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An Empirical Investigation of Female Labor Force Participation, Wages, Fertility, and Age at Marriage in Kore

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ABSTRACT

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This paper develops a simultaneous equation model of female labor force participation, wages, age at marriage and quality and quantity of children. The model is estimated with individual household data from the 1974 Korean World Fertility Survey. The basic theoretical framework of our model is similar to a simultaneous equation model developed by Fleisher and Rhoades (1979). We extend their model by adapting it to the analysis of less-developed countries and adding an age at marriage equation. In addition, the problem of sample selectivity bias in the estimation of the wage equation is investigated.

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I. Introduction

Recent contributions to the theory of household production and the allocation of time have greatly facilitated the analysis of the behavior of households with respect to decisions concerning labor force participation, age at marriage, and fertility. Early studies of these decisions generally focused on one individual aspect of a household's decision making process and ignored the mutual interdependence among these decisions. Researchers are increasingly recognizing the endogenous nature of a number of variables such as age at marriage, quality and quantity of children, and labor force participation status. A number of studies [Nerlove and Schultz (1970), Harman (1970), DeVanzo (1972), Maurer, Ratajczak and Schultz (1973), Cain and Dooley (1976), Fleisher and Rhodes (1979), and Link and Settle (1981)] estimate simultaneous equation models of variables such as fertility, labor force participation, and wages. However, the majority of these studies suffer from the shortcomings of using aggregate geographic data rather than the more desirable data on individual households.

This paper presents a simultaneous equation model of fertility, age at marriage, intensity of labor force participation during marriage, quality of children, and wages. The model is estimated using individual household data from the 1974 Korean World Fertility Survey and therefore incorporates a number of variables which are of particular importance in less-developed countries. Korea is a particularly interesting country to study because the dramatic declines in the birth rate and the infant mortality rate during the 1960's represent one of the most rapid population changes observed in the history of mankind [Cho (1973)]. These rapid declines in fertility and

mortality rates started prior to the period of rapid economic development which began in the late 1960's in Korea. In addition, women's age at marriage has substantially increased since the 1950's, and female labor force participation rates increased dramatically in the 1960's and 1970's.

Our simultaneous equation model is a variation and extension of one employed by Fleisher and Rhodes (1979) in their investigation of women's labor market experience, wages, and number and quality of children in the United States. The model presented in this paper is similar to the Fleisher-Rhodes' model in that it assumes the same theoretical framework - the economic fertility model of number of children and child quality which was explored by Willis (1973), DeTray (1973), and Becker and Lewis (1973). As a result, our model focuses on a number of the same structural relationships examined by Fleisher and Rhodes. For example, both models regard the relevant female labor supply variable to be the extent to which a woman has participated in the labor force over a period of years rather than as the current labor force participation status. However, there are a number of important differences between our model and the Fleisher-Rhodes' model. First, this paper concentrates on modeling a woman's decisions with respect to labor supply and fertility within the framework of her marriage. While Fleisher and Rhodes focus on a woman's lifetime labor supply (proportion of years worked since leaving school), this paper focuses on a woman's labor supply during the period of her marriage. The maintained hypothesis is that the structural relationship between labor supply and fertility, price and income variables in the years prior to marriage is sufficiently different from the relationship in the years during marriage that concentrating on a woman's lifetime labor supply may introduce

biases. This emphasis on a woman's decisions within the framework of marriage also results in the addition of one more endogenous variable - woman's age at marriage - to the four variables investigated by Fleisher and Rhodes.

A second extension of the Fleisher-Rhodes model involves the estimation of the wage equation. Estimation of a reduced form wage function generates instrumental variable predictions for women's wages which are used in the estimation of the labor force participation equation. However, only a relatively small proportion of women in the Korean sample report wages and it is reasonable to assume that this group of women does not represent a random sampling of all women. The instrumental variable predictions of wages for all women which are generated from a wage equation estimated with data on a nonrandom sample of women will be biased. This paper employs a method of correcting for this sample selectivity bias which was developed by Heckman (1979, 1980), Hay (1980), and Hill (1981).

A final major distinction between our model and the Fleisher-Rhodes model stems from our use of data from a less-developed country. In the United States, a woman's labor force participation decision is viewed as a decision "to work or not to work."[1] In many less-developed countries there exist substantial opportunities for employment outside the modern labor market. A Korean woman may choose to work in the modern labor market (e.g. as a paid employee in professional, sales, clerical, service or production work), to be self-employed or an unpaid family worker in the informal or traditional labor market (e.g. working on a family farm), or to not work. This distinction between types of employment is important because the structural relationship

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[1]Hill (1981).

between labor force participation and variables such as fertility may be different for different types of employment. The generally accepted doctrine is that female employment and child rearing activities are not compatible roles and should be negatively related. While employment in the modern work force is no doubt somewhat incompatible with raising children, employment on the family farm may be nearly as compatible with raising children as not working is. This paper attempts to gain insights into this matter by estimating the model with two alternative definitions of labor force participation.

Given the above considerations and the basic framework of the Fleisher-Rhodes' model, the empirical specification of our simultaneous equation model of female labor force participation, number and quality of children, age at marriage, and wages is advanced in Section II. Section III presents the estimated parameters and discusses the more important and interesting results. Conclusions and suggestions for future work are contained in Section IV.

II. The Model

The economic fertility model assumes that the household's utility function has child services (number of children and child quality) and market goods as arguments. A mother's and father's time are inputs into the production of child services. Maximization of the family utility function subject to a time and budget constraint yields demand equations for numbers of children, child quality, and market goods as a function of their prices and full income. Our model expands this basic economic fertility model by incorporating additional endogenous variables - labor force participation, wages, and age at marriage. In addition, the basic economic fertility model is expanded to

incorporate variables which reflect certain cultural and demographic factors which affect preferences and production activities.

The empirical specification of the relationships implied by theoretical considerations is given in equations (1) through (5). These relationships are assumed to be linear in the variables for observations on women in age groups: 25-29, 30-34, and 35-39.[2] All variables are defined in Table 1.

(1) The work intensity during marriage equation
WKINTAM = f(CEB, LWAGE, EDASPIR, DNNFAMM, OWNLAND, URBAN1, URBAN2, URBAN3, LPOINC).

(2) The marital fertility rate equation
ANLBR = f(DURMR, WKINTAM, EDASPIR, MODCONTR, ED, EDSQ, EDH, EDHSQ, MORTR, SHSN, URBAN1, URBAN2, URBAN3, LPOINC, LWAGE).

(3) The duration of marriage equation
DURMR = f(DA1, DA2, DA3, DA4, CEB, ED, EDSQ, EDH, EDHSQ, MICR, URBAN1, URBAN2, URBAN3, WKINTBM).

(4) The child quality (aspirations for children's education) equation
EDASPIR = f(CEB, WKINTAM, LWAGE, ED, EDSQ, EDH, EDHSQ, LPOINC, URBAN1, URBAN2, URBAN3, SHSN).

(5) The wage equation
LWAGE = f(ED, EDSQ, URBAN1, URBAN2, URBAN3, WKINTBM, λ).

The remainder of this section discusses the rationale behind this specification.

The work intensity during marriage equation

In order to capture the strategy of a woman who is jointly determining the number and quality of her children, her age at marriage, and her labor

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[2]Data on six age groups (20-24, 25-29, 30-34, 35-39, 40-44 and 45-49) were originally analyzed. The results for the youngest group of women are not included here because of sample selectivity bias; i.e. nearly 100% of the women in the other age groups are married whereas this is not true for the youngest age group. The sample of women who are age 20-24 and married is not a random sample of all women in this age category and thus the estimated parameters for this group would be biased. The results for the older age groups are not presented because of space limitations and because they did not provide any additional evidence or insights of interest. It can also be argued that the quality of responses of older women to the questionnaire may be poorer than for younger age groups because more time has passed since the child-bearing period in their life.

supply, the labor force participation variable is defined as the proportion of years worked since marriage rather than as current labor force participation status. In order to investigate the possibility that the relationship between labor force participation and variables such as fertility may be different for different types of employment, the system is estimated using two alternative definitions of labor force participation:

WKINTAM	Work intensity after marriage. Labor force participation is defined to include participation in either the modern or traditional sectors of the labor market.
WKINTAM2	Work intensity after marriage. Labor force participation is defined to include participation in the modern sector only.

All of the structural equations will be estimated separately for both measures of labor force participation.

As the roles of mother and labor force participant are generally incompatible, the coefficient on children ever born (CEB) in the labor force participation equation is expected to be negative. If work in the modern sector is in fact less compatible with child care than work in the informal, agricultural sectors then the coefficient on CEB in the WKINTAM2 equation should be smaller than the corresponding coefficient in the WKINTAM equation.

A woman's decision to participate in the labor force is influenced by the wage offered in the market. The natural logarithm of the market wage rate is predicted for all women on the basis of equation (5) and is incorporated in the work intensity equation. It is expected to have a positive influence on the intensity of labor force participation during marriage.

The input of parent's time may be crucial in producing child quality and a woman who has aspirations for high quality children may substitute time in the home for time spent working in the market. To the extent that

aspirations for children's education is a good proxy for child quality, the coefficient on EDASPIR should be negative if this trade-off between market work and work in producing child quality exists.

The coefficient on the dummy variable reflecting the presence of non-nuclear family members (DNNFAMM) is expected to be positive as these additional family members (often parents or in-laws) may reduce the incompatibility of the roles of mother and workers. In addition, a woman may need to work in order to help support the extended family.

If a woman's family owns land she is more likely to work in the informal sector as an unpaid family worker and less likely to participate in the modern labor market than a woman whose family does not own land. Thus the coefficient on OWNLAND is hypothesized to be positive in the WKINTAM equation and negative in the WKINTAM2 equation.

The urbanization background variables (URBAN1, URBAN2, and URBAN3) are included to capture the influence of a woman's attitudes about work insofar as these attitudes are the result of experiences in her "formative years." To the extent that these variables reflect current region of residence they also account for differences in employment opportunities. The coefficients on these variables represent contrasts with ultra-rural women who have lived their entire life in rural areas. In Model 2 the coefficients are expected to be positive as more urban women are more likely to participate in the modern labor market than are more rural women.

A woman's labor force participation will be influenced by her husband's wage rate and by the non-wage income of the family. It is assumed that the husband's labor supply is exogenous so that there is no substitution in household production between the husband's and the wife's time. The husband's

income plus asset income are assumed to affect a woman's work intensity throu an income effect only. This income variable (LPOINC) is incorporated in the work intensity equation in logarithmic form. It is expected to be negatively related to the labor force participation variable.

The marital fertility rate equation

Traditional economic models of fertility express children ever born to a woman as a function of income and other socioeconomic variables which attempt to proxy the price of and preference for children. The fertility variable in this equation is the marital fertility rate, ANLBR, which is computed by dividing children ever born by the duration of marriage. Use of ANLBR with age stratified data controls for the biological constraints on fertility which are imposed by such factors as exposure to intercourse (and hence duration of marriage) and age-patterns of fertility. That is, "since fecundity varies by age, two women who have the same duration of marriage but were married at different ages will have different numbers of births if neither is controlling fertility or if they are both controlling at the same level."[3] In addition, two women who were married at the same age but who have been married for different lengths of time will have different numbers of children because their exposure to the risk of conception is different, ceteris paribus. The need to hold constant the influence of duration of marriage and age-patterns of fertility resulted in the use of ANLBR in conjunction with age-stratified data.[4]

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[3]Boulier and Rosenzweig (1978a), p. 5.

[4]The reader is referred to Lee and McElwain (1981a) for a more detailed discussion of ANLBR and a comparison of ANLBR with several alternative measures of fertility.

There is somewhat of an inconsistency in using ANLBR as a left-hand side variable and CEB as a right-hand side variable in a system of equations. However, it is felt that the number of children rather than ANLBR exerts an influence on variables such as labor force participation. The formulation of the fertility equation in terms of ANLBR is in order to adjust for the influence of duration of marriage on children ever born, not because it is felt that ANLBR is the important decision variable. The use of two different measures of fertility should provide more insights than if the model was restricted to the use of only one measure of fertility.[5]

The duration of marriage variable is included to capture a non-linear relationship: increasing the duration of marriage increases fertility at a decreasing rate. As discussed previously, it is expected that the coefficient on the labor force participation variable will be negative due to the fact that raising children is a time intensive activity and may inhibit market work.

A woman's aspirations for her children's education is included in the ANLBR equation as a proxy for child quality. The idea of a trade-off between quality and quantity of children, which has been dealt with extensively in the literature, suggests a negative coefficient on EDASPIR.[6]

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[5]See Fleisher and Rhodes (1979) for a similar "inconsistency" in model specification. Their inconsistency involves defining two variables for labor force participation. The first, R, is the proportion of years worked since leaving school and is used on the left-hand side of one equation in their system. The second, R', is years worked and is incorporated in their model as a right hand side variable in a wage equation.

[6]Child quality is obviously multifaceted and includes elements of heredity, luck, investments in formal schooling and investments in less formal means of education. However, the only aspect of child quality which is directly measurable is the amount of formal schooling. To avoid the selectivity bias which would result if only women whose children had completed schooling were included in the analysis we use educational aspirations.

The variable MODCONTR is incorporated in the marital fertility equation in order to capture the efficiency with which a woman attempts to control fertility.[7] The relationship between MODCONTR and the marital fertility rate is expected to be negative.

There is considerable evidence of a negative correlation between fertility and parent's education attainment [T. W. Schultz (1973), DeTray (1973)]. If this is due to a positive correlation between age at marriage and parent's educational attainment then the coefficients on the parent's education variables may be small and insignificant in the marital fertility rate equation (which controls for age at marriage by the adjustment for marriage duration and the use of age stratified data). The education variables are included to account for any negative correlation between parent's education and fertility which is due to the influence of "tastes, efficacy of birth control, or efficiency in household production"[8] rather than due to the relationship between age at marriage and parent's educational attainment.

The personal child mortality rate, MORTR, is expected to have a positive impact on fertility in that a family is generally expected to at least partially replace any of their children who die.[9] Consideration of a strong preference for sons in Korea and the fact that Korean women often desire some target number of sons led to incorporation of the share of sons variable, SHSN.[10]

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[7]See Lee and McElwain (1981b) for a specification which treats the use of modern methods of birth control as endogenous. Those result do not vary much from the results reported here.

[8]Willis (1973), p. 551.

[9]See Schultz (1976), Ben-Porath (1976), and Lee and Schultz (1981).

[10]The mortality variable and the son preference variable are incorporated as the mortality rate and the share of sons rather than as the number of child deaths and the number of sons to reduce the obvious spurious correlation between these latter measures and fertility. See Lee and Schultz (1981).

The coefficient of this variable should be negative. The coefficient on the income variable in the fertility rate equation is expected to be positive. Finally, the urbanization background variables are incorporated to capture a woman's attitudes and preferences with respect to children. It is hypothesized that more urbanized women will have fewer children, ceteris paribus, so that the coefficients on these variables should be negative.

The duration of marriage equation

Work by Becker (1973, 1974) Keeley (1977, 1979), and Anderson and Hill (1980) demonstrates that the decision to marry can be viewed as a rational choice influenced by economic considerations. In Korea, where nearly all women marry, the decision variable of interest is age at marriage rather than whether or not to marry. When age-stratified data is used and age dummy variables (DA1-DA4) are included as independent variables, a duration of marriage equation is essentially the mirror image of an age at marriage equation. For consistency with the use of duration of marriage in the ANLBR equation, this model specifies a duration of marriage equation.

A woman's decision about when to marry depends upon the costs and benefits of marriage. These are influenced by her desire for children, her education level, her experiences as a single woman (labor force status prior to marriage), urbanization background, and characteristics of her husband such as his level of education.[11] All of these variables except a woman's desire for children are hypothesized to have a positive impact on age at marriage and

[11] A husband's education level affects the gains from marriage. It will also affect the husband's age at marriage. Since a majority of Korean men marry women about five years younger than they are, the husband's education level will also influence the woman's age at marriage.

hence a negative impact on duration of marriage. Children ever born is incorporated as a proxy for the desire for children and its coefficient is expected to be positive.

A final factor which influences age at marriage in less-developed countries is the perceived rate of infant mortality. Many marriages are arranged by parents and if a woman or her parents expect that a high proportion of her children may die, an early marriage may be arranged so that she is more likely to have some desired number of children. The regional child mortality rate, MICR, is incorporated to capture this influence. The coefficient on MICR in the duration of marriage equation is expected to be positive.

The child quality equation

As mentioned earlier, child quality is multi-faceted and a parent's aspirations for children's education is only a proxy for child quality.

The children ever born variable is expected to have a negative impact on aspirations for children's education because of the trade-off between child quality and quantity. The education levels of the parents are hypothesized to be important determinants of child quality in that more educated parents are likely to have preferences for high quality children. The income variable is expected to have a positive coefficient in this equation as child quality is considered a normal good.

The urbanization variables are included because a woman's urbanization background is likely to influence her preferences between quantity and quality of children. These variables also reflect current region of residence, and are incorporated to reflect the idea that schooling in urban areas may be a

better investment than it is in rural areas.[12] The coefficients on the urbanization variables are expected to be positive as they reflect a contrast with ultra-rural women.

The woman's wage rate is a determinant of the price of quality since the mother's time is an input into the production of child quality. The coefficient is expected to be negative. The woman's labor force participation status is also assumed to affect her aspirations for child quality although it is theoretically unclear what the sign of the labor force participation variable will be. A mother may participate less in the labor force so that her time might be spent in producing child quality. On the other hand, a woman who works may be better able to recognize the returns which her children might realize from education.

The share of sons variable is included to reflect the strong degree of son preference. A family with a large percentage of male children may report a relatively high level of desired education for their children.

The wage equation

The wage equation is viewed as an instrumental variable equation which is estimated with data on women who report wages. It is then used to generate a predicted wage for all women in the sample. The wage equation is a standard one which expresses the natural logarithm of wages as a function of a woman's education, labor market experience prior to marriage,[13] and her urbanization

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[12] DeTray (1973) argues that urban areas receive more education per dollar expenditure than do rural areas due to economies of scale in education. Also, the returns to schooling are no doubt easier to realize in more urban areas.

[13] The work experience during marriage variable is not included in the wage equation as it is an endogenous variable and the wage equation is specified so as to provide instrumental variable predictions for women's wages. Inclusion of a right-hand side endogenous variable is inappropriate in an instrumental variable regression.

background. The coefficients on all of these variables are hypothesized to be positive.

As discussed in the introduction, estimating a standard wage equation for women who work and using this estimated relationship to estimate a wage for all women results in sample selectivity bias.[14] This can be intuitively explained b onsidering the standard wage equation:

$$(6) \qquad \ln W_i = \beta' X_i + \varepsilon_i \qquad i = 1, \ldots, N$$

where $\ln W_i$ is the natural logarithm of the wage rate for the ith woman, is a (1xk) vector of parameters to be estimated, X_i is a (kx1) vector of characteristics (e.g. schooling, experience) of the ith woman, and ε_i is a random error term. Let N be the number of women in the entire sample and assume that ε_i is distributed with a mean of zero and a variance of σ^2. However, the equation can only be estimated for a subset of η_1 women (where $\eta_1 < N$) who report wages. That is, wage data is only available for those women who have chosen to work. If these η_1 women are not a random sample of the N women, the expected value of the error term ε_i, given X_i, is no longer equal to zero. In fact, the expected value of the error term depends on the labor force participation decision and therefore,

$$(7) \quad E(\ln W_i | X_i, \text{ labor force participation decision}) = \beta' X_i + E(\varepsilon_i / \text{labor force participation decision}).$$

This violates the assumptions for ordinary least squares estimation. The solution to this problem, as developed by Heckman (1979) and Hay (1980), is

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[14] This section is by no means a detailed attempt to explain the correction for sample selectivity bias. The reader is instead referred to Hay (1980), Heckman (1979, 1980), and Hill (1981).

to add a variable to the wage equation which leads to a zero expectation for the disturbance term in the equation estimated for the η_1 women.

Since the expected value of the error term depends on the labor force participation decision it should be possible to use information on this decision in order to "purge" the error term of its non-zero expectation. Following Hay (1980) and Hill (1981), the appropriate regressor to incorporate into the wage equation is defined by:

$$\lambda_i = \frac{1}{P_i}[P_i \ln(P_i) + (1-P_i)\ln(1-P_i)] \tag{8}$$

where P_i is the probability that the ith woman participates in the labor force. This probability can be estimated within the framework of a reduced form logit model which expresses labor force participation status as a function of a woman's exogenously determined characteristics. The wage equation corrected for selectivity bias can be written as

$$\ln W_i = \beta' X_i + \delta\lambda_i + \varepsilon_i \qquad i = 1, \ldots \eta_1. \tag{9}$$

The procedure for estimating the wage equation is then to first estimate a reduced form logit model of labor force participation for all women in the sample.[15] The dependent variable is a dummy variable which equals one if a woman is participating in the labor force, zero otherwise. This estimated logit model is used to calculate the estimated probability, $\hat{P}_i$, that each woman will participate in the labor force. This $\hat{P}_i$ is used to obtain an estimate of λ_i,

[15] These results are not included in this paper due to space limitations but they are available upon request.

as defined in equation (8). Then the wage equation given in equation (9) is estimated with data on women who work and report wages. The estimated coefficients from equation (9) are then used to generate estimated market wages for all women.

III. The Results

The results of estimating equations (1) through (5) are given in Table 2 through 7. Each table contains the results of estimating two versions of each equation: Model 1 corresponds to the definition of work intensity during marriage which includes work in the modern and traditional sector (WKINTAM) while Model 2 corresponds to the definition which includes work in the modern sector only (WKINTAM2). Our preferred model is Model 2 so discussion will focus on that model and interesting contrasts between Model 1 and Model 2 will be pointed out.

The work intensity during marriage equation

The results for this equation are given in Table 2. In general, the coefficients on CEB are not significantly different from zero and only for women age 35-39 is the coefficient negative. The coefficients on CEB in Model 1 are consistently larger than the corresponding coefficients in Model 2, indicating that there is some slight evidence that children and labor force participation are less compatible when labor force participation involves work in the modern sector.

As expected, the estimated coefficients on the wage variables are consistently positive and, for Model 2, significantly different from zero. The implied elasticities of labor supply with respect to the woman's wages in Model 1 are 0.22, 0.34, and 0.19 for the three age groups. In Model 2

these elasticities are 0.66, 1.22, and 0.62 for the three age groups. The elasticity for the middle age group is high but the remaining elasticities from Model 2 appear to be reasonable and within the range reported by Link and Settle (1981), and Schultz (1975) for U.S. women and Hill (1981) for Japanese women participating in the modern labor market.

The estimated coefficients on the variable reflecting the presence of non-nuclear family members (DNNFAMM) are positive, indicating that women participate more in the labor market when there are non-nuclear family members living with the household. For the two younger age groups, the influence of non-nuclear family members is stronger for Model 2 which is consistent with the view that modern sector employment and child care activities are not compatible.

The remaining variables which strongly influence a woman's labor force participation are EDASPIR (the child quality proxy), OWNLAND (whether the woman's family owns land) and the income variable. Women with desires for high quality children spend significantly less time in the labor market than do women with lower aspirations for child quality. As expected, the estimated coefficients on OWNLAND are positive in Model 1 (a woman is more likely to work in agriculture if her family owns land) and negative in Model 2 (a woman is less likely to participate in the modern labor market if her family owns land). All of the estimated coefficients on OWNLAND are highly significant. Finally, the coefficient estimates for the LPOINC variable are significant and negative, as hypothesized. A comparison of the magnitudes of the coefficients in the two models indicates that the income effect on female labor force participation is greater for employment in the modern

sector than for employment in the agricultural sector. The labor supply elasticities for husband's and non-wage income in Model 1 are -.04, -.01, and .01 and in Model 2 are -.07, -.08, and -.08 for the three age groups, respectively. The magnitudes of these coefficients seem more consistent with other researchers' estimates of asset income elasticities than with husband's wage elasticities of married women's labor supply.

The marital fertility rate equation

The results for the ANLBR equation are given in Table 3. As expected, there is a significant nonlinear relationship between children ever born and duration of marriage: increasing the duration of marriage increases children ever born at a decreasing rate. The coefficients on the work intensity variable in Model 2 are negative for two out of three age groups and is significantl negative for the oldest age group. In general, the marital fertility rate and work intensity are positively related in Model 1. These results provide a bit more evidence that the role of mother and worker are less compatible for work in the modern sector than for work in the agricultural sector.

The negative coefficients on the child quality proxy variable, EDASPIR, indicate a trade-off between quality and quantity of children. However, these estimated coefficients are generally not significantly different from zero.

The estimated coefficients on the wife's and husband's education terms and on the urbanization dummies are generally mixed in sign and not significantly different from zero. As expected, the estimated coefficients on the mortality variable, MORTR, are consistently positive and the estimated coefficients on the share of sons variable are consistently negative. However, care should be taken in interpreting these coefficients as there is some

evidence that a spurious correlation problem exists when these variables are included in a children ever born or a marital fertility rate equation.[16]

For the younger two age groups, the estimated coefficient on MODCONTR (use of modern contraceptive methods) is negative and significantly different from zero. Thus, younger women who use modern methods of birth control have a lower marital fertility rate than do women who do not use modern methods of birth control. However, the coefficient on MODCONTR for women age 35-39 is positive and significantly different from zero.[17] It may be that older women only began to use modern methods of birth control relatively later in their reproductive years and that older women with more children are more likely to begin using modern birth control methods than are older women with fewer children.

The duration of marriage equation

The results for the DURMR equation are given in Table 4. As expected, the coefficient on the age dummy variables are positive and of the appropriate relative magnitudes: older women in a given age interval have generally been married longer than younger women in that age interval. In addition, there is a positive relationship between children ever born and duration of marriage. Husband's and wife's education exert a negative effect on duration of marriage. The partial derivatives of DURMR with respect to wife's and husband's education (evaluated at the mean value of ED and EDH) and their respective t-statistics for Model 2 are:

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[16]The reader is referred to Lee and Schultz (1981) or Lee and McElwain (1981b) for a detailed discussion of the spurious correlation problem.

[17]This is also true for the age group 40-44 and 45-49.

	25-29	30-34	35-39
$\frac{\partial DURMR}{\partial ED}$	-.1282 (-3.68)	-.2088 (-5.78)	-.1245 (-3.81)
$\frac{\partial DURMR}{\partial EDH}$	-.0533 (-1.92)	-.0658 (-2.19)	-.1191 (-4.23)

Thus, highly educated men and women significantly delay their age at marriage. Many studies conclude that highly educated parents have fewer children. These results, in conjunction with the results for the education terms in the ANLBR equation, indicate that more educated parents have fewer children because they delay their age at marriage not because they have fewer children in a marriage of a given duration.

Other interesting results for this equation are that expectations of high child mortality rates leads to marriage at an earlier age[18] and that women who work intensely prior to marriage tend to marry at a later age than women who do not work intensely prior to marriage. The impact of work experience prior to marriage is greater for employment in the modern sector.

The aspirations for children's education equation

Table 5 presents the results for this equation. The major determinant of aspirations for child quality appears to be the level of education of the

[18] The coefficient on MICR is significant only for age group 30-34. In contrast, a similar regression using the 1971 Korean Fertility Survey data (see Lee and McElwain, 1981) yielded positive and significant coefficients on MICR for five out of six age groups. The poor results for this analysis of the 1974 data are probably due to the fact that distinct values for MICR for each individual Ward in Seoul and Busan are not available. That is, one value of MICR is assigned to all women in Seoul and another value is assigned to all women in Busan. In the 1971 data, distinct values for MICR were available for all Wards in Seoul and Busan so there was a great deal more variability in the measure of mortality than exists in the 1974 results.

parents. The derivative of EDASPIR with respect to ED and EDH (evaluated at the means of ED and EDH) and their respective t-statistics are (for Model 2):

	25-29	30-34	35-39
$\frac{\partial EDASPIR}{\partial ED}$	0.1081	.1142	.2043
	(1.25)	(1.17)	(1.74)
$\frac{\partial EDASPIR}{\partial EDH}$	.0812	.1746	.1130
	(3.85)	(5.43)	(4.69)

The estimated coefficients on CEB again indicate an insignificant trade-off between child quality and quantity. Calculated income elasticities of demand for child quality are positive but quite small in magnitude; in Model 2 they are .0022, .0060, and .0067 for the three age groups. A comparison of these elasticities with the income elasticities of demand for child quantity (.0023, .0834, and .0041, respectively) does not provide support for the hypothesis that the income elasticity of demand for child quality is greater than the income elasticity of demand for child quantity.[19] However, it may be that aspirations for children's education respond less to changes in income than do aspirations for other dimensions of child quality such as quality of schooling, health, and recreational activities.

In general, more urbanized women have higher aspirations for their children's education than do ultra-rural women. Finally, the coefficient on the share of sons variable, SHSN, is generally positive but not significantly different from zero.

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[19] These results are similar to those of Fleisher and Rhoades (1979) who use the wage of out-of-school youths as a proxy for child quality.

The wage equation

Tables 6 and 7 contain the results of estimating the wage equation without a correction for selectivity bias and with a correction for selectivity bias, respectively. A woman's education level has a positive, significant impact on her wage rate. The coefficients on the urbanization variables are generally positive, indicating that more urbanized women earn a higher wage than do ultra-rural women. However, the relative magnitudes of the three coefficients do not indicate that ultra-urban receive a higher wage than do urban women who in turn receive a higher wage than rural women.

Inclusion of the correction for sample selectivity bias, λ, has little influence on the overall explanatory power of the equations or on the magnitudes of the other estimated coefficients. The one exception to this is that the coefficient on the work experience prior to marriage variable is affected considerably. This may be due to the fact that λ may be correlated with work intensity prior to marriage; i.e. a woman's decision to be a current participant in the labor force may be correlated with her work intensity before marriage.

IV. Conclusions

This paper has developed and estimated a simultaneous equation model of intensity of labor force participation during marriage, duration of marriage, the marital fertility rate, aspirations for children's education, and wages. Some of the more interesting results are summarized as follows:

1. Parents' education affects fertility by influencing age at marriage rather than the marital fertility rate. Adult education programs for married adults will thus probably do little to reduce fertility.

2. There is some evidence that a woman who works intensely during her married life will have more children if her job is compatible with child care. Increasing job opportunities for women may only reduce fertility if these job opportunities are in the modern sector.
3. Labor supply elasticities defined with respect to women's wage rates and those defined with respect to husband's plus non-wage income are greater for employment in the modern sector than they are for employment defined as participation in the modern or agricultural sectors.
4. The presence of non-nuclear family members significantly increases the proportion of her married life that a woman will work.
5. More urbanized women and women who work prior to marriage marry later than do less urbanized women and women who do not work prior to marriage. Trends in increased urbanization and modernization can be expected to reduce the fertility rate by delaying age at marriage.
6. Parents' education levels have a significant positive impact on their aspirations for their children's education.
7. Younger women who use modern methods of birth control experience a significantly lower fertility rate than do young women who do not use modern methods of birth control. Thus, the family planning programs which have been sponsored by the Korean government since 1962 have contributed significantly to declining fertility rates among young Korean women.
8. Sample selectivity does not seem to introduce a major bias in female wage equations estimated with data from a less-developed country.

A number of refinements and extensions of our model are possible. The results suggest that the structural relationship between labor force participation and a number of variables such as fertility is different for work in the

modern sector than it is for work in the informal, agricultural sector. Future work should explore this in more detail. One avenue of investigation might be the incorporation of a multinominal logit equation for labor force participation into the model. Such an equation would allow a more refined analyses of the distinction between working in the modern labor market and working in the informal sector.[20]

A second suggestion for future work involves the relationship between son preference and the trade-off between quality and quantity of children. For a country such as Korea, in which parents have strong preferences for male children, it would be interesting to investigate the structural relationship between quality and quantity of male children separately from the relationship for female children.

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[20] Hill (1981)

Table 1: Definitions of Variables

Endogenous Variables	Definition
CEB	Children ever born
ANLBR	CEB/DURMR
DURMR	Duration of marriage
WKINTAM	Work intensity during marriage - modern and traditional, agricultural employment
WKINTAM2	Work intensity during marriage - modern employment
EDASPIR	Educational aspirations for children (proxy for child quality)
LWAGE	Natural logarithm of woman's hourly wage (LWAGE1 is calculated on the basis of wage information for women in modern and traditional employment. LWAGE2 is based on information for women on the modern sector only. See Appendix A for details.)
Exogenous Variables	
DA1, DA2, DA3, DA4	Dummy variables with suffixes reflecting deviation of the woman's age from the youngest age in the five year age interval. For example, DA1 has a value of 1 in age group 25-29 if the woman's age is 26. Otherwise DA1 is equal to zero.
ED, EDSQ	Wife's education and wife's education squared
EDH, EDHSQ	Husband's education and husband's education squared
MORTR	Personal child death rate = number of child deaths divided by CEB
SHSN	Share of surviving sons out of surviving children
LPOINC	Natural logarithm of average monthly household income (in Won) not contributed by the wife
DNNFAMM	Dummy variable which equals one if non-nuclear family members are present in household, zero otherwise
OWNLAND	Dummy variable equal to one if the woman's family owns or rents land, zero otherwise
WKINTBM	Work intensity before marriage - modern or traditional, agricultural employment
WKINTBM2	Work intensity before marriage - modern employment
MICR	Regional child mortality variable
URBAN1 URBAN2 URBAN3	Dummy variables reflecting the degree of women's urbanization background. URBAN1 equals one for the ultra-urbanized woman (one who has spent all of her life in urban areas), zero otherwise. URBAN2 is equal to one for the urban woman (one who is currently living in an urban area and who has spent most but not all of her life in urban areas - she may have been born in a rural area). URBAN3 is equal to one for the rural woman (one who is currently living in a rural area but has not spent her entire life in rural areas - she may have been born in an urban area or spent a portion of her formative years in an urban area). URBAN4 is equal to one for the ultra-rural woman (one who was born and raised in rural areas and who currently lives in a rural area). URBAN4 is suppressed to present perfect singularity of the design matrix.
MODCONTR	Use of modern contraceptive methods; equals one if the woman has ever used a modern methods of birth control (e.g. pill, IUD, condom, etc.), zero otherwise.
	Correction for sample selectivity bias

Table 2: Structural Equation Estimates
Work Intensity During Marriage Equation (WKINTAM)

Independent Variables	Age Group 25-29 $\hat{\beta}$	t	30-34 $\hat{\beta}$	t	35-39 $\hat{\beta}$	t
Model 1						
Intercept	1.0379	3.38	0.8768	3.12	1.9144	6.74
CEB	0.0401	1.49	0.0321	1.41	0.0017	0.09
EDASPIR	-0.0657	-2.59	-0.0864	-4.60	-0.1417	-6.28
LWAGE1	0.0668	1.48	0.1350	2.92	0.0965	2.36
DNNFAMM	0.0184	0.74	0.0027	0.10	0.0620	2.55
OWNLAND	0.2943	7.75	0.3270	8.08	0.2834	7.71
URBAN1	-0.1433	-3.11	-0.0626	-1.38	-0.0672	-1.55
URBAN2	-0.0896	-1.80	-0.0019	-0.03	-0.0709	-1.24
URBAN3	-0.1500	-4.30	0.0356	1.06	-0.0716	-2.36
LPOINC	-0.0107	-2.02	-0.0039	-0.75	0.0045	0.89
R^2	0.2572		0.2964		0.4069	
F-statistic	39.06		44.23		66.18	
Model 2						
Intercept	0.8633	3.17	0.3887	1.75	1.2945	5.29
CEB	0.0109	0.47	0.0133	0.74	-0.0055	-0.35
EDASPIR	-0.0675	-2.94	-0.0634	-4.15	-0.0923	-4.88
LWAGE2	0.1028	2.78	0.1838	4.78	0.0918	2.74
DNNFAMM	0.0364	1.68	0.0415	1.99	0.0337	1.61
OWNLAND	-0.1322	-4.21	-0.1400	-4.80	-0.2313	-8.15
URBAN1	-0.0504	-1.31	-0.0678	-1.83	-0.0084	-0.23
URBAN2	0.0017	0.04	0.0254	0.61	-0.0091	-0.18
URBAN3	-0.0599	-1.97	0.0964	3.46	0.0151	0.58
LPOINC	-0.0112	-2.43	-0.0130	-3.26	-0.0116	-2.80
R^2	0.0411		0.1123		0.1282	
F-statistic	4.83		13.29		14.18	

Notes:
1. The definitions of all variables may be found in Table 1.
2. The number of observations are 1025, 955, and 878 for age groups 25-29, 30-34, and 35-39, respectively.
3. Instrumental variable estimates are substituted for the right-hand side endogenous variables in all structural equations.
4. Model 1 defines labor force participation to include work in either the modern or traditional, agricultural sectors of the labor market. Model 2 defines labor force participation to include only participation in the modern sector.

Table 3: Structural Equation Estimates
Marital Fertility Rate Equation (ANLBR)

Independent Variables	Age Group 25-29 $\hat{\beta}$	t	30-34 $\hat{\beta}$	t	35-39 $\hat{\beta}$	t
Model 1						
Intercept	1.3900	1.70	0.1956	0.32	0.4584	2.22
DURMR	-0.1287	-9.21	-0.0235	-6.53	-0.0124	-6.93
WKINTAM	-0.0208	-0.12	0.0220	0.33	0.0118	0.31
EDASPIR	-0.0285	-0.56	-0.0067	-0.32	-0.0196	-1.46
MODCONTR	-0.1047	-3.22	-0.0195	-1.88	0.0207	3.09
ED	-0.0118	-0.31	0.0023	0.29	-0.0029	-0.74
EDSQ	0.0001	0.09	-0.0011	-1.40	-0.0005	-1.29
EDH	-0.0120	-0.58	0.0003	0.05	-0.0015	-0.63
EDHSQ	0.0006	0.62	-0.0001	-0.25	0.0001	0.48
MORTR	0.2393	1.85	0.3006	7.05	0.1915	7.52
SHSN	-0.0210	-0.49	-0.0455	-2.62	-0.0936	-6.99
URBAN1	-0.0288	-0.25	-0.0085	-0.21	-0.0298	-1.80
URBAN2	0.0615	0.60	-0.0592	-1.03	-0.0546	-2.33
URBAN3	-0.0194	-0.19	0.0244	1.44	-0.0134	-0.83
LPOINC	0.0063	0.85	0.0057	1.95	0.0042	2.38
LWAGE1	0.1077	0.57	0.1245	1.03	0.0789	1.77
R^2	0.1657		0.1369		0.2468	
F-statistic	13.36		9.93		18.83	
Model 2						
Intercept	1.1831	1.58	1.4646	3.07	0.8519	3.58
DURMR	-0.1280	-9.29	-0.0267	-6.24	-0.0123	-6.80
WKINTAM2	-0.3953	-1.13	0.1732	0.93	-0.1125	-2.48
EDASPIR	-0.0324	-0.62	-0.0290	-0.98	-0.0332	-2.88
MODCONTR	-0.1029	-3.16	-0.0214	-2.06	0.0204	3.03
ED	-0.0404	-0.98	0.0105	0.99	0.0003	0.08
EDSQ	0.0005	0.40	0.0003	0.50	-0.0002	-0.45
EDH	-0.0112	-0.54	0.0021	0.39	-0.0019	-0.79
EDHSQ	0.0006	0.58	0.0001	0.22	0.0001	0.73
MORTR	0.2148	1.66	0.3137	7.29	0.2129	8.45
SHSN	-0.0157	-0.36	-0.0535	-2.74	-0.0788	-6.08
URBAN1	-0.0661	-0.77	0.0705	1.68	-0.0156	-1.06
URBAN2	0.0132	0.14	0.0178	0.65	-0.0388	-1.56
URBAN3	-0.0708	-0.81	-0.0084	-0.36	0.0023	0.17
LPOINC	0.0012	0.14	0.0045	1.12	0.0012	0.72
LWAGE2	0.2483	1.27	-0.1363	-1.51	0.0331	0.62
R^2	0.1666		0.1311		0.2417	
F-statistic	13.45		9.45		18.32	

Notes:
1. The definitions of all variables may be found in Table 1.
2. The number of observations are 1025, 955, and 878 for age groups 25-29, 30-34, and 35-39, respectively.
3. Model 1 defines labor force participation to include work in either the modern or traditional, agricultural sectors of the labor market. Model 2 defines labor force participation to include only participation in the modern sector.

Table 4: Structural Equation Estimates
Duration of Marriage Equation (DURMR)

Independent Variables	Age Group 25-29 $\hat{\beta}$	25-29 t	30-34 $\hat{\beta}$	30-34 t	35-39 $\hat{\beta}$	35-39 t
Model 1						
Intercept	2.2162	2.82	7.7106	8.59	14.5890	16.73
DA1	0.5147	2.28	0.7099	2.65	0.8196	3.26
DA2	1.0866	4.40	1.5933	5.85	2.1179	8.32
DA3	1.4369	5.25	2.7808	9.51	3.4126	12.85
DA4	2.1043	6.19	3.7942	12.45	4.3638	16.41
CEB	1.2729	5.09	0.3841	2.08	0.1555	1.15
ED	-0.1624	-2.31	-0.1593	-2.47	-0.0453	-0.74
EDSQ	0.0022	0.52	-0.0045	-0.95	-0.0082	-1.71
EDH	-0.0766	-0.97	-0.1068	-1.37	-0.1343	-2.03
EDHSQ	0.0012	0.28	0.0020	0.45	0.0009	0.22
MICR	-0.8666	-0.23	8.9687	2.26	2.1140	0.57
URBAN1	-0.0334	-0.15	-0.3873	-1.41	-0.9338	-3.06
URBAN2	-0.7022	-2.74	-0.4553	-1.36	0.1479	0.37
URBAN3	-0.0843	-0.50	-0.4086	-2.05	-0.4487	-2.17
WKINTBM	-0.1452	-0.61	-1.0077	-3.56	-0.8197	-2.54
R^2	0.3855		0.4546		0.4578	
F-statistic	45.26		55.97		52.04	
Model 2						
Intercept	2.2267	2.86	7.7546	8.70	14.7460	16.88
DA1	0.5115	2.27	0.7419	2.78	0.7746	3.09
DA2	1.0885	4.42	1.6217	5.98	2.1161	8.34
DA3	1.4382	5.28	2.7973	9.62	3.4107	12.87
DA4	2.1076	6.26	3.8677	12.74	4.3695	16.48
CEB	1.2650	5.08	0.3339	1.81	0.1160	0.86
ED	-0.1611	-2.29	-0.1564	-2.45	-0.0496	-0.81
EDSQ	0.0022	0.51	-0.0041	-0.89	-0.0075	-1.56
EDH	-0.0786	-0.99	-0.1141	-1.47	-0.1258	-1.91
EDHSQ	0.0013	0.31	0.0026	0.58	0.0004	0.10
MICR	-0.8746	-0.24	8.9801	2.28	1.5739	0.42
URBAN1	-0.0152	-0.07	-0.2635	-0.96	-0.8743	-2.86
URBAN2	-0.6838	-2.66	-0.3665	-1.10	0.1957	0.49
URBAN3	-0.0727	-0.43	-0.2874	-1.44	-0.3876	-1.88
WKINTBM2	-0.1916	-0.77	-1.5023	-4.61	-1.2229	-3.21
R^2	0.3856		0.4595		0.4602	
F-statistic	45.28		57.08		52.54	

Notes:
1. The definitions of all variables may be found in Table 1.
2. The number of observations are 1025, 955, and 878 for age groups 25-29, 30-34, and 35-39, respectively.
3. Model 1 defines labor force participation to include work in either the modern or traditional, agricultural sectors of the labor market. Model 2 defines labor force participation to include only participation in the modern sector.

Table 5: Structural Equation Estimates
Aspirations for Children's Education Equation (EDASPIR)

Independent Variables	Age Group 25-29 $\hat{\beta}$	t	30-34 $\hat{\beta}$	t	35-39 $\hat{\beta}$	t
Model 1						
Intercept	12.3784	6.99	22.1317	4.39	5.1758	1.44
CEB	-0.1195	-0.98	-0.1711	-1.37	0.1592	1.12
WKINTAM	-0.2212	-0.40	0.9102	1.09	-2.2533	-2.70
LWAGE1	-0.1325	-0.21	-2.5862	-1.88	1.8091	1.79
ED	0.3046	2.70	0.3184	5.44	0.1229	1.83
EDSQ	-0.0104	-2.88	0.0055	0.57	-0.0189	-2.57
EDH	0.1604	2.60	0.0732	1.21	-0.0375	-0.69
EDHSQ	-0.0041	-1.25	0.0042	1.23	0.0074	2.24
LPOINC	0.0032	0.13	-0.0347	-0.97	0.1011	3.09
URBAN1	0.6485	1.78	1.0185	2.30	0.0961	0.27
URBAN2	0.8613	2.84	1.3416	2.09	0.3496	0.69
URBAN3	0.6804	2.11	0.3470	1.84	-0.1016	-0.29
SHSN	0.1292	0.95	-0.1505	-0.65	0.8147	2.31
R^2	0.2697		0.2903		0.2376	
F-statistic	31.15		32.11		22.46	
Model 2						
Intercept	10.7792	6.50	12.1872	3.10	13.6140	3.13
CEB	-0.1021	-0.87	-0.1906	-1.47	0.0354	0.26
WKINTAM2	1.0001	0.92	3.1833	1.64	1.2421	1.25
LWAGE2	0.1863	0.29	-0.2229	-0.19	-0.7475	-0.62
ED	0.2874	2.35	0.3277	5.46	0.2393	4.40
EDSQ	-0.0120	-3.37	-0.0167	-2.73	-0.0035	-0.33
EDH	0.1551	2.55	0.0835	1.37	-0.0281	-0.51
EDHSQ	-0.0038	-1.17	0.0049	1.41	0.0084	2.52
LPOINC	0.0326	1.17	0.0857	2.31	0.0936	3.04
URBAN1	0.6015	2.33	0.3385	0.67	0.7191	2.50
URBAN2	0.8045	2.94	-0.1124	-0.32	1.3834	2.85
URBAN3	0.6794	2.69	0.2572	0.93	0.7052	2.66
SHSN	0.1161	0.86	-0.3040	-1.21	0.4263	1.24
R^2	0.2718		0.2955		0.2317	
F-statistic	31.48		32.93		21.74	

Notes:
1. The definitions of all variables may be found in Table 1.
2. The number of observations are 1025, 955, and 878 for age groups 25-29, 30-34, and 35-39, respectively.
3. Model 1 defines labor force participation to include work in either the modern or traditional, agricultural sectors of the labor market. Model 2 defines labor force participation to include only participation in the modern sector.

Table 6: Standard Wage Equation

Independent Variables	Age Group 25-29 $\hat{\beta}$	t	30-34 $\hat{\beta}$	t	35-39 $\hat{\beta}$	t
Model 1						
Intercept	2.8963	13.80	3.8083	17.37	3.7037	28.75
ED	0.1240	2.68	0.0024	0.05	0.0064	0.17
EDSQ	0.0001	0.03	0.0072	2.39	0.0080	2.66
URBAN1	0.2791	1.60	0.2021	1.00	0.0972	0.50
URBAN2	0.1261	0.70	0.3881	1.65	0.2404	0.84
URBAN3	0.2634	1.82	-0.1667	-1.00	0.1519	1.21
WKINTBM	0.4048	2.05	0.0741	0.34	0.2829	1.35
R^2	0.3465		0.3040		0.2478	
F-statistic	16.61		12.23		10.82	
# of observations	195		175		204	
Model 2						
Intercept	2.7875	13.19	3.7031	16.33	3.6385	24.95
ED	0.1516	3.23	0.0082	0.17	0.0124	0.30
EDSQ	-0.0006	-0.21	0.0069	2.30	0.0080	2.53
URBAN1	0.2870	1.61	0.3954	1.80	0.1033	0.50
URBAN2	0.2766	1.45	0.2986	1.20	0.2988	0.99
URBAN3	0.2768	1.81	-0.1414	-0.76	0.1700	1.23
WKINTBM2	0.3630	1.73	0.2238	1.02	0.3324	1.51
R^2	0.4439		0.3796		0.2831	
F-statistic	18.49		14.07		10.86	
# of observations	146		145		172	

Notes: 1. The definitions of all variables may be found in Table 1.
2. Model 1 defines labor force participation to include work in either the modern or traditional, agricultural sectors of the labor market. Model 2 defines labor force participation to include only participation in the modern sector.

Table 7: Wage Equation Corrected for Selectivity Bias

Independent Variables	Age Group 25-29 $\hat{\beta}$	t	30-34 $\hat{\beta}$	t	35-39 $\hat{\beta}$	t
Model 1						
Intercept	3.0280	12.34	4.0655	15.73	3.9083	25.56
ED	0.1388	2.87	0.0107	0.22	0.0424	1.04
EDSQ	0.0001	0.02	0.0082	2.69	0.0080	2.68
URBAN1	0.3751	1.90	0.3147	1.50	0.3473	1.58
URBAN2	0.2050	1.04	0.4681	1.97	0.4495	1.52
URBAN3	0.3589	2.10	-0.0483	-0.27	0.3591	2.37
WKINTBM	0.2290	0.88	-0.1026	-0.43	-0.0632	-0.25
λ	0.1550	1.04	0.2842	1.85	0.4035	2.41
R^2	0.3502		0.3179		0.2695	
F-statistic	14.40		11.12		10.33	
# of observations	195		175		204	
Model 2						
Intercept	3.2344	8.23	4.0148	12.18	3.7010	17.08
ED	0.1700	3.50	0.0150	0.30	0.0120	0.29
EDSQ	-0.0006	-0.21	0.0067	2.24	0.0081	2.55
URBAN1	0.2373	1.31	0.3469	1.56	0.1051	0.51
URBAN2	0.2337	1.21	0.2484	0.99	0.3051	1.00
URBAN3	0.2908	1.90	-0.1794	-0.96	0.1732	1.25
WKINTBM2	0.0362	0.11	0.0965	0.40	0.2844	1.13
λ	0.2021	1.35	0.1433	1.30	0.0353	0.39
R^2	0.4511		0.3871		0.2837	
F-statistic	16.20		12.36		9.28	
# of observations	146		145		172	

Notes: 1. The definitions of all variables may be found in Table 1.
2. Model 1 defines labor force participation to include work in either the modern or traditional, agricultural sectors of the labor market. Model 2 defines labor force participation to include only participation in the modern sector.

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