{Education}_{\text{Female}}$$

Where β_1 is the increase in the husband's wage due to the husband's increased education and $\beta_3 \text{Education}_{\text{Female}}$ is the complementary augmentation of the husband's wage through his wife's education. In our model, β_3 is predicted to be positive. The second effect is the indirect effect of the husband's education on his wife's wage,

$$(6) \quad \Delta \text{Wages}_{\text{Female}} / \Delta \text{Education}_{\text{Male}} = R_2 + R_3 \text{ Education}_{\text{Female}}$$

where the complete marginal effect is predicted to be positive if husband and wife are complementary factors of production. In addition, the coefficients on **SAMEIND** and **SAMEOCC** are predicted to be positive in our model because both control for the specific nature of human capital.

The wife's marginal effects follow the same pattern as her husbands. Thus, the direct effect of education on her own wage is:

$$(7) \quad \Delta \text{Wages}_{\text{Female}} / \Delta \text{Education}_{\text{Female}} = R_1 + R_3 \text{ Education}_{\text{Male}}$$

where $R_3 \text{ Education}_{\text{Male}}$ is the enhancement due to her husband's education. The indirect effect is:

$$(8) \quad \Delta \text{Wages}_{\text{Male}} / \Delta \text{Education}_{\text{Female}} = \beta_2 + \beta_3 \text{ Education}_{\text{Male}}$$

where the complete effect is predicted to be positive if the husband and wife are complementary factors. In our model, the marginal effects of both the husband's and wife's education suggest that spouses who are complementary factors provide another reason for positive assortative mating. Thus, positive assortative mating occurs because of productivity reasons as husbands and wives augment each other's market wages.

Data and Empirical Results

For our empirical analysis we obtained cross-sectional samples of working couples from two data sources. The first source is the 1% Public Use Microdata Sample (PUMS) of the 2000 U.S. Census of population. Our second source is the March 2003 Annual Demographic file of the U.S. Current Population Survey (CPS). Both the Census and CPS data provide large, representative samples of workers in the U.S. labor market. Our samples of married couples consist of non-agricultural wage and salary workers with

positive weekly earnings, who were not in the military, or enrolled in school. Given these sample criteria, we were able to construct a sample of 192,905 married working couples from the census data, and 2,775 couples from the CPS data.²

The variables used to estimate the human capital wage models (equations (3) and (4)) are described in Table 1. In general, the independent variables are similar across both samples. Table 2 presents the descriptive statistics for working couples from the CPS and Census data. As expected, men have higher weekly earnings, more work experience and are more likely to work full-time than women. One finding consistent with the assortative mating - labor augmentation proposition is that approximately 20 percent of working couples are employed in the same occupation or industry as their spouse.³

Table 3 presents the estimated wage regressions, by gender, for the CPS and Census samples. Columns 1 and 3 show the estimated coefficients (and standard errors) for males whereas columns 2 and 4 report the results for females. In the interest of space, we report only the regression estimates for the independent variables most relevant to our test of the labor augmentation hypothesis. In general, the estimated signs of the coefficients on the independent variables are consistent with those reported elsewhere.⁴

The results in Table 3 indicate that there are positive, and significant, effects on earnings that are due to the interaction between a worker's education, and the education of his or her spouse. This is consistent with the labor augmentation – assortative mating proposition. However, this result is complicated by the negative coefficient on spouse's education for men and women in both samples. Thus, we need to rely on expressions (6) and (8) above to obtain a more accurate assessment of the full nature of the interaction between spouses' education and earnings.

In tables 4 and 5, we report the marginal effect of an additional year of schooling on earnings in a household by their spouse's education. In table 4, we calculate equation 5 and 6 for each year of schooling from 8 to 20. We show that for a woman with low levels of education, an additional year of schooling by her husband actually lowers her wage. However, at higher levels of education there is a positive effect on her wage, *ceteris paribus*. In the census sample, the cross from a negative to a positive effect on wages takes place at the high school level; in the CPS, this crossover occurs essentially at the junior college level. Table 4 also shows that the husband's returns to education are enhanced by their wife's level of education going from about six percent for a husband with a wife with a 8th grade education to about nine percent with a wife with 20 years of education.

In table 5, we show the marginal effect of a wife's increased level of education on both the husband's and the wife's wages calculated using equations 7 and 8. Here we find that as wives increase their education level the husband's wage is enhanced for all but the lowest level of education. The enhancement is particularly true at high levels of education with an additional year of education by a wife increasing her husband's wage by four percent when the husband has 20 years of schooling. The wife's return to her education is also enhanced by her husband's education with the returns from schooling rising from about 5 percent for the Census data and 4 percent for the CPS data when the husband's education climbs from 8 to 20 years of schooling. The results from both table 4 and 5 suggest that positive assortative mating has productivity effects with both husbands and wives enhancing their returns to schooling through their spouse's level of education.

The estimated coefficients on SAMEOCC and SAMEIND provide a mixed message with respect to men with spouses employed in the same occupational or industry category. The census results indicate that men incur a penalty for having spouses in similar occupations, whereas the CPS results indicate a positive effect on wages, albeit at the margin of statistical significance. For the Census and CPS data, there appears to be a wage penalty for men with wives employed in the same industry (SAMEIND). On the other hand, women with spouses employed in the same industry or occupation have significantly higher weekly earnings than women who work in different industries or occupations from their spouses. These somewhat inconsistent results may be attributable to the degree of aggregation in the industry and occupation variables. An additional factor may involve the industries and occupations that are most likely see matched spouses. For instance, over 65 percent of men and women who are employed in the same occupation as their spouses (SAMEOCC = 1) are found in the two highest-paid categories: managerial and professional workers. This appears to have a positive effect on the earnings of women, but a more ambiguous effect on the earnings of men. For married couples employed in similar industries (SAMEIND = 1), nearly two-thirds of those workers are found in three categories: manufacturing, wholesale-retail trade, and educational / health services.⁵ The estimated coefficient on SAMEIND in Table 3 indicates that females rather than males receive a premium for having a spouse employed in the same industry. Overall, women appear more likely to benefit from the potential complementary effects of having a spouse employed in the same occupation or industry,

Conclusions

This paper develops a theory of intellectual labor augmentation to explain both the marriage wage premium and the possibility of educational assortative mating. Intellectual labor augmentation means that individuals search for spouses that have similar characteristics in order to maximize joint household production. This labor augmentation also suggests that having spouses of similar educational backgrounds helps to create a wage premium that reflects the synergies of marriage. Our empirical analysis of earnings data for married working couples from the U. S. Census of Population and the Current Population Survey supports the labor augmentation argument. In general, the wages of married men and women are positively influenced by the educational attainment of their spouse. However, the interaction effect between the education of men and women tends to increase with the level of educational attainment of both spouses. Thus, we estimate that the complementarity in spousal education is more important for highly-educated couples. An additional finding is that married women enjoy a wage premium if their spouse is employed in the same industry or occupation. However, this result does not appear to be true for married men.

The labor augmentation between husbands and wives reported in this paper are consistent with two recent labor market trends: the increase in the average level of women's educational attainment relative to men, and the significant increase in the percentage of married couples where both spouses are employed. These trends appear to conflict with the more traditional specialization model of spousal selection as proposed by Becker and others.

Bibliography

- Becker, Gary S. Human Capital. 2nd edition. New York: Columbia University Press. 1975.
- Bowlus, Audra J. "A Search interpretation of Male-Female Wage Differentials" Journal of Labor Economics, vol. 15, no. 4, 1997, 625-657.
- Cohen, Philip "Racial-Ethnic and Gender Differences in Returns to Cohabitation and Marriage: Evidence from the Current Population Survey." U.S. Bureau of the Census, Population Division Working Paper.no 35, May 1999.
- Cornwell, Christopher and Peter Rupert "Unobservable Individual Effects, Marriage and the Earnings of Young Men" Economic Inquiry, April 1997, 285-294.
- Chun, Hyunbae and Injae Lee "Why do Married Men Earn More: Productivity or Marriage Selection?" Economic Inquiry, vol. 39, no 2, April 2001, pp. 307-319.
- Daniel, Kermit "Does Marriage Raise the Productivity of Workers?" The Wharton School of the University of Pennsylvania Working Paper, 1995.
- Gorman, Elizabeth "Bringing Home the Bacon: Marital Allocation of Income-Earning Responsibility, Job Shifts and Men's Wages" Journal of Marriage and the Family, February 1999, 110-122.
- Heckman, James "Sample Selection Bias as a Specification Error" Econometrica, vol. 47, 153-162.
- Kalmijn, Matthijs "Assortative Mating by Cultural and Economic Occupational Status" American Journal of Sociology, vol.100, September 1994, 422-452.
- Keith, Kristen and Abigail McWilliams "The Returns to Mobility and Job Search by Gender" Industrial and Labor Relations Review, vol. 52, no.3 April 1999 460-477
- Koreman, Sanders and David Neumark "Does Marriage Really Make Men More Productive?" The Journal of Human Resources, vol. 26, no. 2, 1991, 283-307.
- Lam, David "Marriage Markets and Assortative Mating with Household Public Goods: Theoretical Results and Empirical Implications" The Journal of Human Resources, vol. 23, no. 4, Autumn 1988, pp. 462-487.
- Loh, Eng Seng "Productivity Differences and the Marriage Wage Premium for White Males" The Journal of Human Resources, vol. 31 no. 3, 1996.

Mare, Robert "Five Decades of Educational Assortative Mating" American Sociological Review, vol. 56, no. 1, 15-32.

Mincer, Jacob Schooling, Experience and Earnings. New York: National Bureau of Economic Research. 1974.

Nakosteen, Robert A. and Michael Zimmer "Spouse Selection and Earnings: Evidence of Marital Sorting: Economic Inquiry, vol. 39, no. 2, April 2001, pp201-213.

Qian, Zhenchao "Changes in Assortative Mating: The Impact of Age and Education, 1970-1990" Demography, vol.35, no.3, August 1998.

Reed, W Robert and Kathleen Harford "The Marriage Premium and Compensating Wage Differentials" Texas A&M Department of Economics Working Paper, 1988.

Suen, Wing and Hon-Kwong Lui "A Direct Test of the Efficient Marriage Market Hypothesis" Economic Inquiry, Vol. 37, No.1, January 1999, 29-46.

United States, Department of Labor. "Employment Characteristics of Families in 1998" News Release #USDL 99-146.

Notes

1. We use working couples for our samples in order to concentrate on testing the labor augmentation hypothesis for both male and female wage earners.
2. The census aggregate occupational and industry categories were used to construct the SAMEOCC and SAMEIND variables. The occupational categories are: managerial, professional, sales, clerical, operatives, production/craft, laborers, construction/extractive, and service; the industry categories are: construction/extractive, manufacturing, wholesale/retail trade, information, finance, professional services, education and health services, recreation and hospitality, other services, and public administration.
3. In addition, approximately 10% of the working couples in the Census and CPS samples are employed in the same industry **and** occupational categories. These percentages are significantly higher than what would occur under a random matching of couples by industry or occupation.
4. The regression results reported in Table 3 have been corrected for possible sample selection bias via Heckman's (1979) technique. The selection model is based on a probit estimation of a labor force participation equation (either in or out of the labor force) as a function of a respondent's experience, education, disability status, and the presence of young children. The full set of empirical estimates is available from the authors upon request.
5. For the CPS sample, the distribution of men and women with spouses in the same occupational category is: managerial (18%), professional (49%), service (9%), sales (7%), clerical (9%), operatives (1.5%), production/craft (5.3%), laborers (0.3%), construction/extractive (0.5%). The corresponding percentages for the industry categories are: construction/extractive (1%), manufacturing (18%), wholesale/retail trade (16%), information (2%), finance (6%), professional services (7%), education and health services (34%), recreation and hospitality (5%), other services (3.5%), and public administration (5%). The corresponding percentages for the Census sample are similar.

Table 1
Variables for the
Human Capital Wage Equations

<i>Dependent Variable:</i>	
LnW:	Logarithm of weekly wage and salary income
<i>Independent Variables (X):</i>	
<i>Human Capital Variables:</i>	
EDUCATION	Years of schooling completed by respondent
EXPER	Years of “potential” labor market experience: (Age– EDUCATION–5)
EXPERSQ	(EXPER) ²
<i>Labor Augmentation Variables:</i>	
SPOUSEDUC	Years of schooling completed by respondent’s spouse
EDUCATIONxSPOUSEDUC	interaction term between EDUCATION and SPOUSEDUC
SAMEOCC	set equal to 1 if an individual is employed in the same occupational category as his/her spouse, 0 otherwise
SAMEIND	set equal to 1 if an individual is employed in the same industry category as his/her spouse, 0 otherwise
<i>Demographic Variables and Other Earnings-related Traits:</i>	
UNION	set equal to 1 if an individual reports that his/her workplace is covered by a collective bargaining agreement, 0 otherwise (CPS sample only)
BLACK	set equal to 1 if an individual is black, non-Hispanic, 0 otherwise
HISPANIC	set equal to 1 if an individual is Hispanic, 0 otherwise
FTIME	set equal to 1 if an individual usually works 35 or more hours per week, 0 otherwise
NEAST	set equal to 1 if an individual lives in the Northeast census region, 0 otherwise (omitted category from wage regressions)
MWEST	set equal to 1 if an individual lives in the Midwest census region, 0 otherwise
WEST	set equal to 1 if an individual lives in the West census region, 0 otherwise
SOUTH	set equal to 1 if an individual lives in the South census region, 0 otherwise
METRO	set equal to 1 if an individual lives in a metropolitan area, 0 otherwise
DISAB	set equal to 1 if the individual reports a work-limiting disability, 0 otherwise (Census sample only)

Table 2
Descriptive Statistics
2000 U. S. Census of Population (1 %Public Use Microdata Sample) &
March 2003, Current Population Survey, Annual Demographic File

Variable	Sample Means or Proportions			
	Census		CPS	
	MALES	FEMALES	MALES	FEMALES
Weekly Earnings (\$)	929.03	586.65	904.79	607.31
LnW	6.56	6.12	6.64	6.19
EDUCATION	13.65	13.69	13.82	13.83
EXPER	23.35	22.10	23.92	22.48
EXBERSQ	647.58	584.87	674.41	606.28
SPOUSEDUC	13.69	13.65	13.83	13.82
EDUCATIONxSPOUSEDUC	191.08		195.21	
SAMEOCC	0.210		0.211	
SAMEIND	0.216		0.230	
FULLTIME	0.836	0.598	0.891	0.680
UNION	---	---	0.178	0.127
BLACK	0.078	0.073	0.100	0.088
HISPANIC	0.075	0.078	0.110	0.106
NEAST	0.194		0.181	
MWEST	0.264		0.261	
WEST	0.190		0.206	
SOUTH	0.352		0.351	
METRO	0.820		0.812	
DISAB	0.088	0.079	---	---
Sample Size (number of married couples)	192,905		2,775	

Table 3
Estimated Wage Regression Coefficients
(with Standard Errors)
2000 U. S. Census of Population (1 %Public Use Microdata Sample)
March 2003, Current Population Survey, Annual Demographic File
Dependent Variable: Logarithm of Weekly Wage and Salary Income

Variable	Census		CPS	
	Males	Females	Males	Females
Constant	5.172*** (0.026)	4.852*** (0.029)	5.150*** (0.202)	5.062*** (0.253)
EDUCATION	0.037*** (0.002)	0.043*** (0.0006)	0.032*** (0.014)	0.031* (0.017)
EXPER	0.044*** (0.0006)	0.016*** (0.0006)	0.034*** (0.006)	0.019*** (0.005)
EXPER ²	-0.0008*** (0.00001)	-0.0003*** (0.00001)	-0.0007*** (0.0001)	-0.0003*** (0.0001)
SPOUSEDUC	-0.023*** (0.002)	-0.056*** (0.002)	-0.018 (0.014)	-0.044*** (0.016)
EDUCATIONx SPOUSEDUC	0.003*** (0.0001)	0.005*** (0.0001)	0.003*** (0.001)	0.003*** (0.001)
SAMEOCC	-0.012*** (0.003)	0.075*** (0.004)	0.048* (0.026)	0.041 (0.029)
SAMEIND	-0.035*** (0.003)	0.070*** (0.004)	-0.073*** (0.024)	0.107*** (0.027)
R² (adjusted)	0.221	0.277	0.249	0.334

Notes to Table 3:

- *** Significant at the 1% level
- ** Significant at the 5% level
- * Significant at the 10% level

Table 4
Marginal Effect of Husband's Education on Earnings
By Wife's Level of Education

	Census		CPS	
Wife's Level of Education	Wife's Wages	Husband's Wages	Wife's Wages	Husband's Wages
8	-.0195	.0625	-.0192	.0549
9	-.0148	.0659	-.0160	.0577
10	-.0101	.0691	-.0129	.0604
11	-.0054	.0723	-.0097	.0632
12	-.0008	.0756	-.0065	.0661
13	.0039	.0789	-.0034	.0689
14	.0086	.0822	-.0002	.0717
15	.0133	.0854	.0030	.0745
16	.0179	.0887	.0061	.0773
17	.0227	.0919	.0093	.0801
18	.0273	.0952	.0125	.0829
19	.0320	.0985	.0156	.0857
20	.0367	.1017	.0188	.0885

Table 5
Marginal Effect of Wife's Education on Earnings
By Husband's Level of Education

	Census		CPS	
Husband's Level of Education	Husband's Wages	Wife's Wages	Husband's Wages	Wife's Wages
8	.0027	.0807	.0041	.0565
9	.0061	.0854	.0069	.0597
10	.0094	.0900	.0097	.06282
11	.0126	.0948	.0125	.0660
12	.0159	.0994	.0153	.0692.
13	.0192	.1041	.0181	.0723
14	.0224	.1088	.0209	.0755
15	.0257	.1135	.0237	.0786
16	.0290	.1182	.0265	.0818
17	.0322	.1228	.0293	.0850
18	.0355	.1275	.0321	.0881
19	.0387	.1322	.0349	.0912
20	.0420	.1369	.0377	.0944