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Accounting for Actual Work Experience:

Prototype Hedonic Labor Quality Indexes

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Accounting for Actual Work Experience:

Prototype of Labor Quality Hedonic Indexes

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Introduction

The BLS multifactor productivity series decompose labor productivity growth into components associated with increased capital intensity of production and changes in the skill-composition of the work force. The labor composition index, which serves to gauge the latter effect, is constructed with hedonic techniques motivated by classical human capital theory. More specifically, the labor composition index is constructed by aggregating within-cell growth in hours worked by persons with varying levels of schooling and experience, using weights constructed with predicted values from a human capital wage equation.

The use of administrative record data on actual accumulated work experience as an indicator of workers' current productivity is a distinguishing features of this labor composition series. The current procedure relies on an experience proxy that is based on a one-time match of Social Security Administration (SSA) data to records from the 1973 March CPS Income Supplement. Since the parametric relationship between accumulated work experience and the demographic characteristics of the work force is unlikely to have remained stable over time, the BLS has undertaken a long-run research project to update the work experience data at regular intervals. This paper reports on research into the construction of a prototype index constructed with longitudinal microdata, including retrospective information on accumulated total work experience, from the Survey of Income and Program Participation (SIPP).

Prior research with SSA administrative record data linked to the 1984 panel of the SIPP revealed that SSA-based estimates were biased downward in the case of older workers, due to incomplete Social Security coverage during the initial years of that program.[1] Social Security coverage rates have increased over time, and SSA records now include most of the work history of most of the current workforce. However confidentiality concerns may preclude the routine linking of household survey data and administrative records on an annual basis. Therefore subsequent research has focused on overlapping panels of the SIPP that span the period 1984-1993.[2] In this research, modification of the current wage equation estimation procedure to incorporate an inverse Mills ratio selection bias correction factor proved to be straightforward.

It is a strong suit of this index that it is based on large, well-designed nationally representative surveys that collect a large number of variables of interest to labor economists.[3] The specification and estimation of the wage equation follows a conventional structural approach. A structural approach is attractive in that it supports the quantitative analysis of the underlying economic forces that cause changes in the index over time, and an attempt is made to achieve greater consistency with the other components of the official BLS productivity series by allowing for industry wage

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[1] Linda L. Moeller (2002), "On the Estimation of Classical Human Capital Wage Equations with Two Independent Sources of Data on Actual Work Experience," BLS Working Paper 362, available at http://stats.bls.gov/ore/pdf/ec020110.pdf

[2] Moeller (1999), "A Second Decade of Slower U.S. Productivity Growth: Prototype Labor Composition Indexes Based on the SIPP," presented at the 1999 NBER Summer Institute Workshop on Price, Quantity and Quality Measurement and available at http://www.nber.org/~confer/99/prbgsi99/moeller.pdf.

[3] Thus this research project is in the spirit of earlier work by Newey, Powell and Walker, who found the specification of the estimating equations to be of greater importance than semiparametric estimation techniques in applied work. See Whitney K. Newey, James L. Powell and James R. Walker (1990), "Semiparametric Estimation of Selection Models: Some Empirical Results," American Economic Review, Papers and Proceedings, May, pp. 324-328.

differentials.[4] This research project may be contrasted with current research by Abowd, Haltiwanger and Lane et. al. that is based on very large sets of administrative records but a small number of variables.[5] It may also be contrasted with the research of Jorgenson, Gollop and Fraumeni in which labor composition indexes are constructed with panels of time series aggregates.[6]

The estimated coefficients of three-equation systems of equations are intermediate products in the construction of the labor composition index. The endogenous variables of these equations are actual accumulated work experience, the probability of employment during the current time period, and observed wage rates. Wage rates are estimated as functions of workers' educational achievement and accumulated work experience, and broadly-defined categorical variables for primary industry of employment that capture long-run differences in the capital intensity of production as well as cyclical variation in the demand for labor services. The wage equation incorporates a Heckman-type selection bias correction factor based on the estimated coefficients of a probit equation in which household characteristics and regional categorical variables determine the difference between offered and reservation wage rates, and thus the probability of employment. Since the employment rate is the dependent variable of the probit, the

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[4] For a discussion of the identification problem as it arises in the estimation of hedonic equations, see Shulamit Kahn and Kevin Lang (1988), "Efficient Estimation of Structural Hedonic Systems," International Economic Review, 29, pp. 157-166, Kenneth G. Stewart and J.C.H. Jones (1998), "Hedonics and Demand Analysis: The Implicit Demand for Player Attributes," Economic Inquiry, pp. 192-202, and the references cited in those articles. In the current application, the use of categorical variables for industry and occupation to control for industry-specific differences in human and physical capital employed in production may correspond roughly to Kahn and Lang's discussion of variables that vary with the "matching process" in the context of multiple markets.

[5] See, for example, John M. Abowd, John Haltiwanger, Ron Jarmin, Julia I. Lane, Paul Lengermann, Kristin McCue, Kevin McKinney and Kristin Sandusky (2002), "The Relationship Between Human Capital, Productivity and Market Value: Building Up From Micro Evidence," photocopy.

regional categorical variables should capture regional differences in labor market slackness.

The focus of the current paper is on the specification and estimation of the work experience equation, and the incorporation of a predicted work experience variable into selection-bias corrected wage equations. This work will be used, in part, to evaluate the advisability of adopting two-sample instrumental variable (TSIV) procedures to construct the official BLS labor composition index. [7] Specifically, in future work the coefficients of a work experience equation estimated with microdata from the SIPP may be applied to annual data from the March Current Population Survey (CPS), to construct a proxy for actual work experience. [8] This approach is feasible because the CPS and the SIPP share a common sampling frame, and have many key variables in common.

Data Description

The current BLS labor composition index is constructed primarily with microdata from the annual March supplement to the CPS. In general, the CPS is designed to calculate employment and unemployment rates on a monthly basis. The SIPP is focused on

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[6] Dale W. Jorgenson, Frank M. Gollop and Barbara M. Fraumeni (1987), Productivity and U.S. Economic Growth, Cambridge, Mass.: Harvard University Press.

[7] Recent work in this area includes Joshua D. Angrist and Alan B. Krueger (1992), "The Effect of Age at School Entry on Educational Attainment: An Application of Instrumental Variables with Moments from Two Samples," Journal of the American Statistical Association, 87 (418), pp. 328-336; Angrist and Krueger (1995), "Split-Sample Instrumental Variables Estimates of the Returns to Schooling," Journal of Business and Economic Statistics, 13 (2), pp. 225-235; and Phoebus J. Dhrymes and Adriana Lleras Muney (2001), "Estimation of Models with Grouped and Ungrouped Data by Means of '2SLS,' available at http://www.princeton.edu/~alleras.

[8] The SIPP has been conducted since 1984. For a good introductory overview see Thomas B. Jabine, with Karen E. King and Rita J. Petroni (1990), SIPP Quality Profile, Washington: Bureau of the Census, Department of Commerce

income and program participation. The two surveys are designed to function as interlocking components within a system of household surveys that also includes the Health and Retirement Survey and the American Community Survey. The SIPP and the CPS are drawn from the same sampling frames, SIPP sampling weights are benchmarked to CPS population estimates, and both surveys collect information on the employment and earnings of households. The two surveys exhibit complementary strengths. The CPS sample size is larger and CPS data are available on a more timely basis. The SIPP is a longitudinal survey that collects more detailed retrospective information, including information about respondents' past work histories.

These complementarities between the CPS and the SIPP suggest that proxies constructed through TSIV estimation procedures should be strong, rather than weak. Because the number of variables collected is quite large, these surveys support a more structural approach to model specification, and thus more efficient parameter estimates, than is generally possible in applications that involve much larger samples of administrative records. Consequently, as noted above, an effort has been made to pursue the analytical insights available through the specification and estimation of identified linear systems of wage and experience equations for estimation with two-stage least squares (TSLS) procedures, and to adhere fairly closely to wage equation specifications that are generally accepted within the literature.

Description of Labor Composition Index

The labor composition index, denoted $\frac{\dot{C}}{C}$ in the discussion that follows, is a component of the BLS multifactor productivity series that is intended to reflect changes in the skill composition, or the human capital intensity, of the work force. The multifactor productivity series measures the contribution of increased capital intensity to productivity growth, and the labor composition index is a parallel estimate of the contribution of increases in the human capital of the work force to multifactor productivity growth.

More formally, multifactor productivity growth (MFP) is defined as the difference between the growth of output and the growth of a weighted sum of inputs, assuming that the inputs are paid the value of their marginal products on average. Imposing separability assumptions under which an aggregate production of the form $Q_t = A_t F(K_t, L_t)$ may be said to "exist," logarithmic derivatives of the production function are rearranged to obtain an expression for MFP, or $\frac{\dot{A}_t}{A_t}$ in the expression below:

$$MFP \equiv \frac{\dot{A}_t}{A_t} = \frac{\dot{Q}_t}{Q_t} - s_K \frac{\dot{K}_t}{K_t} - s_L \frac{\dot{L}_t}{L_t}.$$

The shares of capital and labor respectively in national income are denoted s_K, s_L. K_t and L_t are value-weighted stocks of capital and labor employed at time t.[9]

[9] This exposition is generally well known. See, for example, Charles R. Hulten (2001), "Total Factor Productivity: A Short Biography," in New Developments in Productivity Analysis, edited by Charles R.

Multifactor productivity growth rates are an estimate of the degree to which labor productivity growth is attributable to shifts in the composition of growth in physical assets employed in production, and the labor composition index is a parallel estimate of the degree to which labor productivity and multifactor productivity growth rates are attributable to shifts in the skill-composition of growth in hours worked. More specifically the labor composition index serves to decompose growth in labor services, or $\frac{\dot{L}_t}{L_t}$, into growth in hours worked, or $\frac{\dot{H}_t}{H_t}$, and changes in the skill-composition of the work force $\frac{\dot{C}_t}{C_t}$.

Labor composition index weights ω_l, used to aggregate hours worked by different categories of workers, are two-year averages of the labor cost shares of workers with characteristics l. Letting $H_{l,t}$ denote hours worked by workers with characteristics l at time t, omitting subscripts from aggregated values, and omitting time subcripts for simplicity:

$$\frac{\dot{L}}{L} = \omega_1 \frac{\dot{H}_1}{H_1} + \cdots + \omega_n \frac{\dot{H}_n}{H_n} = \omega_1\left(\frac{\dot{H}_1}{H_1} - \frac{\dot{H}}{H}\right) + \cdots + \omega_1\left(\frac{\dot{H}_n}{H_n} - \frac{\dot{H}}{H}\right) + \frac{\dot{H}}{H} \equiv \frac{\dot{C}}{C} + \frac{\dot{H}}{H}.$$

Thus the labor composition effect is $\frac{\dot{C}}{C} \equiv \frac{\dot{L}}{L} - \frac{\dot{H}}{H}$.[10]

Hulten, Edwin R. Dean and Michael J. Harper, NBER and CRIW Studies in Income and Wealth, Vol. 63, Chicago: University of Chicago Press, pp. 1-53.

[10] The exact calculations are described more fully in Moeller (2002 and 1999).

Following a standard methodology for the calculation of a hedonic quality index, BLS uses a standard human capital wage equation to estimate conditional mean wage rates, $\hat{w}_{l,t}$, which are used in turn to calculate labor cost share weights $\omega_{l,t}$ for persons with characteristics l at time t:[11]

$$\omega_{l,t} = \frac{1}{2}\left[\left(\hat{w}_{l,t}H_{l,t} \Big/ \sum_{\forall j,t} \hat{w}_{j,t}H_{j,t}\right) + \left(\hat{w}_{l,t-1}H_{l,t-1} \Big/ \sum_{\forall j,t-1} \hat{w}_{j,t-1}H_{j,t-1}\right)\right].$$

The conditional mean wage rates $\hat{w}_{l,t}$ in the expression above are calculated as predicted values from an OLS regression of the following form.

$$\hat{w}_{l,t} = \hat{\beta}_0 + \hat{\beta}_{s,t}\bar{s}_{l,t} + \hat{\beta}_{e,t}\bar{\tilde{e}}_{l,t} + \hat{\beta}_{d,t}\bar{d}_{l,t} + \hat{\beta}_{r,t}\bar{r}_{l,t}\,.$$

In this last equation overbars denote within-cell weighted sample means. Categorical variables (dummy variables) for the number of years of school completed are represented as $s_{l,t}$, and $\tilde{e}_{l,t}$ is a proxy for years of actual work experience for persons with characteristics l. The demographic variables in the vector $d_{l,t}$ include ever-married

[11] This general approach is discussed extensively in Zvi Griliches (1970), "Notes on the Role of Education in Production Functions and Growth Accounting," in Education, Income and Capital, W. Lee Hanson, Ed., New York: NBER and Columbia University Press, pp. 71-115; and in Griliches (1971), "Introduction: Hedonic Price Indexes Revisited," in Price Indexes and Quality Change: Studies in New Methods of Measurement, Griliches, Ed., Cambridge: Harvard University Press, pp. 3-15. For a contemporary critical discussion of this approach see Ariel Pakes (2002), "A Reconsideration of Hedonic Price Indices with an Application to PC's," NBER Working Paper No. 8715.

status, Black or ethnicity, and full-time/part-time status. Categorical variables in the vector $r_{l,t}$ include region and a city size variable.[12]

Data on actual accumulated work experience are not available in the CPS. It is noteworthy that the current BLS procedure is to use the coefficients of a demographically-driven experience equation, estimated with data from the 1973 CPS that have been linked to SSA employment records, to generate proxies for actual work experience that are entered into wage equations estimated with successive annual cross sections from the March CPS annual income supplement. Regularly-available survey data on accumulated actual work experience may be preferred to linked administrative record data for these purposes.[13]

The Significance of Accumulated Work Experience in Human Capital Theory

The existence of an extensive and longstanding literature on the specification and estimation of human capital wage equations makes the use of hedonic techniques to evaluate changes in the skill composition (or "quality") of labor services particularly attractive. Within this analytical framework the determinants of accumulated

[12] The procedures currently used by BLS are described more completely in BLS Bulletin 2426, Labor Composition and Productivity Growth, 1948-90, U. S. Department of Labor, Bureau of Labor Statistics, December 1993.

[13] Econometric procedures that might be implemented with the SSA data, to compensate for selection bias due to relatively low Social Security coverage rates at the inception of the program and time-varying ceilings on recorded earnings, are discussed in Marjorie Honig and Giora Hanoch (1985), " 'True' Age Profiles of Earnings: Adjusting for Censoring and for Period and Cohort Effects," Review of Economics and Statistics, pp. 383-394. However the simplifying assumptions that would be required to adjust for both limitations simultaneously are non-trivial. Also see Claudia Goldin (1989), "Life-Cycle Labor Force Participation of Married Women: Historical Evidence and Implications," Journal of Labor Economics, 7(1), pp. 20-47, especially Figure 1.

employment experience, or $\tilde{e}$ in the wage equation above, include the relative marginal productivities of household members in market and non-market production, and household members' current and expected future income and time constraints over the course of the life cycle.[14]

For example, in the simplified static case of a two-person household consisting of a husband and wife, optimal household utility U_t is achieved through the joint consumption of "commodities" $Z_{i,t}$, i.e., by maximizing the following utility function.

$$U_t = U(Z_{1,t}, \cdots Z_{m,t}),$$

where i identifies a commodity consumed during period t. Purchased goods and services are combined with household members' time to produce these commodities:

$$Z_{i,t} = Z_{i,t}(T_{h,i,t}, T_{w,i,t}, X_{h,i,t} X_{w,i,t}).$$

Abstracting from non-wage income, the household budget constraint is specified as a function of the market wage rates of each household member, their time constraints, row vectors of market goods and services $X_{s,i,t} = (X_{s,i,t,1} \cdots, X_{s,i,t,n})$ consumed by each spouse in the production of commodity i, an associated column vector of market prices $p_{i,t}$, and

[14] The analysis in the next few paragraphs are based on Jacob Mincer's labor economics seminar at Columbia, during the 1984-85 academic year. They appear to follow an "Addendum" in the 1983 reprint of Becker's Human Capital, and to be a slightly more detailed extension of the analysis in Gronau's then-forthcoming chapter in the Handbook of Labor Economics. See Gary S. Becker (1983), Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education, Second Edition, Chicago and NBER: Midway Reprint, pp. 56-71; and Ruben Gronau (1986), "Home Production – A Survey," Handbook of Labor Economics,vol. 1, Ashenfelter and Layard, Eds., Amsterdam: North-Holland, pp. 273-304. The seminal work in this area includes Mincer (1963), "Market Prices, Opportunity Costs, and Income Effects," in Measurement in Economics: Studies in Mathematical Economics in Memory of Yehuda Grunfeld, Christ et. al. Eds, Stanford: Stanford University Pres; Gary S. Becker (1965), "A Theory of the Allocation of Time," Economics Journal, 75, pp. 493-517; and Kelvin Lancaster (1966), "A New Approach to Consumer Theory," Journal of Political Economy, 74, pp. 132-157.

therefore by the "full prices" of commodities, $\pi_{i,t}$. The household's "full budget constraint" takes the following form:

$$w_{h,t}\overline{T}_{h,t} + w_{w,t}\overline{T}_{w,t} = w_{h,t}\sum_{i} T_{h,i,t} + w_{w,t}\sum_{i} T_{w,i,t} + \sum_{i} p_{i,t}\left(X_{h,i,t} + X_{w,i,t}\right),$$

where $\overline{T}_{s,t}$ is the maximum amount of time available to household member s for total market and non-market activity, $w_{h,t}$ is that person's market wage rate, and the full price of commodity i is $\pi_{i,t} = w_{h,t}T_{h,i,t} + w_{w,t}T_{w,i,t} + p_{h,t}\left(X_{h,i,t} + X_{w,i,t}\right)$. Optimization with respect to $Z_{i,t}$ shows the ratios of the marginal utilities of these commodities to be equal to their full prices. Optimization with respect to the inputs $T_{h,i,t}, T_{w,i,t}$ and $X_{s,i,t}$ results in first-order conditions that can be expressed in terms of the marginal productivity of each input in the production of each commodity, and its marginal utility.[15]

Within this context it is straightforward to argue that childrearing is a labor-intensive household production activity, and that it is optimal for one member of a two-adult household to specialize in non-market production even if both adults had acquired identical levels of market-oriented human capital when living independently, in view of the fixed costs associated with childrearing. From this perspective the labor force attachment of women is intermittent because women are more likely than men to specialize in non-market childrearing activities during some portion of their working lives. Thus the presence of young children is expected to decrease the likelihood of

[15] As noted by Pollack and Wachter, in practice the effects of technological change often cannot be identified separately from changes in taste because data on time use are available, and because household production often appears to be joint production, or "multi-tasking," in practice. Identifying technological change in household production separately from changes in tastes with respect to household production is not a primary concern of the current project, however. See Robert A. Pollack and Michael L. Wachter

current employment. Women who have raised children are expected to accumulate less total work experience and therefore less market-oriented human capital than men or childless women.[16]

It is also straightforward to use the analytical framework sketched above to show that an exogenous increase in the market wage rate, perhaps associated with an increase in the capital intensity of industrial production, may induce a shift into more goods-intensive household production as well as more goods-intensive consumption, and an increase in the supply of labor services to the market on the part of household members who had previously been relatively specialized in household production. At the same time, total household demand for leisure in consumption may increase in response to increases in full income associated with higher wage earnings.

Motivated in part by this analytical framework, a relatively small but influential group of applied researchers has examined the relationship between households' commodity demand and labor supply decisions.[17] In most cases of which I am aware the relationship

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(1975), "The Relevance of the Household Production Function and Its Implications for the Allocation of Time," Journal of Political Economy, 83(2), pp. 255-278.

[16] It is interesting to note that Lundberg estimates simultaneous systems of labor supply equations for husbands and wives, and finds that the cross-effect of hours supplied by the spouse are significant only among households with young children. See Shelly Lundberg (1988), "Labor Supply of Husbands and Wives: A Simultaneous Equations Approach," Review of Economics and Statistics, 70 (2) pp. 224-235.

[17] M. Abbott and O. Ashenfelter (1976), "Labour Supply, Commodity Demand and the Allocation of Time," Review of Economic Studies, 43, pp. 389-411; William Barnett (1979), "The Joint Allocation of Leisure and Goods Expenditure," Econometrica, 47(3), pp. 539-563; Richard Blundell and Ian Walker (1982), "Modelling the Joint Determination of Household Labour Supplies and Commodity Demands," The Economic Journal, 92, pp. 351-364; Angus Deaton and John Muellbauer (1981), "Functional Forms for Labor Supply and Commodity Demands with and without Quantity Restrictions," Econometrica, 49 (6), pp. 1521-1532; W.E. Diewert (1974), "Intertemporal Consumer Theory and the Demand for Durables," Econometrica, 42(3), pp. 497-516; Louis Phlips (1978), "The Demand for Leisure and Money," Econometrica, 46(5), pp. 1025-1043. I am indebted to Erwin Diewert for recommending the paper by Barnett.

between the demand for durable goods and households' supply of labor services has been found to be significant. These results suggest that stocks of durable goods may be explanatory variables in labor supply decisions, particularly in the case of working-aged women. Other noteworthy contributions in this area include a recent theoretical essay by MaCurdy, as well as recent macroeconomic analysis that incorporates household production into simple long-run growth models.[18]

Beyond the general appeal of the general concept for the quantitative analysis of productivity growth, the literature on household production has influenced this research project in two specific ways. First, among the probit equations that are used to construct selection-bias correction factors with which the hedonic wage equations are estimated, one experimental specification includes the estimated probability of homeownership as an explanatory variable. The SIPP does not collect detailed information on the purchase of durable goods, but it does ask whether the household residence is owned by a family member. Recognizing that Consumer Expenditure Survey data show higher levels of durable goods expenditures among homeowners, in comparison with renters, the estimated probability of homeownership is interpreted here as an "instrument" for the

[18] Thomas E. MaCurdy (1999), "An essay on the Life Cycle: Characterizing intertemporal behavior with uncertainty, human capital, taxes, durables, imperfect capital markets, and non-separable preferences," Research in Economics, 53, pp. 5-46; Jess Benhabib, Richard Rogerson and Randall Wright (1991), "Homework in Macroeconomics: Household Production and Aggregate Fluctuations," Journal of Political Economy, 99, pp. 1166-1187; Ellen R. McGrattan (1998), "A Defense of AK Growth Models," Federal Reserve Bank of Minneapolis Quarterly Review, 22 (4), pp. 13-27; McGrattan, Rogerson and Wright (1997), "An Equilibrium Model of the Business Cycle with Household Production and Fiscal Policy," International Economic Review, 38, pp. 267-290.

capital intensity of household production that allows for the likely simultaneity of the homeownership and labor supply decisions.[19]

The second way in which the household production framework influences the estimating equations discussed below is through the inclusion of family income from financial assets, normalized by the poverty cutoff to offset variations in the demand for liquidity associated with variations in family size, among the explanatory variables in the experience equation. Normalized income from financial assets incorporates at least three effects: a wealth effect, expected to be negatively related to total work experience, a liquidity effect that might be negatively related to accumulated work experience of wives but positively related to the accumulated work experience of household heads, and a positive life cycle effect since individuals approaching retirement often shift the composition of their assets in favor of greater liquidity. It is often argued that wealth is endogenously determined over the course of the life cycle, and tests for the exogeneity of this variable are indicated. But the maintained hypothesis in the work reported here is that the flow of income from financial assets is exogenously determined by financial market conditions.

[19] As Matsayuma has noted, the domestic housing stock is one of the most important state variables in the economy; see Kiminori Matsuyama (1990), "Residential Investment and the Current Account," Journal of International Economics, 28, pp. 137-153. For an interesting recent discussion of this issue, see Jesus Fernandez-Villaverde and Dirk Krueger (2001), "Consumption and Saving Over the Life Cycle: How Important are Consumer Durables?" photocopy. As then latter authors note, homeownership may also capture a wealth effect since an owned home is the primary asset held by a large share of U.S. households. The incorporation of the homeownership probit into the systems of equations discussed here is still quite rudimentary. But the fact that homeownership may be a predetermined variable for estimation purposes makes it an attractive variable for applications such as this that focus on long-run relationships. Exogeneity tests and a careful specification of the stochastic relationship among the four equations of this prototype system appear to be indicated for the next stage of this research project.

General Structure of Equations Estimated

The general approach to model specification that is pursued in this paper is reminiscent of Blinder's seminal work on wage discrimination. Blinder compares reduced form and structural wage equation coefficient estimates.[20] His structural model can be specified in the familiar general form $Y = YB + XC + U$, where Y is a vector of endogenous variables, X is a vector of exogenous variables that contains information on family background as well as current exogenous variables, and U is a multivariate normal. The variables that Blinder includes in Y are the current wage rate, w, and categorical variables for education level, occupation, vocational training, union membership, veteran's status and tenure on the present job. Identification is achieved by imposing the assumption that the overall system has a block recursive structure. That is, the current wage rate is assumed to be determined by the other endogenous variables of the system, it is assumed that w is not a determinant of the other dependent variables in Y, and the error term of the wage equation is assumed to be stochastically independent of stochastic terms of the other six equations.

The words "predetermined variables" do not appear in Blinder's article, and the variables do not have time subscripts. Nonetheless the temporal sequence in which decisions regarding the endogenous variables are usually made clearly motivates his structural specification.[21] In this respect it is comparable Heckman's early work on heterogeneity

[20] Alan S. Blinder, "Wage Discrimination: Reduced Form and Structural Estimates," cited above.
[21] For example, Blinder writes "In the intuitive model I have in mind, each individual is presented with endowments of human and non-human capitals and at some point in the life-cycle, jointly determines how far he wishes to pursue his formal education and to what occupational strata he aspires." Blinder (), "Wage

and state dependence, in which retrospective information on pre-survey work experience and work experience reported during the course of successive interviews are treated asymmetrically.[22] In subsequent work focused on the estimation of hours equations, Mroz tested the null that marital status, number of children, and work experience are exogenous. He did not reject the null in the case of relatively unrestrictive "generalized Tobit" estimation procedures that appear to be comparable to the estimation procedures examined here. Thus there is influential precedent for this approach.

As was the case for the structural wage equation examined by Blinder, the wage equations estimated for this research project can be organized within the context of a block-recursive structure in which different equations reflect optimization of the endogenous variables over different, finite time horizons.[23] The predetermined variables in this specification are work experience at $t-5$, marital status, number of children, schooling level, and accumulated financial assets.[24] Current total work experience, the probability of employment in the current period, and the current wage equation are assumed to form a block of equations that is stochastically independent of predetermined

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Discrimination," cited above, p. 441. Also see the early work of Chamberlin and Griliches, in which family background variables were found to be significant determinants of school achievement, but less important determinants of earnings once school achievement is taken into account.

[22] This distinction between pre-survey work experience and employment spells reported during the course of the survey is not acknowledged by Mroz, who criticizes this asymmetry. See Heckman () "Heterogeneity and State Dependence", TK, and T. A. Mroz (1987), "The Sensitivity of and Empirical Model of Married Women's Hours of Work to Economic and Statistical Assumptions," Econometrica, 55, pp. 765-799. I am indebted to Margorie Honig for recommending that I examine Mroz's influential article.

[23] This general approach to the identification of structural systems of equations is illustrated, in an application involving the estimation of dynamic systems of factor demand equations with longitudinal microdata from the LRD, in Moeller (1995), Systems of Factor Demand Equations Derived from a Model of Monopolistic Competition: Results from Time Series Cross Section Data. Doctoral Dissertation for the Columbia University Economics Department, Ann Arbor: University Microfilms.

[24] Predicting years of school completed, which are generally assumed to be a function of parents' income and schooling levels, is beyond the scope of the current work. Therefore schooling is treated as a

and family background variables. In addition, this three-equation system is expanded to include a fourth equation that represents the probability of living in a home owned by a household member, as noted above. Incorporation of the homeownership probit is discussed in an earlier paper and not revisited here, but the "structural" specification of the selection bias correction factor that is incorporated in the wage equations reviewed below.[25]

To fix ideas, these systems of equations may be specified in general terms as follows.

$$\varphi_{EX}(EX_t) = G_{EX}\left[School, FAM, Health, Wealth, Nowrkspl, DEMOG, \varepsilon_E\right]$$

$$\Pr(EMP) = G_{EMP}\left[School, EX_{t-5}, FAM, Health, Wealth, DEMOG, GEO, \varepsilon_H\right].$$

$$\varphi_W(W_t) = G_w\left[School, \varphi_{EX}(EX_t), PT, Sector, Blue, Race, \lambda, \varepsilon_w\right]$$

In some cases $\varphi(Y) = Y$, and in other cases $\varphi(Y) = \ln Y$. $School$ is either a set of categorical variables defined in terms of years of school completed, or a linear spline in years of school completed with spline knots at conventional degree-completion years. $FAM = (C, W_{SP})$ contains information about the respondent's family that is expected to affect his or her labor supply decision; the variables denoted C reflect the number of children of the respondent and/or the respondent's spouse (in some cases the number of young children), and a variable W_{SP} that takes the value of the wage rate of the spouse if one is present and employed, and zero otherwise. $Health$ takes a value of 1 if the

predetermined variable, and the hypothesis that additive unobserved individual effects such as ability in school are uncorrelated with unobserved ability and thus accumulated work experience is maintained.

[25] See Moeller (1999) for details. At this stage this experimental specification is not very refined; the term "structural" refers more to the intent of the specification than to its current implementation, although the specification is formally identified.

respondent reports a disability that interferes with his or her ability to hold a job, and zero otherwise. *Wealth* is calculated as family income from financial assets divided by the official poverty cutoff; this normalization is intended to result in a variable that represents the transactions demand for liquidity, as noted above, and reduces the degree of heteroskedasticity that might otherwise be introduced by the financial income variable. *Nonwrkspl* is a vector that includes a categorical variable that takes a value of 1 if the last spell of non-employment for 6 months or longer was involuntary unemployment, and a variable that is equal to the duration of the last spell out of employment if it was involuntary, and zero otherwise.

DEMOG is a subvector that contains the following demographic variables: *Age* is the respondent's age minus 65 if that difference is positive, and zero otherwise. *Ms* is a categorical variable that reflect the respondent's marital status. *RET* is a linear spline function in age with a single knot at 55, intended to capture possible approach of retirement and the associated depreciation of market-oriented human capital. *GEO* is a subvector of geographic variables that includes categoricals for Census regions, and a variable that takes a value of 1 if the respondent lives in a city and zero otherwise.

PT takes a value of 1 when the respondent usually works less than 35 hours a week, and 0 otherwise. *Blue* takes a value of 1 when the respondent is a male production worker, and 0 otherwise. *Sector* is a vector of categorical variables that identify the major industrial sector in which the largest share of total hours was worked in a given calendar year. The selection bias correction factor λ is an inverse Mills ratio. The vector of stochastic terms, $\varepsilon = (\varepsilon_{EX_t}, \varepsilon_{EMP_t}, \varepsilon_{w_t})$ is assumed to have a mean zero, and it is assumed that $\sigma_{EX_{t-5}, EMP_{it}} = 0$. Exclusion restrictions that serve to identify this system, subject to the normalization required for the selection bias factor, are outlined in Appendix B.

Specification and Estimation of Experience Equation.

The explanatory variables that enter the experience equation that is used in the current official index consist primarily of discrete counterparts of variables that also enter the wage equation. Separate identification of the coefficients of the experience and wage equations depends on the fact that the variables in the experience equation consist of mappings from two continuous variables (years of schooling and number of children in the family) to sets of discrete categorical variables that are defined in terms of the same two variables, a potential experience variable that is itself a linear combination of age and years of school completed, and "piecewise" variables obtained by multiplying the categorical variables by potential experience. This approach is not ideal for the purposes of structural or “causal” analysis. Consequently several alternative specifications of the work equation have been examined, in all cases with an eye toward the construction proxies or “instruments” that might also be used in two-sample estimation procedures.

The alternative specifications estimated to date include a linear spline in years of school completed, a demographically-driven quadratic that follows an early specification of Heckman, a specification in which the log of actual work experience is the dependent variable following work by Lancaster and Chesher, a more short-run specification that incorporates lagged work experience as a predetermined explanatory variable, and an S-curve that has been used in the time series literature to study market saturation. Detailed descriptions of the equations estimated are included in Appendix D.

Although the extensive literature on the estimation of duration may not be directly applicable to the problem at hand, for reasons discussed below, but it is not entirely clear that it is inapplicable either. For this reason it may be worth noting that although semi-parametric specifications may be preferred for the purposes of estimating the duration of completed spells, there does not appear to be a consensus in the literature on the criteria for preferring one semi-parametric approach to estimation over another. Furthermore the entire productivity series relies on separability assumptions that embody well-known functional form restrictions, and in this sense continued reliance on functional form restrictions is internally consistent.[26] On both of these counts the specification of a Weibull distribution for the estimation of systems of wage and employment duration equations as suggested in the work of Lancaster, and Lancaster and Chesher is particularly attractive.[27]

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[26] Ernst R. Berndt and Christensen (1973), "The Internal Structure of Functional Relations: Separability, Substitution and Aggregation," Review of Economic Studies, 40 (3), pp. 403-410.

[27] T. Lancaster and A.D. Chesher (1984), "Simultaneous Equations with Endogenous Hazards," in Studies in Labor Market Dynamics, G.R. Neumann and N. Westergaard-Nielsen, Eds, Berlin: Springer-Verlag; Lancaster (1985), "Simultaneous Equations Models in Applied Search Theory," Journal of Econometrics, 28, pp. 155-169, Lancaster (1986), "Some Remarks on Wage and Duration Econometrics," in Unemployment, Search, and Labor Supply, Blundell and Walker, Eds., Cambridge: Cambridge University Press, and Lancaster (1990), The Econometric Analysis of Transition Data, Econometric Society Monograph No. 17, Cambridge: Cambridge University Press.

In this approach specifications experience and wage equations take the following form:

$$E(t) = \phi_1(t)\exp^{\left(X_1(t)\beta_1 + \varepsilon_1\right)}$$

$$W(t) = \phi_2(t)\exp^{\left[\left(X_2(t), E(t)\right)' \beta_2 + \varepsilon_2\right]}$$

The variable t represents potential experience, or years since completion of school. In keeping with the general rationale discussed above, it is assumed that the variables in the vector $X_1(t)$ are time-varying but exogenous, in the sense defined by Lancaster in his monograph on transition data.[28] Taking logarithms, as is standard practice in the estimation of human capital wage equations, is intuitively appealing in view of the well-recognized skewed distributions of wages and accumulated work experience. The result is a triangular system of the following form, where X_1 and X_2 may contain some variables in common:

$$\ln[E(t)] = \ln[\phi_1(t)] + X_1(t)\beta_1 + \varepsilon_1$$

$$\ln[W(t)] = \ln[\phi_2(t)] + [X_2(t), \ln E(t)]' \beta_2 + \varepsilon_2$$

This system is estimated most efficiently by maximum likelihood procedures, but implementation of maximum likelihood procedures in the context of selection-bias correction is not always straightforward, and least-squares should also yield consistent parameter estimates.[29] Since the logarithmic transformation is monotonic and the distribution of $\ln[E(t)]$ is roughly comparable in shape to the distribution of $\ln[W(t)]$,

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[28] See Lancaster (1990), page 28.

[29] Lancaster (1983), "Generalized Residuals and Heterogeneous Duration Models: The Exponential Case," Bulletin of Economic Research, 35 (2), pp. 71-85; Jeffrey M. Woodridge (2002), Econometric Analysis of Cross Section and Panel Data, Cambridge MA: MIT Press, p. 566.

entering the predicted value of the log of accumulated experience into the second estimating equation should help decrease residual heteroskedasticity. It is interesting to note that the R^2s of the equations with the log of potential experience on the left-hand-side are substantially lower than their counterparts with experience measured in levels. But the performance of the predicted log experience variable in the wage equation is among the strongest of the specifications examined.

An alternative approach to equation specification, also concerned with possible correlations in the residuals of the experience and wage equations, involves the use of a lagged value of actual accumulated work experience as an explanatory variable in the experience equation. Since lagged work experience is a predetermined value it should be uncorrelated with current wage rates when contemporaneous shocks or short-lived random "individual effects" are the source of correlation between wage and experience equation residuals.[30] Therefore work experience accumulated by year $t-5$ has been entered in one of the alternative experience equation specifications. Endogeneity tests for the lagged work experience variable are clearly indicated. In prior work, Heckman found lagged work experience to be an endogenous explanatory variable in an experience equation, but exogenous in the wage equation. And recent research by Mincer and Danninger, using the PSID, suggests that technological shocks cause unemployment and employment rates to deviate from long-run equilibrium for periods of 3-5 years.[31] Thus it seems plausible that a five-year lag will be sufficient to justify treating the lagged

[30] Heckman (1981), "Heterogeneity and State Dependence," Studies in Labor Markets, Sherwin Rosen, Ed., Chicago: University of Chicago Press, pp. 91-139.
[31] Jacob Mincer and Stephan Danninger (2000), "Technology, Unemployment, and Inflation," NBER Working Paper No. 7818, http://www.nber.org/papers/w7817.

variable as a predetermined variable. It is noteworthy that although lagged actual work experience variable substantially increases the explanatory power of the experience equation relative to potential experience, the resulting predicted value for potential experience does not increase the explanatory power of the wage equation nearly as dramatically.[32]

An "S-curve," taken from the time series literature on market saturation, was also estimated. In this case the inverse of potential experience was entered on the right-hand-side, without a quadratic term. In future work a quadratic might usefully be considered: when it is omitted predicted work experience values are quite high at the upper tail. Nonetheless, the within-cell wage equation prediction error associated with this specification is often fairly small.

Unobserved, randomly-distributed but sustained individual effects such as ability may also result in correlation among the stochastic components of the schooling, work experience and wage variables, as recognized at least since the 1970's.[33] It has been argued that persons with more innate ability will naturally achieve greater success in school and in the workplace than their less able colleagues, and that OLS estimates of the returns to schooling and work experience will be biased as a result.[34] The use of predicted actual work experience rather than reported values as explanatory variables in the wage equations is motivated in part by this concern, and in part by an institutional interest in extending this research to applications involving two-sample estimates. It is

[32] Neuman reports similar results in TK.
[33] Griliches and Chamberlin.

noteworthy in this regard that Krueger and Angrist reject the null hypothesis of significant unobserved ability in the wage equation, in their work with split samples.[35] Nonetheless the systematic implementation of exogeneity tests within the context studied here may be indicated for the next stage of this project.

The work history topical module of the SIPP collects information on both single and multiple employment spells, and these spells may be completed or censored . Observations on wage earners, who were employed during the period spanned by the survey, are censored in the sense that the term is used in the econometric literature on the estimation of duration. Especially among women, spells of employment were multiple spells. On average across all panels roughly 60% of male respondents reported having been employed at least 6 months per year every year since the first year of employment lasting 6 months or longer; the corresponding percentage for females is roughly 30%. Therefore, by necessity, for the purposes of this study persons who report having 6 or more months of continuous employment per year are considered to have been employed continuously. Observations with at least one spell of non-employment lasting 6 months or longer are observations with multiple employment spells. Among respondents aged 21-64 with at least one spell of non-employment that lasted 6 months or longer, information is collected on the duration of the most recent spell, and on the total number of spells.

[34] This concern motivates the work by Angrist and Krueger (1992, 1995), cited above.
[35] Joshua Angrist and Alan Krueger (1995), "Split Sample Instrumental Variable Estimates of the Returns to Schooling," Journal of Business and Economic Statistics, Vol. 13, No. 2, pp. 225-235. Also see

As noted above, it is not obvious that the extensive literature on duration estimation should be brought to bear in this research, since the variable of interest is the total number of years worked to date, rather than the expected duration of all employment spells. This is because, within the analytical framework of standard static human capital wage equations, it is assumed that employees accumulate both general and specific human capital throughout their working lives. It is this "stock" of accumulated human capital that is assumed to increase current worker productivity. Thus the censored values are the variables of interest for the purposes of estimating human capital wage equations, especially since wage data are unavailable by definition for those whose lifetime employment has been completed. Similarly, while employment during one's lifetime could be specified within a censored regression framework, a selection bias correction factor has not been incorporated in the experience equation because only about 6% of females and less than 1% of the males in the population report that they never worked.

Regression and Labor Composition Index Number Results

Annual coefficient estimates and associated summary statistics for each of the experience equations estimated are reported separately by gender in Appendix D. Two basic wage equation specifications are estimated: the current BLS specification described in Section III, and a new specification is the revised specification discussed in Section V. The current BLS specification includes information on family structure and regional categorical variables in the wage equation while the alternative specification does not.

Griliches (1970), "Notes," cited above, and Blinder (TK), "Wage Discrimination: Reduced Form and Structural Estimates," The alternative specification includes broadly-defined categorical variables for primary industry of employment and a selection bias correction factor, neither of which is incorporated in the current BLS specification. In the case of the alternative specification, information on household composition enters the wage equation indirectly, through the selection bias correction factor.

More specifically, predicted values for actual work experience are obtained with each of five experience equation specifications, as discussed above. The wage equation used to construct the current index is estimated with predicted experience values based on the experience equation currently used to construct the index, and with potential experience. In addition, each of the four alternative specifications of the experience variable discussed above is entered as a proxy in the alternative wage equation. Two alternative selection bias correction factors, denoted λ, are included with each of the new alternative specifications of the wage equation/experience proxy. The first selection bias correction factor, denoted λ_{BA}, is estimated with the coefficients of a simple "baseline" probit that follows Heckman's early work. The second selection bias correction factor, denoted λ_{ST}, is estimated with the coefficients of a probit in which the predicted probability of homeownership replaces normalized income from financial assets as the wealth variable, the number of children under six years of age and the number of school-aged children are entered as separate explanatory variables, and categorical variables for nine Census regions are included to capture differences in local labor market conditions.

Examination of the tables in Appendix D reveals that the current BLS experience equation specification is often dominated by the alternatives estimated, when evaluated in terms of the R^2s associated with the experience and wage rate equations. In addition, simple counts of the incidence with which predicted sample values fall above or below the range $(0,75]$ suggest that the current BLS specification does not fit the data as well in the outer tails of the distribution as several of the other specifications considered. (Tables and charts on outliers of predicted values are included in Appendix D, in a separate section between the experience equation and the wage equation coefficients.)

However, the wage equation parameter estimates are used to generate predicted wage rate values with which to construct the labor cost share weights $\omega_{l,t}$ for persons with characteristics l at time t, as discussed in Section III. The within-cell fit of the equations is of substantial interest for this reason. Summary statistics on weighted ratios of the antilog of the wage equation residual divided by the actual wage rate were therefore generated for cells defined in terms of alternative data partitions and 5-year age intervals.[36] That is, partitions defined in terms of broad ranges of actual work experience were divided into sub-cells that can be sorted by age, to facilitate direct comparison by cohort across partitions.

To provide a broad overview of the results, the weighted within-cell-and-cohort ratios were pooled across all years, and summary statistics were generated for each combination

[36] Bias-adjustment for the non-linear conversion from of the predicted log wage is not part of the current BLS procedure and has not been implemented in the results reported here. See Dhrymes (1995), "On Devising Unbiased Estimates for the Parameters of the Cobb-Douglas Production Function," reprinted in Theoretical and applied econometrics: The selected papers of Phoebus J. Dhrymes, Aldershott: Elgar.

of experience, participation, wage equation and data partition considered. Results are summarized in the tables below. The three rows that tend to have the lowest ratios are highlighted in each table.

The first highlighted row, denoted *optw*, corresponds to the partition used in the current series except that cells are defined over 5-year work experience intervals rather than 1-year intervals of potential experience. [37] The second highlighted row, denoted *newn*, corresponds to the alternative partition proposed in this paper except that data are partitioned by broad age intervals rather than by actual work experience.[38] The third highlighted row, denoted *neww*, corresponds to another alternative partition that also sorts workers into broad intervals of actual work experience. Thus the first and third highlighted rows identify partitions that are only feasible when the index is constructed by partitioning the data in terms of the actual work experience information in the SIPP, while the second highlighted row denoted *newn* identifies a new alternative partition that is feasible with TS2SLS or TSIV estimation procedures.

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[37] The current OPT index, denoted *optp* in the tables, is constructed by partitioning microdata from the March annual supplement of the CPS into 72 age vales (0-1, 1-2, ..., 71 and over), 7 discrete categorical variables for years of school completed (fewer than 4 years, 4-8, 8-11, 12, 12-14, 14-16, 16, over 16), and gender. For females, there are also 4 discrete categorical variables for number of children (none, 1, 2, more than 2), and marital status (ever married, never married). Potential experience, number of children, and the "ever married" variable jointly serve as an estimate of actual work experience. See BLS Bulletin 2426 (1993), cited above, Table D-1, p. 68. The partition denoted *optw* is the same, except that 5-year intervals of actual work experience replace the 1-year potential experience intervals. The partition denoted *opta* is the same except that 5-year age intervals replace the 1-year potential experience intervals.

[38] For the partition denoted *new*, cells are defined in terms of 4 broad regions (northeast, south, central and west); 3 broad industry categories (manufacturing, mining, transportation and agriculture; finance and wholesale and retail trade; and services), 2 broad age categories (younger than 55, and 55 and older) 3 broad schooling categories (less than 12 years, 12 years, 13-16 years, and more than 16 years of school completed), and gender. Among male employees in heavy industry there is a further partition into production and non-production employment that follows Berndt and Christensen (1974), cited above. The

In the case of males, abstracting from partitions in terms of actual work experience and focusing on the row denoted *newn* in which data are partitioned by industry, schooling, and broad age intervals, the current experience and wage equation without a selection bias correction result in the smallest mean and median ratios. The new wage equation specification, with the predicted level of actual experience on the RHS, the "structural" selection bias correction factor and the same data partition yields the smallest ratio at the 25^{th} percentile. The inter-quartile range and 75^{th} percentile ratios are smallest when potential experience replaces estimated experience in the current wage equation and the selection bias correction factor is omitted.

For females, again abstracting from partitions in terms of actual work experience, the smallest mean within-cell-and-cohort ratio, and the smallest value at the 25^{th} percentile, are associated with the partition *newn* together with a wage equation in which potential experience replaces predicted actual experience and there is no selection bias correction. The same partition by industry, schooling and broad age intervals in combination with the Weibull specification for the experience equation and the structural specification of the participation equation results in the smallest median ratio. The same partition in combination with the current BLS experience equation and no selection bias correction performs takes the lowest value at the 75^{th} percentile, and has the smallest interquartile range

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partition denoted *newn* differentiates between employees with undergraduate and advanced degrees. The partition denoted *neww* incorporates a further partition into 3 broad intervals of actual work experience.

FEMALES

EQN	1 OPT/PE	2 OPT/opt	3 WB/BA	4 WB/ST	5 HC/BA	6 HC/ST	7 LV/BA	8 LV/ST	9 LG/BA	10 LG/ST	11 SC/BA	12 SC/ST

MEAN WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

PARTN	1	2	3	4	5	6	7	8	9	10	11	12
optp	0.15392	0.15447	0.15421	0.15418	0.15301	0.15289	0.15373	0.15372	0.15274	0.1526	0.15368	0.15369
optw	0.14964	0.14981	0.1503	0.15005	0.14901	0.14865	0.14992	0.14968	0.15082	0.15067	0.15037	0.1502
opta	0.16392	0.16492	0.16611	0.16611	0.16212	0.16186	0.16546	0.16549	0.16407	0.16389	0.16561	0.1657
new	0.1561	0.15668	0.15614	0.15618	0.15674	0.1569	0.15637	0.15642	0.1558	0.15592	0.15551	0.15557
newn	0.14672	0.14684	0.14697	0.14699	0.14742	0.14754	0.14702	0.14703	0.14801	0.14811	0.14678	0.14684
neww	0.13802	0.13775	0.13935	0.13914	0.13924	0.13909	0.13947	0.13926	0.1416	0.14178	0.13957	0.13946

75TH PERCENTILE WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

PARTN	1	2	3	4	5	6	7	8	9	10	11	12
optp	0.18402	0.18486	0.18279	0.18271	0.18266	0.18272	0.18247	0.1822	0.18019	0.18014	0.18201	0.1819
optw	0.17973	0.17929	0.17733	0.17715	0.17763	0.17738	0.17672	0.1767	0.17714	0.17716	0.17735	0.17737
opta	0.19787	0.19864	0.19873	0.19854	0.19576	0.1957	0.19715	0.19744	0.19602	0.1956	0.19803	0.19807
new	0.18468	0.18492	0.18588	0.18572	0.187	0.18707	0.18608	0.18607	0.18466	0.18453	0.18456	0.18482
newn	0.17622	0.17549	0.17679	0.1766	0.17715	0.17734	0.17637	0.17666	0.1781	0.17787	0.17632	0.1768
neww	0.16604	0.16494	0.16639	0.16599	0.16688	0.16667	0.16629	0.16586	0.16922	0.16917	0.16707	0.16694

MEDIAN WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

PARTN	1	2	3	4	5	6	7	8	9	10	11	12
optp	0.14537	0.14499	0.14442	0.1444	0.1436	0.1435	0.14383	0.14352	0.14362	0.14342	0.14435	0.14442
optw	0.1415	0.14066	0.14088	0.1404	0.1404	0.1401	0.14031	0.13982	0.14239	0.14212	0.14153	0.14111
opta	0.15543	0.15517	0.15418	0.154	0.1537	0.1534	0.1532	0.15297	0.15166	0.1516	0.15369	0.15354
new	0.15022	0.14944	0.14952	0.1495	0.1485	0.1486	0.14962	0.14979	0.14982	0.14987	0.14915	0.14941
newn	0.14221	0.14178	0.14175	0.1415	0.1416	0.1417	0.1416	0.14176	0.14392	0.14389	0.14203	0.14208
neww	0.13232	0.1317	0.1334	0.1331	0.1328	0.1325	0.13363	0.13312	0.13661	0.13668	0.13412	0.13407

25TH PERCENTILE WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

PARTN	1	2	3	4	5	6	7	8	9	10	11	12
optp	0.11238	0.11262	0.11317	0.1131	0.11179	0.11169	0.11275	0.1125	0.1128	0.1128	0.11308	0.11295
optw	0.10909	0.10942	0.1105	0.11017	0.10927	0.10896	0.11006	0.1098	0.1116	0.1114	0.11075	0.11045
opta	0.11883	0.1191	0.11888	0.11887	0.11748	0.11741	0.11864	0.1182	0.1183	0.1182	0.11868	0.11877
new	0.11911	0.11878	0.11846	0.11861	0.11688	0.11708	0.1186	0.1188	0.1199	0.1198	0.11883	0.11896
newn	0.11063	0.11095	0.1116	0.11175	0.11071	0.11077	0.11168	0.1117	0.1128	0.113	0.11096	0.11113
neww	0.10253	0.10283	0.10437	0.10437	0.1034	0.10341	0.1047	0.1047	0.1057	0.1061	0.10421	0.10443

INTER-QUARTILE RANGE: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

PARTN	1	2	3	4	5	6	7	8	9	10	11	12
optp	0.07165	0.07224	0.06962	0.06961	0.07087	0.07103	0.06972	0.06963	0.06736	0.06731	0.06894	0.06895
optw	0.07063	0.06987	0.06682	0.06698	0.06836	0.06842	0.06665	0.06689	0.06551	0.06573	0.0666	0.06693
opta	0.07904	0.07954	0.07985	0.07967	0.07827	0.07829	0.0785	0.07922	0.07767	0.07737	0.07935	0.0793
new	0.06557	0.06614	0.06742	0.06711	0.07012	0.06999	0.06748	0.06724	0.06467	0.06469	0.06573	0.06586
newn	0.06558	0.06454	0.06519	0.06485	0.06643	0.06657	0.06469	0.06488	0.06527	0.06486	0.06536	0.06567
neww	0.06351	0.06211	0.06202	0.06162	0.06348	0.06326	0.06159	0.06108	0.06349	0.06306	0.06286	0.06251

MALES

MEAN WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

EQN	1 OPT/PE	2 OPT/opt	3 WB/BA	4 WB/ST	5 HC/BA	6 HC/ST	7 LV/BA	8 LV/ST	9 LG/BA	10 LG/ST	11 SC/BA	12 SC/ST
PARTN												
optp	0.11167	0.11203	0.11043	0.1103	0.10866	0.10835	0.11015	0.10998	0.10898	0.10899	0.10972	0.10954
optw	0.10789	0.10822	0.10715	0.10682	0.10476	0.10424	0.10675	0.10641	0.10773	0.10765	0.10713	0.1068
opta	0.12128	0.122	0.11938	0.11909	0.11543	0.11494	0.11897	0.11869	0.1172	0.11713	0.11876	0.11845
new	0.10717	0.10738	0.10972	0.1097	0.10976	0.10977	0.10989	0.10989	0.10937	0.10949	0.10965	0.10955
newn	0.09975	0.09972	0.10233	0.1023	0.10181	0.10181	0.10226	0.10224	0.10435	0.10441	0.10288	0.10277
neww	0.09427	0.09417	0.09651	0.09645	0.09547	0.09535	0.09638	0.0963	0.09843	0.09856	0.09699	0.09691

75TH PERCENTILE WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

EQN	1	2	3	4	5	6	7	8	9	10	11	12
optp	0.13276	0.13352	0.13085	0.13056	0.12938	0.12903	0.1305	0.13036	0.12579	0.12559	0.12906	0.1287
optw	0.12869	0.12881	0.12678	0.12649	0.12485	0.1244	0.12623	0.1261	0.12474	0.12485	0.12642	0.12602
opta	0.14652	0.1477	0.14291	0.14283	0.13754	0.13694	0.14264	0.1422	0.13762	0.13756	0.14173	0.14153
new	0.12596	0.12627	0.12966	0.12986	0.13099	0.13099	0.12983	0.12981	0.12689	0.127	0.12887	0.12891
newn	0.1155	0.11563	0.12072	0.1207	0.12089	0.12076	0.1205	0.12082	0.1222	0.1221	0.12165	0.1215
neww	0.10955	0.10898	0.11313	0.11309	0.11295	0.11299	0.11273	0.11269	0.11551	0.11549	0.11413	0.11416

MEDIAN WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

EQN	1	2	3	4	5	6	7	8	9	10	11	12
optp	0.10433	0.10371	0.10158	0.10143	0.1017	0.10161	0.10108	0.10101	0.10107	0.10107	0.10187	0.10176
optw	0.10063	0.0999	0.09803	0.09766	0.09824	0.09772	0.09751	0.09701	0.10003	0.09997	0.09939	0.0989
opta	0.11413	0.11341	0.10954	0.10896	0.10922	0.10864	0.10868	0.10868	0.10739	0.10716	0.10964	0.10917
new	0.09962	0.09935	0.10201	0.1022	0.10179	0.10202	0.10208	0.10208	0.10231	0.10246	0.10298	0.10301
newn	0.09344	0.0933	0.09586	0.09585	0.09579	0.09576	0.0957	0.09578	0.09827	0.09825	0.09692	0.09699
neww	0.08789	0.0874	0.08952	0.08937	0.08893	0.08865	0.0895	0.08945	0.09239	0.09232	0.09089	0.09071

25TH PERCENTILE WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

EQN	1	2	3	4	5	6	7	8	9	10	11	12
optp	0.08076	0.08081	0.07988	0.07979	0.07892	0.07876	0.07982	0.07968	0.08118	0.08106	0.08047	0.08036
optw	0.07811	0.07814	0.07788	0.07693	0.07625	0.07581	0.07692	0.07693	0.08005	0.07983	0.0778	0.07752
opta	0.08622	0.08637	0.08438	0.08382	0.08263	0.08254	0.08373	0.08358	0.08528	0.08516	0.08504	0.08478
new	0.08104	0.08067	0.08155	0.08121	0.08031	0.08264	0.08163	0.08152	0.08285	0.08289	0.08236	0.08207
newn	0.07544	0.07553	0.07548	0.07547	0.07548	0.07545	0.07586	0.07193	0.07807	0.07813	0.07599	0.07585
neww	0.07017	0.07024	0.07358	0.0703	0.06973	0.06972	0.07587	0.07045	0.07232	0.07242	0.07067	0.07066

INTER-QUARTILE RANGE: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE

EQN	1	2	3	4	5	6	7	8	9	10	11	12
optp	0.052	0.0527	0.0597	0.05077	0.05046	0.05278	0.05046	0.05028	0.05068	0.05068	0.04461	0.04453
optw	0.05059	0.05067	0.04976	0.04956	0.0486	0.04859	0.0486	0.04859	0.04932	0.04917	0.0447	0.04502
opta	0.0603	0.06132	0.05853	0.05902	0.05491	0.0544	0.05491	0.0544	0.05891	0.05862	0.05234	0.0524
new	0.04492	0.0456	0.04812	0.04865	0.05068	0.0573	0.05068	0.05073	0.0482	0.04828	0.04403	0.04412
newn	0.04007	0.04008	0.04524	0.04522	0.04541	0.04531	0.04541	0.04531	0.04464	0.04489	0.04413	0.04397
neww	0.03938	0.03874	0.04277	0.04279	0.04321	0.04327	0.04321	0.04327	0.04214	0.04224	0.04318	0.04308

Mneumonics for Columns 1-12 in Above Tables
OPT/PE identifies the current wage equation specification, with potential experience replacing the actual work experience proxy. OPT/opt identifies the current approach, with coefficients from the contemporaneous experience equation used to construct a work experience proxy. In the remaining mneumonics, WB identifies an equation with the log of actual experience on the LHS and the log of potential experience on the RHS. HC follows an early specification in by Heckman with the level of actual experience on the LHS, LV is a new specification with levels on the LHS, LG identifies an experience equation with actual experience on the LHS and lagged experience on the RHS, and SC is an S-curve where the logs of actual and potential experience are entered on the LHS and RHS respectively. In columns 3-12, BA identifies selection bias correction factors based on an employment probit that follows the early work of Heckman. ST identifies selection bias correction factors based on a probit in which the probability of living in a home owned by a household members is entered as an index of the capital intensity of household production, and categorical variables for 9 Census regions capture regional differences in employment population ratios.

Partitioning in terms of broad schooling, industry and work experience intervals generally results in smaller within-cell-and-cohort ratios than the ones mentioned above. In the case of males, focusing on the partition labeled *neww*, the current wage equation specification with no selection bias correction yields the lowest mean, median and inter-quartile range, as well as the smallest ratio at the 75^{th} percentile. In the case of females the current specification with no selection bias correction yields the lowest mean and median within-cell-and-cohort ratios. The wage equation specified in terms of potential experience, with no selection bias correction factor, yields the lowest ratio at the 25^{th} percentile. The experience specification in levels, in combination with the alternative specification of the wage equation and the structural specification of the participation equation results in the smallest inter-quartile range.

These intermediate results do not substitute for conventional specification and exogeneity tests, which are clearly indicated if this research project is to be continued.[39] In addition, systematic review of these ratios by cohort may provide further insights into the strengths and weaknesses of alternative specifications. Nonetheless these preliminary results illustrate the importance of alternative data partitions to the quantitative results obtained with hedonic indexes.

Intuitively, however, consistency between the explanatory variables of the wage equation and the partitioning variables seems desirable in order to give analytical meaning to the separability assumptions that underlie the index number approach to productivity measurement. That is, it seems logical that the explanatory variables that are the true structural determinants of observed wage rates should also be the variables used to partition the data into groups within which relative wage rates are assumed to remain unchanged in the face of changes in prices paid for other factors of production.

Assuming that internal consistency between the explanatory variables of the wage equation and the variables employed in estimation is desired, the new specifications and partitions appear to dominate the current ones. This may be seen by comparing the 4 cells in the first two rows and first two columns of the upper left-hand portion of each panel, marked off as a box surrounded by a solid line, with the 20 cells in columns 3-12 and the last two rows, similarly boxed, in the bottom right-hand portions of each panel.

[39] Furthermore,it should be noted that tabulation of annual coefficient estimates revealed that some cross-sections variables intended to allow the slopes and interecepts of the wage equation to vary in the case of younger and older workers, from whom information on actual work experience is not collected, were omitted inadvertently. Although in most cases these variables are insignificantly different from zero when

The upper left-hand portions, i.e. the cells that correspond to the first two columns of the table and the rows denoted *optp* correspond to the wage equation and partition employed to construct the current BLS index. The row denoted *optw* is the same except that the partition is defined in terms of 5-year intervals of actual work experience rather than 1-year intervals of potential experience. The cells in columns 3-12 and the rows denoted *new*, *newn* and *neww* correspond to conditional mean cell wage rates, predicted with the 3- and 4-equation systems described above.

It is particularly noteworthy that the partition denoted *newn* does not rely on actual work experience data, but it is defined in terms of the key variables in the revised specification of the wage equation. It appears to dominate the current partition, and the revised partition defined in terms of 5-year age intervals. It is dominated in turn by the partition *neww*.

To recapitulate, key differences between the current and revised wage equation specifications are that the current approach does not incorporate a selection bias adjustment factor and it does not include categorical variables for industry of primary employment., while it does include regional categorical variables. The revised specification incorporates a selection bias adjustment factor. Regional categorical variables assumed to capture regional differences in local labor market conditions are entered in the employment probit that underlies the selection bias correction factor λ_{ST}, and categorical variables for industry of primary employment are entered in the wage

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included, it is still true that the rankings of the ratios may well change after those errors have been corrected.

equation to capture industry differences in the physical- and specific-human-capital intensity of production that may result in substantial costs of adjustment.

Average index growth rates across all equation specifications examined are reported in the Table below, together with index growth rates calculated with cell mean growth rates. Growth rates for each partition/specification combination are reported in Appendix F, along with exact definitions of each partition.

Perhaps not surprisingly, given the different effects of the partitions considered on the ratios reported above, the choice of a data partition and the time period over which average annual growth rates are calculated both make a significant difference in the values taken by the labor composition index. The design of the 1984 work history topical module was substantially different from the design of subsequent topical modules, and no work history data were collected in the 1985 panel. Therefore average annual growth rates based on the period 1987-1993 are reported here.

For the period 1987-1993, following the current methodology, average annual index growth rates were 3 percent for males and 2.9 percent for females (cell OPTP, OPT in Appendix F). These values are quite similar to the index obtained with cell mean wage rates, which shows growth rates of 2.7 percent for males and females under the same data partition. In contrast, when data are broadly partitioned by schooling, industry and age (*newn*), average annual growth rates for males and females are much smaller (0.02 percent for males, and 0.08 percent for females on average across all equation specifications examined). When the labor composition index is constructed with cell mean wage rates rather than predicted values, the partition *newn* results in average annual growth rates of 0.04 percent for males and 0.10 percent for females.

		Avg. Ann. Growth			Avg. Ann. Growth	
Partition	Sex	Hedonic	Mean Wage	Partition	Hedonic	Mean Wage
optp	males	0.0309	0.0265			
	females	0.0294	0.0267			
opta	Males	0.0034	0.0031	*newn*	-0.0002	0.0004
	females	0.0026	0.0025		0.0008	0.0010
optw	Males	0.0441	0.0456	*neww*	0.0533	0.0539
	females	0.0680	0.0718		0.0466	0.0469

The effect of partitioning by actual work experience is striking. When data are broadly partitioned by schooling, industry and actual work experience (*neww*) the indexes average about 5 percent (5.33 percent for males and 4.66 percent for females on average, across all equation specifications). Alternative equation specifications again yield quite similar results. The index constructed with cell mean wage rates is 5.4 percent for males and 4.7 percent for females. This similarity between the cell mean growth rates and the hedonic index growth rates is reassuring because it suggests that the econometric estimates are not distorting the values that would be obtained under conventional index number procedures.

Conclusion

The results reported in this paper indicate that the ability to differentiate between workers with strong and weak labor force attachment is quantitatively important for the labor composition index, if a partition by accumulated total work experience is desired. Some analysts would argue that it is not appropriate to partition by variables that may be endogenous in the long run, such as primary industry of employment and total work experience, despite the fact that these partitions yield the smallest within-cell-and-cohort prediction errors.[40] However this paper has invoked the notion that lagged predetermined variables are "state variables," reflecting irreversible investments in physical and human capital, to motivate a recursive structural specification of experience, employment and wage equations. In the event that this recursive structure is not rejected by specification tests, then partitioning the data in terms of the state variables employed in estimation may be justified.

Alternatively, partitioning by predicted work experience might be more appropriate despite the errors in assigning observations to "bins" that would undoubtedly result. Partitioning by predicted work experience would have the advantage of supporting the two-sample estimation procedure currently envisioned by the BLS, while partitioning by actual work experience does not. Feedback from workshop participants on these points would be welcome.

As noted above, specification and exogenity tests are clearly indicated before evaluation of the alternative specifications discussed here will be complete. Nonetheless, and despite the fact that the choice of a particular set of equation specifications has a much smaller effect on the labor composition index than the choice of a partition does, the

[40] Glen Cain has stressed this point in email correspondence.

robustness of the equation parameter estimates in successive annual cross-sections speaks well to the usefulness of applying hedonic techniques to these data.[41]

Future work based on the household production framework might focus on estimating separate systems of wage and hours equations by household type in order to allow for greater simultaneity in the determination of wage rates and hours worked, and in the labor supply decisions of husbands and wives. It would be interesting to attempt to formulate separability tests based on flexible functional forms.[42] The estimation of separate systems of hours and wage equations for mature and elderly households, taking account of other income flows and asset holdings and more detailed account of health conditions, might also prove useful for an analysis of the effects of the labor supply decisions of the aging baby boom cohort on productivity growth.

This research has been aided substantially by the fact that the classical human capital wage equation is one of the most robust equations estimated in applied economics, and particularly well-suited to the application of hedonic techniques. Furthermore the data set examined was designed explicitly for the analysis of labor supply decisions. The application of hedonic techniques to markets undergoing rapid technological change, for which both theory and data may be less well-developed, is likely to be much more

[41] Some of this robustness is due to the fact that the annual cross-sections are estimated with pooled overlapping panels of the SIPP. For example, the estimates for 1987 are obtained by pooling data collected in the second year spanned by the 1986 SIPP panel and the first year spanned by the 1987 panel, where annual variables are averages or sums of monthly or quarterly reported values. A substantial amount of smoothing is undoubtedly achieved in the estimation process.

[42] Given the difficulty of identifying time spent in household production separately from time spent in consumption, application of the conventional approach would not be entirely straightforward. On this point see Pollack and Wachter, cited above. Prior conceptual work on the estimation of systems of equations with "mixed" data on prices and quantities might be useful in this context.

difficult. In such contexts, and particularly when the work is being undertaken by government statistical agencies accountable to the general public, the guidance provided by disinterested academic research can be invaluable.

Appendix A: Overview of Research Project and Background on the SIPP

Overall, the project has had the following objectives:

1. Examination of three sources of bias that may be present in the current measures. These sources of potential bias are: (a) systematic errors in the measurement of actual work experience, earnings, and hours worked, (b) sample selection bias, and (c) model misspecification bias.

2. Illustration of the usefulness of the econometric approach to the construction of index numbers, as it is applied in the construction of the labor composition index, through the development of research papers in which the structural determinants of changes in the labor composition index are analyzed in quantitative terms.

The SIPP is extremely well designed for the purposes of measuring changes in earnings and hours of employment at the national level. In addition to the availability of microdata on the total number of years worked by survey respondents, the following aspects of the SIPP's design are important for the construction of an index of shifts in the skill-composition of the work force.

First, the SIPP may provide improved estimates of quarterly and annual hours worked, relative to other large sets of microdata that are representative of the U.S. labor market.[1] In particular, it provides information on the number of hours worked by salaried employees that is not available from the Current Employment Statistics' (CES) establishment data.[2] The SIPP collects information on the number of weeks worked and the usual number of weekly hours worked, for each month in the calendar year, from all adult survey respondents. In contrast, the CES only collects information on hours worked by production and non-managerial workers during the pay period that includes the 12th day of the month. The SIPP also collects monthly information on the number of weeks worked and the number of hours worked per week on a second job.[3] Information on hours worked while self-employed in a first or second business is also collected from all adult SIPP respondents.

Second, the SIPP follows all members of a surveyed household for the duration of the 28-month survey period, even when some or all members of the household relocate. In contrast, the CPS does not follow individuals who separate from the surveyed household, and does not survey each household member for an entire calendar year. Thus short employment spells that might be omitted from retrospective information collected in the March CPS are likely to be incorporated in SIPP data. Similarly within-year selection bias of the type discussed by Hanoch should not be a problem, as it may be for estimates based on the annual March supplement to the CPS.[4]

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[1] The strengths of SIPP estimates of total hours worked, relative to those available from the Current Population Survey (CPS) and Current Employment Statistics (CES) data, are discussed in Moeller (2002), cited above. This paper summarizes results from prior research in which known limitations of the hours estimates in the CPS are analyzed, as well as research that examines respondent recall error in PSID estimates of hours worked. The sequence of questions on hours worked in the PSID is quite comparable to the sequence of questions upon which the SIPP estimates are based.

[2] The BLS is currently working on ways to collect establishment data on hours worked by salaried employees. The resolution of this problem is not straightforward since many establishments do not maintain administrative records on hours worked by salaried employees.

[3] Data on hours worked on a second job are now collected in the CPS, but only from a fourth of the respondents, and only in selected months.

[4] Giora Hanoch (1980), "Hours and Weeks in the Theory of Labor Supply," in Female Labor Supply: Theory and Estimation, James P. Smith, Ed., Princeton: Princeton University Press, pp. 119-165. Also see Rebecca M. Blank (1988), "Simultaneously Modeling the Supply of Weeks and Hours of Work among Female Household Heads," Journal of Labor Economics, 6 (2), pp. 177-204.

Third, the precision of estimates of changes over time is known to be substantially increased with repeated observations on the same unit of analysis, since the relative importance of sampling variance is diminished with repeated observations. Consequently estimates of hours growth rates obtained with longitudinal data dominate estimates based on successive CPS cross-sections, all else equal, because repeated observations represent a smaller share of the total number of observations in the CPS.

Fourth, as noted above, the SIPP collects monthly information on weekly hours usually worked each month, number of weeks worked, and weekly earnings at two or more jobs, in interviews that are conducted every four months. This relatively short recall period is designed to minimize respondent recall error for a given sample size, relative to the retrospective questions in the annual March supplement of the CPS. It should also generate more precise estimates of cyclical fluctuations in total employment, hours worked and earnings than those available from the CPS March supplement, in which the primary frame of reference is the longest-held job during the previous calendar year.

Fifth, in addition to then-current (or then-recent) data collected at four-month intervals, retrospective information on each respondent's prior work history, migration, education and assets are collected in one-time "topical modules." These data support the estimation and analysis of structural models of household labor supply in which "gains from trade" may have been achieved through household members' specialization in market or non-market production.

It must be noted that the detailed and extensive information collected in the SIPP increases the amount of time required to assemble and process the data. Consequently the SIPP is much less timely than either the CES or the CPS, and probably cannot be used directly to construct quarterly indicators. However, the work described below demonstrates that it provides a very strong basis for the econometric analysis of hours and earnings growth rates, and it could prove useful for the construction of quarterly indicators within the foreseeable future.[5]

Initial Comparisons with Social Security Administrative Records.

The first stage of the project focused on a comparison of the SIPP's information on total accumulated work experience with parallel information in administrative records from the Social Security Administration (SSA) that had been matched to the SIPP microdata, in a prior research project undertaken by the SSA.[6] Administrative records on quarterly employment and earnings were compared directly with SIPP estimates of the total number of years worked. SIPP estimates were found to dominate the estimates based on administrative records due to incomplete SSA coverage during the early years of the program, and variability of program coverage rates over time.[7]

The work experience proxy currently used to construct the labor composition index, with the coefficients of an experience equation previously estimated with 1973 CPS microdata matched to SSA administrative records, has been shown to generate earnings profiles that are clearly steeper than the earnings profiles

[5] Prior to the introduction of computer-assisted interviewing procedures preliminary data were available roughly a year after the time period to which they refer. That is, data were available roughly 8 months after an interview, and the interview referred to the preceding 4 months. There is a greater current data-processing lag, but it is expected to decrease as the automated data collection procedures currently being developed increase in efficiency. Once the new data-processing procedures are working smoothly , preliminary data will probably be available a year or less from the month to which they refer.

[6] Some results from this prior project are reported in Howard M. Iams (1991), "Child Care Effects on Social Security Benefits," 1991 Annual Research Conference Proceedings, Bureau of the Census, pp. 255-271.

[7] The linking of administrative record and survey microdata also raises important privacy issues, and these have prevented the routine linking of comparable data sets in most other years. These privacy concerns are likely to preclude the reliable, routine linking of administrative record and survey microdata for some time to come.

generated with either the SSA or the SIPP 1984 work experience proxy. This result reflects the fact that the measurement error embodied in the SSA administrative records has changed over time, and/or it indicates that the structural relationship between actual work experience and wage rates has not been constant. Incorporation of a standard selection-bias correction factor into the 1984 wage equations estimated was found to lower female earnings profiles among younger married women, relative to earnings profiles from which the selection-bias correction factors were omitted. [8]

The initial rationale for the project was to use data from the 1984 panel of the SIPP, which had already been linked to SSA data, to test the null that the coefficients of the experience equation were stable over time. The statistical community has been interested in the potential cost savings associated with the increased use of administrative records, but remains concerned about confidentiality, comparability and data quality. [9] Since regular ongoing access to successive matches between survey data and administrative records is not assured, the stability of the experience equation coefficients over time was also an important question.

To evaluate the quality of each work experience measure, internal consistency checks were performed before the two estimates of respondents' total work experience were compared. In the case of the SSA data, information on the number of quarters of covered employment were compared with SSA data on quarterly earnings. In the case of the SIPP data, respondents' direct estimates of the total number of years worked were compared with estimates obtained by calculating the duration of each reported employment spell, and adding the number of years worked in each spell. From this internal standpoint, both data sets were found to be reasonably consistent.[10]

Comparison of the SIPP and the SSA measures of total work experience, in the table below, reveals that the SSA estimates for older workers were biased downward, in a manner consistent with relatively low Social Security coverage rates during the 1930's and 1940's. The SIPP estimates for workers younger than 21are understated because the full sequence of work history questions was not asked of younger workers.

[8] Results from the first stage of the project are discussed in more detail below, and in Linda Moeller (2002), cited above.

[9] Thombas B. Jabine and Fritz Scheuren (1985), "Goals for Statistical Uses of Administrative Records: The Next 10 Years," Journal of Business & Economic Statistics, 3 (4), pp. 380-391, and the comments that follow in the same volume: William P. Butz, "The Future of Administrative Records in the Census Bureau's Demographic Activities," pp. 393-395; John J. Carroll, "Uses of Administrative Records: A Social Security Point of View," pp. 396-397; Janet L. Norwood, "Administrative Statistics: A BLS Perspective," pp. 398-400; and Charles A. Waite, "The Future of Administrative Records in the Economic Programs of the Census Bureau," pp. 400-401.

[10] The SAS programs developed to implement these internal consistency checks are complicated, especially in the case of the SIPP. This complexity is evident in the flow charts that summarize the program that constructs the work experience variable. These flow charts describe the calculations undertaken to construct an actual work experience variable with data from the 1986-1992 panels. The sequence of work history questions included with the 1984 panel of the SIPP collected information on up to four jobs held at the beginning of the respondent's adult working life, and the code required to develop internal consistency checks was therefore more complex. The essential structure of the program is the same in both cases, however.

SIPP and SSA Work Experience Estimates, Employed Persons
Discrepancies by Cohort, Weighted Sample Observations

	Percentage by Cohort				Cohort
	SIPP < SSA	SIPP = SSA	SIPP > SSA	No Match	Share of Sample
Age	Females				
16-21	0.00	0.00	0.00	3.00	9.75
21-25	26.67	66.31	3.50	3.52	15.13
26-30	28.55	61.70	7.37	2.38	14.80
31-35	28.37	55.86	13.28	2.49	13.09
36-40	24.78	52.90	19.57	2.75	11.07
41-45	23.76	48.11	24.62	3.52	9.63
46-50	26.02	35.68	35.22	3.07	7.40
51-55	18.70	35.86	42.42	3.01	6.80
56-60	15.43	36.69	45.37	2.51	6.10
61-65	11.02	26.00	60.01	2.96	3.80
66-60	6.56	13.79	77.47	2.17	1.43
71+	6.49	8.07	83.46	1.98	0.99
Age	Males				
16-21	0.00	0.00	0.00	4.75	8.78
21-25	33.06	58.42	3.61	4.91	13.68
26-30	33.68	56.28	6.57	3.47	15.14
31-35	33.50	52.34	11.45	2.71	13.18
36-40	27.96	51.66	16.80	3.57	11.77
41-45	29.87	49.68	16.14	4.40	9.15
46-50	28.35	45.84	21.41	4.39	7.88
51-55	13.00	47.63	35.97	3.41	7.12
56-60	13.71	35.05	47.58	3.66	6.46
61-65	9.22	29.79	57.59	3.41	4.14
66-60	6.92	18.38	69.94	4.76	1.45
71+	0.00	7.07	92.30	0.63	1.25

Unweighted percentages of SIPP records that can be matched to SSA administrative records for the age group 16-21 are 87.52% among women, and 85.03% among men. Information on the duration of the current job, or last job held, is available, but the SIPP total work experience variable is not consistently available for persons in this age group. Therefore no comparison is made in this Table. Shares may not sum to 100%, due to rounding.

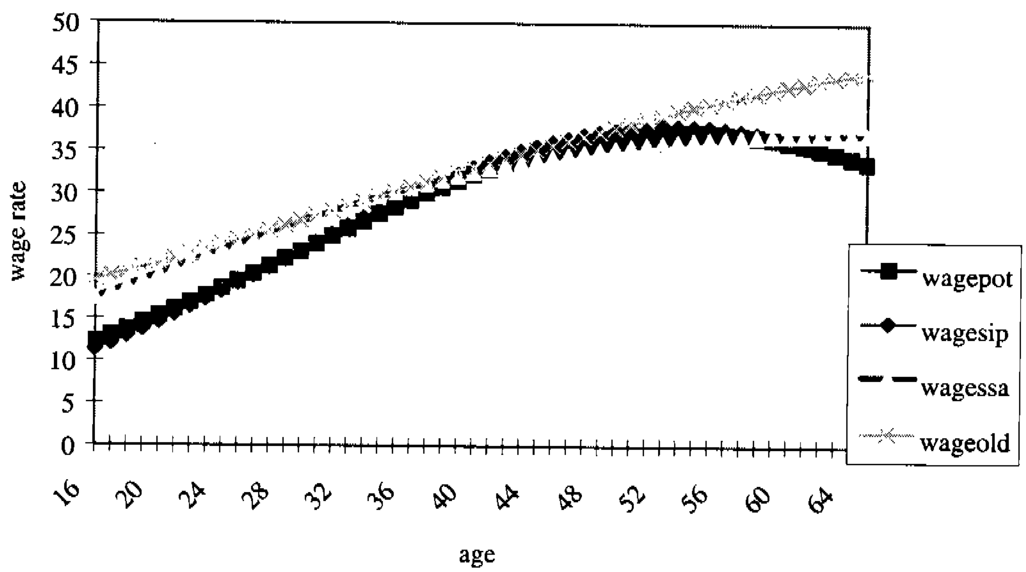
The bias in the SSA administrative record data seemed the more important for two reasons. First, prior OPT research with the NLSY found that accumulated work experience is not a significant determinant of young men's earnings. Similar results had previously been obtained by Mincer and Jovanovic in the case of young men, but they found actual work experience to be a significant determinant of the earnings of older men.[11] Second, while Honig and Hanoch have proposed econometric procedures to offset known variations in SSA coverage rates, a close accounting for the changes in SSA coverage rates over time is not possible because information on the industry and occupation in which respondents worked during the 1930's and 1940's is unavailable.[12] In sum, the use of SIPP work experience data seemed to be more the more straightforward approach.

[11] Jacob Mincer and Boyan Jovanovic (1981). "Labor Mobility and Wages." Studies in Labor Markets, S. Rosen, Ed., Chicago: University of Chicago Press.
[12] Also see Hanoch and Honig (1985), cited above.

Experience and earnings profiles were estimated separately with four alternative measures of actual work experience: a work experience proxy estimated with the coefficients of the 1973 CPS-SSA work experience equation that are provided in the labor composition bulletin, a work experience proxy estimated with SSA administrative record data matched to the 1984 SIPP, a work experience proxy estimated with information from the 1984 SIPP work history topical module, and potential work experience. In all cases examined, the 1973 and 1984 SSA experience profiles were flatter than the 1984 SIPP experience profiles, as would be expected when the average actual work experience of older workers is understated in the original data.

Perhaps more surprisingly, earnings profiles based on the 1973 CPS-SSA experience equation coefficients diverged from the earnings profiles obtained with the other three experience proxies, and this divergence increased with age. This result is illustrated in the chart below. In this chart the curve labeled *wagepot* corresponds to a wage equation in which potential experience is entered as a proxy for actual work experience. The profile obtained with a predicted value of the SIPP actual experience variable is labeled *wagesip*, the corresponding profile obtained with SSA data is labeled *wagessa*, and the profile obtained with the 1973 CPS-SSA proxy is labeled *wageold*. The pattern shown here, in which the earnings profile obtained with the 1973 CPS-SSA proxy is substantially higher than the other three curves in the case of older workers, was obtained for virtually all cases examined. In the case of the male wage profiles, wage profiles based on the 1973 proxy increase at an increasing rate.

Female Wage Rate Profile
SIPP and SSA Data
Ever Married, 17+ Years of Schooling, No Children



This finding suggests that combining 1973 experience equation coefficient estimates with 1984 earnings data results in biased wage rate estimates over age ranges in which the sample is thin.[13] It can be shown, by substituting the explanatory variables that enter the experience equation into the predicted and squared predicted experience values that enter the wage equation, that the work experience proxy implicitly

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[13] This is like the outlier problem in time series data, but here the problem is due to groups of outliers, i.e., clusters of experience equation estimates that are too low, combined with the fact that the work experience equation and the wage equation have several explanatory variables in common.

introduces a number of structural restrictions between the work experience equation and the earnings equation. The results obtained with the 1973 CPS-SSA proxy and both the SSA and the SIPP proxies from 1984 appear to indicate that these implicit restrictions have not been stable over time. To the extent that the magnitudes of these discrepancies are not constant over time they may introduce a significant bias into the labor composition index because the weights associated with the growth rates of hours worked by older workers may be systematically overstated. The fact that the discrepancies seem to occur primarily over age ranges where the sample is thin suggests that the magnitude of the bias may be small. But if increased uncertainty about the real values of their retirement accounts induces members of the baby boom cohort to retire at older ages than their parents have done, as many analysts expect, then the relative importance of this bias may be sustained for a number of years to come.

Having determined that the 1984 SIPP data on actual work experience were stronger than the work experience measure available from SSA administrative record data, and that the incorporation of selection-bias correction factors into the estimation of the OPT wage equation was reasonably straightforward, the project moved into its second stage. An alternative strategy that was discussed then would have been to attempt to adjust for the changes in SSA coverage rates over time with statistical procedures similar to those discussed by Hanoch and Honig. But in light of the results just mentioned, which underscore the importance of working with microdata that are internally consistent from a temporal standpoint, it was decided instead to focus the second stage of the project on an examination of the stability of successive annual estimates of labor supply and wage equations with overlapping panels of the SIPP.

Similarly, at this juncture of the project some effort was made to generate adjusted t-statistics for the selection-bias corrected wage equation coefficients, following the calculations sketched in an appendix to the 1980 article by Heckman cited above, and to test the null hypothesis that the labor supply and wage equations represent a simply recursive system, following procedures outlined in the 1986 review article by Dhrymes.[14] However, development of the computer programs required to execute these calculations proved to be time consuming, and it is known that the second tests have not always been executed successfully in previous applications. Therefore further work to debug the SAS code that implements these tests was deferred until comparable results had been obtained with the SIPP panels that were fielded after 1984.

Summary

This appendix has reviewed results obtained during the initial stage of a major project to construct a new prototype labor composition index with a series of panels from the Survey of Income and Program Participation (SIPP). The SIPP is a new, nationally representative longitudinal household survey that is designed to provide accurate measures of actual hours worked and wage rates earned. Two independent measures of employees' total prior work experience, one based on responses to retrospective questions in the work experience topical module of the SIPP and one based on Social Security Administration (SSA) administrative records, were compared. This comparison revealed that the SSA estimates for older workers were biased downward due to low Social Security Insurance coverage rates at the inception of that program.

Current OPT procedures, in which a work experience proxy constructed with experience equation coefficients previously estimated with 1973 Current Population Survey (CPS) data matched to administrative records, were shown to generate biased wage rate estimates when incorporated into a 1984 wage equation. The OLS procedures applied in the construction of OPT's current labor composition index were then been modified to incorporate a standard selection-bias-correction factor. These calculations are much more complex than those required to work with the retrospective calendar-year microdata collected in the March CPS supplement. The construction of calendar-year values for earnings, hours worked, and wage rates requires re-indexing the SIPP's monthly variables, which are collected at four-month intervals,

[14] Phoebus J. Dhrymes (1986), "Limited Dependent Variables," Handbook of Econometrics Vol. III., Griliches and Intrilligator, Eds.

so that a given index number corresponds to the same calendar month for all rotation groups. Once the survey-month variables were re-indexed, annual estimates for the first calendar year spanned by the panel are obtained by summing or averaging monthly values 1-12, and 13-24. In light of this complexity, it is reassuring to learn that the wage equation estimates obtained with the SIPP are reasonably comparable to those obtained with annual microdata from the March CPS, for the same wage equation specification.

However, even after incorporation of a conventional selection-bias correction factor, earnings profiles based on the 1973 CPS-SSA matched file, and on the 1984 SIPP-SSA matched file, were found to be flatter than earnings profiles based on the actual work experience data reported in the SIPP work history topical module. That is, the SSA-matched files appear to over-predict the wage rates of younger workers and older workers. This finding suggests that the systematic under-estimates of employment among persons who have worked in industries not covered by Social Security legislation, and this effect is quite separate from the conventional selection bias problem discussed by Heckman. Surprisingly, a wage equation in which potential experience serves as a proxy for actual work experience resulted in earnings profiles that are quite comparable to those based on the SIPP actual work experience data, for all cases examined.

Appendix B: Identification

This appendix discusses the identification of the systems of equations presented in the body of the paper. The primary focus of the appendix is on the four-equation "structural" system of equations that includes the probability of living in a home owned by a household member. The other equations estimated are special cases of the four-equation system, except that the homeownership probit is omitted and the normalized asset income variable replaces the predicted probability of homeownership if the employment probit. Explanatory variables are listed in general terms below for simplicity; exact definitions of the variables employed in each system are provided in Appendix D.

Full identification of these systems requires taking explicit account of the fact that their stochastic elements are assumed to be distributed as a multivariate normal, and/or eliminating the assumption that the stochastic terms of the system have a normal distribution and relying on bootstrapping procedures to evaluate the structural restrictions imposed. However it seems worthwhile to note that, allowing for the normalization of coefficient values associated with the selection bias correction factor, it is possible to identify the coefficients of the four-equation system in which the wage rate, the probabilities of employment and living in a home owned by a household member, and accumulated work experience are determined simultaneously. Therefore, if identification and specification tests confirm that the model is identified and the stochastic terms of the system have been properly "scaled," and if the null hypothesis of no model misspecification is not rejected, we should be able to evaluate the relative importance of the explanatory variables that enter each equation in determining the values of the LHS variables.

The claim that the structural coefficients of the system can be identified is based on the following argument. Let $ex_{i,t}$ be the number of years worked experience accumulated by person i at time t. Let $h_{i,t}=1$ if respondent i lived in a home owned by a household member during calendar year t, and 0 otherwise. Let $e_{i,t}=1$ if reservation wage of respondent i falls below his or her market wage rate and 0 otherwise, as in the work of Heckman. Let $w_{i,t}$ be the log of the average hourly earnings of respondent i during calendar year t conditional on $e_{i,t}=I$, and let $ex_{i,t}$ be the total accumulated work experience at time t. Then the row vector $Y_{i,t}=\left(ex_{i,t}, h_{i,t}, e_{i,t}, w_{i,t}\right)$ consists of the current endogenous variables of the system.

It is assumed that the predetermined variables of the system, denoted $Y_{i,t-p}$, are years of work experience at $t-5$, education, the primary industry of employment, occupation, marital status, number of children, wealth, and geographic region of current residence. These variables are assumed to be predetermined in the sense that they change slowly due to substantial costs of adjustment. This assumption could be tested with endogeneity tests. The current exogenous variables of the system, denoted $X_{i,t}$, are assumed to be the wage of the spouse, a categorical variable that takes a value of 1 if the respondent reports a disability that makes it difficult to work and 0 otherwise, a categorical variable that takes a value of 1 if the last spell out of work was involuntary, and the age of the respondent.[1]

It is difficult to draw a sharp distinction between predetermined and exogenous variables in many instances. For example, in the case of long-lived marriages it might be argued that the wage of the spouse is a predetermined variable because the lifetime education levels and labor supply behavior of head and spouse have been optimized jointly. But in other cases this assumption seems unwarranted, given increases in divorce rates and dual earner households. Similarly, experience is a state variable with a large predetermined component, especially in the case of older workers.

In the current specification the predetermined variables included in $Y_{i,t-p}$ are assumed to be uncorrelated with $\varphi_{i,t}$. The stochastic component of the system is assumed to be distributed as a multivariate normal, $\varphi_{i,t}$ with a mean of zero and covariance matrix Φ. Under these assumptions the following logic shows that the system is formally identified.

The right-hand-side of the first equation given below is linear in the explanatory variables of the model, apart from $\varphi_{i,t}$.[2] The distribution of $\varphi_{i,t}$ is a known continuous function, with a known inverse, so G^{-1} exists. Applying this inverse to the first set of equations below, the identification of the linear, non-stochastic components of the system can be examined the in terms of the coefficient matrices on the right-hand side of the second set of equations.

$$Y_{i,t} = G\lfloor \alpha + Y_{i,t}B + (Y_{i,t-p}, X_{i,t})C + \varphi_{i,t} \rfloor$$

$$\Rightarrow \quad G^{-1}(Y_{i,t}) = \alpha + YB_{i,t} + (Y_{i,t-p}, X_{i,t})C + \varphi_{i,t}.$$

The structural restrictions of the system are the zeros in the matrices $B, C,$ and Φ. By analogy with general linear systems of econometric models (GLSEMs), this system is fully identified if the matrices composed of the explanatory variables that are omitted from each equation have full column rank.[3]

To see this more explicitly, write the vector of predetermined and exogenous explanatory variables of the system be written, $Z_{i,t}$, be written as follows:

[1] The number of years worked and age are "splined" to allow for changes in the probability of employment and home ownership with the approach of retirement and old age, respectively. These techniques are not pertinent to the identification conditions discussed here.

[2] For a more complete discussion of the identification problem as it arises in the estimation of hedonic equations, see Shulamit Kahn and Kevin Lang (1988), "Efficient Estimation of Structural Hedonic Systems," International Economic Review, 29, pp. 157-166, and the references cited in that article. In the current application, the use of categorical variables for industry and occupation, to control for industry-specific differences in human and physical capital employed in production, may have a rough correspondence to Kahn and Lang's discussion of variables that vary with the "matching process" in the case of multiple markets.

[3] Phoebus J. Dhrymes (1994), *Topics in Advanced Econometrics, vol. II: Linear and Nonlinear Simultaneous Equations*, New York: Springer-Verlag.

$$
\left(Y_{i,t-p}, X_{i,t}\right)' = \begin{pmatrix} ex_{i,t-5} \\ education \\ primary\ occupation \\ primary\ industry \\ marital\ status \\ number\ of\ children \\ wealth \\ geographic\ region \\ spouse's\ wage \\ disability \\ age \\ part-time \\ nowork \end{pmatrix} = \begin{pmatrix} z_1 \\ z_2 \\ z_3 \\ z_4 \\ z_5 \\ z_6 \\ z_7 \\ z_8 \\ z_9 \\ z_{10} \\ z_{11} \\ z_{12} \\ z_{13} \end{pmatrix} = Z_{i,t}',
$$

where $Y_{i,t} = \left(ex_{i,t}, h_{i,t}, e_{i,t} w_{i,t}\right)$. The structural restrictions of the system are the zeros in the following matrices:

$$
B = \begin{bmatrix} 0 & 0 & 0 & b_{1,4} \\ 0 & 0 & b_{2,3} & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}, \quad \Phi = \begin{bmatrix} \sigma_{x,x} & 0 & 0 & \sigma_{x,w} \\ 0 & \sigma_{h,h} & \sigma_{h.e} & \sigma_{h,w} \\ 0 & \sigma_{e,h} & \sigma_{e,e} & \sigma_{e,w} \\ \sigma_{w,x} & \sigma_{w,h} & \sigma_{w,e} & \sigma_{w,w} \end{bmatrix}, \text{ and}
$$

$$
C = \begin{bmatrix} c_{1,1} & c_{1,2} & c_{1,3} & c_{1,4} \\ c_{2,1} & c_{2,2} & c_{2,3} & c_{2,4} \\ 0 & c_{3,2} & c_{3,3} & c_{3,4} \\ 0 & 0 & 0 & c_{4,4} \\ c_{5,1} & c_{5,2} & c_{5,3} & 0 \\ c_{6,1} & c_{6,2} & c_{6,3} & 0 \\ c_{7,1} & c_{7,2} & 0 & 0 \\ 0 & c_{8,2} & c_{8,3} & c_{8,4} \\ 0 & 0 & c_{9,3} & 0 \\ c_{10,1} & c_{10,2} & c_{10,3} & 0 \\ c_{11,1} & c_{11,2} & c_{11,3} & c_{11,4} \\ 0 & 0 & 0 & c_{12,4} \\ c_{13,1} & 0 & 0 & 0 \end{bmatrix}
$$

The dependent variable in the first equation is years of work experience. The coefficients of the explanatory variables in that equation are represented by the first columns of the matrices B and C. All other endogenous variables in the system are omitted from $b_{.,1}$. The variables omitted from $c_{.,1}$ are occupation, industry, the wage of the spouse, and a categorical variable for part-time employment on the current job. The second equation pertains to the probability of living in a home owned by a household member; the coefficients of that equation are represented by the second columns of B and C. The other endogenous variables are omitted from the right hand side of that equation, as are occupation, industry, the wage rate of the spouse, and the categorical variable for full-time/part-time status.[4] However the probability of living in a home owned by a household member and the wage rate of the spouse are included in the third equation, while industry, occupation and full-time/part-time status are included in the fourth.

The matrix of coefficients that correspond to the explanatory variables omitted from the experience equation, $A_{1,o}$, is specified explicitly below. It is clear from inspection that the rank of $A_{1,o}$ is 3, unless the elements of that matrix are linear combinations of one another for some reason that is not evident.[5]

$$r\left(A_{1,0}\right) = r\begin{pmatrix} 0 & b_{2,3} & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ c_{3,2} & c_{3,3} & c_{3,4} \\ 0 & 0 & c_{4,4} \\ c_{8,2} & c_{8,3} & c_{8,4} \\ 0 & c_{9,3} & 0 \\ 0 & 0 & c_{12,4} \end{pmatrix} = 3.$$

Similarly, in the cases of the homeownership and employment probits respectively:

[4] The current official methodology assumes that part-time status is an exogenous variable. However it is often argued that the decision to work part-time is an endogenous one, since women who work part-time allocate the balance of their work hours to child care and household production, and a substantial fraction of part-time workers are in school. For example, in 1998 roughly 27% of workers who usually work part-time reported "child care problems" or "other family or personal obligations" as their reason for working less than 35 hours per week, and roughly 34% cited "in school or training," or "retired or Social Security limit on earnings." The schooling and retirement decisions are clearly endogenous over the long run, and the same is usually true for number of children. But it is unclear *a priori* whether the part-time/full-time categorical variable should be considered predetermined or endogenous for the purposes of wage equation estimates. For the purposes of benchmarking the SIPP prototypes with the current official estimates thie exogeneity assumption has been maintained, but it should be tested in future work. The data cited here are annual estimates from Employment and Earnings, January 1999, Table 20.

[5] One of the functions of identification tests is to determine whether the matrices used to show that a system of equations can be identified do, in fact, meet these rank conditions when the coefficients of the system have been estimated with real-world data. The coefficient estimates obtained with econometric procedures are estimates of the "true" coefficients of the system, and the distribution of the coefficient estimates depends on the distribution of the stochastic terms of the true system. Identification tests take account of the fact that the matrices of omitted explanatory variables may be "almost" singular, without being singular in the non-stochastic sense of the word. Effectively, they are tests of the null hypothesis that the rank of the matrix $A_{j,o}$ is insignificantly different from 3.

$$r\left(A_{2,0}\right)=r\begin{pmatrix} 0 & 0 & b_{1,4} \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & c_{4,4} \\ 0 & c_{9,3} & 0 \\ 0 & 0 & c_{12,4} \\ c_{13,1} & 0 & 0 \end{pmatrix}=3, \text{ and } r\left(A_{3,0}\right)=r\begin{pmatrix} 0 & 0 & b_{1,4} \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & c_{4,4} \\ c_{7,1} & c_{7,2} & 0 \\ 0 & 0 & c_{12,4} \\ c_{13,1} & 0 & 0 \end{pmatrix}=3.$$

Finally, in the case of the wage equation we have: $r\left(A_{4,0}\right)=r\begin{pmatrix} 0 & 0 & b_{2,3} \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ c_{5,1} & c_{5,2} & c_{5,3} \\ c_{6,1} & c_{6,2} & c_{6,3} \\ c_{7,1} & c_{7,2} & 0 \\ 0 & 0 & c_{9,3} \\ c_{10,1} & c_{10,2} & c_{10,3} \\ c_{13,1} & 0 & 0 \end{pmatrix}=3.$

Expanding the matrices $A_{j,0}$ to include the relevant submatrices of the covariance matrix Φ would not change the rank conditions shown above. Therefore the four-equation system is identified by conventional exclusion restrictions, assuming that these restrictions are appropriate.

Appendix C: Partitioning Considerations: Separability and Aggregation

Attribution of the sources of productivity growth to separate factors of production, i.e., to capital and labor, or to various categories of labor, requires that the aggregate production function be separable in the partitions within which factors of production are aggregated. For example, consider a "well-behaved" production function, $Q = F(K, L, E, M, S)$, where Q is real output, K represents the total capital stock, L represents total hours worked, E denotes energy, M represents total materials, and S represents total services. Each of these variables is a function of subsets of a large set of heterogeneous inputs $X = (X_1, \ldots, X_S)$ and outputs $Y = (Y_1, \ldots, Y_Q)$ that have been aggregated in some way, with weights that take account of relative value per unit, i.e, their relative price.[1]

Let lower case letters denote functions that are used to aggregate the individual inputs and outputs. In practice these functions tend to be arithmetic or geometric means of logs, levels, or square roots of the variables of interest.

$$\begin{aligned} K &= k(X_1, \ldots, X_K) \\ L &= l(X_{K+1}, \ldots, X_L) \\ E &= e(X_{L+1}, \ldots, X_E) \\ M &= m(X_{E+1}, \ldots, X_M) \\ S &= s(X_{M+1}, \ldots, X_S) \\ Q &= q(Y_1, \ldots, Y_Q) \end{aligned} \qquad (1)$$

Construction of multifactor productivity index numbers requires calculating the difference between the rate of growth of output and the share-weighted rates of growth of the inputs listed above. That is,

$$\ln A_t - \ln A_{t-1} \equiv (\ln Q_t - \ln Q_{t-1}) - (s_K(\ln K_t - \ln K_{t-1}) + \cdots + s_S(\ln S_t - \ln S_{t-1})).$$

This approach relies on the maintained hypothesis that the inputs $X = (X_1, \ldots, X_S)$ are separable in the partition (K,L,E,M,S). By definition, separability of labor from other factors of production is a situation in which:

$$\frac{\partial}{\partial X_k}\left(\frac{\frac{\partial F}{\partial X_i}}{\frac{\partial F}{\partial X_j}}\right) = 0, \quad \text{where } \begin{cases} i, j \in L \\ k \notin L \end{cases}, \quad I = Q, K, L, E, M, S. \qquad (2)$$

If the production function F is "strongly separable" in this partition, marginal change in the level at which factor X_k is employed has no effect on marginal productivity ratios among the various types of labor services included in the subset L. Separability of other factors is defined symmetrically.[2]

[1] This discussion abstracts from the issue of intermediate inputs. See Domar ().

[2] Complete definitions are provided in W. Leontief (1947), "A Note on the Interrelation of Subsets of Independent Variables of a Continuous Function with Continuous Derivatives," Bulletin of the American Mathematical Society, 55, pp. 343-350; and (1947), "An Introduction to a Theory of the Internal Structure of Functional Relationships," Econometrica, 15, pp. 361-373. Also see C. Blackorby and R. R. Russell (1989), "Will the Real Elasticity of Substitution Please Stand Up? (A Comparison of Allen/Uzawa and Morishima Elasticities.)" American Economic Review, 79, pp. 882-888. Weak and strong separability are defined in Blackorby, Primont and Russell (1988, confirm), and I think in Berndt and Christensen.

To see how these conditions may be examined empirically, recall that the first-order conditions associated with simple models of profit-maximizing behavior on the part of perfectly or monopolistically competitive firms imply that workers will be employed at levels at which their relative wage rates are equal to the corresponding ratios of marginal products. That is, if input prices are denoted $w = (w_1, \dots, w_S)$, the traditional first-order conditions associated with the optimization of the firm's static (or time separable) objective function implies that factors are paid the value of their marginal products.

$$\frac{\frac{\partial F}{\partial X_i}}{\frac{\partial F}{\partial X_j}} = \frac{w_i}{w_j}, \quad i, j = 1, \dots, S. \tag{3}$$

Together the assumptions of (a) perfect or monopolistic competition and (b) separability of production functions imply that the relative wage rates among different categories of labor will be unaffected by an exogenous change in the level at which X_k is employed, because the ratio of marginal contributions that employees X_i and X_j make to total output will be unaffected:

$$\frac{\partial}{\partial X_k}\left(\frac{\frac{\partial F}{\partial X_i}}{\frac{\partial F}{\partial X_j}}\right) = \frac{\partial}{\partial X_k}\left(\frac{w_i}{w_j}\right) = 0, \quad \text{where } \begin{cases} i, j \in L \\ k \notin L \end{cases}. \tag{4}$$

In contrast with traditional general equilibrium theory, which describes a general situation in which "everything depends on everything else," these two assumptions allow for changes in the optimal *levels* at which factors within L, for example, are employed. But they imply there is no reason for the *composition* of the individual types of labor to change in response to a marginal change in X_k, because marginal productivity ratios and relative wage rates among these different categories of labor will be unaffected by an exogenous change in the equilibrium levels at which other factors in K,E,M and S are employed.

Since separability implies that the wage ratios in L are stable in the face of changes in relative prices among other factors of production, assign scalar values to each of the wage ratios in L, normalized to the L^{th} factor of production:

$$\begin{aligned} \frac{\frac{\partial F}{\partial X_{K+1}}}{\frac{\partial F}{\partial X_L}} &= \frac{w_{K+1}}{w_L} = a_{K+1,L} \Rightarrow w_{K+1} = a_{K+1,L} w_L \\ &\vdots \\ \frac{\frac{\partial F}{\partial X_{L-1}}}{\frac{\partial F}{\partial X_L}} &= \frac{w_{L-1}}{w_L} = a_{L-1,L} \Rightarrow w_{L-1} = a_{L-1,L} w_L . \end{aligned} \tag{5}$$

In general the year-to-year difference between $X_{i,t}$ and $X_{i,t-1}$ will be small in magnitude, relative to the corresponding levels, $X_{i,t}$ or $X_{i,t-1}$. Therefore assume for simplicity that there is a set of scalars, $b_{K+1} \ldots b_L$, such that the following relationship holds over the two years t and $t+1$.

$$X_{i,t} = b_i X_{L,t}, \quad \text{where } i = K+1, \ldots, L. \tag{6}$$

These simplifying assumptions can be used to make the empirical content of the separability assumptions more explicit. To address the specific context in which the official BLS labor composition index is constructed, let the contribution of L to growth in total factor productivity between t and $t+1$ be measured with the following formula.

$$s_L(ln\, L_t - ln\, L_{t-1}) = s_L\{ln[l(X_{K+1,t}, \ldots X_{L,t})] - ln[l(X_{K+1,t-1}, \ldots X_{L,t-1})]\}. \tag{7}$$

$$\text{where } s_L = \frac{\left(\sum_{i=K+1}^{L} w_{i,t} X_{i,t}\right) + \left(\sum_{i=K+1}^{L} w_{i,t-1} X_{i,t-1}\right)}{\left(\sum_{i=1}^{S} w_{i,t} X_{i,t} + w_{i,t-1} X_{i,t-1}\right) + \left(\sum_{i=1}^{S} w_{i,t} X_{i,t} + w_{i,t-1} X_{i,t-1}\right)}.$$

Let the aggregator function l used to that maps the individual inputs $X_{K+1}, \ldots X_L$ into the aggregate labor services L be arithmetic summation. Then we have:

$$l(X_{K+1,t} \ldots, X_{L,t}) = \sum_{i=K+1}^{L} X_{i,t} = \sum_{i=K+1}^{L} b_i X_{L,t} = X_{L,t} \sum_{i=K+1}^{L} b_i \,. \tag{8}$$

Substituting into (7) using the relationships in (5), (6) and (8), and assuming similar relationships also hold for sectors K, E, M and S, we obtain:

$$s_L(ln\, L_t - ln\, L_{t-1}) = \left[\frac{(w_{L,t} X_{L,t} + w_{L,t-1} X_{L,t-1}) \sum_{i \in L} a_i b_i}{\sum_{j=K,L,E,M,S} \left[(w_{J,t} X_{J,t} + w_{J,t-1} X_{J,t-1}) \sum_{i \in J} a_i b_i\right]}\right] [ln\, X_{L,t} - ln\, X_{L,t-1}]. \tag{9}$$

The expression on the right-hand side of equation (9) implies that data from any arbitrary pair of variables (w_L, X_L) in L captures the true behavior of all elements (w_i, X_i) in L at between *t-1* and *t*, when weighted by a scalar equal to $\sum_{i=K+1}^{L} a_i b_i$. Thus the expressions in equations (5) and (6) convert a very general analytical framework with many heterogeneous factors of production into one that is comparable to traditional models in which factors of production within each major category of inputs "move together."

When these assumptions are justified, the measurement of the effect of a change in X_k on the contribution that factors in L make to total productivity growth is relatively straightforward. An exogenous change in $X_k, k \notin L$, has no effect on the numerator of the expression within square brackets on the right hand of equation (10), That is, equations (5) and (7) imply:

$$\frac{\partial}{\partial X_k}\left[\frac{\frac{\partial F}{\partial X_i}}{\frac{\partial F}{\partial X_L}}\right]=\frac{\partial}{\partial X_k}\left[\frac{w_i}{w_L}\right]=\frac{\partial}{\partial X_k}a_{iL}=0,$$
$$\frac{\partial}{\partial X_k}\left[\frac{X_i}{X_L}\right]=\frac{\partial}{\partial X_k}b_{iL}=0. \tag{10}$$

Therefore the effects of an exogenous change in X_k on total factor productivity growth are channeled entirely through the expressions like $(w_{J,t}X_{J,t}+w_{J,t-1}X_{J,t-1})$ and $(ln\,X_{J,t}-ln\,X_{J,t-1})$. The equilibrium employment levels and factor price levels of all the heterogeneous inputs within a given sector respond proportionately to a given change, according to the relationships given by equations (5) and (7). These assumptions clearly support the use of probability samples from each major sector to measure changes taking place throughout the entire economy.

In the case of labor services, it has often been observed that employment in capital intensive industries tends to be more cyclical than employment in industries that experience less cyclical demand fluctuation. Similarly, the determinants of demand fluctuations in the trade industries may be different from those in the service industries. In such cases the values of the scalars $b_{K+1}\ldots b_L$, defined above equation (7), may be significantly more stable *within* subsets H,T,S than they are across the entire set of labor services.

Intuitively, the simplifying assumption that equilibrium employment levels for different categories of labor services can be simply scaled up or down to obtain a reliable measure of the total may be more palatable for subsets of labor services, such as the heavy industry, trade, and service industries, than it is for all labor services supplied to the market.[3] Then the contribution of labor services to output and multi factor productivity growth might be captured more accurately as a weighted sum of the labor services supplied by these three categories of labor. The labor composition index takes account of these systematic variations in the characteristics of labor services.

Following this line of argument, let the individual inputs that are categorized as labor services employed in production , denoted L above, be subdivided further into three major industry subsets: hours worked in heavy industry, trade and finance, and services.

$$\begin{aligned} L_H &= h(X_{K+1},\ldots,X_H) \\ L_T &= t(X_{H+1},\ldots,X_T) \\ L_S &= h(X_{T+1},\ldots,X_S) \end{aligned} \tag{11}$$

Let the contribution of labor services to multifactor productivity growth be measured with the following expression:

$$s_L(ln\,L_t-ln\,L_{t-1})=s_H(ln\,L_{H,t}-ln\,L_{H,t-1})+s_T(ln\,L_{T,t}-ln\,L_{T,t-1})+s_S(ln\,L_{S,t}-ln\,L_{S,t-1}), \tag{12}$$

where: $$s_{i,t}=\frac{\left(\sum_j^{j'} w_{i,t}X_{i,t}\right)+\left(\sum_j^{j'} w_{i,t-1}X_{i,t-1}\right)}{\sum_{i=1}^{L} w_{i,t}X_{i,t}+w_{i,t-1}X_{i,t-1}},$$

$$ln\,L_{i,t}-ln\,L_{i,t-1}=(ln\,X_{i,t}-ln\,X_{i,t-1})\sum_j^{j'}a_ib_i\ , \text{ and}$$

$$i,j'=H,T,S,\quad j=K+1,H+1,T+1,$$

[3] Theil, Linear Aggregation.

In this case, large cyclical fluctuations in wage and employment levels, which are characteristic of heavy industry, are contained within the sector that is experiencing them, rather than being averaged out. This is particularly noteworthy in the case of overtime wage rates, which command a premium but seem more attributable to adjustment costs than to the skill characteristics of workers.

In real applications, of course, a single observation is not taken to be representative of a single sector, or a single cell. Instead, complex stratified survey data are used to calculate weighted mean or conditional mean wage rates and totals for hours worked, $(\overline{w}_J, X_J)$, where the index J ranges over the cells in which the survey microdata are partitioned. Wage rates in heavy industry tend to have higher mean values and to be more highly skewed than wage rates overall, cyclical variations in average wage rates are likely to be more pronounced when the data are not partitioned by industrial sector. Therefore the assumption that labor services within the partitions H,T, and S retain a proportionate relationship to one another over the course of the business cycle may be more acceptable than the broader partition in the case of labor services.

The separability assumptions discussed above are imposed implicitly when it is assumed that the relationship between outputs and inputs can be represented by a Cobb-Douglas or constant elasticity of substitution (CES) production function.[4] Systems of factor demand equations derived from more flexible functional forms, such as the translog and the generalized Leontieif, have been used to test these assumption.[5]

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[4] Hirofumi Uzawa (1962), "Production Functions with Constant Elasticity of Substitution," Review of Economic Studies, 29, pp. 291-299; Ernst R. Berndt and Laurits R. Christensen (1973), "Internal Structure of Functional Relationships: Separability, Substitution, and Aggregation," Review of Economic Studies, 40, pp. 403-440.

[5] To my knowledge, these tests were first presented in the literature by Christensen, Jorgenson and Lau in their 1971 paper, "Conjugate Duality and the Transcendental Logarithmic Production Function," Econometrica, 39. Some limitations of this approach are illustrated in Guilkey, Lowell, and Sickles (1983), "Comparison of the Performance of Three Flexible Functional Forms," International Economic Review, 24, pp. 591-616, and R. E. Lopez (1985) "Structural Implications of a Class of Flexible Functional Forms for Profit Functions," International Economic Review, 26, pp. 593-601.

Appendix D: Variable Definitions and Estimating Equations

$$pot = (age - schooling - 6)$$

$$priv = (1 \quad if\ currently\ employed\ in\ nonprofit\ industry, \quad 0\ otherwise)$$

$$school = \begin{pmatrix} s0to4 \\ s5to8 \\ s12 \\ s13to15 \\ s16 \\ s17up \end{pmatrix} = \begin{pmatrix} 1 \quad if\ schooling \in [0,4], \quad 0\ otherwise \\ 1 \quad if\ schooling \in [5,8], \quad 0\ otherwise \\ 1 \quad if\ schooling = 12, \quad 0\ otherwise \\ 1 \quad if\ schooling \in [13,15], \quad 0\ otherwise \\ 1 \quad if\ schooling = 16, \quad 0\ otherwise \\ 1 \quad if\ schooling \geq 17, \quad 0\ otherwise \end{pmatrix}$$

$$kids = \begin{pmatrix} kid1 \\ kid23 \\ kid4+ \end{pmatrix} = \begin{pmatrix} 1 \quad if\ kids = 1, \quad 0\ otherwise \\ 1 \quad if\ kids = 2,3, \quad 0\ otherwise \\ 1 \quad if\ kids \geq 4, \quad 0\ otherwise \end{pmatrix}$$

$$race = \begin{pmatrix} black \\ hisp \end{pmatrix} = \begin{pmatrix} 1 \quad if\ black, \quad 0\ otherwise \\ 1 \quad if\ hispanic, \quad 0\ otherwise \end{pmatrix}$$

$$married = (1\ if\ ever\ married, 0\ otherwise)$$

Additional explanatory variables for alternative specifications are as follows:

$$schooling = years\ of\ school\ completed$$

$$aged = \max(pot - 55, 0)$$

$$spled = \begin{pmatrix} spled \\ spledhs \\ spledsc \\ spledcd \\ spledgd \end{pmatrix} = \begin{pmatrix} schooling \\ \max(schooling - 11.5, 0) \\ \max(schooling - 12.5, 0) \\ \max(schooling - 15.5, 0) \\ \max(schooling - 17.5, 0) \end{pmatrix}$$

$$assypov = \left(\text{family income from financial assets} \middle/ \text{family poverty cutoff value} \right)$$

$$spouse = \begin{pmatrix} relage \\ reled \\ othwage \end{pmatrix} = \begin{pmatrix} \text{own age / age of spouse} \\ \text{own schooling / schooling of spouse} \\ \text{wage rate of spouse} \end{pmatrix}$$

$$duroutex = \begin{pmatrix} 1 \text{ if last spell of no work } \geq 6 \text{ months was involuntary}, \quad 0 \text{ otherwise} \\ \text{duration last spell of no work} \geq 6 \text{ months if involuntary}, \quad 0 \text{ otherwise} \end{pmatrix}$$

$$disab = (1 \text{ if disabled}, \quad 0 \text{ otherwise})$$

$$ind = \begin{pmatrix} hvy \\ tnf \\ svs \end{pmatrix} = \begin{pmatrix} 1 \text{ if } \max\left(\text{industry hours worked} \middle/ \text{total hours} \right) \in \text{heavy industry}, \quad 0 \text{ otherwise} \\ 1 \text{ if } \max\left(\text{industry hours worked} \middle/ \text{total hours} \right) \in \text{trade and finance}, \quad 0 \text{ otherwise} \\ 1 \text{ if } \max\left(\text{industry hours worked} \middle/ \text{total hours} \right) \in \text{services}, \quad 0 \text{ otherwise} \end{pmatrix}$$

$$ms = (1 \text{ if currently married}, \quad 0 \text{ otherwise})$$

$$young = \text{number of children with age} \leq 6$$

$$spage = \text{age of spouse if married}, \quad 0 \text{ otherwise}$$

$$sped = \text{schooling of spouse if married}, \quad 0 \text{ otherwise}$$

$$othwage = \text{wage of spouse if married and spouse is employed}, \quad 0 \text{ otherwise}$$

$$long = \begin{pmatrix} \text{int} \ln g \\ wkd \ln g \end{pmatrix} = \begin{pmatrix} 1 \quad \text{if } tenure \geq 10, \quad 0 \text{ otherwise} \\ (\max(pot\exp - tenure, 0)) \quad \text{if } tenure \geq 10, \quad 0 \text{ otherwise} \end{pmatrix}$$

$$short = \begin{pmatrix} \text{int}\, yng \\ wkdyng \end{pmatrix} = \begin{pmatrix} 1 \quad \text{if } age \in [16,21), \quad 0 \text{ otherwise} \\ (\max(pot - tenure, 0)) \quad \text{if } age \in [16,21), \quad 0 \text{ otherwise} \end{pmatrix}$$

$$invpot = (pot\exp)^{-1}$$

$$last5 = \text{worked at } t-5$$

Dependent variables for experience equation

$$qtrswkd = total\ quarters\ of\ employment\ recorded\ in\ SSA\ records$$

$$worked = number\ of\ years\ employed\ 6+months\ as\ of\ year\ t$$

$$\ln wkd = \left(\log(worked)\quad if\ worked > 0,\quad NA\ otherwise\right)$$

Alternative Experience Equations Specifications

The experience equation currently employed by the BLS is specified separately for males and females, as identified by subscripts *f* and *m* below:

$$qtrswkd_f = \left[school, pot, married, kids, pot^2, \left(pot, pot^2\right)*married, pot*\left(kids, school, priv\right), priv\right]$$

$$qtrswkd_m = \left[school, pot, pot^2, pot*\left(school, priv\right), priv\right]$$

Alternative experience equation following current BLS approach, but with the same specification estimated separately by gender:

$$worked = \left[school, pot, married, kids, pot^2, \left(pot, pot^2\right)*married, pot*\left(kids, school, priv\right), long, short\right]$$

Alternative experience equation following Heckman (1980), and where $x \bullet x$ identifies "interactions of all linear terms" in the vector x . The variable *assypov* replaces assets in Heckman's work. The same specification is estimated separately by gender:

$$worked = \lfloor young^2, x \bullet x \rfloor, \text{ where } x = (young, assypov, reled, relage, othwage, schooling).$$

Alternative long-run structural specification, following the work of Mincer and Becker in which "gains from trade" from marriage are possible. A spline function in years of schooling replaces the quadratic in potential experience and the schooling dummies; the intervals used to define the spline are the same as those used to define the schooling dummies. The duration of the last spell out of work of 6 months or longer, when that spell was identified as a period when the respondent was unable to find work, is assumed to be exogenous variable that will be negatively correlated with the total number of years worked. A reported disability is also assumed to be exogenous and negatively correlated with years worked. The same specification is estimated separately by gender:

$$worked = \lfloor pot\exp, pot\exp^2, spled, kids, kids^2, spouse, assypov, duroutex, disab, aged, race \rfloor$$

Alternative specification in which the dependent variable is transformed to the logarithm of years worked, following Lancaster and Chesher:

$$\ln wkd = \lfloor \ln pot, \ln pot^2, spled, kids, kids^2, spouse, assypov, duroutex, disab, aged, race \rfloor$$

Alternative short-run specification in which accumulated work experience in year is assumed to be a predetermined state variable. Results are reported separately by gender , as above:

$$worked = \lfloor last5, last5^2, spled, young, young^2, spouse, assypov, duroutex, disab, aged, race \rfloor.$$

Alternative functional form specification with an "S-curve," employed in models of market saturation:

$$\ln wkd = \lfloor invpot, spled, young, young^2, spouse, assypov, duroutex, disab, aged, race \rfloor$$

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Accounting for Actual Work Experience:

Prototype Hedonic Labor Quality Indexes

TO BE PRESENTED AT THE NBER SUMMER INSTITUTE 2002

PRODUCTIVITY POTPOURRI WORKSHOP

PRELIMINARY DRAFT

NOT FOR CITATION OR QUOTATION

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This paper reports on research undertaken by Linda Moeller under an inter-agency agreement between the Bureau of Labor Statistics and the Bureau of the Census. The results and conclusions discussed here are those of the author and do not represent the views of the Office of Productivity of the Bureau of Labor Statistics (BLS), Department of Labor, or the Bureau of the Census (BOC), Department of Commerce. The results are preliminary and should not be quoted or cited. This draft is being released to inform interested parties of this research and to encourage discussion.

Accounting for Actual Work Experience:

Prototype of Labor Quality Hedonic Indexes

Table of Contents

Introduction

The BLS multifactor productivity series decompose labor productivity growth into components associated with increased capital intensity of production and changes in the skill-composition of the work force. The labor composition index, which serves to gauge the latter effect, is constructed with hedonic techniques motivated by classical human capital theory. More specifically, the labor composition index is constructed by aggregating within-cell growth in hours worked by persons with varying levels of schooling and experience, using weights constructed with predicted values from a human capital wage equation.

The use of administrative record data on actual accumulated work experience as an indicator of workers' current productivity is a distinguishing features of this labor composition series. The current procedure relies on an experience proxy that is based on a one-time match of Social Security Administration (SSA) data to records from the 1973 March CPS Income Supplement. Since the parametric relationship between accumulated work experience and the demographic characteristics of the work force is unlikely to have remained stable over time, the BLS has undertaken a long-run research project to update the work experience data at regular intervals. This paper reports on research into the construction of a prototype index constructed with longitudinal microdata, including retrospective information on accumulated total work experience, from the Survey of Income and Program Participation (SIPP).

Prior research with SSA administrative record data linked to the 1984 panel of the SIPP revealed that SSA-based estimates were biased downward in the case of older workers, due to incomplete Social Security coverage during the initial years of that program.[1] Social Security coverage rates have increased over time, and SSA records now include most of the work history of most of the current workforce. However confidentiality concerns may preclude the routine linking of household survey data and administrative records on an annual basis. Therefore subsequent research has focused on overlapping panels of the SIPP that span the period 1984-1993.[2] In this research, modification of the current wage equation estimation procedure to incorporate an inverse Mills ratio selection bias correction factor proved to be straightforward.

It is a strong suit of this index that it is based on large, well-designed nationally representative surveys that collect a large number of variables of interest to labor economists.[3] The specification and estimation of the wage equation follows a conventional structural approach. A structural approach is attractive in that it supports the quantitative analysis of the underlying economic forces that cause changes in the index over time, and an attempt is made to achieve greater consistency with the other components of the official BLS productivity series by allowing for industry wage

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[1] Linda L. Moeller (2002), "On the Estimation of Classical Human Capital Wage Equations with Two Independent Sources of Data on Actual Work Experience," BLS Working Paper 362, available at http://stats.bls.gov/ore/pdf/ec020110.pdf

[2] Moeller (1999), "A Second Decade of Slower U.S. Productivity Growth: Prototype Labor Composition Indexes Based on the SIPP," presented at the 1999 NBER Summer Institute Workshop on Price, Quantity and Quality Measurement and available at http://www.nber.org/~confer/99/prbgsi99/moeller.pdf.

[3] Thus this research project is in the spirit of earlier work by Newey, Powell and Walker, who found the specification of the estimating equations to be of greater importance than semiparametric estimation techniques in applied work. See Whitney K. Newey, James L. Powell and James R. Walker (1990), "Semiparametric Estimation of Selection Models: Some Empirical Results," American Economic Review, Papers and Proceedings, May, pp. 324-328.

differentials.[4] This research project may be contrasted with current research by Abowd, Haltiwanger and Lane et. al. that is based on very large sets of administrative records but a small number of variables.[5] It may also be contrasted with the research of Jorgenson, Gollop and Fraumeni in which labor composition indexes are constructed with panels of time series aggregates.[6]

The estimated coefficients of three-equation systems of equations are intermediate products in the construction of the labor composition index. The endogenous variables of these equations are actual accumulated work experience, the probability of employment during the current time period, and observed wage rates. Wage rates are estimated as functions of workers' educational achievement and accumulated work experience, and broadly-defined categorical variables for primary industry of employment that capture long-run differences in the capital intensity of production as well as cyclical variation in the demand for labor services. The wage equation incorporates a Heckman-type selection bias correction factor based on the estimated coefficients of a probit equation in which household characteristics and regional categorical variables determine the difference between offered and reservation wage rates, and thus the probability of employment. Since the employment rate is the dependent variable of the probit, the

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[4] For a discussion of the identification problem as it arises in the estimation of hedonic equations, see Shulamit Kahn and Kevin Lang (1988), "Efficient Estimation of Structural Hedonic Systems," International Economic Review, 29, pp. 157-166, Kenneth G. Stewart and J.C.H. Jones (1998), "Hedonics and Demand Analysis: The Implicit Demand for Player Attributes," Economic Inquiry, pp. 192-202, and the references cited in those articles. In the current application, the use of categorical variables for industry and occupation to control for industry-specific differences in human and physical capital employed in production may correspond roughly to Kahn and Lang's discussion of variables that vary with the "matching process" in the context of multiple markets.

[5] See, for example, John M. Abowd, John Haltiwanger, Ron Jarmin, Julia I. Lane, Paul Lengermann, Kristin McCue, Kevin McKinney and Kristin Sandusky (2002), "The Relationship Between Human Capital, Productivity and Market Value: Building Up From Micro Evidence," photocopy.

regional categorical variables should capture regional differences in labor market slackness.

The focus of the current paper is on the specification and estimation of the work experience equation, and the incorporation of a predicted work experience variable into selection-bias corrected wage equations. This work will be used, in part, to evaluate the advisability of adopting two-sample instrumental variable (TSIV) procedures to construct the official BLS labor composition index.[7] Specifically, in future work the coefficients of a work experience equation estimated with microdata from the SIPP may be applied to annual data from the March Current Population Survey (CPS), to construct a proxy for actual work experience.[8] This approach is feasible because the CPS and the SIPP share a common sampling frame, and have many key variables in common.

Data Description

The current BLS labor composition index is constructed primarily with microdata from the annual March supplement to the CPS. In general, the CPS is designed to calculate employment and unemployment rates on a monthly basis. The SIPP is focused on

[6] Dale W. Jorgenson, Frank M. Gollop and Barbara M. Fraumeni (1987), Productivity and U.S. Economic Growth, Cambridge, Mass.: Harvard University Press.

[7] Recent work in this area includes Joshua D. Angrist and Alan B. Krueger (1992), "The Effect of Age at School Entry on Educational Attainment: An Application of Instrumental Variables with Moments from Two Samples," Journal of the American Statistical Association, 87 (418), pp. 328-336; Angrist and Krueger (1995), "Split-Sample Instrumental Variables Estimates of the Returns to Schooling," Journal of Business and Economic Statistics, 13 (2), pp. 225-235; and Phoebus J. Dhrymes and Adriana Lleras Muney (2001), "Estimation of Models with Grouped and Ungrouped Data by Means of '2SLS,' available at http://www.princeton.edu/~alleras.

[8] The SIPP has been conducted since 1984. For a good introductory overview see Thomas B. Jabine, with Karen E. King and Rita J. Petroni (1990), SIPP Quality Profile, Washington: Bureau of the Census, Department of Commerce

income and program participation. The two surveys are designed to function as interlocking components within a system of household surveys that also includes the Health and Retirement Survey and the American Community Survey. The SIPP and the CPS are drawn from the same sampling frames, SIPP sampling weights are benchmarked to CPS population estimates, and both surveys collect information on the employment and earnings of households. The two surveys exhibit complementary strengths. The CPS sample size is larger and CPS data are available on a more timely basis. The SIPP is a longitudinal survey that collects more detailed retrospective information, including information about respondents' past work histories.

These complementarities between the CPS and the SIPP suggest that proxies constructed through TSIV estimation procedures should be strong, rather than weak. Because the number of variables collected is quite large, these surveys support a more structural approach to model specification, and thus more efficient parameter estimates, than is generally possible in applications that involve much larger samples of administrative records. Consequently, as noted above, an effort has been made to pursue the analytical insights available through the specification and estimation of identified linear systems of wage and experience equations for estimation with two-stage least squares (TSLS) procedures, and to adhere fairly closely to wage equation specifications that are generally accepted within the literature.

Description of Labor Composition Index

The labor composition index, denoted $\frac{\dot{C}}{C}$ in the discussion that follows, is a component of the BLS multifactor productivity series that is intended to reflect changes in the skill composition, or the human capital intensity, of the work force. The multifactor productivity series measures the contribution of increased capital intensity to productivity growth, and the labor composition index is a parallel estimate of the contribution of increases in the human capital of the work force to multifactor productivity growth.

More formally, multifactor productivity growth (MFP) is defined as the difference between the growth of output and the growth of a weighted sum of inputs, assuming that the inputs are paid the value of their marginal products on average. Imposing separability assumptions under which an aggregate production of the form $Q_t = A_t F(K_t, L_t)$ may be said to "exist," logarithmic derivatives of the production function are rearranged to obtain an expression for MFP, or $\frac{\dot{A}_t}{A_t}$ in the expression below:

$$MFP \equiv \frac{\dot{A}_t}{A_t} = \frac{\dot{Q}_t}{Q_t} - s_K \frac{\dot{K}_t}{K_t} - s_L \frac{\dot{L}_t}{L_t}.$$

The shares of capital and labor respectively in national income are denoted s_K, s_L. K_t and L_t are value-weighted stocks of capital and labor employed at time t.[9]

[9] This exposition is generally well known. See, for example, Charles R. Hulten (2001), "Total Factor Productivity: A Short Biography," in New Developments in Productivity Analysis, edited by Charles R.

Multifactor productivity growth rates are an estimate of the degree to which labor productivity growth is attributable to shifts in the composition of growth in physical assets employed in production, and the labor composition index is a parallel estimate of the degree to which labor productivity and multifactor productivity growth rates are attributable to shifts in the skill-composition of growth in hours worked. More specifically the labor composition index serves to decompose growth in labor services, or $\frac{\dot{L}_t}{L_t}$, into growth in hours worked, or $\frac{\dot{H}_t}{H_t}$, and changes in the skill-composition of the work force $\frac{\dot{C}_t}{C_t}$.

Labor composition index weights ω_l, used to aggregate hours worked by different categories of workers, are two-year averages of the labor cost shares of workers with characteristics l. Letting $H_{l,t}$ denote hours worked by workers with characteristics l at time t, omitting subscripts from aggregated values, and omitting time subcripts for simplicity:

$$\frac{\dot{L}}{L} = \omega_1 \frac{\dot{H}_1}{H_1} + \cdots + \omega_n \frac{\dot{H}_n}{H_n} = \omega_1\left(\frac{\dot{H}_1}{H_1} - \frac{\dot{H}}{H}\right) + \cdots + \omega_1\left(\frac{\dot{H}_n}{H_n} - \frac{\dot{H}}{H}\right) + \frac{\dot{H}}{H} \equiv \frac{\dot{C}}{C} + \frac{\dot{H}}{H}.$$

Thus the labor composition effect is $\frac{\dot{C}}{C} \equiv \frac{\dot{L}}{L} - \frac{\dot{H}}{H}$.[10]

Hulten, Edwin R. Dean and Michael J. Harper, NBER and CRIW Studies in Income and Wealth, Vol. 63, Chicago: University of Chicago Press, pp. 1-53.

[10] The exact calculations are described more fully in Moeller (2002 and 1999).

Following a standard methodology for the calculation of a hedonic quality index, BLS uses a standard human capital wage equation to estimate conditional mean wage rates, $\hat{w}_{l,t}$, which are used in turn to calculate labor cost share weights $\omega_{l,t}$ for persons with characteristics l at time t:[11]

$$\omega_{l,t} = \frac{1}{2}\left[\left(\hat{w}_{l,t}H_{l,t} \Big/ \sum_{\forall j,t} \hat{w}_{j,t}H_{j,t}\right) + \left(\hat{w}_{l,t-1}H_{l,t-1} \Big/ \sum_{\forall j,t-1} \hat{w}_{j,t-1}H_{j,t-1}\right)\right].$$

The conditional mean wage rates $\hat{w}_{l,t}$ in the expression above are calculated as predicted values from an OLS regression of the following form.

$$\hat{w}_{l,t} = \hat{\beta}_0 + \hat{\beta}_{s,t}\bar{s}_{l,t} + \hat{\beta}_{e,t}\bar{\tilde{e}}_{l,t} + \hat{\beta}_{d,t}\bar{d}_{l,t} + \hat{\beta}_{r,t}\bar{r}_{l,t}\,.$$

In this last equation overbars denote within-cell weighted sample means. Categorical variables (dummy variables) for the number of years of school completed are represented as $s_{l,t}$, and $\tilde{e}_{l,t}$ is a proxy for years of actual work experience for persons with characteristics l. The demographic variables in the vector $d_{l,t}$ include ever-married

[11] This general approach is discussed extensively in Zvi Griliches (1970), "Notes on the Role of Education in Production Functions and Growth Accounting," in Education, Income and Capital, W. Lee Hanson, Ed., New York: NBER and Columbia University Press, pp. 71-115; and in Griliches (1971), "Introduction: Hedonic Price Indexes Revisited," in Price Indexes and Quality Change: Studies in New Methods of Measurement, Griliches, Ed., Cambridge: Harvard University Press, pp. 3-15. For a contemporary critical discussion of this approach see Ariel Pakes (2002), "A Reconsideration of Hedonic Price Indices with an Application to PC's," NBER Working Paper No. 8715.

status, Black or ethnicity, and full-time/part-time status. Categorical variables in the vector $r_{l,t}$ include region and a city size variable.[12]

Data on actual accumulated work experience are not available in the CPS. It is noteworthy that the current BLS procedure is to use the coefficients of a demographically-driven experience equation, estimated with data from the 1973 CPS that have been linked to SSA employment records, to generate proxies for actual work experience that are entered into wage equations estimated with successive annual cross sections from the March CPS annual income supplement. Regularly-available survey data on accumulated actual work experience may be preferred to linked administrative record data for these purposes.[13]

The Significance of Accumulated Work Experience in Human Capital Theory

The existence of an extensive and longstanding literature on the specification and estimation of human capital wage equations makes the use of hedonic techniques to evaluate changes in the skill composition (or "quality") of labor services particularly attractive. Within this analytical framework the determinants of accumulated

[12] The procedures currently used by BLS are described more completely in BLS Bulletin 2426, Labor Composition and Productivity Growth, 1948-90, U. S. Department of Labor, Bureau of Labor Statistics, December 1993.

[13] Econometric procedures that might be implemented with the SSA data, to compensate for selection bias due to relatively low Social Security coverage rates at the inception of the program and time-varying ceilings on recorded earnings, are discussed in Marjorie Honig and Giora Hanoch (1985), " 'True' Age Profiles of Earnings: Adjusting for Censoring and for Period and Cohort Effects," Review of Economics and Statistics, pp. 383-394. However the simplifying assumptions that would be required to adjust for both limitations simultaneously are non-trivial. Also see Claudia Goldin (1989), "Life-Cycle Labor Force Participation of Married Women: Historical Evidence and Implications," Journal of Labor Economics, 7(1), pp. 20-47, especially Figure 1.

employment experience, or $\tilde{e}$ in the wage equation above, include the relative marginal productivities of household members in market and non-market production, and household members' current and expected future income and time constraints over the course of the life cycle.[14]

For example, in the simplified static case of a two-person household consisting of a husband and wife, optimal household utility U_t is achieved through the joint consumption of "commodities" $Z_{i,t}$, i.e., by maximizing the following utility function.

$$U_t = U(Z_{1,t}, \cdots Z_{m,t}),$$

where i identifies a commodity consumed during period t. Purchased goods and services are combined with household members' time to produce these commodities:

$$Z_{i,t} = Z_{i,t}(T_{h,i,t}, T_{w,i,t}, X_{h,i,t} X_{w,i,t}).$$

Abstracting from non-wage income, the household budget constraint is specified as a function of the market wage rates of each household member, their time constraints, row vectors of market goods and services $X_{s,i,t} = (X_{s,i,t,1} \cdots, X_{s,i,t,n})$ consumed by each spouse in the production of commodity i, an associated column vector of market prices $p_{i,t}$, and

[14] The analysis in the next few paragraphs are based on Jacob Mincer's labor economics seminar at Columbia, during the 1984-85 academic year. They appear to follow an "Addendum" in the 1983 reprint of Becker's Human Capital, and to be a slightly more detailed extension of the analysis in Gronau's then-forthcoming chapter in the Handbook of Labor Economics. See Gary S. Becker (1983), Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education, Second Edition, Chicago and NBER: Midway Reprint, pp. 56-71; and Ruben Gronau (1986), "Home Production – A Survey," Handbook of Labor Economics, vol. 1, Ashenfelter and Layard, Eds., Amsterdam: North-Holland, pp. 273-304. The seminal work in this area includes Mincer (1963), "Market Prices, Opportunity Costs, and Income Effects," in Measurement in Economics: Studies in Mathematical Economics in Memory of Yehuda Grunfeld, Christ et. al. Eds, Stanford: Stanford University Pres; Gary S. Becker (1965), "A Theory of the Allocation of Time," Economics Journal, 75, pp. 493-517; and Kelvin Lancaster (1966), "A New Approach to Consumer Theory," Journal of Political Economy, 74, pp. 132-157.

therefore by the "full prices" of commodities, $\pi_{i,t}$. The household's "full budget constraint" takes the following form:

$$w_{h,t}\overline{T}_{h,t} + w_{w,t}\overline{T}_{w,t} = w_{h,t}\sum_{i} T_{h,i,t} + w_{w,t}\sum_{i} T_{w,i,t} + \sum_{i} p_{i,t}\left(X_{h,i,t} + X_{w,i,t}\right),$$

where $\overline{T}_{s,t}$ is the maximum amount of time available to household member s for total market and non-market activity, $w_{h,t}$ is that person's market wage rate, and the full price of commodity i is $\pi_{i,t} = w_{h,t}T_{h,i,t} + w_{w,t}T_{w,i,t} + p_{h,t}\left(X_{h,i,t} + X_{w,i,t}\right)$. Optimization with respect to $Z_{i,t}$ shows the ratios of the marginal utilities of these commodities to be equal to their full prices. Optimization with respect to the inputs $T_{h,i,t}, T_{w,i,t}$ and $X_{s,i,t}$ results in first-order conditions that can be expressed in terms of the marginal productivity of each input in the production of each commodity, and its marginal utility.[15]

Within this context it is straightforward to argue that childrearing is a labor-intensive household production activity, and that it is optimal for one member of a two-adult household to specialize in non-market production even if both adults had acquired identical levels of market-oriented human capital when living independently, in view of the fixed costs associated with childrearing. From this perspective the labor force attachment of women is intermittent because women are more likely than men to specialize in non-market childrearing activities during some portion of their working lives. Thus the presence of young children is expected to decrease the likelihood of

[15] As noted by Pollack and Wachter, in practice the effects of technological change often cannot be identified separately from changes in taste because data on time use are available, and because household production often appears to be joint production, or "multi-tasking," in practice. Identifying technological change in household production separately from changes in tastes with respect to household production is not a primary concern of the current project, however. See Robert A. Pollack and Michael L. Wachter

current employment. Women who have raised children are expected to accumulate less total work experience and therefore less market-oriented human capital than men or childless women.[16]

It is also straightforward to use the analytical framework sketched above to show that an exogenous increase in the market wage rate, perhaps associated with an increase in the capital intensity of industrial production, may induce a shift into more goods-intensive household production as well as more goods-intensive consumption, and an increase in the supply of labor services to the market on the part of household members who had previously been relatively specialized in household production. At the same time, total household demand for leisure in consumption may increase in response to increases in full income associated with higher wage earnings.

Motivated in part by this analytical framework, a relatively small but influential group of applied researchers has examined the relationship between households' commodity demand and labor supply decisions.[17] In most cases of which I am aware the relationship

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(1975), "The Relevance of the Household Production Function and Its Implications for the Allocation of Time," Journal of Political Economy, 83(2), pp. 255-278.

[16] It is interesting to note that Lundberg estimates simultaneous systems of labor supply equations for husbands and wives, and finds that the cross-effect of hours supplied by the spouse are significant only among households with young children. See Shelly Lundberg (1988), "Labor Supply of Husbands and Wives: A Simultaneous Equations Approach," Review of Economics and Statistics, 70 (2) pp. 224-235.

[17] M. Abbott and O. Ashenfelter (1976), "Labour Supply, Commodity Demand and the Allocation of Time," Review of Economic Studies, 43, pp. 389-411; William Barnett (1979), "The Joint Allocation of Leisure and Goods Expenditure," Econometrica, 47(3), pp. 539-563; Richard Blundell and Ian Walker (1982), "Modelling the Joint Determination of Household Labour Supplies and Commodity Demands," The Economic Journal, 92, pp. 351-364; Angus Deaton and John Muellbauer (1981), "Functional Forms for Labor Supply and Commodity Demands with and without Quantity Restrictions," Econometrica, 49 (6), pp. 1521-1532; W.E. Diewert (1974), "Intertemporal Consumer Theory and the Demand for Durables," Econometrica, 42(3), pp. 497-516; Louis Phlips (1978), "The Demand for Leisure and Money," Econometrica, 46(5), pp. 1025-1043. I am indebted to Erwin Diewert for recommending the paper by Barnett.

between the demand for durable goods and households' supply of labor services has been found to be significant. These results suggest that stocks of durable goods may be explanatory variables in labor supply decisions, particularly in the case of working-aged women. Other noteworthy contributions in this area include a recent theoretical essay by MaCurdy, as well as recent macroeconomic analysis that incorporates household production into simple long-run growth models.[18]

Beyond the general appeal of the general concept for the quantitative analysis of productivity growth, the literature on household production has influenced this research project in two specific ways. First, among the probit equations that are used to construct selection-bias correction factors with which the hedonic wage equations are estimated, one experimental specification includes the estimated probability of homeownership as an explanatory variable. The SIPP does not collect detailed information on the purchase of durable goods, but it does ask whether the household residence is owned by a family member. Recognizing that Consumer Expenditure Survey data show higher levels of durable goods expenditures among homeowners, in comparison with renters, the estimated probability of homeownership is interpreted here as an "instrument" for the

[18] Thomas E. MaCurdy (1999), "An essay on the Life Cycle: Characterizing intertemporal behavior with uncertainty, human capital, taxes, durables, imperfect capital markets, and non-separable preferences," Research in Economics, 53, pp. 5-46; Jess Benhabib, Richard Rogerson and Randall Wright (1991), "Homework in Macroeconomics: Household Production and Aggregate Fluctuations," Journal of Political Economy, 99, pp. 1166-1187; Ellen R. McGrattan (1998), "A Defense of AK Growth Models," Federal Reserve Bank of Minneapolis Quarterly Review, 22 (4), pp. 13-27; McGrattan, Rogerson and Wright (1997), "An Equilibrium Model of the Business Cycle with Household Production and Fiscal Policy," International Economic Review, 38, pp. 267-290.

capital intensity of household production that allows for the likely simultaneity of the homeownership and labor supply decisions.[19]

The second way in which the household production framework influences the estimating equations discussed below is through the inclusion of family income from financial assets, normalized by the poverty cutoff to offset variations in the demand for liquidity associated with variations in family size, among the explanatory variables in the experience equation. Normalized income from financial assets incorporates at least three effects: a wealth effect, expected to be negatively related to total work experience, a liquidity effect that might be negatively related to accumulated work experience of wives but positively related to the accumulated work experience of household heads, and a positive life cycle effect since individuals approaching retirement often shift the composition of their assets in favor of greater liquidity. It is often argued that wealth is endogenously determined over the course of the life cycle, and tests for the exogeneity of this variable are indicated. But the maintained hypothesis in the work reported here is that the flow of income from financial assets is exogenously determined by financial market conditions.

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[19] As Matsayuma has noted, the domestic housing stock is one of the most important state variables in the economy; see Kiminori Matsuyama (1990), "Residential Investment and the Current Account," Journal of International Economics, 28, pp. 137-153. For an interesting recent discussion of this issue, see Jesus Fernandez-Villaverde and Dirk Krueger (2001), "Consumption and Saving Over the Life Cycle: How Important are Consumer Durables?" photocopy. As then latter authors note, homeownership may also capture a wealth effect since an owned home is the primary asset held by a large share of U.S. households. The incorporation of the homeownership probit into the systems of equations discussed here is still quite rudimentary. But the fact that homeownership may be a predetermined variable for estimation purposes makes it an attractive variable for applications such as this that focus on long-run relationships. Exogeneity tests and a careful specification of the stochastic relationship among the four equations of this prototype system appear to be indicated for the next stage of this research project.

General Structure of Equations Estimated

The general approach to model specification that is pursued in this paper is reminiscent of Blinder's seminal work on wage discrimination. Blinder compares reduced form and structural wage equation coefficient estimates.[20] His structural model can be specified in the familiar general form $Y = YB + XC + U$, where Y is a vector of endogenous variables, X is a vector of exogenous variables that contains information on family background as well as current exogenous variables, and U is a multivariate normal. The variables that Blinder includes in Y are the current wage rate, w, and categorical variables for education level, occupation, vocational training, union membership, veteran's status and tenure on the present job. Identification is achieved by imposing the assumption that the overall system has a block recursive structure. That is, the current wage rate is assumed to be determined by the other endogenous variables of the system, it is assumed that w is not a determinant of the other dependent variables in Y, and the error term of the wage equation is assumed to be stochastically independent of stochastic terms of the other six equations.

The words "predetermined variables" do not appear in Blinder's article, and the variables do not have time subscripts. Nonetheless the temporal sequence in which decisions regarding the endogenous variables are usually made clearly motivates his structural specification.[21] In this respect it is comparable Heckman's early work on heterogeneity

[20] Alan S. Blinder, "Wage Discrimination: Reduced Form and Structural Estimates," cited above.
[21] For example, Blinder writes "In the intuitive model I have in mind, each individual is presented with endowments of human and non-human capitals and at some point in the life-cycle, jointly determines how far he wishes to pursue his formal education and to what occupational strata he aspires." Blinder (), "Wage

and state dependence, in which retrospective information on pre-survey work experience and work experience reported during the course of successive interviews are treated asymmetrically.[22] In subsequent work focused on the estimation of hours equations, Mroz tested the null that marital status, number of children, and work experience are exogenous. He did not reject the null in the case of relatively unrestrictive "generalized Tobit" estimation procedures that appear to be comparable to the estimation procedures examined here. Thus there is influential precedent for this approach.

As was the case for the structural wage equation examined by Blinder, the wage equations estimated for this research project can be organized within the context of a block-recursive structure in which different equations reflect optimization of the endogenous variables over different, finite time horizons.[23] The predetermined variables in this specification are work experience at $t-5$, marital status, number of children, schooling level, and accumulated financial assets.[24] Current total work experience, the probability of employment in the current period, and the current wage equation are assumed to form a block of equations that is stochastically independent of predetermined

Discrimination," cited above, p. 441. Also see the early work of Chamberlin and Griliches, in which family background variables were found to be significant determinants of school achievement, but less important determinants of earnings once school achievement is taken into account.

[22] This distinction between pre-survey work experience and employment spells reported during the course of the survey is not acknowledged by Mroz, who criticizes this asymmetry. See Heckman () "Heterogeneity and State Dependence", TK, and T. A. Mroz (1987), "The Sensitivity of and Empirical Model of Married Women's Hours of Work to Economic and Statistical Assumptions," Econometrica, 55, pp. 765-799. I am indebted to Margorie Honig for recommending that I examine Mroz's influential article.

[23] This general approach to the identification of structural systems of equations is illustrated, in an application involving the estimation of dynamic systems of factor demand equations with longitudinal microdata from the LRD, in Moeller (1995), Systems of Factor Demand Equations Derived from a Model of Monopolistic Competition: Results from Time Series Cross Section Data. Doctoral Dissertation for the Columbia University Economics Department, Ann Arbor: University Microfilms.

[24] Predicting years of school completed, which are generally assumed to be a function of parents' income and schooling levels, is beyond the scope of the current work. Therefore schooling is treated as a

and family background variables. In addition, this three-equation system is expanded to include a fourth equation that represents the probability of living in a home owned by a household member, as noted above. Incorporation of the homeownership probit is discussed in an earlier paper and not revisited here, but the "structural" specification of the selection bias correction factor that is incorporated in the wage equations reviewed below.[25]

To fix ideas, these systems of equations may be specified in general terms as follows.

$$\varphi_{EX}(EX_t) = G_{EX}\left[School, FAM, Health, Wealth, Nowrkspl, DEMOG, \varepsilon_E\right]$$

$$\Pr(EMP) = G_{EMP}\left[School, EX_{t-5}, FAM, Health, Wealth, DEMOG, GEO, \varepsilon_H\right]$$

$$\varphi_W(W_t) = G_w\left[School, \varphi_{EX}(EX_t), PT, Sector, Blue, Race, \lambda, \varepsilon_w\right]$$

In some cases $\varphi(Y) = Y$, and in other cases $\varphi(Y) = \ln Y$. $School$ is either a set of categorical variables defined in terms of years of school completed, or a linear spline in years of school completed with spline knots at conventional degree-completion years. $FAM = (C, W_{SP})$ contains information about the respondent's family that is expected to affect his or her labor supply decision; the variables denoted C reflect the number of children of the respondent and/or the respondent's spouse (in some cases the number of young children), and a variable W_{SP} that takes the value of the wage rate of the spouse if one is present and employed, and zero otherwise. $Health$ takes a value of 1 if the

predetermined variable, and the hypothesis that additive unobserved individual effects such as ability in school are uncorrelated with unobserved ability and thus accumulated work experience is maintained.

[25] See Moeller (1999) for details. At this stage this experimental specification is not very refined; the term "structural" refers more to the intent of the specification than to its current implementation, although the specification is formally identified.

respondent reports a disability that interferes with his or her ability to hold a job, and zero otherwise. *Wealth* is calculated as family income from financial assets divided by the official poverty cutoff; this normalization is intended to result in a variable that represents the transactions demand for liquidity, as noted above, and reduces the degree of heteroskedasticity that might otherwise be introduced by the financial income variable. *Nonwrkspl* is a vector that includes a categorical variable that takes a value of 1 if the last spell of non-employment for 6 months or longer was involuntary unemployment, and a variable that is equal to the duration of the last spell out of employment if it was involuntary, and zero otherwise.

DEMOG is a subvector that contains the following demographic variables: *Age* is the respondent's age minus 65 if that difference is positive, and zero otherwise. *Ms* is a categorical variable that reflect the respondent's marital status. *RET* is a linear spline function in age with a single knot at 55, intended to capture possible approach of retirement and the associated depreciation of market-oriented human capital. *GEO* is a subvector of geographic variables that includes categoricals for Census regions, and a variable that takes a value of 1 if the respondent lives in a city and zero otherwise.

PT takes a value of 1 when the respondent usually works less than 35 hours a week, and 0 otherwise. *Blue* takes a value of 1 when the respondent is a male production worker, and 0 otherwise. *Sector* is a vector of categorical variables that identify the major industrial sector in which the largest share of total hours was worked in a given calendar year. The selection bias correction factor λ is an inverse Mills ratio. The vector of stochastic terms, $\varepsilon = \left(\varepsilon_{EX_t}, \varepsilon_{EMP_t}, \varepsilon_{w_t}\right)$ is assumed to have a mean zero, and it is assumed that $\sigma_{EX_{t-5}, EMP_{t1}} = 0$. Exclusion restrictions that serve to identify this system, subject to the normalization required for the selection bias factor, are outlined in Appendix B.

Specification and Estimation of Experience Equation.

The explanatory variables that enter the experience equation that is used in the current official index consist primarily of discrete counterparts of variables that also enter the wage equation. Separate identification of the coefficients of the experience and wage equations depends on the fact that the variables in the experience equation consist of mappings from two continuous variables (years of schooling and number of children in the family) to sets of discrete categorical variables that are defined in terms of the same two variables, a potential experience variable that is itself a linear combination of age and years of school completed, and "piecewise" variables obtained by multiplying the categorical variables by potential experience. This approach is not ideal for the purposes of structural or "causal" analysis. Consequently several alternative specifications of the work equation have been examined, in all cases with an eye toward the construction proxies or "instruments" that might also be used in two-sample estimation procedures.

The alternative specifications estimated to date include a linear spline in years of school completed, a demographically-driven quadratic that follows an early specification of Heckman, a specification in which the log of actual work experience is the dependent variable following work by Lancaster and Chesher, a more short-run specification that incorporates lagged work experience as a predetermined explanatory variable, and an S-curve that has been used in the time series literature to study market saturation. Detailed descriptions of the equations estimated are included in Appendix D.

Although the extensive literature on the estimation of duration may not be directly applicable to the problem at hand, for reasons discussed below, but it is not entirely clear that it is inapplicable either. For this reason it may be worth noting that although semi-parametric specifications may be preferred for the purposes of estimating the duration of completed spells, there does not appear to be a consensus in the literature on the criteria for preferring one semi-parametric approach to estimation over another. Furthermore the entire productivity series relies on separability assumptions that embody well-known functional form restrictions, and in this sense continued reliance on functional form restrictions is internally consistent.[26] On both of these counts the specification of a Weibull distribution for the estimation of systems of wage and employment duration equations as suggested in the work of Lancaster, and Lancaster and Chesher is particularly attractive.[27]

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[26] Ernst R. Berndt and Christensen (1973), "The Internal Structure of Functional Relations: Separability, Substitution and Aggregation," Review of Economic Studies, 40 (3), pp. 403-410.

[27] T. Lancaster and A.D. Chesher (1984), "Simultaneous Equations with Endogenous Hazards," in Studies in Labor Market Dynamics, G.R. Neumann and N. Westergaard-Nielsen, Eds, Berlin: Springer-Verlag; Lancaster (1985), "Simultaneous Equations Models in Applied Search Theory," Journal of Econometrics, 28, pp. 155-169, Lancaster (1986), "Some Remarks on Wage and Duration Econometrics," in Unemployment, Search, and Labor Supply, Blundell and Walker, Eds., Cambridge: Cambridge University Press, and Lancaster (1990), The Econometric Analysis of Transition Data, Econometric Society Monograph No. 17, Cambridge: Cambridge University Press.

In this approach specifications experience and wage equations take the following form:

$$E(t) = \phi_1(t)\exp^{\left(X_1(t)\beta_1 + \varepsilon_1\right)}$$

$$W(t) = \phi_2(t)\exp^{\left[\left(X_2(t), E(t)\right)' \beta_2 + \varepsilon_2\right]}$$

The variable t represents potential experience, or years since completion of school. In keeping with the general rationale discussed above, it is assumed that the variables in the vector $X_1(t)$ are time-varying but exogenous, in the sense defined by Lancaster in his monograph on transition data.[28] Taking logarithms, as is standard practice in the estimation of human capital wage equations, is intuitively appealing in view of the well-recognized skewed distributions of wages and accumulated work experience. The result is a triangular system of the following form, where X_1 and X_2 may contain some variables in common:

$$\ln[E(t)] = \ln[\phi_1(t)] + X_1(t)\beta_1 + \varepsilon_1$$

$$\ln[W(t)] = \ln[\phi_2(t)] + [X_2(t), \ln E(t)]' \beta_2 + \varepsilon_2$$

This system is estimated most efficiently by maximum likelihood procedures, but implementation of maximum likelihood procedures in the context of selection-bias correction is not always straightforward, and least-squares should also yield consistent parameter estimates.[29] Since the logarithmic transformation is monotonic and the distribution of $\ln[E(t)]$ is roughly comparable in shape to the distribution of $\ln[W(t)]$,

[28] See Lancaster (1990), page 28.

[29] Lancaster (1983), "Generalized Residuals and Heterogeneous Duration Models: The Exponential Case," Bulletin of Economic Research, 35 (2), pp. 71-85; Jeffrey M. Woodridge (2002), Econometric Analysis of Cross Section and Panel Data, Cambridge MA: MIT Press, p. 566.

entering the predicted value of the log of accumulated experience into the second estimating equation should help decrease residual heteroskedasticity. It is interesting to note that the R^2s of the equations with the log of potential experience on the left-hand-side are substantially lower than their counterparts with experience measured in levels. But the performance of the predicted log experience variable in the wage equation is among the strongest of the specifications examined.

An alternative approach to equation specification, also concerned with possible correlations in the residuals of the experience and wage equations, involves the use of a lagged value of actual accumulated work experience as an explanatory variable in the experience equation. Since lagged work experience is a predetermined value it should be uncorrelated with current wage rates when contemporaneous shocks or short-lived random "individual effects" are the source of correlation between wage and experience equation residuals.[30] Therefore work experience accumulated by year $t-5$ has been entered in one of the alternative experience equation specifications. Endogeneity tests for the lagged work experience variable are clearly indicated. In prior work, Heckman found lagged work experience to be an endogenous explanatory variable in an experience equation, but exogenous in the wage equation. And recent research by Mincer and Danninger, using the PSID, suggests that technological shocks cause unemployment and employment rates to deviate from long-run equilibrium for periods of 3-5 years.[31] Thus it seems plausible that a five-year lag will be sufficient to justify treating the lagged

[30] Heckman (1981), "Heterogeneity and State Dependence," Studies in Labor Markets, Sherwin Rosen, Ed., Chicago: University of Chicago Press, pp. 91-139.
[31] Jacob Mincer and Stephan Danninger (2000), "Technology, Unemployment, and Inflation," NBER Working Paper No. 7818, http://www.nber.org/papers/w7817.

variable as a predetermined variable. It is noteworthy that although lagged actual work experience variable substantially increases the explanatory power of the experience equation relative to potential experience, the resulting predicted value for potential experience does not increase the explanatory power of the wage equation nearly as dramatically.[32]

An "S-curve," taken from the time series literature on market saturation, was also estimated. In this case the inverse of potential experience was entered on the right-hand-side, without a quadratic term. In future work a quadratic might usefully be considered: when it is omitted predicted work experience values are quite high at the upper tail. Nonetheless, the within-cell wage equation prediction error associated with this specification is often fairly small.

Unobserved, randomly-distributed but sustained individual effects such as ability may also result in correlation among the stochastic components of the schooling, work experience and wage variables, as recognized at least since the 1970's.[33] It has been argued that persons with more innate ability will naturally achieve greater success in school and in the workplace than their less able colleagues, and that OLS estimates of the returns to schooling and work experience will be biased as a result.[34] The use of predicted actual work experience rather than reported values as explanatory variables in the wage equations is motivated in part by this concern, and in part by an institutional interest in extending this research to applications involving two-sample estimates. It is

[32] Neuman reports similar results in TK.
[33] Griliches and Chamberlin.

noteworthy in this regard that Krueger and Angrist reject the null hypothesis of significant unobserved ability in the wage equation, in their work with split samples.[35] Nonetheless the systematic implementation of exogeneity tests within the context studied here may be indicated for the next stage of this project.

The work history topical module of the SIPP collects information on both single and multiple employment spells, and these spells may be completed or censored . Observations on wage earners, who were employed during the period spanned by the survey, are censored in the sense that the term is used in the econometric literature on the estimation of duration. Especially among women, spells of employment were multiple spells. On average across all panels roughly 60% of male respondents reported having been employed at least 6 months per year every year since the first year of employment lasting 6 months or longer; the corresponding percentage for females is roughly 30%. Therefore, by necessity, for the purposes of this study persons who report having 6 or more months of continuous employment per year are considered to have been employed continuously. Observations with at least one spell of non-employment lasting 6 months or longer are observations with multiple employment spells. Among respondents aged 21-64 with at least one spell of non-employment that lasted 6 months or longer, information is collected on the duration of the most recent spell, and on the total number of spells.

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[34] This concern motivates the work by Angrist and Krueger (1992, 1995), cited above.
[35] Joshua Angrist and Alan Krueger (1995), "Split Sample Instrumental Variable Estimates of the Returns to Schooling," Journal of Business and Economic Statistics, Vol. 13, No. 2, pp. 225-235. Also see

As noted above, it is not obvious that the extensive literature on duration estimation should be brought to bear in this research, since the variable of interest is the total number of years worked to date, rather than the expected duration of all employment spells. This is because, within the analytical framework of standard static human capital wage equations, it is assumed that employees accumulate both general and specific human capital throughout their working lives. It is this "stock" of accumulated human capital that is assumed to increase current worker productivity. Thus the censored values are the variables of interest for the purposes of estimating human capital wage equations, especially since wage data are unavailable by definition for those whose lifetime employment has been completed. Similarly, while employment during one's lifetime could be specified within a censored regression framework, a selection bias correction factor has not been incorporated in the experience equation because only about 6% of females and less than 1% of the males in the population report that they never worked.

Regression and Labor Composition Index Number Results

Annual coefficient estimates and associated summary statistics for each of the experience equations estimated are reported separately by gender in Appendix D. Two basic wage equation specifications are estimated: the current BLS specification described in Section III, and a new specification is the revised specification discussed in Section V. The current BLS specification includes information on family structure and regional categorical variables in the wage equation while the alternative specification does not.

Griliches (1970), "Notes," cited above, and Blinder (TK), "Wage Discrimination: Reduced Form and Structural Estimates," The alternative specification includes broadly-defined categorical variables for primary industry of employment and a selection bias correction factor, neither of which is incorporated in the current BLS specification. In the case of the alternative specification, information on household composition enters the wage equation indirectly, through the selection bias correction factor.

More specifically, predicted values for actual work experience are obtained with each of five experience equation specifications, as discussed above. The wage equation used to construct the current index is estimated with predicted experience values based on the experience equation currently used to construct the index, and with potential experience. In addition, each of the four alternative specifications of the experience variable discussed above is entered as a proxy in the alternative wage equation. Two alternative selection bias correction factors, denoted λ, are included with each of the new alternative specifications of the wage equation/experience proxy. The first selection bias correction factor, denoted λ_{BA}, is estimated with the coefficients of a simple "baseline" probit that follows Heckman's early work. The second selection bias correction factor, denoted λ_{ST}, is estimated with the coefficients of a probit in which the predicted probability of homeownership replaces normalized income from financial assets as the wealth variable, the number of children under six years of age and the number of school-aged children are entered as separate explanatory variables, and categorical variables for nine Census regions are included to capture differences in local labor market conditions.

Examination of the tables in Appendix D reveals that the current BLS experience equation specification is often dominated by the alternatives estimated, when evaluated in terms of the R^2s associated with the experience and wage rate equations. In addition, simple counts of the incidence with which predicted sample values fall above or below the range $(0,75]$ suggest that the current BLS specification does not fit the data as well in the outer tails of the distribution as several of the other specifications considered. (Tables and charts on outliers of predicted values are included in Appendix D, in a separate section between the experience equation and the wage equation coefficients.)

However, the wage equation parameter estimates are used to generate predicted wage rate values with which to construct the labor cost share weights $\omega_{l,t}$ for persons with characteristics l at time t, as discussed in Section III. The within-cell fit of the equations is of substantial interest for this reason. Summary statistics on weighted ratios of the antilog of the wage equation residual divided by the actual wage rate were therefore generated for cells defined in terms of alternative data partitions and 5-year age intervals.[36] That is, partitions defined in terms of broad ranges of actual work experience were divided into sub-cells that can be sorted by age, to facilitate direct comparison by cohort across partitions.

To provide a broad overview of the results, the weighted within-cell-and-cohort ratios were pooled across all years, and summary statistics were generated for each combination

[36] Bias-adjustment for the non-linear conversion from of the predicted log wage is not part of the current BLS procedure and has not been implemented in the results reported here. See Dhrymes (1995), "On Devising Unbiased Estimates for the Parameters of the Cobb-Douglas Production Function," reprinted in Theoretical and applied econometrics: The selected papers of Phoebus J. Dhrymes, Aldershott: Elgar.

of experience, participation, wage equation and data partition considered. Results are summarized in the tables below. The three rows that tend to have the lowest ratios are highlighted in each table.

The first highlighted row, denoted *optw*, corresponds to the partition used in the current series except that cells are defined over 5-year work experience intervals rather than 1-year intervals of potential experience. [37] The second highlighted row, denoted *newn*, corresponds to the alternative partition proposed in this paper except that data are partitioned by broad age intervals rather than by actual work experience.[38] The third highlighted row, denoted *neww*, corresponds to another alternative partition that also sorts workers into broad intervals of actual work experience. Thus the first and third highlighted rows identify partitions that are only feasible when the index is constructed by partitioning the data in terms of the actual work experience information in the SIPP, while the second highlighted row denoted *newn* identifies a new alternative partition that is feasible with TS2SLS or TSIV estimation procedures.

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[37] The current OPT index, denoted *optp* in the tables, is constructed by partitioning microdata from the March annual supplement of the CPS into 72 age vales (0-1, 1-2, ..., 71 and over), 7 discrete categorical variables for years of school completed (fewer than 4 years, 4-8, 8-11, 12, 12-14, 14-16, 16, over 16), and gender. For females, there are also 4 discrete categorical variables for number of children (none, 1, 2, more than 2), and marital status (ever married, never married). Potential experience, number of children, and the "ever married" variable jointly serve as an estimate of actual work experience. See BLS Bulletin 2426 (1993), cited above, Table D-1, p. 68. The partition denoted *optw* is the same, except that 5-year intervals of actual work experience replace the 1-year potential experience intervals. The partition denoted *opta* is the same except that 5-year age intervals replace the 1-year potential experience intervals.

[38] For the partition denoted *new*, cells are defined in terms of 4 broad regions (northeast, south, central and west); 3 broad industry categories (manufacturing, mining, transportation and agriculture; finance and wholesale and retail trade; and services), 2 broad age categories (younger than 55, and 55 and older) 3 broad schooling categories (less than 12 years, 12 years, 13-16 years, and more than 16 years of school completed), and gender. Among male employees in heavy industry there is a further partition into production and non-production employment that follows Berndt and Christensen (1974), cited above. The

In the case of males, abstracting from partitions in terms of actual work experience and focusing on the row denoted *newn* in which data are partitioned by industry, schooling, and broad age intervals, the current experience and wage equation without a selection bias correction result in the smallest mean and median ratios. The new wage equation specification, with the predicted level of actual experience on the RHS, the "structural" selection bias correction factor and the same data partition yields the smallest ratio at the 25th percentile. The inter-quartile range and 75th percentile ratios are smallest when potential experience replaces estimated experience in the current wage equation and the selection bias correction factor is omitted.

For females, again abstracting from partitions in terms of actual work experience, the smallest mean within-cell-and-cohort ratio, and the smallest value at the 25th percentile, are associated with the partition *newn* together with a wage equation in which potential experience replaces predicted actual experience and there is no selection bias correction. The same partition by industry, schooling and broad age intervals in combination with the Weibull specification for the experience equation and the structural specification of the participation equation results in the smallest median ratio. The same partition in combination with the current BLS experience equation and no selection bias correction performs takes the lowest value at the 75th percentile, and has the smallest interquartile range

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partition denoted *newn* differentiates between employees with undergraduate and advanced degrees. The partition denoted *neww* incorporates a further partition into 3 broad intervals of actual work experience.

						FEMALES						
	1	2	3	4	5	6	7	8	9	10	11	12
EQN	OPT/PE	OPT/opt	WB/BA	WB/ST	HC/BA	HC/ST	LV/BA	LV/ST	LG/BA	LG/ST	SC/BA	SC/ST
	MEAN WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
PARTN												
optp	0.15392	0.15447	0.15421	0.15418	0.15301	0.15289	0.15373	0.15372	0.15274	0.1526	0.15368	0.15369
optw	0.14964	0.14981	0.1503	0.15005	0.14901	0.14865	0.14992	0.14968	0.15082	0.15067	0.15037	0.1502
opta	0.16392	0.16492	0.16611	0.16611	0.16212	0.16186	0.16546	0.16549	0.16407	0.16389	0.16561	0.1657
new	0.1561	0.15668	0.15614	0.15618	0.15674	0.1569	0.15637	0.15642	0.1558	0.15592	0.15551	0.15557
newn	0.14672	0.14684	0.14697	0.14699	0.14742	0.14754	0.14702	0.14703	0.14801	0.14811	0.14678	0.14684
neww	0.13802	0.13775	0.13935	0.13914	0.13924	0.13909	0.13947	0.13926	0.1416	0.14178	0.13957	0.13946
	75TH PERCENTILE WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
optp	0.18402	0.18486	0.18279	0.18271	0.18266	0.18272	0.18247	0.1822	0.18019	0.18014	0.18201	0.1819
optw	0.17973	0.17929	0.17733	0.17715	0.17763	0.17738	0.17672	0.1767	0.17714	0.17716	0.17735	0.17737
opta	0.19787	0.19864	0.19873	0.19854	0.19576	0.1957	0.19715	0.19744	0.19602	0.1956	0.19803	0.19807
new	0.18468	0.18492	0.18588	0.18572	0.187	0.18707	0.18608	0.18607	0.18466	0.18453	0.18456	0.18482
newn	0.17622	0.17549	0.17679	0.1766	0.17715	0.17734	0.17637	0.17666	0.1781	0.17787	0.17632	0.1768
neww	0.16604	0.16494	0.16639	0.16599	0.16688	0.16667	0.16629	0.16586	0.16922	0.16917	0.16707	0.16694
	MEDIAN WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
optp	0.14537	0.14499	0.14442	0.1444	0.1436	0.1435	0.14383	0.14352	0.14362	0.14342	0.14435	0.14442
optw	0.1415	0.14066	0.14088	0.1404	0.1404	0.1401	0.14031	0.13982	0.14239	0.14212	0.14153	0.14111
opta	0.15543	0.15517	0.15418	0.154	0.1537	0.1534	0.1532	0.15297	0.15166	0.1516	0.15369	0.15354
new	0.15022	0.14944	0.14952	0.1495	0.1485	0.1486	0.14962	0.14979	0.14982	0.14987	0.14915	0.14941
newn	0.14221	0.14178	0.14175	0.1415	0.1416	0.1417	0.1416	0.14176	0.14392	0.14389	0.14203	0.14208
neww	0.13232	0.1317	0.1334	0.1331	0.1328	0.1325	0.13363	0.13312	0.13661	0.13668	0.13412	0.13407
	25TH PERCENTILE WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
optp	0.11238	0.11262	0.11317	0.1131	0.11179	0.11169	0.11275	0.1125	0.1128	0.1128	0.11308	0.11295
optw	0.10909	0.10942	0.1105	0.11017	0.10927	0.10896	0.11006	0.1098	0.1116	0.1114	0.11075	0.11045
opta	0.11883	0.1191	0.11888	0.11887	0.11748	0.11741	0.11864	0.1182	0.1183	0.1182	0.11868	0.11877
new	0.11911	0.11878	0.11846	0.11861	0.11688	0.11708	0.1186	0.1188	0.1199	0.1198	0.11883	0.11896
newn	0.11063	0.11095	0.1116	0.11175	0.11071	0.11077	0.11168	0.1117	0.1128	0.113	0.11096	0.11113
neww	0.10253	0.10283	0.10437	0.10437	0.1034	0.10341	0.1047	0.1047	0.1057	0.1061	0.10421	0.10443
	INTER-QUARTILE RANGE: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
optp	0.07165	0.07224	0.06962	0.06961	0.07087	0.07103	0.06972	0.06963	0.06736	0.06731	0.06894	0.06895
optw	0.07063	0.06987	0.06682	0.06698	0.06836	0.06842	0.06665	0.06689	0.06551	0.06573	0.0666	0.06693
opta	0.07904	0.07954	0.07985	0.07967	0.07827	0.07829	0.0785	0.07922	0.07767	0.07737	0.07935	0.0793
new	0.06557	0.06614	0.06742	0.06711	0.07012	0.06999	0.06748	0.06724	0.06467	0.06469	0.06573	0.06586
newn	0.06558	0.06454	0.06519	0.06485	0.06643	0.06657	0.06469	0.06488	0.06527	0.06486	0.06536	0.06567
neww	0.06351	0.06211	0.06202	0.06162	0.06348	0.06326	0.06159	0.06108	0.06349	0.06306	0.06286	0.06251

MALES

EQN	1 OPT/PE	2 OPT/opt	3 WB/BA	4 WB/ST	5 HC/BA	6 HC/ST	7 LV/BA	8 LV/ST	9 LG/BA	10 LG/ST	11 SC/BA	12 SC/ST
	MEAN WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
PARTN												
optp	0.11167	0.11203	0.11043	0.1103	0.10866	0.10835	0.11015	0.10998	0.10898	0.10899	0.10972	0.10954
optw	0.10789	0.10822	0.10715	0.10682	0.10476	0.10424	0.10675	0.10641	0.10773	0.10765	0.10713	0.1068
opta	0.12128	0.122	0.11938	0.11909	0.11543	0.11494	0.11897	0.11869	0.1172	0.11713	0.11876	0.11845
new	0.10717	0.10738	0.10972	0.1097	0.10976	0.10977	0.10989	0.10989	0.10937	0.10949	0.10965	0.10955
newn	0.09975	0.09972	0.10233	0.1023	0.10181	0.10181	0.10226	0.10224	0.10435	0.10441	0.10288	0.10277
neww	0.09427	0.09417	0.09651	0.09645	0.09547	0.09535	0.09638	0.0963	0.09843	0.09856	0.09699	0.09691
	75TH PERCENTILE WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
optp	0.13276	0.13352	0.13085	0.13056	0.12938	0.12903	0.1305	0.13036	0.12579	0.12559	0.12906	0.1287
optw	0.12869	0.12881	0.12678	0.12649	0.12485	0.1244	0.12623	0.1261	0.12474	0.12485	0.12642	0.12602
opta	0.14652	0.1477	0.14291	0.14283	0.13754	0.13694	0.14264	0.1422	0.13762	0.13756	0.14173	0.14153
new	0.12596	0.12627	0.12966	0.12986	0.13099	0.13099	0.12983	0.12981	0.12689	0.127	0.12887	0.12891
newn	0.1155	0.11563	0.12072	0.1207	0.12089	0.12076	0.1205	0.12082	0.1222	0.1221	0.12165	0.1215
neww	0.10955	0.10898	0.11313	0.11309	0.11295	0.11299	0.11273	0.11269	0.11551	0.11549	0.11413	0.11416
	MEDIAN WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
optp	0.10433	0.10371	0.10158	0.10143	0.1017	0.10161	0.10108	0.10101	0.10107	0.10107	0.10187	0.10176
optw	0.10063	0.0999	0.09803	0.09766	0.09824	0.09772	0.09751	0.09701	0.10003	0.09997	0.09939	0.0989
opta	0.11413	0.11341	0.10954	0.10896	0.10922	0.10864	0.10868	0.10868	0.10739	0.10716	0.10964	0.10917
new	0.09962	0.09935	0.10201	0.1022	0.10179	0.10202	0.10208	0.10208	0.10231	0.10246	0.10298	0.10301
newn	0.09344	0.0933	0.09586	0.09585	0.09579	0.09576	0.0957	0.09578	0.09827	0.09825	0.09692	0.09699
neww	0.08789	0.0874	0.08952	0.08937	0.08893	0.08865	0.0895	0.08945	0.09239	0.09232	0.09089	0.09071
	25TH PERCENTILE WITHIN-CELL RATIO: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
optp	0.08076	0.08081	0.07988	0.07979	0.07892	0.07876	0.07982	0.07968	0.08118	0.08106	0.08047	0.08036
optw	0.07811	0.07814	0.07788	0.07693	0.07625	0.07581	0.07692	0.07693	0.08005	0.07983	0.0778	0.07752
opta	0.08622	0.08637	0.08438	0.08382	0.08263	0.08254	0.08373	0.08358	0.08528	0.08516	0.08504	0.08478
new	0.08104	0.08067	0.08155	0.08121	0.08031	0.08264	0.08163	0.08152	0.08285	0.08289	0.08236	0.08207
newn	0.07544	0.07553	0.07548	0.07547	0.07548	0.07545	0.07586	0.07193	0.07807	0.07813	0.07599	0.07585
neww	0.07017	0.07024	0.07358	0.0703	0.06973	0.06972	0.07587	0.07045	0.07232	0.07242	0.07067	0.07066
	INTER-QUARTILE RANGE: ANTILOG WAGE EQUATION RESIDUAL TO ACTUAL WAGE											
optp	0.052	0.0527	0.0597	0.05077	0.05046	0.05278	0.05046	0.05028	0.05068	0.05068	0.04461	0.04453
optw	0.05059	0.05067	0.04976	0.04956	0.0486	0.04859	0.0486	0.04859	0.04932	0.04917	0.0447	0.04502
opta	0.0603	0.06132	0.05853	0.05902	0.05491	0.0544	0.05491	0.0544	0.05891	0.05862	0.05234	0.0524
new	0.04492	0.0456	0.04812	0.04865	0.05068	0.0573	0.05068	0.05073	0.0482	0.04828	0.04403	0.04412
newn	0.04007	0.04008	0.04524	0.04522	0.04541	0.04531	0.04541	0.04531	0.04464	0.04489	0.04413	0.04397
neww	0.03938	0.03874	0.04277	0.04279	0.04321	0.04327	0.04321	0.04327	0.04214	0.04224	0.04318	0.04308

Mneumonics for Columns 1-12 in Above Tables

OPT/PE identifies the current wage equation specification, with potential experience replacing the actual work experience proxy.
OPT/opt identifies the current approach, with coefficients from the contemporaneous experience equation used to construct a work experience proxy.
In the remaining mneumonics, WB identifies an equation with the log of actual experience on the LHS and the log of potential experience on the RHS.
HC follows an early specification in by Heckman with the level of actual experience on the LHS, LV is a new specification with levels on the LHS,
LG identifies an experience equation with actual experience on the LHS and lagged experience on the RHS, and SC is an S-curve where the logs of actual and potential experience are entered on the LHS and RHS respectively.
In columns 3-12, BA identifies selection bias correction factors based on an employment probit that follows the early work of Heckman. ST identifies selection bias correction factors based on a probit in which the probability of living in a home owned by a household members is entered as an index of the capital intensity of household production, and categorical variables for 9 Census regions capture regional differences in employment population ratios.

Partitioning in terms of broad schooling, industry and work experience intervals generally results in smaller within-cell-and-cohort ratios than the ones mentioned above. In the case of males, focusing on the partition labeled *neww*, the current wage equation specification with no selection bias correction yields the lowest mean, median and inter-quartile range, as well as the smallest ratio at the 75th percentile. In the case of females the current specification with no selection bias correction yields the lowest mean and median within-cell-and-cohort ratios. The wage equation specified in terms of potential experience, with no selection bias correction factor, yields the lowest ratio at the 25th percentile. The experience specification in levels, in combination with the alternative specification of the wage equation and the structural specification of the participation equation results in the smallest inter-quartile range.

These intermediate results do not substitute for conventional specification and exogeneity tests, which are clearly indicated if this research project is to be continued.[39] In addition, systematic review of these ratios by cohort may provide further insights into the strengths and weaknesses of alternative specifications. Nonetheless these preliminary results illustrate the importance of alternative data partitions to the quantitative results obtained with hedonic indexes.

Intuitively, however, consistency between the explanatory variables of the wage equation and the partitioning variables seems desirable in order to give analytical meaning to the separability assumptions that underlie the index number approach to productivity measurement. That is, it seems logical that the explanatory variables that are the true structural determinants of observed wage rates should also be the variables used to partition the data into groups within which relative wage rates are assumed to remain unchanged in the face of changes in prices paid for other factors of production.

Assuming that internal consistency between the explanatory variables of the wage equation and the variables employed in estimation is desired, the new specifications and partitions appear to dominate the current ones. This may be seen by comparing the 4 cells in the first two rows and first two columns of the upper left-hand portion of each panel, marked off as a box surrounded by a solid line, with the 20 cells in columns 3-12 and the last two rows, similarly boxed, in the bottom right-hand portions of each panel.

[39] Furthermore,it should be noted that tabulation of annual coefficient estimates revealed that some cross-sections variables intended to allow the slopes and interecepts of the wage equation to vary in the case of younger and older workers, from whom information on actual work experience is not collected, were omitted inadvertently. Although in most cases these variables are insignificantly different from zero when

The upper left-hand portions, i.e. the cells that correspond to the first two columns of the table and the rows denoted *optp* correspond to the wage equation and partition employed to construct the current BLS index. The row denoted *optw* is the same except that the partition is defined in terms of 5-year intervals of actual work experience rather than 1-year intervals of potential experience. The cells in columns 3-12 and the rows denoted *new*, *newn* and *neww* correspond to conditional mean cell wage rates, predicted with the 3- and 4-equation systems described above.

It is particularly noteworthy that the partition denoted *newn* does not rely on actual work experience data, but it is defined in terms of the key variables in the revised specification of the wage equation. It appears to dominate the current partition, and the revised partition defined in terms of 5-year age intervals. It is dominated in turn by the partition *neww*.

To recapitulate, key differences between the current and revised wage equation specifications are that the current approach does not incorporate a selection bias adjustment factor and it does not include categorical variables for industry of primary employment., while it does include regional categorical variables. The revised specification incorporates a selection bias adjustment factor. Regional categorical variables assumed to capture regional differences in local labor market conditions are entered in the employment probit that underlies the selection bias correction factor λ_{ST}, and categorical variables for industry of primary employment are entered in the wage

included, it is still true that the rankings of the ratios may well change after those errors have been corrected.

equation to capture industry differences in the physical- and specific-human-capital intensity of production that may result in substantial costs of adjustment.

Average index growth rates across all equation specifications examined are reported in the Table below, together with index growth rates calculated with cell mean growth rates. Growth rates for each partition/specification combination are reported in Appendix F, along with exact definitions of each partition.

Perhaps not surprisingly, given the different effects of the partitions considered on the ratios reported above, the choice of a data partition and the time period over which average annual growth rates are calculated both make a significant difference in the values taken by the labor composition index. The design of the 1984 work history topical module was substantially different from the design of subsequent topical modules, and no work history data were collected in the 1985 panel. Therefore average annual growth rates based on the period 1987-1993 are reported here.

For the period 1987-1993, following the current methodology, average annual index growth rates were 3 percent for males and 2.9 percent for females (cell OPTP, OPT in Appendix F). These values are quite similar to the index obtained with cell mean wage rates, which shows growth rates of 2.7 percent for males and females under the same data partition. In contrast, when data are broadly partitioned by schooling, industry and age (*newn*), average annual growth rates for males and females are much smaller (0.02 percent for males, and 0.08 percent for females on average across all equation specifications examined). When the labor composition index is constructed with cell mean wage rates rather than predicted values, the partition *newn* results in average annual growth rates of 0.04 percent for males and 0.10 percent for females.

		Avg. Ann. Growth			Avg. Ann. Growth	
Partition	Sex	Hedonic	Mean Wage	Partition	Hedonic	Mean Wage
optp	males	0.0309	0.0265			
	females	0.0294	0.0267			
opta	Males	0.0034	0.0031	*newn*	-0.0002	0.0004
	females	0.0026	0.0025		0.0008	0.0010
optw	Males	0.0441	0.0456	*neww*	0.0533	0.0539
	females	0.0680	0.0718		0.0466	0.0469

The effect of partitioning by actual work experience is striking. When data are broadly partitioned by schooling, industry and actual work experience (*neww*) the indexes average about 5 percent (5.33 percent for males and 4.66 percent for females on average, across all equation specifications). Alternative equation specifications again yield quite similar results. The index constructed with cell mean wage rates is 5.4 percent for males and 4.7 percent for females. This similarity between the cell mean growth rates and the hedonic index growth rates is reassuring because it suggests that the econometric estimates are not distorting the values that would be obtained under conventional index number procedures.

Conclusion

The results reported in this paper indicate that the ability to differentiate between workers with strong and weak labor force attachment is quantitatively important for the labor composition index, if a partition by accumulated total work experience is desired. Some analysts would argue that it is not appropriate to partition by variables that may be endogenous in the long run, such as primary industry of employment and total work experience, despite the fact that these partitions yield the smallest within-cell-and-cohort prediction errors.[40] However this paper has invoked the notion that lagged predetermined variables are "state variables," reflecting irreversible investments in physical and human capital, to motivate a recursive structural specification of experience, employment and wage equations. In the event that this recursive structure is not rejected by specification tests, then partitioning the data in terms of the state variables employed in estimation may be justified.

Alternatively, partitioning by predicted work experience might be more appropriate despite the errors in assigning observations to "bins" that would undoubtedly result. Partitioning by predicted work experience would have the advantage of supporting the two-sample estimation procedure currently envisioned by the BLS, while partitioning by actual work experience does not. Feedback from workshop participants on these points would be welcome.

As noted above, specification and exogenity tests are clearly indicated before evaluation of the alternative specifications discussed here will be complete. Nonetheless, and despite the fact that the choice of a particular set of equation specifications has a much smaller effect on the labor composition index than the choice of a partition does, the

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[40] Glen Cain has stressed this point in email correspondence.

robustness of the equation parameter estimates in successive annual cross-sections speaks well to the usefulness of applying hedonic techniques to these data.[41]

Future work based on the household production framework might focus on estimating separate systems of wage and hours equations by household type in order to allow for greater simultaneity in the determination of wage rates and hours worked, and in the labor supply decisions of husbands and wives. It would be interesting to attempt to formulate separability tests based on flexible functional forms.[42] The estimation of separate systems of hours and wage equations for mature and elderly households, taking account of other income flows and asset holdings and more detailed account of health conditions, might also prove useful for an analysis of the effects of the labor supply decisions of the aging baby boom cohort on productivity growth.

This research has been aided substantially by the fact that the classical human capital wage equation is one of the most robust equations estimated in applied economics, and particularly well-suited to the application of hedonic techniques. Furthermore the data set examined was designed explicitly for the analysis of labor supply decisions. The application of hedonic techniques to markets undergoing rapid technological change, for which both theory and data may be less well-developed, is likely to be much more

[41] Some of this robustness is due to the fact that the annual cross-sections are estimated with pooled overlapping panels of the SIPP. For example, the estimates for 1987 are obtained by pooling data collected in the second year spanned by the 1986 SIPP panel and the first year spanned by the 1987 panel, where annual variables are averages or sums of monthly or quarterly reported values. A substantial amount of smoothing is undoubtedly achieved in the estimation process.

[42] Given the difficulty of identifying time spent in household production separately from time spent in consumption, application of the conventional approach would not be entirely straightforward. On this point see Pollack and Wachter, cited above. Prior conceptual work on the estimation of systems of equations with "mixed" data on prices and quantities might be useful in this context.

difficult. In such contexts, and particularly when the work is being undertaken by government statistical agencies accountable to the general public, the guidance provided by disinterested academic research can be invaluable.

Appendix A: Overview of Research Project and Background on the SIPP

Overall, the project has had the following objectives:

1. Examination of three sources of bias that may be present in the current measures. These sources of potential bias are: (a) systematic errors in the measurement of actual work experience, earnings, and hours worked, (b) sample selection bias, and (c) model misspecification bias.

2. Illustration of the usefulness of the econometric approach to the construction of index numbers, as it is applied in the construction of the labor composition index, through the development of research papers in which the structural determinants of changes in the labor composition index are analyzed in quantitative terms.

The SIPP is extremely well designed for the purposes of measuring changes in earnings and hours of employment at the national level. In addition to the availability of microdata on the total number of years worked by survey respondents, the following aspects of the SIPP's design are important for the construction of an index of shifts in the skill-composition of the work force.

First, the SIPP may provide improved estimates of quarterly and annual hours worked, relative to other large sets of microdata that are representative of the U.S. labor market.[1] In particular, it provides information on the number of hours worked by salaried employees that is not available from the Current Employment Statistics' (CES) establishment data.[2] The SIPP collects information on the number of weeks worked and the usual number of weekly hours worked, for each month in the calendar year, from all adult survey respondents. In contrast, the CES only collects information on hours worked by production and non-managerial workers during the pay period that includes the 12th day of the month. The SIPP also collects monthly information on the number of weeks worked and the number of hours worked per week on a second job.[3] Information on hours worked while self-employed in a first or second business is also collected from all adult SIPP respondents.

Second, the SIPP follows all members of a surveyed household for the duration of the 28-month survey period, even when some or all members of the household relocate. In contrast, the CPS does not follow individuals who separate from the surveyed household, and does not survey each household member for an entire calendar year. Thus short employment spells that might be omitted from retrospective information collected in the March CPS are likely to be incorporated in SIPP data. Similarly within-year selection bias of the type discussed by Hanoch should not be a problem, as it may be for estimates based on the annual March supplement to the CPS.[4]

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[1] The strengths of SIPP estimates of total hours worked, relative to those available from the Current Population Survey (CPS) and Current Employment Statistics (CES) data, are discussed in Moeller (2002), cited above. This paper summarizes results from prior research in which known limitations of the hours estimates in the CPS are analyzed, as well as research that examines respondent recall error in PSID estimates of hours worked. The sequence of questions on hours worked in the PSID is quite comparable to the sequence of questions upon which the SIPP estimates are based.

[2] The BLS is currently working on ways to collect establishment data on hours worked by salaried employees. The resolution of this problem is not straightforward since many establishments do not maintain administrative records on hours worked by salaried employees.

[3] Data on hours worked on a second job are now collected in the CPS, but only from a fourth of the respondents, and only in selected months.

[4] Giora Hanoch (1980), "Hours and Weeks in the Theory of Labor Supply," in Female Labor Supply: Theory and Estimation, James P. Smith, Ed., Princeton: Princeton University Press, pp. 119-165. Also see Rebecca M. Blank (1988), "Simultaneously Modeling the Supply of Weeks and Hours of Work among Female Household Heads," Journal of Labor Economics, 6 (2), pp. 177-204.

Third, the precision of estimates of changes over time is known to be substantially increased with repeated observations on the same unit of analysis, since the relative importance of sampling variance is diminished with repeated observations. Consequently estimates of hours growth rates obtained with longitudinal data dominate estimates based on successive CPS cross-sections, all else equal, because repeated observations represent a smaller share of the total number of observations in the CPS.

Fourth, as noted above, the SIPP collects monthly information on weekly hours usually worked each month, number of weeks worked, and weekly earnings at two or more jobs, in interviews that are conducted every four months. This relatively short recall period is designed to minimize respondent recall error for a given sample size, relative to the retrospective questions in the annual March supplement of the CPS. It should also generate more precise estimates of cyclical fluctuations in total employment, hours worked and earnings than those available from the CPS March supplement, in which the primary frame of reference is the longest-held job during the previous calendar year.

Fifth, in addition to then-current (or then-recent) data collected at four-month intervals, retrospective information on each respondent's prior work history, migration, education and assets are collected in one-time "topical modules." These data support the estimation and analysis of structural models of household labor supply in which "gains from trade" may have been achieved through household members' specialization in market or non-market production.

It must be noted that the detailed and extensive information collected in the SIPP increases the amount of time required to assemble and process the data. Consequently the SIPP is much less timely than either the CES or the CPS, and probably cannot be used directly to construct quarterly indicators. However, the work described below demonstrates that it provides a very strong basis for the econometric analysis of hours and earnings growth rates, and it could prove useful for the construction of quarterly indicators within the foreseeable future. [5]

Initial Comparisons with Social Security Administrative Records.

The first stage of the project focused on a comparison of the SIPP's information on total accumulated work experience with parallel information in administrative records from the Social Security Administration (SSA) that had been matched to the SIPP microdata, in a prior research project undertaken by the SSA.[6] Administrative records on quarterly employment and earnings were compared directly with SIPP estimates of the total number of years worked. SIPP estimates were found to dominate the estimates based on administrative records due to incomplete SSA coverage during the early years of the program, and variability of program coverage rates over time.[7]

The work experience proxy currently used to construct the labor composition index, with the coefficients of an experience equation previously estimated with 1973 CPS microdata matched to SSA administrative records, has been shown to generate earnings profiles that are clearly steeper than the earnings profiles

[5] Prior to the introduction of computer-assisted interviewing procedures preliminary data were available roughly a year after the time period to which they refer. That is, data were available roughly 8 months after an interview, and the interview referred to the preceding 4 months. There is a greater current data-processing lag, but it is expected to decrease as the automated data collection procedures currently being developed increase in efficiency. Once the new data-processing procedures are working smoothly , preliminary data will probably be available a year or less from the month to which they refer.

[6] Some results from this prior project are reported in Howard M. Iams (1991), "Child Care Effects on Social Security Benefits," 1991 Annual Research Conference Proceedings, Bureau of the Census, pp. 255-271.

[7] The linking of administrative record and survey microdata also raises important privacy issues, and these have prevented the routine linking of comparable data sets in most other years. These privacy concerns are likely to preclude the reliable, routine linking of administrative record and survey microdata for some time to come.

generated with either the SSA or the SIPP 1984 work experience proxy. This result reflects the fact that the measurement error embodied in the SSA administrative records has changed over time, and/or it indicates that the structural relationship between actual work experience and wage rates has not been constant. Incorporation of a standard selection-bias correction factor into the 1984 wage equations estimated was found to lower female earnings profiles among younger married women, relative to earnings profiles from which the selection-bias correction factors were omitted.[8]

The initial rationale for the project was to use data from the 1984 panel of the SIPP, which had already been linked to SSA data, to test the null that the coefficients of the experience equation were stable over time. The statistical community has been interested in the potential cost savings associated with the increased use of administrative records, but remains concerned about confidentiality, comparability and data quality.[9] Since regular ongoing access to successive matches between survey data and administrative records is not assured, the stability of the experience equation coefficients over time was also an important question.

To evaluate the quality of each work experience measure, internal consistency checks were performed before the two estimates of respondents' total work experience were compared. In the case of the SSA data, information on the number of quarters of covered employment were compared with SSA data on quarterly earnings. In the case of the SIPP data, respondents' direct estimates of the total number of years worked were compared with estimates obtained by calculating the duration of each reported employment spell, and adding the number of years worked in each spell. From this internal standpoint, both data sets were found to be reasonably consistent.[10]

Comparison of the SIPP and the SSA measures of total work experience, in the table below, reveals that the SSA estimates for older workers were biased downward, in a manner consistent with relatively low Social Security coverage rates during the 1930's and 1940's. The SIPP estimates for workers younger than 21are understated because the full sequence of work history questions was not asked of younger workers.

[8] Results from the first stage of the project are discussed in more detail below, and in Linda Moeller (2002), cited above.

[9] Thombas B. Jabine and Fritz Scheuren (1985), "Goals for Statistical Uses of Administrative Records: The Next 10 Years," Journal of Business & Economic Statistics, 3 (4), pp. 380-391, and the comments that follow in the same volume: William P. Butz, "The Future of Administrative Records in the Census Bureau's Demographic Activities," pp. 393-395; John J. Carroll, "Uses of Administrative Records: A Social Security Point of View," pp. 396-397; Janet L. Norwood, "Administrative Statistics: A BLS Perspective," pp. 398-400; and Charles A. Waite, "The Future of Administrative Records in the Economic Programs of the Census Bureau," pp. 400-401.

[10] The SAS programs developed to implement these internal consistency checks are complicated, especially in the case of the SIPP. This complexity is evident in the flow charts that summarize the program that constructs the work experience variable. These flow charts describe the calculations undertaken to construct an actual work experience variable with data from the 1986-1992 panels. The sequence of work history questions included with the 1984 panel of the SIPP collected information on up to four jobs held at the beginning of the respondent's adult working life, and the code required to develop internal consistency checks was therefore more complex. The essential structure of the program is the same in both cases, however.

SIPP and SSA Work Experience Estimates, Employed Persons
Discrepancies by Cohort, Weighted Sample Observations

	Percentage by Cohort				Cohort Share of Sample
	SIPP < SSA	SIPP = SSA	SIPP > SSA	No Match	
Age	Females				
16-21	0.00	0.00	0.00	3.00	9.75
21-25	26.67	66.31	3.50	3.52	15.13
26-30	28.55	61.70	7.37	2.38	14.80
31-35	28.37	55.86	13.28	2.49	13.09
36-40	24.78	52.90	19.57	2.75	11.07
41-45	23.76	48.11	24.62	3.52	9.63
46-50	26.02	35.68	35.22	3.07	7.40
51-55	18.70	35.86	42.42	3.01	6.80
56-60	15.43	36.69	45.37	2.51	6.10
61-65	11.02	26.00	60.01	2.96	3.80
66-60	6.56	13.79	77.47	2.17	1.43
71+	6.49	8.07	83.46	1.98	0.99
Age	Males				
16-21	0.00	0.00	0.00	4.75	8.78
21-25	33.06	58.42	3.61	4.91	13.68
26-30	33.68	56.28	6.57	3.47	15.14
31-35	33.50	52.34	11.45	2.71	13.18
36-40	27.96	51.66	16.80	3.57	11.77
41-45	29.87	49.68	16.14	4.40	9.15
46-50	28.35	45.84	21.41	4.39	7.88
51-55	13.00	47.63	35.97	3.41	7.12
56-60	13.71	35.05	47.58	3.66	6.46
61-65	9.22	29.79	57.59	3.41	4.14
66-60	6.92	18.38	69.94	4.76	1.45
71+	0.00	7.07	92.30	0.63	1.25

Unweighted percentages of SIPP records that can be matched to SSA administrative records for the age group 16-21 are 87.52% among women, and 85.03% among men. Information on the duration of the current job, or last job held, is available, but the SIPP total work experience variable is not consistently available for persons in this age group. Therefore no comparison is made in this Table. Shares may not sum to 100%, due to rounding.

The bias in the SSA administrative record data seemed the more important for two reasons. First, prior OPT research with the NLSY found that accumulated work experience is not a significant determinant of young men's earnings. Similar results had previously been obtained by Mincer and Jovanovic in the case of young men, but they found actual work experience to be a significant determinant of the earnings of older men.[11] Second, while Honig and Hanoch have proposed econometric procedures to offset known variations in SSA coverage rates, a close accounting for the changes in SSA coverage rates over time is not possible because information on the industry and occupation in which respondents worked during the 1930's and 1940's is unavailable.[12] In sum, the use of SIPP work experience data seemed to be more the more straightforward approach.

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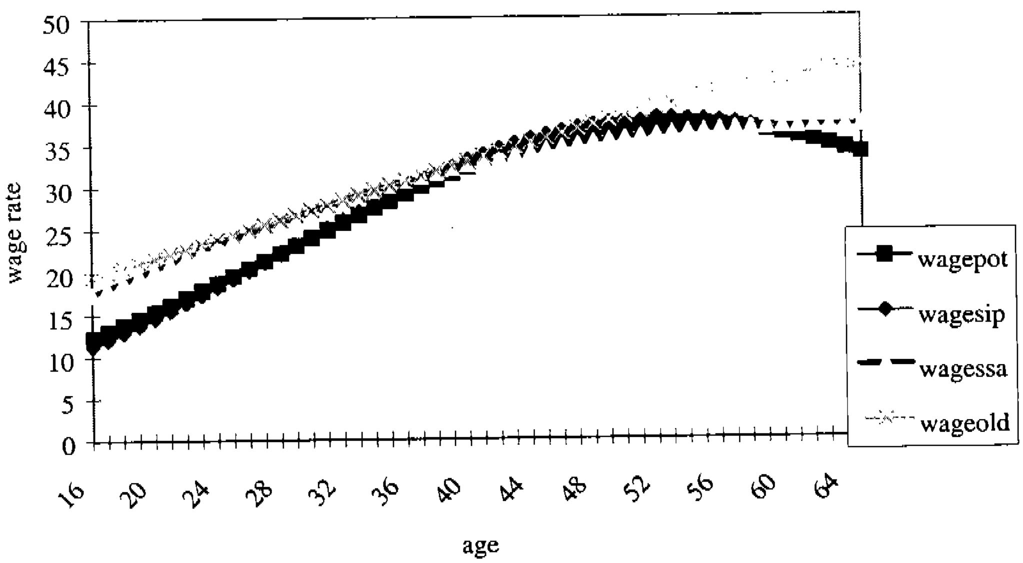
[11] Jacob Mincer and Boyan Jovanovic (1981). "Labor Mobility and Wages." Studies in Labor Markets, S. Rosen, Ed., Chicago: University of Chicago Press.
[12] Also see Hanoch and Honig (1985), cited above.

Experience and earnings profiles were estimated separately with four alternative measures of actual work experience: a work experience proxy estimated with the coefficients of the 1973 CPS-SSA work experience equation that are provided in the labor composition bulletin, a work experience proxy estimated with SSA administrative record data matched to the 1984 SIPP, a work experience proxy estimated with information from the 1984 SIPP work history topical module, and potential work experience. In all cases examined, the 1973 and 1984 SSA experience profiles were flatter than the 1984 SIPP experience profiles, as would be expected when the average actual work experience of older workers is understated in the original data.

Perhaps more surprisingly, earnings profiles based on the 1973 CPS-SSA experience equation coefficients diverged from the earnings profiles obtained with the other three experience proxies, and this divergence increased with age. This result is illustrated in the chart below. In this chart the curve labeled *wagepot* corresponds to a wage equation in which potential experience is entered as a proxy for actual work experience. The profile obtained with a predicted value of the SIPP actual experience variable is labeled *wagesip*, the corresponding profile obtained with SSA data is labeled *wagessa*, and the profile obtained with the 1973 CPS-SSA proxy is labeled *wageold*. The pattern shown here, in which the earnings profile obtained with the 1973 CPS-SSA proxy is substantially higher than the other three curves in the case of older workers, was obtained for virtually all cases examined. In the case of the male wage profiles, wage profiles based on the 1973 proxy increase at an increasing rate.

Female Wage Rate Profile
SIPP and SSA Data
Ever Married, 17+ Years of Schooling, No Children



This finding suggests that combining 1973 experience equation coefficient estimates with 1984 earnings data results in biased wage rate estimates over age ranges in which the sample is thin.[13] It can be shown, by substituting the explanatory variables that enter the experience equation into the predicted and squared predicted experience values that enter the wage equation, that the work experience proxy implicitly

[13] This is like the outlier problem in time series data, but here the problem is due to groups of outliers, i.e., clusters of experience equation estimates that are too low, combined with the fact that the work experience equation and the wage equation have several explanatory variables in common.

introduces a number of structural restrictions between the work experience equation and the earnings equation. The results obtained with the 1973 CPS-SSA proxy and both the SSA and the SIPP proxies from 1984 appear to indicate that these implicit restrictions have not been stable over time. To the extent that the magnitudes of these discrepancies are not constant over time they may introduce a significant bias into the labor composition index because the weights associated with the growth rates of hours worked by older workers may be systematically overstated. The fact that the discrepancies seem to occur primarily over age ranges where the sample is thin suggests that the magnitude of the bias may be small. But if increased uncertainty about the real values of their retirement accounts induces members of the baby boom cohort to retire at older ages than their parents have done, as many analysts expect, then the relative importance of this bias may be sustained for a number of years to come.

Having determined that the 1984 SIPP data on actual work experience were stronger than the work experience measure available from SSA administrative record data, and that the incorporation of selection-bias correction factors into the estimation of the OPT wage equation was reasonably straightforward, the project moved into its second stage. An alternative strategy that was discussed then would have been to attempt to adjust for the changes in SSA coverage rates over time with statistical procedures similar to those discussed by Hanoch and Honig. But in light of the results just mentioned, which underscore the importance of working with microdata that are internally consistent from a temporal standpoint, it was decided instead to focus the second stage of the project on an examination of the stability of successive annual estimates of labor supply and wage equations with overlapping panels of the SIPP.

Similarly, at this juncture of the project some effort was made to generate adjusted t-statistics for the selection-bias corrected wage equation coefficients, following the calculations sketched in an appendix to the 1980 article by Heckman cited above, and to test the null hypothesis that the labor supply and wage equations represent a simply recursive system, following procedures outlined in the 1986 review article by Dhrymes.[14] However, development of the computer programs required to execute these calculations proved to be time consuming, and it is known that the second tests have not always been executed successfully in previous applications. Therefore further work to debug the SAS code that implements these tests was deferred until comparable results had been obtained with the SIPP panels that were fielded after 1984.

Summary

This appendix has reviewed results obtained during the initial stage of a major project to construct a new prototype labor composition index with a series of panels from the Survey of Income and Program Participation (SIPP). The SIPP is a new, nationally representative longitudinal household survey that is designed to provide accurate measures of actual hours worked and wage rates earned. Two independent measures of employees' total prior work experience, one based on responses to retrospective questions in the work experience topical module of the SIPP and one based on Social Security Administration (SSA) administrative records, were compared. This comparison revealed that the SSA estimates for older workers were biased downward due to low Social Security Insurance coverage rates at the inception of that program.

Current OPT procedures, in which a work experience proxy constructed with experience equation coefficients previously estimated with 1973 Current Population Survey (CPS) data matched to administrative records, were shown to generate biased wage rate estimates when incorporated into a 1984 wage equation. The OLS procedures applied in the construction of OPT's current labor composition index were then been modified to incorporate a standard selection-bias-correction factor. These calculations are much more complex than those required to work with the retrospective calendar-year microdata collected in the March CPS supplement. The construction of calendar-year values for earnings, hours worked, and wage rates requires re-indexing the SIPP's monthly variables, which are collected at four-month intervals,

[14] Phoebus J. Dhrymes (1986), "Limited Dependent Variables," Handbook of Econometrics Vol. III., Griliches and Intrilligator, Eds.

so that a given index number corresponds to the same calendar month for all rotation groups. Once the survey-month variables were re-indexed, annual estimates for the first calendar year spanned by the panel are obtained by summing or averaging monthly values 1-12, and 13-24. In light of this complexity, it is reassuring to learn that the wage equation estimates obtained with the SIPP are reasonably comparable to those obtained with annual microdata from the March CPS, for the same wage equation specification.

However, even after incorporation of a conventional selection-bias correction factor, earnings profiles based on the 1973 CPS-SSA matched file, and on the 1984 SIPP-SSA matched file, were found to be flatter than earnings profiles based on the actual work experience data reported in the SIPP work history topical module. That is, the SSA-matched files appear to over-predict the wage rates of younger workers and older workers. This finding suggests that the systematic under-estimates of employment among persons who have worked in industries not covered by Social Security legislation, and this effect is quite separate from the conventional selection bias problem discussed by Heckman. Surprisingly, a wage equation in which potential experience serves as a proxy for actual work experience resulted in earnings profiles that are quite comparable to those based on the SIPP actual work experience data, for all cases examined.

Appendix B: Identification

This appendix discusses the identification of the systems of equations presented in the body of the paper. The primary focus of the appendix is on the four-equation "structural" system of equations that includes the probability of living in a home owned by a household member. The other equations estimated are special cases of the four-equation system, except that the homeownership probit is omitted and the normalized asset income variable replaces the predicted probability of homeownership if the employment probit. Explanatory variables are listed in general terms below for simplicity; exact definitions of the variables employed in each system are provided in Appendix D.

Full identification of these systems requires taking explicit account of the fact that their stochastic elements are assumed to be distributed as a multivariate normal, and/or eliminating the assumption that the stochastic terms of the system have a normal distribution and relying on bootstrapping procedures to evaluate the structural restrictions imposed. However it seems worthwhile to note that, allowing for the normalization of coefficient values associated with the selection bias correction factor, it is possible to identify the coefficients of the four-equation system in which the wage rate, the probabilities of employment and living in a home owned by a household member, and accumulated work experience are determined simultaneously. Therefore, if identification and specification tests confirm that the model is identified and the stochastic terms of the system have been properly "scaled," and if the null hypothesis of no model misspecification is not rejected, we should be able to evaluate the relative importance of the explanatory variables that enter each equation in determining the values of the LHS variables.

The claim that the structural coefficients of the system can be identified is based on the following argument. Let $ex_{i,t}$ be the number of years worked experience accumulated by person i at time t. Let $h_{i,t} = 1$ if respondent i lived in a home owned by a household member during calendar year t, and 0 otherwise. Let $e_{i,t} = 1$ if reservation wage of respondent i falls below his or her market wage rate and 0 otherwise, as in the work of Heckman. Let $w_{i,t}$ be the log of the average hourly earnings of respondent i during calendar year t conditional on $e_{i,t} = 1$, and let $ex_{i,t}$ be the total accumulated work experience at time t. Then the row vector $Y_{i,t} = \left(ex_{i,t}, h_{i,t}, e_{i,t}, w_{i,t}\right)$ consists of the current endogenous variables of the system.

It is assumed that the predetermined variables of the system, denoted $Y_{i,t-p}$, are years of work experience at $t-5$, education, the primary industry of employment, occupation, marital status, number of children, wealth, and geographic region of current residence. These variables are assumed to be predetermined in the sense that they change slowly due to substantial costs of adjustment. This assumption could be tested with endogeneity tests. The current exogenous variables of the system, denoted $X_{i,t}$, are assumed to be the wage of the spouse, a categorical variable that takes a value of 1 if the respondent reports a disability that makes it difficult to work and 0 otherwise, a categorical variable that takes a value of 1 if the last spell out of work was involuntary, and the age of the respondent.[1]

It is difficult to draw a sharp distinction between predetermined and exogenous variables in many instances. For example, in the case of long-lived marriages it might be argued that the wage of the spouse is a predetermined variable because the lifetime education levels and labor supply behavior of head and spouse have been optimized jointly. But in other cases this assumption seems unwarranted, given increases in divorce rates and dual earner households. Similarly, experience is a state variable with a large predetermined component, especially in the case of older workers.

In the current specification the predetermined variables included in $Y_{i,t-p}$ are assumed to be uncorrelated with $\varphi_{i,t}$. The stochastic component of the system is assumed to be distributed as a multivariate normal, $\varphi_{i,t}$ with a mean of zero and covariance matrix Φ. Under these assumptions the following logic shows that the system is formally identified.

The right-hand-side of the first equation given below is linear in the explanatory variables of the model, apart from $\varphi_{i,t}$.[2] The distribution of $\varphi_{i,t}$ is a known continuous function, with a known inverse, so G^{-1} exists. Applying this inverse to the first set of equations below, the identification of the linear, non-stochastic components of the system can be examined the in terms of the coefficient matrices on the right-hand side of the second set of equations.

$$Y_{i,t} = G\left[\alpha + Y_{i,t}B + \left(Y_{i,t-p}, X_{i,t}\right)C + \varphi_{i,t}\right]$$
$$\Rightarrow \quad G^{-1}\left(Y_{i,t}\right) = \alpha + YB_{i,t} + \left(Y_{i,t-p}, X_{i,t}\right)C + \varphi_{i,t}.$$

The structural restrictions of the system are the zeros in the matrices $B, C,$ and Φ. By analogy with general linear systems of econometric models (GLSEMs), this system is fully identified if the matrices composed of the explanatory variables that are omitted from each equation have full column rank.[3]

To see this more explicitly, write the vector of predetermined and exogenous explanatory variables of the system be written, $Z_{i,t}$, be written as follows:

[1] The number of years worked and age are "splined" to allow for changes in the probability of employment and home ownership with the approach of retirement and old age, respectively. These techniques are not pertinent to the identification conditions discussed here.
[2] For a more complete discussion of the identification problem as it arises in the estimation of hedonic equations, see Shulamit Kahn and Kevin Lang (1988), "Efficient Estimation of Structural Hedonic Systems," International Economic Review, 29, pp. 157-166, and the references cited in that article. In the current application, the use of categorical variables for industry and occupation, to control for industry-specific differences in human and physical capital employed in production, may have a rough correspondence to Kahn and Lang's discussion of variables that vary with the "matching process" in the case of multiple markets.
[3] Phoebus J. Dhrymes (1994), *Topics in Advanced Econometrics, vol. II: Linear and Nonlinear Simultaneous Equations*, New York: Springer-Verlag.

$$\left(Y_{i,t-p}, X_{i,t}\right)' = \begin{pmatrix} ex_{i,t-5} \\ education \\ primary\ occupation \\ primary\ industry \\ marital\ status \\ number\ of\ children \\ wealth \\ geographic\ region \\ spouse's\ wage \\ disability \\ age \\ part-time \\ nowork \end{pmatrix} = \begin{pmatrix} z_1 \\ z_2 \\ z_3 \\ z_4 \\ z_5 \\ z_6 \\ z_7 \\ z_8 \\ z_9 \\ z_{10} \\ z_{11} \\ z_{12} \\ z_{13} \end{pmatrix} = Z_{i,t}',$$

where $Y_{i,t} = \left(ex_{i,t}, h_{i,t}, e_{i,t} w_{i,t}\right)$. The structural restrictions of the system are the zeros in the following matrices:

$$B = \begin{bmatrix} 0 & 0 & 0 & b_{1,4} \\ 0 & 0 & b_{2,3} & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}, \quad \Phi = \begin{bmatrix} \sigma_{x,x} & 0 & 0 & \sigma_{x,w} \\ 0 & \sigma_{h,h} & \sigma_{h,e} & \sigma_{h,w} \\ 0 & \sigma_{e,h} & \sigma_{e,e} & \sigma_{e,w} \\ \sigma_{w,x} & \sigma_{w,h} & \sigma_{w,e} & \sigma_{w,w} \end{bmatrix}, \text{ and}$$

$$C = \begin{bmatrix} c_{1,1} & c_{1,2} & c_{1,3} & c_{1,4} \\ c_{2,1} & c_{2,2} & c_{2,3} & c_{2,4} \\ 0 & c_{3,2} & c_{3,3} & c_{3,4} \\ 0 & 0 & 0 & c_{4,4} \\ c_{5,1} & c_{5,2} & c_{5,3} & 0 \\ c_{6,1} & c_{6,2} & c_{6,3} & 0 \\ c_{7,1} & c_{7,2} & 0 & 0 \\ 0 & c_{8,2} & c_{8,3} & c_{8,4} \\ 0 & 0 & c_{9,3} & 0 \\ c_{10,1} & c_{10,2} & c_{10,3} & 0 \\ c_{11,1} & c_{11,2} & c_{11,3} & c_{11,4} \\ 0 & 0 & 0 & c_{12,4} \\ c_{13,1} & 0 & 0 & 0 \end{bmatrix}$$

The dependent variable in the first equation is years of work experience. The coefficients of the explanatory variables in that equation are represented by the first columns of the matrices B and C. All other endogenous variables in the system are omitted from $b_{.,1}$. The variables omitted from $c_{.,1}$ are occupation, industry, the wage of the spouse, and a categorical variable for part-time employment on the current job. The second equation pertains to the probability of living in a home owned by a household member; the coefficients of that equation are represented by the second columns of B and C. The other endogenous variables are omitted from the right hand side of that equation, as are occupation, industry, the wage rate of the spouse, and the categorical variable for full-time/part-time status.[4] However the probability of living in a home owned by a household member and the wage rate of the spouse are included in the third equation, while industry, occupation and full-time/part-time status are included in the fourth.

The matrix of coefficients that correspond to the explanatory variables omitted from the experience equation, $A_{1,o}$, is specified explicitly below. It is clear from inspection that the rank of $A_{1,o}$ is 3, unless the elements of that matrix are linear combinations of one another for some reason that is not evident.[5]

$$r\left(A_{1,0}\right)=r\begin{pmatrix} 0 & b_{2,3} & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ c_{3,2} & c_{3,3} & c_{3,4} \\ 0 & 0 & c_{4,4} \\ c_{8,2} & c_{8,3} & c_{8,4} \\ 0 & c_{9,3} & 0 \\ 0 & 0 & c_{12,4} \end{pmatrix}=3.$$

Similarly, in the cases of the homeownership and employment probits respectively:

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[4] The current official methodology assumes that part-time status is an exogenous variable. However it is often argued that the decision to work part-time is an endogenous one, since women who work part-time allocate the balance of their work hours to child care and household production, and a substantial fraction of part-time workers are in school. For example, in 1998 roughly 27% of workers who usually work part-time reported "child care problems" or "other family or personal obligations" as their reason for working less than 35 hours per week, and roughly 34% cited "in school or training," or "retired or Social Security limit on earnings." The schooling and retirement decisions are clearly endogenous over the long run, and the same is usually true for number of children. But it is unclear *a priori* whether the part-time/full-time categorical variable should be considered predetermined or endogenous for the purposes of wage equation estimates. For the purposes of benchmarking the SIPP prototypes with the current official estimates thie exogeneity assumption has been maintained, but it should be tested in future work. The data cited here are annual estimates from Employment and Earnings, January 1999, Table 20.

[5] One of the functions of identification tests is to determine whether the matrices used to show that a system of equations can be identified do, in fact, meet these rank conditions when the coefficients of the system have been estimated with real-world data. The coefficient estimates obtained with econometric procedures are estimates of the "true" coefficients of the system, and the distribution of the coefficient estimates depends on the distribution of the stochastic terms of the true system. Identification tests take account of the fact that the matrices of omitted explanatory variables may be "almost" singular, without being singular in the non-stochastic sense of the word. Effectively, they are tests of the null hypothesis that the rank of the matrix $A_{j,o}$ is insignificantly different from 3.

$$r\left(A_{2,0}\right)=r\begin{pmatrix} 0 & 0 & b_{1,4} \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & c_{4,4} \\ 0 & c_{9,3} & 0 \\ 0 & 0 & c_{12,4} \\ c_{13,1} & 0 & 0 \end{pmatrix}=3, \quad \text{and} \quad r\left(A_{3,0}\right)=r\begin{pmatrix} 0 & 0 & b_{1,4} \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & c_{4,4} \\ c_{7,1} & c_{7,2} & 0 \\ 0 & 0 & c_{12,4} \\ c_{13,1} & 0 & 0 \end{pmatrix}=3.$$

Finally, in the case of the wage equation we have: $r\left(A_{4,0}\right)=r\begin{pmatrix} 0 & 0 & b_{2,3} \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ c_{5,1} & c_{5,2} & c_{5,3} \\ c_{6,1} & c_{6,2} & c_{6,3} \\ c_{7,1} & c_{7,2} & 0 \\ 0 & 0 & c_{9,3} \\ c_{10,1} & c_{10,2} & c_{10,3} \\ c_{13,1} & 0 & 0 \end{pmatrix}=3.$

Expanding the matrices $A_{j,0}$ to include the relevant submatrices of the covariance matrix Φ would not change the rank conditions shown above. Therefore the four-equation system is identified by conventional exclusion restrictions, assuming that these restrictions are appropriate.

Appendix C: Partitioning Considerations: Separability and Aggregation

Attribution of the sources of productivity growth to separate factors of production, i.e., to capital and labor, or to various categories of labor, requires that the aggregate production function be separable in the partitions within which factors of production are aggregated. For example, consider a "well-behaved" production function, $Q = F(K, L, E, M, S)$, where Q is real output, K represents the total capital stock, L represents total hours worked, E denotes energy, M represents total materials, and S represents total services. Each of these variables is a function of subsets of a large set of heterogeneous inputs $X = (X_1, \ldots, X_S)$ and outputs $Y = (Y_1, \ldots, Y_Q)$ that have been aggregated in some way, with weights that take account of relative value per unit. i.e, their relative price.[1]

Let lower case letters denote functions that are used to aggregate the individual inputs and outputs. In practice these functions tend to be arithmetic or geometric means of logs, levels, or square roots of the variables of interest.

$$\begin{aligned} K &= k(X_1, \ldots, X_K) \\ L &= l(X_{K+1}, \ldots, X_L) \\ E &= e(X_{L+1}, \ldots, X_E) \\ M &= m(X_{E+1}, \ldots, X_M) \\ S &= s(X_{M+1}, \ldots, X_S) \\ Q &= q(Y_1, \ldots, Y_Q) \end{aligned} \tag{1}$$

Construction of multifactor productivity index numbers requires calculating the difference between the rate of growth of output and the share-weighted rates of growth of the inputs listed above. That is,

$$\ln A_t - \ln A_{t-1} \equiv (\ln Q_t - \ln Q_{t-1}) - (s_K(\ln K_t - \ln K_{t-1}) + \cdots + s_S(\ln S_t - \ln S_{t-1})).$$

This approach relies on the maintained hypothesis that the inputs $X = (X_1, \ldots, X_S)$ are separable in the partition (K,L,E,M,S). By definition, separability of labor from other factors of production is a situation in which:

$$\frac{\partial}{\partial X_k}\left(\frac{\frac{\partial F}{\partial X_i}}{\frac{\partial F}{\partial X_j}}\right) = 0, \quad \text{where } \begin{cases} i, j \in L \\ k \notin L \end{cases}, \quad I = Q, K, L, E, M, S. \tag{2}$$

If the production function F is "strongly separable" in this partition, marginal change in the level at which factor X_k is employed has no effect on marginal productivity ratios among the various types of labor services included in the subset L. Separability of other factors is defined symmetrically.[2]

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[1] This discussion abstracts from the issue of intermediate inputs. See Domar ().

[2] Complete definitions are provided in W. Leontief (1947), "A Note on the Interrelation of Subsets of Independent Variables of a Continuous Function with Continuous Derivatives," Bulletin of the American Mathematical Society, 55, pp. 343-350; and (1947), "An Introduction to a Theory of the Internal Structure of Functional Relationships," Econometrica, 15, pp. 361-373. Also see C. Blackorby and R. R. Russell (1989), "Will the Real Elasticity of Substitution Please Stand Up? (A Comparison of Allen/Uzawa and Morishima Elasticities.)" American Economic Review, 79, pp. 882-888. Weak and strong separability are defined in Blackorby, Primont and Russell (1988, confirm), and I think in Berndt and Christensen.

To see how these conditions may be examined empirically, recall that the first-order conditions associated with simple models of profit-maximizing behavior on the part of perfectly or monopolistically competitive firms imply that workers will be employed at levels at which their relative wage rates are equal to the corresponding ratios of marginal products. That is, if input prices are denoted $w = (w_1, \ldots, w_S)$, the traditional first-order conditions associated with the optimization of the firm's static (or time separable) objective function implies that factors are paid the value of their marginal products.

$$\frac{\frac{\partial F}{\partial X_i}}{\frac{\partial F}{\partial X_j}} = \frac{w_i}{w_j}, \quad i, j = 1, \ldots, S. \tag{3}$$

Together the assumptions of (a) perfect or monopolistic competition and (b) separability of production functions imply that the relative wage rates among different categories of labor will be unaffected by an exogenous change in the level at which X_k is employed, because the ratio of marginal contributions that employees X_i and X_j make to total output will be unaffected:

$$\frac{\partial}{\partial X_k}\left(\frac{\frac{\partial F}{\partial X_i}}{\frac{\partial F}{\partial X_j}}\right) = \frac{\partial}{\partial X_k}\left(\frac{w_i}{w_j}\right) = 0, \quad \text{where} \begin{cases} i, j \in L \\ k \notin L \end{cases}. \tag{4}$$

In contrast with traditional general equilibrium theory, which describes a general situation in which "everything depends on everything else," these two assumptions allow for changes in the optimal *levels* at which factors within L, for example, are employed. But they imply there is no reason for the *composition* of the individual types of labor to change in response to a marginal change in X_k, because marginal productivity ratios and relative wage rates among these different categories of labor will be unaffected by an exogenous change in the equilibrium levels at which other factors in K,E,M and S are employed.

Since separability implies that the wage ratios in L are stable in the face of changes in relative prices among other factors of production, assign scalar values to each of the wage ratios in L, normalized to the L^{th} factor of production:

$$\begin{aligned} \frac{\frac{\partial F}{\partial X_{K+1}}}{\frac{\partial F}{\partial X_L}} &= \frac{w_{K+1}}{w_L} = a_{K+1,L} \Rightarrow w_{K+1} = a_{K+1,L} w_L \\ &\vdots \\ \frac{\frac{\partial F}{\partial X_{L-1}}}{\frac{\partial F}{\partial X_L}} &= \frac{w_{L-1}}{w_L} = a_{L-1,L} \Rightarrow w_{L-1} = a_{L-1,L} w_L. \end{aligned} \tag{5}$$

In general the year-to-year difference between $X_{i,t}$ and $X_{i,t-1}$ will be small in magnitude, relative to the corresponding levels, $X_{i,t}$ or $X_{i,t-1}$. Therefore assume for simplicity that there is a set of scalars, $b_{K+1} \ldots b_L$, such that the following relationship holds over the two years t and $t+1$.

$$X_{i,t} = b_i X_{L,t}, \quad \text{where } i = K+1, \ldots, L. \tag{6}$$

These simplifying assumptions can be used to make the empirical content of the separability assumptions more explicit. To address the specific context in which the official BLS labor composition index is constructed, let the contribution of L to growth in total factor productivity between t and $t+1$ be measured with the following formula.

$$s_L(\ln L_t - \ln L_{t-1}) = s_L\{\ln[l(X_{K+1,t}, \ldots X_{L,t})] - \ln[l(X_{K+1,t-1}, \ldots X_{L,t-1})]\}. \tag{7}$$

$$\text{where } s_L = \frac{\left(\sum_{i=K+1}^{L} w_{i,t} X_{i,t}\right) + \left(\sum_{i=K+1}^{L} w_{i,t-1} X_{i,t-1}\right)}{\left(\sum_{i=1}^{S} w_{i,t} X_{i,t} + w_{i,t-1} X_{i,t-1}\right) + \left(\sum_{i=1}^{S} w_{i,t} X_{i,t} + w_{i,t-1} X_{i,t-1}\right)}.$$

Let the aggregator function l used to that maps the individual inputs $X_{K+1}, \ldots X_L$ into the aggregate labor services L be arithmetic summation. Then we have:

$$l(X_{K+1,t}, \ldots, X_{L,t}) = \sum_{i=K+1}^{L} X_{i,t} = \sum_{i=K+1}^{L} b_i X_{L,t} = X_{L,t} \sum_{i=K+1}^{L} b_i . \tag{8}$$

Substituting into (7) using the relationships in (5), (6) and (8), and assuming similar relationships also hold for sectors K, E, M and S, we obtain:

$$s_L(\ln L_t - \ln L_{t-1}) = \left[\frac{(w_{L,t} X_{L,t} + w_{L,t-1} X_{L,t-1}) \sum_{i \in L} a_i b_i}{\sum_{j=K,L,E,M,S} \left[(w_{J,t} X_{J,t} + w_{J,t-1} X_{J,t-1}) \sum_{i \in J} a_i b_i\right]}\right] [\ln X_{L,t} - \ln X_{L,t-1}]. \tag{9}$$

The expression on the right-hand side of equation (9) implies that data from any arbitrary pair of variables (w_L, X_L) in L captures the true behavior of all elements (w_i, X_i) in L at between *t-1* and *t*, when weighted by a scalar equal to $\sum_{i=K+1}^{L} a_i b_i$. Thus the expressions in equations (5) and (6) convert a very general analytical framework with many heterogeneous factors of production into one that is comparable to traditional models in which factors of production within each major category of inputs "move together."

When these assumptions are justified, the measurement of the effect of a change in X_k on the contribution that factors in L make to total productivity growth is relatively straightforward. An exogenous change in $X_k, k \notin L$, has no effect on the numerator of the expression within square brackets on the right hand of equation (10), That is, equations (5) and (7) imply:

$$\frac{\partial}{\partial X_k}\left[\frac{\frac{\partial F}{\partial X_i}}{\frac{\partial F}{\partial X_L}}\right]=\frac{\partial}{\partial X_k}\left[\frac{w_i}{w_L}\right]=\frac{\partial}{\partial X_k}a_{iL}=0,$$
$$\frac{\partial}{\partial X_k}\left[\frac{X_i}{X_L}\right]=\frac{\partial}{\partial X_k}b_{iL}=0. \tag{10}$$

Therefore the effects of an exogenous change in X_k on total factor productivity growth are channeled entirely through the expressions like $\left(w_{J,t}X_{J,t}+w_{J,t-1}X_{J,t-1}\right)$ and $\left(\ln X_{J,t}-\ln X_{J,t-1}\right)$. The equilibrium employment levels and factor price levels of all the heterogeneous inputs within a given sector respond proportionately to a given change, according to the relationships given by equations (5) and (7). These assumptions clearly support the use of probability samples from each major sector to measure changes taking place throughout the entire economy.

In the case of labor services, it has often been observed that employment in capital intensive industries tends to be more cyclical than employment in industries that experience less cyclical demand fluctuation. Similarly, the determinants of demand fluctuations in the trade industries may be different from those in the service industries. In such cases the values of the scalars $b_{K+1}\ldots b_L$, defined above equation (7), may be significantly more stable *within* subsets H,T,S than they are across the entire set of labor services.

Intuitively, the simplifying assumption that equilibrium employment levels for different categories of labor services can be simply scaled up or down to obtain a reliable measure of the total may be more palatable for subsets of labor services, such as the heavy industry, trade, and service industries, than it is for all labor services supplied to the market.[3] Then the contribution of labor services to output and multi factor productivity growth might be captured more accurately as a weighted sum of the labor services supplied by these three categories of labor. The labor composition index takes account of these systematic variations in the characteristics of labor services.

Following this line of argument, let the individual inputs that are categorized as labor services employed in production , denoted L above, be subdivided further into three major industry subsets: hours worked in heavy industry, trade and finance, and services.

$$\begin{aligned} L_H &= h\left(X_{K+1},\ldots,X_H\right) \\ L_T &= t\left(X_{H+1},\ldots,X_T\right) \\ L_S &= h\left(X_{T+1},\ldots,X_S\right) \end{aligned} \tag{11}$$

Let the contribution of labor services to multifactor productivity growth be measured with the following expression:

$$s_L\left(\ln L_t-\ln L_{t-1}\right)=s_H\left(\ln L_{H,t}-\ln L_{H,t-1}\right)+s_T\left(\ln L_{T,t}-\ln L_{T,t-1}\right)+s_S\left(\ln L_{S,t}-\ln L_{S,t-1}\right), \tag{12}$$

where: $$s_{i,t}=\frac{\left(\sum_j^{j'} w_{i,t}X_{i,t}\right)+\left(\sum_j^{j'} w_{i,t-1}X_{i,t-1}\right)}{\sum_{i=1}^{L} w_{i,t}X_{i,t}+w_{i,t-1}X_{i,t-1}},$$

$$\ln L_{i,t}-\ln L_{i,t-1}=\left(\ln X_{i,t}-\ln X_{i,t-1}\right)\sum_j^{j'} a_i b_i \text{, and}$$

$$i,j'=H,T,S,\quad j=K+1,H+1,T+1,$$

[3] Theil, Linear Aggregation.

In this case, large cyclical fluctuations in wage and employment levels, which are characteristic of heavy industry, are contained within the sector that is experiencing them, rather than being averaged out. This is particularly noteworthy in the case of overtime wage rates, which command a premium but seem more attributable to adjustment costs than to the skill characteristics of workers.

In real applications, of course, a single observation is not taken to be representative of a single sector, or a single cell. Instead, complex stratified survey data are used to calculate weighted mean or conditional mean wage rates and totals for hours worked, $(\overline{w}_J, X_J)$, where the index J ranges over the cells in which the survey microdata are partitioned. Wage rates in heavy industry tend to have higher mean values and to be more highly skewed than wage rates overall, cyclical variations in average wage rates are likely to be more pronounced when the data are not partitioned by industrial sector. Therefore the assumption that labor services within the partitions H,T, and S retain a proportionate relationship to one another over the course of the business cycle may be more acceptable than the broader partition in the case of labor services.

The separability assumptions discussed above are imposed implicitly when it is assumed that the relationship between outputs and inputs can be represented by a Cobb-Douglas or constant elasticity of substitution (CES) production function.[4] Systems of factor demand equations derived from more flexible functional forms, such as the translog and the generalized Leontieif, have been used to test these assumption.[5]

[4] Hirofumi Uzawa (1962), "Production Functions with Constant Elasticity of Substitution," Review of Economic Studies, 29, pp. 291-299; Ernst R. Berndt and Laurits R. Christensen (1973), "Internal Structure of Functional Relationships: Separability, Substitution, and Aggregation," Review of Economic Studies, 40, pp. 403-440.

[5] To my knowledge, these tests were first presented in the literature by Christensen, Jorgenson and Lau in their 1971 paper, "Conjugate Duality and the Transcendental Logarithmic Production Function," Econometrica, 39. Some limitations of this approach are illustrated in Guilkey, Lowell, and Sickles (1983), "Comparison of the Performance of Three Flexible Functional Forms," International Economic Review, 24, pp. 591-616, and R. E. Lopez (1985) "Structural Implications of a Class of Flexible Functional Forms for Profit Functions," International Economic Review, 26, pp. 593-601.

Appendix D: Variable Definitions and Estimating Equations

$$pot = (age - schooling - 6)$$

$$priv = (1 \quad if\ currently\ employed\ in\ nonprofit\ industry, \quad 0\ otherwise)$$

$$school = \begin{pmatrix} s0to4 \\ s5to8 \\ s12 \\ s13to15 \\ s16 \\ s17up \end{pmatrix} = \begin{pmatrix} 1 \quad if\ schooling \in [0,4], \quad 0\ otherwise \\ 1 \quad if\ schooling \in [5,8], \quad 0\ otherwise \\ 1 \quad if\ schooling = 12, \quad 0\ otherwise \\ 1 \quad if\ schooling \in [13,15], \quad 0\ otherwise \\ 1 \quad if\ schooling = 16, \quad 0\ otherwise \\ 1 \quad if\ schooling \geq 17, \quad 0\ otherwise \end{pmatrix}$$

$$kids = \begin{pmatrix} kid1 \\ kid23 \\ kid4+ \end{pmatrix} = \begin{pmatrix} 1 \quad if\ kids = 1, \quad 0\ otherwise \\ 1 \quad if\ kids = 2,3, \quad 0\ otherwise \\ 1 \quad if\ kids \geq 4, \quad 0\ otherwise \end{pmatrix}$$

$$race = \begin{pmatrix} black \\ hisp \end{pmatrix} = \begin{pmatrix} 1 \quad if\ black, \quad 0\ otherwise \\ 1 \quad if\ hispanic, \quad 0\ otherwise \end{pmatrix}$$

$$married = (1\ if\ ever\ married, 0\ otherwise)$$

Additional explanatory variables for alternative specifications are as follows:

$$schooling = years\ of\ school\ completed$$

$$aged = \max(pot - 55, 0)$$

$$spled = \begin{pmatrix} spled \\ spledhs \\ spledsc \\ spledcd \\ spledgd \end{pmatrix} = \begin{pmatrix} schooling \\ \max(schooling - 11.5, 0) \\ \max(schooling - 12.5, 0) \\ \max(schooling - 15.5, 0) \\ \max(schooling - 17.5, 0) \end{pmatrix}$$

$$assypov = \left(family\ income\ from\ financial\ assets \big/ family\ poverty\ cutoff\ value \right)$$

$$spouse = \begin{pmatrix} relage \\ reled \\ othwage \end{pmatrix} = \begin{pmatrix} own\ age / age\ of\ spouse \\ own\ schooling / schooling\ of\ spouse \\ wage\ rate\ of\ spouse \end{pmatrix}$$

$$duroutex = \begin{pmatrix} 1\ if\ last\ spell\ of\ no\ work\ \geq 6\ months\ was\ involuntary, \quad 0\ otherwise \\ duration\ last\ spell\ of\ no\ work \geq 6\ months\ if\ involuntary, \quad 0\ otherwise \end{pmatrix}$$

$$disab = (1\ if\ disabled, \quad 0\ otherwise)$$

$$ind = \begin{pmatrix} hvy \\ tnf \\ svs \end{pmatrix} = \begin{pmatrix} 1\ if\ \max\left(industry\ hours\ worked \big/ total\ hours\right) \in heavy\ industry, \quad 0\ otherwise \\ 1\ if\ \max\left(industry\ hours\ worked \big/ total\ hours\right) \in trade\ and\ finance, \quad 0\ otherwise \\ 1\ if\ \max\left(industry\ hours\ worked \big/ total\ hours\right) \in services, \quad 0\ otherwise \end{pmatrix}$$

$$ms = (1\ if\ currently\ married, \quad 0\ otherwise)$$

$$young = number\ of\ children\ with\ age \leq 6$$

$$spage = age\ of\ spouse\ if\ married, \quad 0\ otherwise$$

$$sped = schooling\ of\ spouse\ if\ married, \quad 0\ otherwise$$

$$othwage = wage\ of\ spouse\ if\ married\ and\ spouse\ is\ employed, \quad 0\ otherwise$$

$$long = \begin{pmatrix} \mathrm{int} \ln g \\ wkd \ln g \end{pmatrix} = \begin{pmatrix} 1 \quad if\ tenure \geq 10, \quad 0\ otherwise \\ (\max(pot\exp - tenure, 0)) \quad if\ tenure \geq 10, \quad 0\ otherwise \end{pmatrix}$$

$$short = \begin{pmatrix} \mathrm{int}\ yng \\ wkdyng \end{pmatrix} = \begin{pmatrix} 1 \quad if\ age \in [16, 21), \quad 0\ otherwise \\ (\max(pot - tenure, 0)) \quad if\ age \in [16, 21), \quad 0\ otherwise \end{pmatrix}$$

$$invpot = (pot\exp)^{-1}$$

$$last5 = worked\ at\ t - 5$$

Dependent variables for experience equation

$qtrswkd = total\ quarters\ of\ employment\ recorded\ in\ SSA\ records$

$worked = number\ of\ years\ employed\ 6+ months\ as\ of\ year\ t$

$\ln wkd = (\log(worked)\quad if\ worked > 0,\quad NA\ otherwise)$

Alternative Experience Equations Specifications

The experience equation currently employed by the BLS is specified separately for males and females, as identified by subscripts *f* and *m* below:

$$qtrswkd_f = \lfloor school, pot, married, kids, pot^2, (pot, pot^2)*married, pot*(kids, school, priv), priv \rfloor$$

$$qtrswkd_m = \lfloor school, pot, pot^2, pot*(school, priv), priv \rfloor$$

Alternative experience equation following current BLS approach, but with the same specification estimated separately by gender:

$$worked = \lfloor school, pot, married, kids, pot^2, (pot, pot^2)*married, pot*(kids, school, priv), long, short \rfloor$$

Alternative experience equation following Heckman (1980), and where $x \bullet x$ identifies "interactions of all linear terms" in the vector x. The variable *assypov* replaces assets in Heckman's work. The same specification is estimated separately by gender:

$$worked = \lfloor young^2, x \bullet x \rfloor, \text{ where } x = (young, assypov, reled, relage, othwage, schooling).$$

Alternative long-run structural specification, following the work of Mincer and Becker in which "gains from trade" from marriage are possible. A spline function in years of schooling replaces the quadratic in potential experience and the schooling dummies; the intervals used to define the spline are the same as those used to define the schooling dummies. The duration of the last spell out of work of 6 months or longer, when that spell was identified as a period when the respondent was unable to find work, is assumed to be exogenous variable that will be negatively correlated with the total number of years worked. A reported disability is also assumed to be exogenous and negatively correlated with years worked. The same specification is estimated separately by gender:

$$worked = \lfloor pot\exp, pot\exp^2, spled, kids, kids^2, spouse, assypov, duroutex, disab, aged, race \rfloor$$

Alternative specification in which the dependent variable is transformed to the logarithm of years worked, following Lancaster and Chesher:

$$\ln wkd = \lfloor \ln pot, \ln pot^2, spled, kids, kids^2, spouse, assypov, duroutex, disab, aged, race \rfloor$$

Alternative short-run specification in which accumulated work experience in year is assumed to be a predetermined state variable. Results are reported separately by gender , as above:

$$worked = \lfloor last5, last5^2, spled, young, young^2, spouse, assypov, duroutex, disab, aged, race \rfloor.$$

Alternative functional form specification with an "S-curve," employed in models of market saturation:

$$\ln wkd = \left\lfloor invpot, spled, young, young^{2}, spouse, assypov, duroutex, disab, aged, race \right\rfloor$$

Accounting for Actual Work Experience

Appendix E: Experience Equation Coefficients
Charts and Tables on Predicted Experience Outliers
Wage Equation Coefficients

Experience
Equations

Females	OPTEXPFM									
	1984		1985		1986		1987		1988	
	N	9054	N	7326	N	4627	N	9021	N	9190
	Rsquare	0.282	Rsquare	0.2882	Rsquare	0.3576	Rsquare	0.3719	Rsquare	0.3853
	MSE	675.15878	MSE	544.57305	MSE	476.82448	MSE	490.34826	MSE	493.21513
	Coeff	Standard	Coeff	Standard	Coeff	Standard	Coeff	Standard	Coeff	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-3.494429	1.022661	-3.294335	1.142093	-3.196783	1.068	-3.478584	0.769656	-2.567774	0.834025
POTEXP	0.940446	0.111055	0.891656	0.120779	0.781301	0.115956	0.856583	0.081676	0.75697	0.084295
POTEXPSQ	-0.003673	0.002514	-0.000584	0.002785	-1.3E-05	0.002791	-0.002664	0.001948	-0.001216	0.002061
MARRIED	1.364078	0.871641	1.529306	0.949507	1.221975	0.858844	1.454566	0.609669	1.61005	0.706024
POMAR	-0.126348	0.112383	-0.093552	0.122065	-0.107582	0.116063	-0.134601	0.081655	-0.086741	0.085949
POSQMAR	-0.00342	0.002588	-0.006267	0.002869	-0.002598	0.002869	-0.000964	0.002008	-0.001288	0.002134
POTKID1	-0.046146	0.01104	-0.051748	0.012174	-0.053289	0.013929	-0.031448	0.010213	-0.032467	0.009489
POTKID23	-0.130272	0.013867	-0.128835	0.015122	-0.068539	0.016637	-0.069671	0.011653	-0.08819	0.01109
POTKID4	-0.178611	0.032048	-0.138063	0.033087	-0.158374	0.038194	-0.195089	0.026771	-0.222115	0.025494
S0TO4	-0.731741	3.225672	-1.861515	3.458507	-9.474112	4.165227	0.365967	2.603462	-0.704275	2.760397
S5TO8	0.047808	1.385652	-0.048592	1.595557	-1.72478	1.513602	-3.136462	1.190776	-2.519177	1.313806
S12	3.759162	0.691536	3.499157	0.792717	4.52939	0.765646	3.961704	0.563187	3.029077	0.58301
S13T15	5.094312	0.75991	4.925211	0.866687	6.426276	0.824956	5.813785	0.601583	4.188506	0.619389
S16	5.779453	0.859359	6.297338	0.972403	6.488776	0.923486	6.568997	0.677681	4.945572	0.695285
S17UP	6.430339	0.919055	5.87489	1.051964	7.310732	0.989016	6.654321	0.733773	5.303325	0.76102
POS0TO4	-0.033604	0.088846	0.030337	0.100773	0.273797	0.117972	-0.121704	0.078268	-0.021963	0.084361
POS5TO8	-0.011048	0.03977	-0.016899	0.04548	-0.025055	0.047473	0.009283	0.037406	-0.02496	0.040733
POS12	-0.059048	0.023914	-0.045052	0.027212	-0.130197	0.029116	-0.088153	0.021126	-0.056784	0.021696
POS13T15	-0.084597	0.028772	-0.063882	0.032527	-0.144384	0.03443	-0.110747	0.024653	-0.065967	0.02445
POS16	-0.081436	0.035802	-0.096317	0.04084	-0.140178	0.044984	-0.145505	0.032584	-0.127591	0.030808
POS17UP	0.015165	0.041577	0.066379	0.047012	-0.065881	0.048078	-0.02163	0.036402	-0.050937	0.032644
BLACK	1.215245	0.307837	1.486931	0.345256	-0.089537	0.344462	-0.15393	0.248091	0.216978	0.246043
HISP	-0.616613	0.426808	-0.891953	0.469112	-0.339504	0.443081	-0.138882	0.313595	-0.44375	0.315253

Females	1989		1990		1991		1992		1993	
	N	3343	N	9593	N	15220	N	15154	N	17887
OPTEXPFM	Rsquare	.4007	Rsquare	0.4239	Rsquare	0.4345	Rsquare	0.4455	Rsquare	0.4347
	MSE	710.11689	MSE	505.71214	MSE	397.35777	MSE	394.14583	MSE	371.49266
	Coefficien	Standard	Coefficien	Standard	Coefficien	Standard	Coefficien	Standard	Coefficien	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-2.187516	1.663432	-3.449418	0.799406	-2.725993	0.616233	-1.325264	0.561597	-2.379897	0.517188
POTEXP	0.622352	0.163158	0.787213	0.079171	0.786269	0.06017	0.737248	0.057007	0.794498	0.052307
POTEXPSQ	0.004973	0.003895	0.000514	0.001931	-0.000431	0.001481	-0.000118	0.001469	-0.000755	0.001354
MARRIED	2.434186	1.527631	0.461915	0.624914	0.646106	0.489304	0.305447	0.432968	0.149754	0.388932
POMAR	-0.032779	0.167856	0.037281	0.079103	-0.000405	0.060605	0.059825	0.057464	0.095151	0.052508
POSQMAR	-0.005724	0.004016	-0.005591	0.001992	-0.00459	0.001534	-0.006453	0.001526	-0.006872	0.001406
POTKID1	-0.039537	0.01459	-0.029381	0.009948	-0.032082	0.007621	-0.051002	0.007743	-0.042933	0.007122
POTKID23	-0.102122	0.017099	-0.096432	0.011486	-0.093987	0.008809	-0.092645	0.008665	-0.098167	0.008113
POTKID4	-0.211215	0.049865	-0.161564	0.027686	-0.16104	0.02083	-0.196905	0.020476	-0.195142	0.01854
S0TO4	-12.60557	5.11217	0.385434	2.739385	0.033113	2.159353	2.01945	2.022279	1.859446	2.233149
S5TO8	-3.137543	2.199756	-0.130109	1.202381	-2.035	0.933934	-1.230517	0.920772	-1.726731	0.832261
S12	2.302924	1.00311	4.310656	0.58972	3.27211	0.466328	1.979395	0.446654	3.055045	0.419324
S13T15	2.882718	1.071856	6.438105	0.626112	5.232238	0.493847	3.619639	0.469997	4.814529	0.437332
S16	3.424878	1.230717	7.220064	0.675856	6.098704	0.538801	4.616806	0.510073	5.828194	0.472549
S17UP	3.717969	1.406899	7.878628	0.75049	6.763728	0.591196	5.225145	0.554202	6.661065	0.521288
POS0TO4	0.451581	0.151239	-0.077871	0.083044	-0.100051	0.066441	-0.166048	0.066673	-0.162841	0.0712
POS5TO8	0.017614	0.068328	-0.054385	0.037443	0.025654	0.029823	0.000819	0.030337	0.019337	0.027733
POS12	-0.064138	0.036671	-0.042797	0.02219	0.006893	0.017413	0.056381	0.017157	-0.00925	0.016337
POS13T15	-0.06655	0.040652	-0.075499	0.025358	-0.014545	0.019805	0.052081	0.019497	-0.022735	0.018173
POS16	-0.110179	0.052078	-0.093939	0.030367	-0.030794	0.024169	0.043635	0.023318	-0.018049	0.02188
POS17UP	-0.053567	0.055541	-0.05347	0.035721	0.018327	0.027527	0.087572	0.025844	-0.012359	0.024405
BLACK	0.533019	0.423798	0.312283	0.238282	0.125676	0.187544	-0.310926	0.178238	-0.163208	0.163399
HISP	-0.282507	0.526643	-0.768894	0.298286	-0.564522	0.23198	-0.750266	0.216349	-1.008628	0.197673

Females **HECKSPFM**

	1984		1985		1986		1987		1988	
	Rsquare	0.277	Rsquare	0.278	Rsquare	0.3552	Rsquare	0.3735	Rsquare	0.3942
	MSE	677.80114	MSE	548.72234	MSE	478.08317	MSE	489.93232	MSE	489.83127
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-3.532158	3.120778	-0.479473	3.324369	-11.91102	3.502081	-9.939825	2.587383	-4.937496	1.916195
ED	-0.153988	0.204547	-0.309628	0.224708	0.388842	0.227675	0.130559	0.171143	-0.192747	0.140237
AGE	0.355604	0.053238	0.288732	0.05803	0.606971	0.062589	0.502698	0.04711	0.415545	0.041345
YOUNG	-4.289872	1.502974	-4.20274	1.379384	-1.629642	1.891464	-0.891227	1.066446	-1.407668	0.832277
ASSYPOV	2.690823	1.706801	4.724024	2.511157	-2.247523	2.704208	0.476972	2.102593	1.733488	2.429124
YOUNGSQ	0.09712	0.172659	-0.01317	0.160358	-0.172912	0.164077	-0.133098	0.122901	-0.044884	0.106886
RELAGE	0.724577	1.379912	0.060383	1.310409	-3.336184	1.685208	-0.542534	1.174414	-2.340406	1.022495
RELED	2.367776	1.222554	0.234488	1.092414	3.764185	1.45153	3.015875	0.927644	2.306769	0.905747
OTHWAGE	-0.003022	0.045504	0.096813	0.067205	0.064192	0.060543	0.091105	0.047171	0.127553	0.028602
YNGASSY	-0.872772	0.680268	-1.062264	0.944794	0.683071	0.954766	-0.240443	0.829383	0.137026	0.629772
YRELAGE	0.117609	0.746105	-0.454227	0.469915	1.326592	0.894093	0.184519	0.445372	0.477428	0.551873
YRELED	-0.082762	0.491319	0.537284	0.331868	-0.709818	0.828238	-0.567383	0.421874	-0.617192	0.550223
YNGOTHWG	0.001434	0.005837	0.002567	0.009116	0.004425	0.006677	0.016035	0.008433	-0.002617	0.00438
YNGED	0.09499	0.06861	0.11638	0.072841	-0.008712	0.067058	0.012617	0.046981	0.030207	0.045637
YNGAGE	0.068955	0.024023	0.065675	0.022812	0.031828	0.028041	0.026934	0.018208	0.020888	0.017042
ASRELAGE	2.873968	0.798428	0.810013	0.916277	4.981468	2.09358	2.282887	1.500164	0.339166	2.813174
ASRELED	-2.057971	0.6733	-1.71772	0.907654	-4.080973	2.166427	-2.007786	1.655911	-0.400371	2.949618
ASOTHWG	0.00632	0.010517	0.050423	0.023106	-0.013399	0.01977	0.001705	0.013972	-0.009654	0.01884
ASSYED	-0.088058	0.084178	-0.101329	0.11292	0.048634	0.141098	0.029642	0.116344	-0.058356	0.094016
ASSYAGE	-0.045797	0.01975	-0.067775	0.029355	0.001239	0.033007	-0.042851	0.020626	-0.01764	0.026395
REAGREED	0.83172	0.459123	0.957479	0.302309	0.299164	0.730306	0.204501	0.286791	-0.493259	0.598646
RELAGOWG	0.018719	0.022136	-0.037617	0.027143	-0.029352	0.018746	-0.008555	0.025443	0.00437	0.020432
RELAGED	-0.19726	0.098137	-0.1326	0.093881	0.091465	0.114945	-0.035362	0.07942	0.149244	0.058678
RELEDOWG	-0.015756	0.022472	0.012784	0.018406	0.004036	0.022544	0.003926	0.026832	-0.012371	0.021869
RELEDAG	-0.097458	0.021695	-0.048902	0.020288	-0.094697	0.027	-0.081719	0.017973	-0.044247	0.015072
OTHWGED	0.000147	0.002192	-0.002442	0.00337	-0.000153	0.003279	-0.002252	0.00233	-0.004467	0.00165
OTHWGAGE	-2.77E-05	0.00051	-0.001339	0.000657	-0.001293	0.000715	-0.002806	0.000719	-0.00264	0.000434
AGED	0.012808	0.003557	0.016478	0.004037	-0.005741	0.004191	0.005113	0.003207	0.009839	0.003099
BLACK	1.093102	0.303458	1.253465	0.340357	-0.113514	0.337749	-0.364196	0.242836	-0.007364	0.239222
HISP	-0.76259	0.423822	-0.899111	0.467252	-0.463164	0.437489	-0.49952	0.309484	-0.823435	0.308718

Females	1989		1990		1991		1992		1993	
HECKSPFM	Rsquare	0.4009	Rsquare	0.4167	Rsquare	0.4279	Rsquare	0.4354	Rsquare	0.4238
	MSE	709.56841	MSE	509.03727	MSE	399.74728	MSE	397.80204	MSE	375.15009
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-10.27577	3.088715	-9.527906	2.563754	-6.652118	2.023224	2.758691	1.470498	-1.245312	1.317574
ED	0.189964	0.233475	0.043543	0.168035	-0.113419	0.133735	-0.739616	0.1069	-0.422611	0.097065
AGE	0.558197	0.067901	0.500983	0.046476	0.445754	0.037116	0.207261	0.032082	0.315246	0.029156
YOUNG	0.705851	1.610189	-3.643903	1.291539	-2.927532	0.804361	-2.819654	0.636584	-2.396117	0.588048
ASSYPOV	-4.932424	2.733285	3.885353	1.597002	5.682749	1.441258	3.03712	1.760404	3.116773	1.644545
YOUNGSQ	-0.111633	0.216858	0.084754	0.115337	0.116975	0.090271	0.041303	0.088625	0.002546	0.076961
RELAGE			1.620559	1.243914	0.001814	0.894512	0.029239	0.663044	0.037362	0.024033
RELED			2.90935	1.03235	2.146555	0.745244	0.176739	0.561869	-0.044963	0.030533
OTHWAGE	0.092364	0.053087	0.033714	0.029791	0.053916	0.020675	0.032188	0.009861	0.003412	0.007976
YNGASSY	0.122632	1.530158	-0.12566	0.296455	-0.607797	0.512706	-0.224756	0.793724	-0.988991	0.606347
YRELAGE			0.883302	0.668011	0.541772	0.347742	-0.268277	0.2644	0.040035	0.026611
YRELED			-0.155219	0.504141	-0.092572	0.296349	0.220139	0.245324	-0.082727	0.05148
YNGOTHWG	0.000217	0.012714	8.169E-05	0.002307	-0.003051	0.002998	-0.002676	0.002164	0.000397	0.001624
YNGED	0.061219	0.091162	0.072748	0.049786	0.030157	0.037309	0.073529	0.03512	0.056148	0.031316
YNGAGE	-0.059448	0.03456	0.040773	0.018802	0.038568	0.01364	0.0381	0.013031	0.03308	0.011569
ASRELAGE			0.572837	1.345669	-0.238767	0.736707	-0.132703	0.859596	0.016392	0.040489
ASRELED			1.110758	1.192575	0.063299	0.672656	0.140428	0.727011	0.012	0.054318
ASOTHWG	-0.009031	0.040006	0.004218	0.00587	0.006736	0.0077	-0.046543	0.018884	0.001028	0.004398
ASSYED	0.245455	0.131201	-0.221771	0.072444	-0.277199	0.071612	-0.069414	0.082463	-0.05194	0.069
ASSYAGE	0.01509	0.023701	-0.054289	0.019351	-0.03947	0.014156	-0.042673	0.021065	-0.056136	0.017476
REAGREED			-0.041126	0.519675	-0.264378	0.233861	-0.533777	0.209955	0.0000197 53 0	2.281E-05
RELAGOWG			0.000187	0.011255	0.001738	0.005828	0.024543	0.022061	0.000105	0.000722
RELAGED			-0.184569	0.083572	-0.046436	0.060083	-0.006707	0.041688	-0.00218	0.001259
RELEDOWG			0.00126	0.012483	-0.00745	0.008588	-0.025353	0.021709	-0.000976	0.001227
RELEDAG			-0.083317	0.018798	-0.057578	0.014017	0.010643	0.010242	0.000408	0.00045
OTHWGED	0.000412	0.004003	-0.000451	0.001195	-0.003463	0.001103	-0.00164	0.000554	0.000063	0.000552
OTHWGAGE	-0.004158	0.000915	-0.001133	0.000429	-0.000201	0.000238	-0.000429	0.000157	-0.000151	0.000136
AGED	-0.00011	0.005243	0.009264	0.003131	0.011881	0.002504	0.026185	0.002376	0.017348	0.002189
BLACK	0.277417	0.412092	0.094495	0.234207	0.005618	0.184229	-0.384966	0.176443	-0.185606	0.160986
HISP	-0.775363	0.51846	-1.093175	0.295606	-0.82757	0.229654	-0.980898	0.215144	-1.303101	0.196388

Females **LVLSPFM**

	1984		1985		1986		1987		1988	
	Rsquare	0.2931	Rsquare	0.2863	Rsquare	0.3534	Rsquare	0.3736	Rsquare	0.3946
	MSE	669.79539	MSE	545.14243	MSE	478.17557	MSE	489.5759	MSE	489.34869
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.424517	1.913764	1.739015	2.155717	-2.810282	2.141235	-2.808401	1.559048	4.796579	1.223718
POTEXP	0.636209	0.064897	0.575576	0.075094	0.549749	0.075028	0.536057	0.055045	0.232538	0.040914
POTEXPSQ	-0.0055	0.000749	-0.004878	0.000857	-0.001404	0.000888	-0.002414	0.000638	-0.000979	0.000582
SPLED	0.181305	0.202623	0.105006	0.228952	0.621154	0.232198	0.429956	0.168117	-0.59189	0.12673
SPLEDHS	0.590893	0.559004	0.711379	0.620297	0.71314	0.626013	0.818635	0.451026	0.30515	0.453266
SPLEDSC	0.156336	0.262488	0.307453	0.288377	0.78747	0.284163	0.435095	0.200662	0.000711	0.200671
SPLEDCD	0.072914	1.141581	0.636919	1.255173	0.633924	1.26005	-0.780948	0.901736	-2.268621	0.899638
SPLEDGW	1.104927	0.518188	1.29125	0.5758	1.165767	0.562712	0.305731	0.412056	-0.740358	0.419251
OWNKID	-1.146644	0.183415	-1.271581	0.175083	-0.476426	0.221495	-0.40813	0.151714	-0.565848	0.142661
KIDSQ	0.054299	0.040823	0.072795	0.033077	-0.02285	0.05178	-0.061367	0.034518	-0.065753	0.033064
INVOUTYN	-0.573082	0.470066	-0.220018	1.845748	-0.347972	0.62539	-1.068132	0.504128	-2.832953	0.584271
INVOUTDR	-0.363343	0.053393			-0.361649	0.283649	-0.469414	0.215013	-0.383352	0.225885
RELED	-1.53808	0.325597	-0.313271	0.194413	-0.257903	0.450807	-0.700426	0.279482	-0.139278	0.380192
RELAGE	-0.554504	0.359423	-1.199641	0.281105	-1.375617	0.442188	-0.480122	0.257204	0.096383	0.367963
NOTWELL	-2.403493	0.281067	-2.568885	0.321591	-0.21174	0.359641	-0.547598	0.253024	-0.528351	0.246682
ASSYPOV	-0.283406	0.063032	-0.712542	0.219993	-0.748629	0.293956	-0.991758	0.196806	-0.093833	0.139508
AGED	0.004209	0.003418	0.006704	0.003913	-0.00322	0.004087	0.004106	0.002997	0.025129	0.00218
BLACK	1.360017	0.300193	1.642823	0.337277	0.060269	0.338833	-0.032874	0.24306	0.394356	0.239304
HISP	-0.565305	0.422076	-0.699584	0.467529	-0.259781	0.442848	-0.158317	0.312219	-0.545782	0.31049

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females	1989		1990		1991				1993	
LVLSPFM	Rsquare	0.4004	Rsquare	0.4237	Rsquare	0.4375	Rsquare	0.4473	Rsquare	0.4366
	MSE	709.68547	MSE	505.70734	MSE	396.26593	MSE	393.4557	MSE	370.82706
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	7.580207	1.909163	-5.00324	1.535414	-3.297461	1.158298	-1.89912	1.095107	-5.052545	1.052382
POTEXP	0.23344	0.065887	0.700095	0.053967	0.612944	0.040827	0.559047	0.039439	0.71065	0.037432
POTEXPSQ	0.000468	0.000979	-0.004174	0.000624	-0.003705	0.000486	-0.005073	0.000471	-0.006042	0.000435
SPLED	-0.677983	0.197957	0.594747	0.163532	0.344112	0.122977	-0.006708	0.118563	0.408095	0.113729
SPLEDHS	-0.067879	0.754851	1.908276	0.44233	1.728047	0.346915	1.382067	0.339341	0.979266	0.317186
SPLEDSC	0.015785	0.335828	0.662007	0.195024	0.578651	0.154234	0.390158	0.150246	0.283202	0.138346
SPLEDCD	-0.748652	1.522316	0.074979	0.855925	-0.417392	0.671567	-0.827741	0.651707	-0.382931	0.609919
SPLEDGW	0.319063	0.717224	0.063323	0.404856	-0.20551	0.315845	-0.561433	0.307593	-0.506537	0.286365
OWNKID	-1.050034	0.288699	-0.77552	0.15786	-0.768618	0.120866	-0.78772	0.123554	-0.797134	0.110873
KIDSQ	0.018845	0.077794	0.014198	0.03926	0.015177	0.029379	-0.00037	0.03194	0.000513	0.028057
INVOUTYN	-2.739063	0.95187	-2.276972	0.57245	-1.883699	0.452506	-1.389692	0.417634	-1.274807	0.301494
INVOUTDR	-0.355074	0.373444	-0.158729	0.223669	-0.232072	0.168273	-0.347325	0.172208	-0.370821	0.139071
RELED			-0.65436	0.303666	-0.521673	0.210216	0.141444	0.175621	0.008985	0.005421
RELAGE			-0.47741	0.307761	-0.553177	0.203834	-0.320668	0.185242	-0.0055	0.004026
NOTWELL	-1.755483	0.411235	-0.931958	0.220237	-1.497587	0.177551	-1.410925	0.175557	-1.237814	0.155539
ASSYPOV	-0.106968	0.214123	-0.395697	0.141454	-0.544662	0.124837	-0.241288	0.177505	-0.520109	0.136482
AGED	0.0201	0.003529	0.001938	0.002902	0.008494	0.002178	0.016936	0.002124	0.007566	0.002026
BLACK	0.945451	0.412752	0.305732	0.232535	0.157604	0.182826	-0.201659	0.1747	-0.05607	0.15964
HISP	-0.542243	0.521382	-0.578529	0.297929	-0.45074	0.230824	-0.636732	0.215142	-0.926141	0.196536

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females		LNEXPFM								
	1984		1985		1986		1987		1988	
	Rsquare	0.1982	Rsquare	0.1937	Rsquare	0.1079	Rsquare	0.1166	Rsquare	0.1063
	MSE	75.29071	MSE	60.06235	MSE	129.78287	MSE	131.67999	MSE	121.02716
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-1.627234	0.193032	-1.556659	0.218043	-3.948943	0.506021	-4.333054	0.369265	-1.410481	0.296627
LNPOT	0.565922	0.085704	0.748804	0.096549	0.356887	0.210706	0.085136	0.149801	0.364117	0.17194
LNPOTSQ	0.129386	0.026029	0.070003	0.029014	0.334219	0.069024	0.392193	0.049307	0.089383	0.045461
SPLED	0.235762	0.020943	0.205114	0.023323	0.459909	0.057294	0.498033	0.040868	0.15571	0.029393
SPLEDHS	0.224473	0.062767	0.173826	0.068215	0.19759	0.169854	0.453015	0.121243	0.325359	0.112103
SPLEDSC	0.068244	0.029551	0.083578	0.031811	0.131673	0.077198	0.077619	0.054003	0.003059	0.049664
SPLEDCD	0.100706	0.128262	0.202083	0.138557	0.122975	0.341157	-0.220165	0.242305	-0.473516	0.222345
SPLEDGW	0.085108	0.058147	0.135549	0.063388	0.078353	0.152357	-0.139682	0.110767	-0.25981	0.103667
OWNKID	-0.162893	0.02089	-0.179415	0.019759	-0.348867	0.06052	-0.174847	0.041124	-0.038717	0.035061
KIDSQ	0.004396	0.00461	0.0058	0.003687	0.039051	0.014105	-0.008483	0.009324	-0.034878	0.008169
INVOUTYN*	-0.154014	0.052847	0.090523	0.203395	0.107163	0.169742	-0.169332	0.135614	-0.647702	0.144515
INVOUTDR	-0.026305	0.005999			-0.035084	0.076976	0.046987	0.057827	0.104583	0.055864
RELED	-0.042654	0.036573	0.026797	0.021372	0.168307	0.122147	0.017062	0.075222	-0.017113	0.095047
RELAGE	-0.107619	0.040737	-0.09366	0.031757	-0.198425	0.120489	-0.022046	0.070086	0.065457	0.092261
NOTWELL	-0.289767	0.031485	-0.30956	0.035351	0.027416	0.09748	-0.040201	0.067904	-0.119192	0.060935
ASSYPOV	-0.034127	0.007085	-0.061138	0.024227	-0.033735	0.079771	-0.055188	0.052924	-0.017324	0.034502
AGED	-0.003258	0.000354	-0.002715	0.000399	-0.006911	0.001012	-0.006593	0.000728	-0.000241	0.000501
BLACK	0.074735	0.03375	0.092196	0.037165	-0.147503	0.091993	-0.283163	0.06538	-0.198705	0.059179
HISP	-0.076387	0.047394	-0.091108	0.051458	0.052578	0.120035	0.025683	0.083876	-0.271762	0.076761

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females	1989		1990		1991				1993	
LNEXPFM	Rsquare	0.1145	Rsquare	0.1243	Rsquare	0.1356	Rsquare	0.1499	Rsquare	0.142
	MSE	153.19493	MSE	113.08284	MSE	87.75628	MSE	77.95822	MSE	88.8666
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-0.017321	0.511699	-2.809059	0.30241	-2.256563	0.23017	-2.566459	0.218493	-2.546662	0.19265
LNPOT	0.75749	0.394201	0.285949	0.125275	0.261554	0.100101	0.252652	0.089205	0.225899	0.078533
LNPOTSQ	-0.036165	0.091119	0.244113	0.040829	0.226164	0.031926	0.254313	0.029618	0.260683	0.026677
SPLED	-0.012807	0.04138	0.330145	0.033133	0.281383	0.025155	0.31441	0.024274	0.3212	0.021771
SPLEDHS	0.036161	0.162944	0.522212	0.098869	0.421451	0.076756	0.352701	0.076589	0.277766	0.066636
SPLEDSC	0.021526	0.07249	0.128619	0.043605	0.114694	0.03417	0.102454	0.033946	0.061771	0.029093
SPLEDCD	-0.004458	0.329413	-0.026233	0.191115	0.027953	0.148669	0.071034	0.147198	0.028014	0.128251
SPLEDGW	0.024634	0.154851	-0.063208	0.09046	-0.045098	0.069905	-0.044074	0.06944	-0.095612	0.060172
OWNKID	-0.04042	0.06131	-0.123812	0.035641	-0.116601	0.026969	-0.14665	0.027937	-0.105207	0.023347
KIDSQ	-0.044692	0.016681	-0.010896	0.00881	-0.005667	0.006524	0.006144	0.007226	-0.008066	0.005908
INVOUTYN	-0.345589	0.205452	-0.391741	0.127956	-0.220154	0.100188	-0.207895	0.094322	-0.206551	0.06338
INVOUTDR	0.002609	0.080612	0.026749	0.049982	-0.002252	0.037256	-0.00512	0.038895	-0.003785	0.029238
RELED			0.072668	0.067722	0.030917	0.046448	0.074356	0.039572	0.003152	0.001136
RELAGE			-0.020934	0.069027	-0.07688	0.045401	-0.089783	0.041819	-0.00139	0.000846
NOTWELL	-0.457342	0.088709	-0.16723	0.049194	-0.16239	0.039239	-0.158506	0.039549	-0.181771	0.032616
ASSYPOV	-0.02788	0.046218	-0.031207	0.031612	-0.03738	0.027624	-0.012927	0.040086	-0.029799	0.028683
AGED	0.001309	0.000733	-0.003974	0.000588	-0.003142	0.000445	-0.003797	0.000433	-0.003945	0.000386
BLACK	-0.037174	0.089091	-0.119196	0.051994	-0.174709	0.040488	-0.166604	0.039457	-0.091423	0.033556
HISP	-0.22229	0.112562	-0.001388	0.06655	-0.143682	0.051093	-0.170257	0.048556	-0.119884	0.04129

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females		LAGSPFM								
	1984		1985		1986		1987		1988	
	Rsquare	0.8773	Rsquare	0.9045	Rsquare	0.8104	Rsquare	0.8865	Rsquare	0.9001
	MSE	279.04939	MSE	199.38931	MSE	258.9009	MSE	208.43309	MSE	198.74921
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	3.884408	0.355543	2.686157	0.340304	7.283492	0.548425	4.730977	0.320795	4.964948	0.289756
LAST5	1.004167	0.009601	0.944407	0.009015	0.850272	0.018142	0.95462	0.010276	0.942397	0.009662
LASTSQ	-0.000992	0.000258	8.388E-05	0.000229	0.000832	0.000621	-0.000453	0.000334	-0.000246	0.000304
SPLED	-0.06589	0.033617	-0.092455	0.032659	-0.529027	0.05079	-0.237772	0.02935	-0.23991	0.028051
SPLEDHS	0.246724	0.232499	0.015413	0.22622	0.284091	0.338492	0.113664	0.191666	-0.01291	0.184044
SPLEDSC	-0.027664	0.109276	-0.089455	0.105471	0.490274	0.153435	0.168207	0.085372	0.088846	0.081414
SPLEDCD	-0.062663	0.474132	-0.564662	0.458121	1.387639	0.676807	0.426516	0.382801	0.383297	0.363199
SPLEDGW	0.029784	0.215267	-0.172065	0.210394	1.147792	0.303218	0.179664	0.175197	0.088091	0.169925
YOUNG	-0.326313	0.161409	0.101313	0.138993	-0.029051	0.209639	-0.076314	0.121601	-0.018797	0.106515
YOUNGSQ	0.042035	0.069081	-0.043558	0.054726	-0.10006	0.084582	-0.049234	0.050741	-0.047284	0.04265
INVOUTYN	-0.670271	0.195806	0.732586	0.674769	-1.235568	0.338646	-0.913087	0.214665	-1.04602	0.237453
INVOUTDR	0.034898	0.022312			0.414532	0.153653	-0.002164	0.091549	0.054008	0.091756
RELED	-0.12155	0.134015	0.049623	0.070413	-0.695429	0.241048	-0.328468	0.117267	-0.782971	0.154085
RELAGE	-0.285425	0.148954	-0.157229	0.102284	0.1271	0.238991	-0.056243	0.108876	-0.270372	0.147213
NOTWELL	-0.257068	0.116723	0.047418	0.11753	1.107544	0.194154	0.353061	0.107358	0.367284	0.10015
ASSYPOV	-0.061909	0.026245	-0.000374	0.079977	0.036478	0.158074	-0.094551	0.083535	0.045383	0.056629
AGED	0.00331	0.000343	0.004086	0.000342	0.010413	0.000534	0.005994	0.000312	0.00628	0.000296
BLACK	0.147632	0.124857	0.09149	0.123316	-0.0097	0.183119	-0.047695	0.103266	0.04676	0.096845
HISP	-0.185189	0.174758	-0.403441	0.170093	-0.423516	0.238012	-0.08739	0.132341	-0.332925	0.125754

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females	1989		1990		1991		1992		1993	
LAGSPFM	Rsquare	0.97	Rsquare	0.8357	Rsquare	0.9244	Rsquare	0.8728	Rsquare	0.8872
	MSE	158.68411	MSE	269.97606	MSE	145.30541	MSE	188.76799	MSE	165.96582
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	3.247805	0.279935	6.21346	0.401894	4.13765	0.218127	4.572053	0.261004	4.477949	0.230758
LAST5	1.063926	0.008928	0.77855	0.011847	0.927875	0.006587	0.857591	0.008387	0.879212	0.007324
LASTSQ	-0.001447	0.000261	0.00192	0.000388	0.000247	0.000203	0.000737	0.000276	0.000715	0.000236
SPLED	-0.041297	0.027005	-0.48409	0.036374	-0.163504	0.019963	-0.288641	0.024809	-0.246184	0.021891
SPLEDHS	0.106626	0.168783	0.899359	0.235635	0.271612	0.126978	0.589421	0.16262	0.264144	0.141851
SPLEDSC	0.055822	0.074954	0.261877	0.104127	0.040298	0.056555	0.241653	0.072055	0.155199	0.061917
SPLEDCD	0.468623	0.338313	0.360569	0.455942	-0.192266	0.245835	0.56133	0.312177	0.300408	0.272641
SPLEDGW	0.254953	0.159891	-0.023937	0.215826	-0.186399	0.11559	0.062431	0.14721	-0.094519	0.128024
YOUNG	-0.254918	0.108004	-0.003234	0.141056	-0.233053	0.077066	-0.103512	0.099427	-0.010661	0.081399
YOUNGSQ	0.103601	0.047416	-0.082899	0.057925	0.015726	0.031586	-0.053603	0.041175	-0.097786	0.032854
INVOUTYN	-0.744498	0.213113	-1.640198	0.305536	-0.961376	0.165935	-1.630999	0.200282	-1.240791	0.134913
INVOUTDR	-0.100488	0.083512	0.331976	0.119303	0.116231	0.061693	0.312782	0.082651	0.130061	0.062271
RELED			-0.425389	0.160533	-0.144641	0.076217	0.035795	0.083828	0.003829	0.002404
RELAGE			0.019972	0.163431	-0.138745	0.074513	-0.049571	0.08864	-0.002176	0.001799
NOTWELL	-0.226709	0.091928	0.537103	0.117699	-0.021687	0.065061	0.196532	0.084275	0.212529	0.069609
ASSYPOV	-0.009488	0.047794	-0.107376	0.075322	-0.043691	0.045635	-0.125009	0.084835	0.127384	0.060988
AGED	0.000586	0.000282	0.013386	0.000374	0.005929	0.000214	0.010015	0.000267	0.007773	0.000229
BLACK	-0.129191	0.091494	0.005437	0.123649	0.061287	0.066821	-0.023239	0.083645	0.057637	0.071285
HISP	-0.172886	0.116339	-0.475922	0.158335	-0.214899	0.084385	-0.189562	0.102919	-0.36349	0.087621

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females **SATCVFM**

	1984		1985		1986		1987		1988	
	Rsquare	0.1713	Rsquare	0.1666	Rsquare	0.0882	Rsquare	0.0966	Rsquare	0.0985
	MSE	76.53905	MSE	61.06096	MSE	131.19722	MSE	133.15563	MSE	121.54817
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	2.083454	0.096275	2.013867	0.102592	1.501771	0.276305	0.678903	0.203795	0.889955	0.176753
INVPOT	-1.768549	0.134284	-1.897201	0.156582	-2.060804	0.31889	-1.654851	0.222673	-1.618613	0.27707
SPLED	-0.026937	0.009421	-0.025134	0.010278	-0.012267	0.026152	0.032045	0.019082	0.019093	0.017414
SPLEDHS	0.19355	0.063751	0.153122	0.069241	0.161865	0.171522	0.367766	0.122467	0.3136	0.112554
SPLEDSC	0.073391	0.030041	0.077354	0.032347	0.184821	0.077882	0.082603	0.054587	0.016503	0.049806
SPLEDCD	0.143794	0.130259	0.23181	0.140841	0.397044	0.343413	-0.140712	0.24462	-0.343333	0.222015
SPLEDGW	0.102733	0.059063	0.131979	0.064441	0.148276	0.153752	-0.146615	0.111929	-0.235564	0.103892
YOUNG	-0.2124	0.044433	-0.169896	0.042869	-0.175861	0.106689	-0.131221	0.078232	-0.140069	0.06531
YOUNGSQ	0.011812	0.018971	0.001411	0.01682	-0.045094	0.042898	-0.058307	0.032484	-0.040027	0.026118
INVOUTYN	-0.16189	0.053711	0.094296	0.206711	0.065392	0.171601	-0.204885	0.137163	-0.688692	0.145109
INVOUTDR	-0.025736	0.006097			-0.018168	0.077781	0.060295	0.05847	0.104751	0.056097
RELED	-0.065135	0.037017	0.00842	0.021665	0.12774	0.122432	0.037229	0.07529	-0.029054	0.095328
RELAGE	-0.156151	0.041145	-0.142657	0.031928	-0.303717	0.121369	-0.121793	0.070593	-0.032134	0.092599
NOTWELL	-0.259156	0.031912	-0.280137	0.03585	0.086873	0.098264	0.004426	0.06855	-0.099162	0.061104
ASSYPOV	-0.03845	0.007191	-0.079741	0.024504	-0.096942	0.079947	-0.104343	0.05329	-0.014321	0.034633
AGED	0.00159	0.000103	0.001584	0.000116	0.002027	0.000299	0.002523	0.000208	0.00258	0.000185
BLACK	0.049219	0.034219	0.061363	0.037712	-0.178329	0.092791	-0.317395	0.065958	-0.236358	0.05922
HISP	-0.155586	0.047918	-0.166684	0.052075	-0.067601	0.120601	-0.068847	0.084534	-0.309763	0.076897

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females	1989		1990		1991		1992		1993	
SATCVFM	Rsquare	0.1036	Rsquare	0.1103	Rsquare	0.2441	Rsquare	0.1242	Rsquare	0.1321
	MSE	154.10706	MSE	113.97492	MSE	82.06239	MSE	89.77845	MSE	78.76881
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error P	Estimate	Error P	Estimate	Error Par	Estimate	Error P	Estimate	Error Pa
INTERCEP	2.065966	0.270247	1.137782	0.168738	0.624131	0.123488	1.273015	0.123694	1.304288	0.109078
INVPOT	-2.222359	0.682339	-1.602744	0.183928	0.082346	0.001665	-1.081037	0.110792	-1.581813	0.113295
SPLED	-0.073692	0.02643	0.000707	0.015595	-1.221697	0.127615	-0.02217	0.011936	-0.008939	0.010643
SPLEDHS	0.0276	0.163924	0.485537	0.099491	0.088306	0.011473	0.33692	0.077341	0.282873	0.067311
SPLEDSC	0.030478	0.07278	0.127111	0.043956	0.28845	0.071722	0.092867	0.034283	0.06893	0.029398
SPLEDCD	0.108837	0.328552	-0.018691	0.192523	0.065246	0.031971	0.033061	0.148524	0.066633	0.129523
SPLEDGW	0.044336	0.155281	-0.086602	0.091115	0.035014	0.138943	-0.116096	0.069998	-0.132673	0.060755
YOUNG	-0.199833	0.104811	-0.047131	0.059919	-0.065814	0.065306	-0.243844	0.047546	-0.1488	0.038929
YOUNGSQ	0.001496	0.04605	-0.073762	0.0245	-0.046677	0.043705	0.02466	0.019615	-0.018827	0.015626
INVOUTYN	-0.39258	0.206626	-0.396756	0.128975	-0.048608	0.017861	-0.237319	0.095266	-0.211465	0.064035
INVOUTDR	0.002456	0.081091	0.027285	0.050363	-0.132081	0.093705	0.001141	0.039287	-0.003386	0.029542
RELED			0.076333	0.067896	0.027959	0.034838	0.065318	0.039881	0.001387	0.001142
RELAGE			-0.088312	0.069194	0.098029	0.043081	-0.099403	0.042164	-0.000997	0.000854
NOTWELL	-0.436392	0.088897	-0.145361	0.049533	-0.091099	0.042247	-0.148295	0.039922	-0.167306	0.032915
ASSYPOV	-0.027436	0.04642	-0.048864	0.031795	-0.031473	0.036731	-0.056481	0.040331	-0.050759	0.028915
AGED	0.002733	0.000281	0.002465	0.000168	-0.010615	0.025771	0.002887	0.000124	0.002543	0.000112
BLACK	-0.103847	0.088854	-0.149364	0.052209	-0.000418	0.000135	-0.178705	0.039779	-0.108322	0.033834
HISP	-0.271378	0.112906	-0.075867	0.066825	-0.186587	0.037744	-0.217447	0.048922	-0.178725	0.041558

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Males **OPTEXPML**

	1984		1985		1986		1987		1988	
	N	7833	N	6316	N	4010	N	7867	N	7970
	Rsquare	0.6569	Rsquare	0.6763	Rsquare	0.6973	Rsquare	0.7116	Rsquare	0.7096
	MSE	568.34686	MSE	443.59234	MSE	414.31766	MSE	413.98171	MSE	413.02959
Variable	Coeff. Estimate	Standard Error	Coeff. Estimate	Standard Error	Coeff. Estimate	Standard Error	Coeff. Estimate	Standard Error	Coeff. Estimate	Standard Error
INTERCEP	-0.80871	0.942584	-0.666109	1.04266	0.533622	0.991057	-0.997602	0.676293	0.248669	0.720665
POTEXP	1.058921	0.098493	1.022112	0.104884	0.853228	0.104132	0.959468	0.070182	0.659718	0.068698
POTEXPSQ	-0.008574	0.00224	-0.006709	0.002375	-0.005385	0.00243	-0.007083	0.00162	0.001099	0.001544
MARRIED	-0.391154	0.795432	0.11993	0.868252	0.225571	0.805111	1.498138	0.546162	1.127988	0.618598
POMAR	0.087525	0.10084	0.027988	0.107473	-0.039563	0.106155	-0.17069	0.071699	0.01074	0.071444
POSQMAR	0.001788	0.002329	0.002359	0.002471	0.004934	0.002526	0.007854	0.001695	0.002028	0.001626
POTKID1	-0.015082	0.009259	0.003619	0.009812	-0.041776	0.012035	-0.029283	0.008595	-0.016105	0.008012
POTKID23	-0.022191	0.01105	-0.016057	0.011577	-0.036142	0.013878	-0.024335	0.0096	-0.010797	0.008949
POTKID4	-0.069223	0.023517	-0.035148	0.02494	-0.027657	0.028912	-0.079415	0.020126	-0.091624	0.019236
S0TO4	-3.370804	2.646779	-0.646022	3.568334	-3.520974	2.390714	-7.43242	2.285084	-7.288687	2.20607
S5TO8	-4.264331	1.204956	-4.852812	1.331096	-0.125736	1.325743	0.77796	0.927348	0.209015	0.976514
S12	0.940413	0.656698	1.164279	0.726303	0.668603	0.734528	1.321092	0.509448	1.063986	0.518977
S13T15	2.213474	0.70745	2.295684	0.785197	1.679484	0.783843	2.59524	0.54168	2.292005	0.55705
S16	3.146897	0.757611	3.015462	0.840195	1.837693	0.832297	3.235671	0.577463	2.048861	0.596744
S17UP	2.684104	0.776664	2.589887	0.862003	2.93235	0.854333	3.02129	0.599013	2.74916	0.619454
POS0TO4	0.048857	0.071967	-0.041934	0.094019	0.0077	0.07322	0.068252	0.065775	0.058656	0.060515
POS5TO8	0.106276	0.034622	0.117183	0.038146	-0.052269	0.041623	-0.091984	0.0288	-0.064121	0.029717
POS12	0.046523	0.022767	0.035949	0.025048	0.061409	0.028188	0.02971	0.019337	0.015783	0.018981
POS13T15	0.046259	0.026294	0.037919	0.02919	0.049044	0.032567	0.025978	0.022319	0.00065	0.02172
POS16	0.002319	0.030172	0.005003	0.033357	0.075407	0.03721	0.002426	0.025745	-0.003606	0.02434
POS17UP	0.104102	0.031906	0.103141	0.035157	0.040082	0.039024	0.052174	0.027152	-0.043029	0.024864
BLACK	-2.271819	0.303429	-2.423805	0.327351	-1.907649	0.362146	-1.332212	0.256637	-1.098198	0.250302
HISP	-0.889861	0.364727	-0.734977	0.386537	-1.664557	0.396369	-1.245685	0.268972	-1.232243	0.258344

	1989		1990		1991		1992		1993	
	N	1527	N	8184	N	13240	N	13333	N	15395
Males	Rsquare	0.7349	Rsquare	0.7837	Rsquare	0.7571	Rsquare	0.7515	Rsquare	0.7564
OPTEXPML	MSE	591.79425	MSE	367.22029	MSE	297.65098	MSE	305.88081	MSE	287.42727
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.295089	1.76911	-1.036791	0.599472	-0.792526	0.485578	0.502583	0.47215	-1.226914	0.435305
POTEXP	0.583604	0.135604	0.840201	0.058451	0.802423	0.046091	0.712251	0.044619	0.865119	0.041254
POTEXPSQ	0.002162	0.002794	0.000304	0.001372	0.001108	0.001116	0.002125	0.001076	-0.00167	0.001003
MARRIED	-0.072508	1.527052	-0.00586	0.489186	-0.068016	0.384153	0.249365	0.364294	0.75842	0.328581
POMAR	0.142704	0.147843	0.085613	0.060113	0.120805	0.047207	0.086656	0.045763	-0.023598	0.04211
POSQMAR	-0.000203	0.003066	-0.001115	0.001445	-0.002686	0.001174	-0.001628	0.001137	0.002242	0.00106
POTKID1	-0.034954	0.01729	-0.014381	0.007156	-0.013739	0.005788	-0.014345	0.006044	0.000758	0.005645
POTKID23	-0.020344	0.020584	-0.024942	0.00776	-0.021999	0.006251	-0.01634	0.006469	-0.013117	0.006027
POTKID4	-0.264962	0.073906	-0.028088	0.018146	-0.038386	0.014313	-0.033894	0.014157	-0.012133	0.013249
S0TO4	-48.91324	13.459981	0.08424	1.717475	2.220686	1.50286	-1.420264	1.360022	-0.031462	1.428705
S5TO8	-1.023901	2.675486	-0.578333	0.800922	0.36046	0.676229	-0.235486	0.658139	0.128217	
S12	0.513068	1.420862	2.588799	0.447766	2.046482	0.375941	1.166583	0.380164	2.485974	0.351793
S13T15	0.783823	1.480832	3.391679	0.475364	2.973946	0.39789	2.30461	0.401769	3.701637	0.371193
S16	-0.900264	1.532603	4.053388	0.503436	3.762594	0.419709	2.756498	0.421241	3.776048	0.391182
S17UP	-0.681863	1.613216	3.8673	0.522415	3.727584	0.440205	2.923463	0.440313	4.221242	0.409241
POS0TO4	1.011422	0.316314	-0.047899	0.052135	-0.143208	0.045552	-0.057115	0.043151	-0.126999	0.044946
POS5TO8	-0.016693	0.076934	-0.060059	0.025362	-0.088703	0.021538	-0.077945	0.021431	-0.08109	0.020047
POS12	-0.005666	0.046276	-0.023627	0.01721	0.012318	0.014554	0.044565	0.014853	-0.010965	0.013642
POS13T15	-0.013708	0.050204	0.004243	0.019403	0.02701	0.016298	0.050914	0.016516	0.000611	0.015208
POS16	0.032084	0.053351	-0.003409	0.021774	0.017539	0.018221	0.056948	0.018314	0.018027	0.016938
POS17UP	-0.010479	0.054543	0.04799	0.022907	0.053398	0.019246	0.075092	0.019205	0.016785	0.017893
BLACK	-1.204256	0.553404	-1.364456	0.209568	-1.08567	0.171266	-1.187576	0.167498	-1.205876	0.156065
HISP	-0.100182	0.639014	-1.211104	0.22391	-1.212398	0.177722	-0.84647	0.171681	-0.99875	0.155676

Males **HECKSPML**

	1984		1985		1986		1987		1988	
	Rsquare	0.6538	Rsquare	0.6748	Rsquare	0.6962	Rsquare	0.7097	Rsquare	0.7291
	MSE	571.12391	MSE	444.92664	MSE	415.39747	MSE	415.56725	MSE	399.04816
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-1.999966	2.240069	-3.978524	2.499127	-1.804167	2.321082	-6.640393	1.710404	-5.841359	1.595533
ED	-0.844494	0.151439	-0.790813	0.170396	-0.819104	0.157958	-0.55759	0.11738	-0.718405	0.109767
AGE	0.548545	0.042021	0.617722	0.046044	0.56712	0.047912	0.651062	0.034344	0.662986	0.032349
YOUNG	-2.622513	1.177484	-0.765009	1.126287	1.138787	1.323916	1.809656	0.830766	2.184061	0.816044
ASSYPOV	1.719843	0.989033	-0.012232	1.183764	2.700842	1.261347	3.168347	0.98237	1.802561	0.921787
YOUNGSQ	0.041499	0.130082	-0.121868	0.125512	0.110524	0.130229	0.029023	0.104496	-0.179478	0.097125
RELAGE	4.478298	1.180596	3.179464	1.073045	1.375572	1.267922	1.532488	0.89092	0.612235	0.893698
RELED	-1.435331	0.987576	-0.14202	0.89928	-2.988474	1.124342	-1.314231	0.723438	-0.487429	0.695273
OTHWAGE	0.069404	0.058351	-0.012849	0.083656	0.272801	0.152673	0.060436	0.077188	0.058711	0.059258
YNGASSY	-0.105724	0.511134	0.10704	0.286689	-1.201253	0.434866	0.004487	0.411984	-0.152497	0.369525
YRELAGE	1.037413	0.773175	0.775131	0.489669	-0.342942	0.766739	-0.365701	0.350524	-0.143279	0.466358
YRELED	-0.086515	0.378988	0.027022	0.430886	1.200811	0.568768	0.515746	0.317453	0.064583	0.319811
YNGOTHWG	-0.002394	0.010003	-0.009939	0.017518	-0.016268	0.016724	-0.001666	0.015952	0.004875	0.007689
YNGED	0.042417	0.046986	0.025598	0.051267	0.046647	0.051133	0.043487	0.036017	0.015726	0.036732
YNGAGE	0.021386	0.019537	-0.00915	0.018735	-0.091051	0.021551	-0.07975	0.014369	-0.057447	0.013774
ASRELAGE	1.059818	0.397376	0.84424	0.452601	-3.453394	1.603192	1.013044	0.529944	0.489958	0.621986
ASRELED	-0.419418	0.362492	0.239383	0.396463	3.93447	1.539641	-1.012741	0.394337	-0.627603	0.613662
ASOTHWG	0.041053	0.026623	0.024075	0.022798	0.036005	0.023254	0.055477	0.031454	0.028624	0.025876
ASSYED	-0.101873	0.04867	-0.038858	0.06386	-0.233631	0.073834	-0.273898	0.066079	-0.119273	0.041477
ASSYAGE	-0.013702	0.007136	-0.007232	0.012181	0.010959	0.019318	0.014491	0.014948	0.001714	0.014054
REAGREED	-1.148741	0.539736	-0.87185	0.333131	-0.911061	0.649053	-0.64227	0.274603	-0.829627	0.412654
RELAGOWG	-0.065584	0.030697	0.044942	0.041542	0.044739	0.046481	0.068889	0.049422	0.008615	0.036062
RELAGED	-0.199629	0.080063	-0.193728	0.076614	0.019212	0.084415	-0.048686	0.060527	0.035946	0.059481
RELEDOWG	0.124117	0.036456	-0.026207	0.014955	-0.158242	0.078148	-0.047571	0.050995	-0.022209	0.031665
RELEDAG	0.047012	0.017175	0.027998	0.017149	0.071395	0.02048	0.0391	0.013355	0.01815	0.012571
OTHWGED	-0.011063	0.00338	-0.003745	0.004162	-0.007139	0.005915	-0.009899	0.004055	-0.004529	0.002891
OTHWGAGE	0.000921	0.000918	0.001866	0.001113	-0.001829	0.00159	0.001497	0.001248	8.501E-05	0.000836
AGED	0.019966	0.002817	0.017439	0.003112	0.015381	0.003248	0.011641	0.002349	0.013979	0.002216
BLACK	-1.985366	0.305947	-2.226988	0.330017	-1.795473	0.36353	-1.356827	0.258719	-0.868974	0.242336
HISP	-1.160615	0.364004	-1.095531	0.385042	-2.057499	0.390539	-1.686502	0.267705	-1.814308	0.246995

	1989		1990		1991		1992		1993	
Males	Rsquare	0.753	Rsquare	0.7811	Rsquare	0.756	Rsquare	0.7534	Rsquare	0.7527
HECKSPML	MSE	572.58622	MSE	369.65098	MSE	298.38957	MSE	304.75034	MSE	289.63453
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-1.2967	3.101314	-5.377418	1.434582	-4.720557	1.176597	-6.498377	1.137992	-7.54468	0.953086
ED	-1.056543	0.222103	-0.768042	0.098483	-0.803227	0.081447	-0.646158	0.078193	-0.584249	0.070115
AGE	0.608893	0.06298	0.694495	0.029081	0.646454	0.024168	0.680932	0.023536	0.742685	0.020412
YOUNG	-0.29012	2.313784	-0.401865	0.7735	-0.269423	0.583723	1.303805	0.512688	1.00649	0.446457
ASSYPOV	-0.359696	1.214638	1.530633	0.7159	0.400643	0.732866	1.290345	0.392918	1.111448	0.349812
YOUNGSQ	-0.135406	0.344277	0.046907	0.091132	-0.052816	0.072268	-0.089739	0.071148	-0.085668	0.057362
RELAGE	-0.004625	0.005878	0.386456	0.801319	1.731145	0.618608	0.772352	0.352504	-0.036317	0.016801
RELED	0.00092	0.008097	0.202523	0.625341	0.809853	0.461673	-0.74383	0.270052	0.013053	0.023227
OTHWAGE	-0.0507	0.134251	0.03467	0.037079	-0.03698	0.026031	0.04977	0.03217	0.003243	0.014961
YNGASSY	-0.634066	1.239873	0.06538	0.164843	0.471414	0.113174	-0.130415	0.086929	-0.262563	0.161353
YRELAGE	-0.014043	0.008182	0.004726	0.448273	0.28437	0.279789	0.124657	0.180876	-0.005541	0.017079
YRELED	0.020813	0.012191	0.239965	0.214813	0.062178	0.163299	-0.131555	0.155391	0.006914	0.031404
YNGOTHW G	-0.006604	0.038259	-0.005031	0.00473	-0.000857	0.005048	-0.006219	0.005891	-0.003017	0.002788
YNGED	0.284284	0.118354	0.036827	0.032674	0.007827	0.026023	0.018577	0.025409	0.060576	0.021513
YNGAGE	-0.089758	0.047965	-0.015583	0.012971	-0.005647	0.009979	-0.040797	0.010278	-0.049732	0.009273
ASRELAGE	-0.001916	0.002359	1.586231	0.731081	1.344617	0.524637	0.245836	0.378588	-0.085084	0.107479
ASRELED	0.002311	0.002617	-1.970249	0.763261	-2.001782	0.510712	-0.008916	0.368396	0.139258	0.127957
ASOTHWG	-0.024537	0.071215	-0.009272	0.017284	0.012168	0.00672	-0.012106	0.006824	0.003362	0.00613
ASSYED	0.069668	0.115692	-0.043718	0.043993	-0.056119	0.033881	-0.082069	0.02648	-0.065254	0.020108
ASSYAGE	-0.019017	0.023396	-0.016377	0.010056	0.012908	0.009054	-0.006409	0.005606	-0.002481	0.004608
REAGREED	1.645E-06	1.46E-06	-1.014194	0.405116	-1.100342	0.224181	-0.013915	0.081998	0.0000586 96 0	2.794E-05
RELAGOWG	0.004372	0.000821	0.015219	0.018878	0.011509	0.011527	-0.009781	0.00871	0.00309	0.001954
RELAGED	0.000146	0.000236	0.038597	0.052726	-0.066675	0.042108	-0.027018	0.021762	0.001388	0.000881
RELEDOWG	-0.006605	0.00109	-0.026662	0.015694	0.003387	0.005059	0.000449	0.010662	-0.002955	0.001811
RELEDAG	-2.21E-05	0.000108	0.013135	0.011255	-0.0026	0.008541	0.01539	0.005306	-0.000504	0.000352
OTHWGED	-0.009267	0.008745	-0.002197	0.001533	5.565E-05	0.001541	-0.001147	0.001495	-0.00069	0.000857
OTHWGAGE	0.005795	0.002437	0.000458	0.000442	0.000828	0.000382	-0.000284	0.00053	0.00022	0.000285
AGED	0.018793	0.004605	0.012931	0.001983	0.015982	0.001656	0.012675	0.001606	0.009269	0.001523
BLACK	-1.172987	0.538179	-1.376858	0.210675	-1.044088	0.171494	-1.209696	0.166426	-1.178953	0.156576
HISP	-0.948685	0.616821	-1.821279	0.219182	-1.79305	0.173722	-1.387586	0.168037	-1.494074	0.154375

Males **LVLSPML**

	1984		1985		1986		1987		1988	
	Rsquare	0.6636	Rsquare	0.6815	Rsquare	0.7015	Rsquare	0.7161	Rsquare	0.731
	MSE	562.63175	MSE	439.87641	MSE	411.22751	MSE	410.64941	MSE	397.37861
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-6.257603	1.605499	-4.071989	1.827553	-0.266707	1.684973	-0.308032	1.201425	9.385736	0.876514
POTEXP	1.115429	0.058852	0.941009	0.06707	0.622422	0.066642	0.539376	0.046119	0.16678	0.03153
POTEXPSQ	-0.00569	0.000717	-0.002583	0.000812	0.000807	0.00085	0.001962	0.00058	0.004948	0.000496
SPLED	0.401864	0.165466	0.216835	0.18715	-0.117271	0.176327	-0.1235	0.125162	-1.155492	0.088901
SPLEDHS	1.153631	0.51642	1.182789	0.547624	1.791432	0.606554	1.026498	0.417061	0.177061	0.404202
SPLEDSC	0.602837	0.22414	0.53207	0.236891	0.337454	0.250738	0.18476	0.171995	0.0377	0.166821
SPLEDCD	-0.32472	0.956365	-0.474875	1.018967	-0.546328	1.09542	-2.223603	0.750767	-2.682022	0.730759
SPLEDGW	0.270539	0.408022	0.1366	0.437016	-0.825556	0.46591	-1.637331	0.327996	-2.048634	0.321247
OWNKID	-0.360147	0.154999	-0.104115	0.158316	-0.03775	0.165896	0.011531	0.128923	0.351957	0.13957
KIDSQ	0.013343	0.033513	-0.009047	0.033411	-0.029137	0.032936	-0.034356	0.029248	-0.105755	0.03503
INVOUTYN	-0.793874	0.367193	0.551399	0.271662	-2.375525	0.468591	-2.731556	0.37416	-1.938765	0.453868
INVOUTDR	-0.401399	0.130376			-0.206096	0.205769	-0.294916	0.161226	-0.60765	0.217313
RELED	0.585301	0.277682	0.642194	0.226617	0.249417	0.29502	0.667325	0.187252	0.487786	0.180015
RELAGE	0.720182	0.342616	0.238194	0.264722	0.132534	0.35381	-0.375846	0.212764	-0.35362	0.216443
NOTWELL	-2.969539	0.251365	-2.982968	0.277598	-1.883036	0.309463	-1.706108	0.210664	-1.298328	0.198343
ASSYPOV	-0.020958	0.056516	-0.001407	0.064218	0.012464	0.119729	-0.059894	0.126933	-0.056564	0.087453
AGED	0.002029	0.002765	0.006065	0.003088	0.013814	0.003132	0.017038	0.002181	0.035628	0.001423
BLACK	-1.867287	0.30145	-2.112306	0.325557	-1.569421	0.360876	-1.184572	0.254961	-0.927917	0.240905
HISP	-0.862157	0.36329	-0.748376	0.385146	-1.471617	0.389733	-1.202075	0.266202	-1.549787	0.247733

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

	1989		1990		1991		1992		1993	
Males	Rsquare	0.7489	Rsquare	0.7888	Rsquare	0.7658	Rsquare	0.7599	Rsquare	0.7642
LVLSPML	MSE	575.19328	MSE	362.85	MSE	292.22577	MSE	300.62612	MSE	282.74339
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	9.972833	2.314337	-3.834458	1.056071	0.604279	0.813093	1.750322	0.766495	-2.023395	0.749925
POTEXP	0.29208	0.081896	0.751175	0.039249	0.624462	0.03031	0.520992	0.029632	0.679491	0.028352
POTEXPSQ	0.003195	0.001158	0.000214	0.000482	5.24E-05	0.000387	0.001703	0.000391	0.000932	0.000357
SPLED	-1.185572	0.219333	0.211232	0.109894	-0.309343	0.084235	-0.4109	0.079925	0.060805	0.079215
SPLEDHS	-0.781183	0.965088	0.816742	0.3484	1.2773	0.279599	1.467502	0.283008	1.087827	0.26068
SPLEDSC	-0.286633	0.377152	0.221606	0.148339	0.279294	0.117509	0.40484	0.116626	0.326945	0.108669
SPLEDCD	-3.411926	1.643371	-1.415538	0.628286	-0.919751	0.503574	-0.682652	0.503783	-1.268274	0.466766
SPLEDGW	-2.31483	0.727505	-1.042634	0.277831	-1.036214	0.224078	-1.064762	0.224926	-1.230251	0.208743
OWNKID	0.583071	0.423162	-0.250221	0.110218	-0.047508	0.087957	0.056072	0.09435	0.197428	0.08185
KIDSQ	-0.256666	0.149572	0.053566	0.026369	-0.006391	0.020816	-0.039496	0.023601	-0.046754	0.020238
INVOUTYN	-1.807728	0.990999	-2.136734	0.374856	-3.380849	0.282392	-2.121556	0.265882	-2.048468	0.199274
INVOUTDR	-0.452168	0.392112	-0.576421	0.143565	-0.230248	0.093682	-0.733182	0.141317	-0.752328	0.088242
RELED	0.000765	0.000775	0.659575	0.17849	0.347993	0.126471	0.343043	0.090258	0.014601	0.002889
RELAGE	9.937E-05	0.000619	-0.193699	0.211958	-0.13622	0.146625	-0.038628	0.096095	-0.006191	0.002422
NOTWELL	-2.160273	0.440542	-1.382485	0.164955	-1.714727	0.136305	-1.537978	0.139513	-1.413318	0.125207
ASSYPOV	-0.017051	0.0809	-0.112992	0.078729	-0.039461	0.059276	0.02005	0.033654	0.022309	0.038239
AGED	0.031738	0.003534	0.010106	0.001901	0.019532	0.001443	0.021425	0.001388	0.012447	0.001385
BLACK	-1.301869	0.536711	-1.27162	0.206676	-1.004244	0.167834	-1.078855	0.164217	-1.13888	0.15306
HISP	-0.449529	0.620982	-1.129367	0.220208	-1.279048	0.173464	-0.935239	0.168349	-1.02725	0.153107

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Males **LNEXPML**

	1984		1985		1986		1987		1988	
	Rsquare	0.4103	Rsquare	0.4401	Rsquare	0.3247	Rsquare	0.3723	Rsquare	0.3674
	MSE	52.06921	MSE	39.50214	MSE	60.23778	MSE	54.52018	MSE	53.81528
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-0.862077	0.143449	-0.59827	0.162307	-0.436914	0.237707	-0.293331	0.152616	0.669671	0.129593
LNPOT	0.796447	0.066401	0.676745	0.07021	0.678054	0.102705	0.425183	0.069825	0.696881	0.080358
LNPOTSQ	0.073983	0.018909	0.093688	0.019908	0.070114	0.031003	0.114865	0.020597	-0.042347	0.019424
SPLED	0.11911	0.014591	0.105317	0.016095	0.075059	0.024598	0.08594	0.015919	-0.055705	0.011699
SPLEDHS	0.119689	0.047769	0.12109	0.049175	0.101926	0.088713	0.088263	0.055276	-0.042152	0.054689
SPLEDSC	0.055242	0.020745	0.04944	0.02129	-0.005528	0.036724	0.039188	0.022836	-0.012573	0.02261
SPLEDCD	-0.036518	0.088415	-0.00429	0.091433	0.07751	0.160643	-0.05482	0.099843	-0.273925	0.09909
SPLEDGW	0.030959	0.037693	0.049354	0.039178	-0.007898	0.06827	-0.076971	0.04357	-0.194991	0.043542
OWNKID	0.018362	0.014283	0.025115	0.014218	0.007055	0.023977	0.012256	0.017038	0.074354	0.01865
KIDSQ	-0.005236	0.003101	-0.005316	0.003005	-0.002537	0.00482	-0.003595	0.00389	-0.01601	0.004734
INVOUTYN	-0.16995	0.033985	0.037512	0.024296	-0.282148	0.068635	-0.412183	0.049662	-0.411847	0.061423
INVOUTDR	0.008901	0.012066			0.000159	0.030139	0.030148	0.021405	0.034936	0.029425
RELED	0.075321	0.025706	0.070406	0.020386	-0.003036	0.043236	0.089682	0.024973	0.101443	0.024424
RELAGE	-0.008585	0.031783	-0.029549	0.024142	-0.023971	0.052042	-0.097332	0.028738	-0.154527	0.029409
NOTWELL	-0.305076	0.023125	-0.296555	0.024783	-0.066991	0.04515	-0.102806	0.027887	-0.10055	0.026803
ASSYPOV	-0.005248	0.00523	-0.002551	0.005766	-0.017287	0.017533	0.002425	0.016851	-0.000722	0.011843
AGED	-0.001602	0.000244	-0.001421	0.000266	-0.000715	0.000436	-0.000615	0.000276	0.002266	0.000186
BLACK	-0.180076	0.027916	-0.20814	0.029234	-0.141916	0.052844	-0.113718	0.033859	-0.109966	0.032627
HISP	-0.078046	0.033535	-0.084597	0.034531	-0.156289	0.056917	-0.079379	0.035296	-0.134326	0.033541

NVOUTYN and INVOUTDR are NA in thc 1985 SIPP panel. VET was substituted in that year only.

Males	1989		1990		1991		1992		1993	
LNEXPML	Rsquare	0.54	Rsquare	0.4602	Rsquare	0.5769	Rsquare	0.3435	Rsquare	0.3806
Variable	MSE	55.48	MSE	47.49962	MSE	28.68019	MSE	47.52621	MSE	42.46235
INTERCEP	0.326376	0.269332	-0.379891	0.131186	0.015303	0.076014	0.0168	0.116943	-0.228746	0.104399
LNPOT	0.887536	0.181392	0.195433	0.064381	0.53477	0.035271	0.266065	0.054533	0.229141	0.04593
LNPOTSQ	-0.046175	0.041161	0.200463	0.018758	0.07263	0.010516	0.144166	0.016024	0.181215	0.014422
SPLED	-0.063506	0.020182	0.125877	0.013739	0.047525	0.007938	0.073798	0.012095	0.104367	0.011209
SPLEDHS	-0.064583	0.093188	0.076359	0.045574	0.111426	0.02743	0.12354	0.044704	0.13054	0.039129
SPLEDSC	-0.032625	0.036362	0.029083	0.019424	0.024664	0.011542	0.038403	0.018453	0.044624	0.016328
SPLEDCD	-0.348017	0.158194	-0.052258	0.082239	0.017055	0.049412	0.027399	0.079658	0.002311	0.070085
SPLEDGW	-0.215943	0.070059	-0.049854	0.036344	-0.04514	0.021975	-0.053113	0.035542	-0.035354	0.031329
OWNKID	0.122207	0.040296	-0.019332	0.014379	0.013968	0.008554	0.015054	0.014753	0.034721	0.012197
KIDSQ	-0.032762	0.014406	0.003923	0.003455	-0.003015	0.002042	-0.003068	0.003723	-0.008337	0.003037
INVOUTYN	-0.205072	0.095501	-0.261994	0.049072	-0.409397	0.027709	-0.3525	0.04201	-0.294895	0.029914
INVOUTDR	-0.018843	0.037823	-0.039037	0.018793	-0.007518	0.009194	-0.021306	0.022341	-0.034705	0.013252
RELED	-6.65E-05	0.0000758	0.082072	0.023398	0.056549	0.012445	0.032626	0.01435	0.001878	0.000433
RELAGE	0.000159	6.081E-05	-0.052627	0.0278	-0.078023	0.01449	-0.022652	0.015321	-0.000855	0.000364
NOTWELL	-0.20248	0.042414	-0.124192	0.021499	-0.113193	0.013327	-0.161062	0.022008	-0.179401	0.018756
ASSYPOV	-2.19E-05	0.007801	-0.004836	0.010304	-0.004832	0.005817	0.001914	0.00532	0.004144	0.005743
AGED	0.00197	0.000325	-0.001433	0.000237	7.936E-06	0.000136	-0.000434	0.00021	-0.001106	0.000196
BLACK	-0.182463	0.051761	-0.219893	0.027055	-0.108054	0.016471	-0.151586	0.025967	-0.104037	0.022989
HISP	0.001778	0.059886	-0.120817	0.028786	-0.104755	0.017018	-0.043712	0.026597	-0.089388	0.022967

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Males **LAGEXPML**

	1984		1985		1986		1987		1988	
	Rsquare	0.9588	Rsquare	0.9827	Rsquare	0.8956	Rsquare	0.9113	Rsquare	0.9156
	MSE	196.84186	MSE	102.61194	MSE	243.15452	MSE	229.49902	MSE	222.5846
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	5.774072	0.26366	3.486637	0.191814	11.23968	0.501153	9.172587	0.336496	8.952658	0.334377
LAST5	0.962492	0.00775	1.01577	0.005984	0.757805	0.017337	0.790787	0.011622	0.797761	0.011304
LASTSQ	4.113E-05	0.00015	-0.000404	0.000109	-0.000458	0.000478	-0.000445	0.000306	-0.000668	0.000293
SPLED	-0.198392	0.02652	-0.099525	0.019518	-0.981636	0.050575	-0.796836	0.033771	-0.793194	0.033988
SPLEDHS	0.087494	0.180258	0.188864	0.127465	0.708678	0.356659	0.021637	0.232282	-0.265348	0.22608
SPLEDSC	0.041425	0.078453	0.116567	0.055276	0.323799	0.148003	0.069251	0.096061	0.017173	0.093435
SPLEDCD	0.095295	0.334142	0.606876	0.237275	1.026372	0.645803	-0.116006	0.419184	-0.230035	0.408629
SPLEDGW	0.045164	0.14241	0.275353	0.101709	0.248283	0.274988	-0.349373	0.183326	-0.381543	0.179821
YOUNG	0.127437	0.107284	0.048659	0.071748	-0.255295	0.190979	-0.11532	0.136062	0.021488	0.128408
YOUNGSQ	-0.028882	0.043069	0.004333	0.027523	0.061926	0.07231	0.043202	0.056032	-0.012805	0.0526
INVOUTYN	-0.934547	0.128279	-0.008602	0.061437	-1.650837	0.277127	-1.758263	0.209153	-1.521488	0.25407
INVOUTDR	0.079617	0.045612			0.226353	0.121805	0.299365	0.090239	0.330544	0.121817
RELED	0.1587	0.097105	0.066609	0.052917	0.362282	0.173513	0.150781	0.104836	0.017784	0.101134
RELAGE	-0.067351	0.118	-0.106866	0.060903	-0.516799	0.206242	-0.283366	0.117177	0.060876	0.11973
NOTWELL	0.116754	0.088201	0.291781	0.065076	1.771	0.185241	0.784201	0.117888	0.904779	0.111513
ASSYPOV	0.057846	0.01977	0.023036	0.014953	-0.124153	0.07052	0.062597	0.070845	0.209374	0.048999
AGED	0.003964	0.000336	0.001101	0.000253	0.019263	0.000644	0.017484	0.00044	0.017578	0.000445
BLACK	-0.267655	0.105505	-0.170755	0.076125	-0.645045	0.213071	-0.483694	0.142178	-0.326539	0.134768
HISP	-0.089515	0.125743	0.105717	0.089258	-1.379769	0.227752	-0.69112	0.147869	-0.697187	0.138576

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

	1989		1990		1991		1992		1993	
Males	Rsquare	0.9817	Rsquare	0.9006	Rsquare	0.9303	Rsquare	0.8876	Rsquare	0.9103
LAGSPML	MSE	155.41269	MSE	248.94469	MSE	159.41872	MSE	205.63897	MSE	174.37337
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	4.346736	0.378094	13.392539	0.36382	9.579785	0.236951	11.877596	0.288098	10.194467	0.2376
LAST5	1.0541	0.012989	0.588948	0.011457	0.766998	0.007862	0.554295	0.009239	0.693365	0.007974
LASTSQ	-0.002214	0.000308	0.000404	0.000306	5.142E-05	0.0002	0.002142	0.000256	0.000322	0.00021
SPLED	-0.17336	0.03877	-1.389872	0.035762	-0.836206	0.023774	-1.174726	0.028999	-0.971966	0.02395
SPLEDHS	-0.122003	0.259843	0.321105	0.238745	0.335236	0.152383	0.635969	0.193352	0.269314	0.16064
SPLEDSC	-0.035019	0.101622	0.215669	0.101785	0.183472	0.06411	0.17927	0.079753	0.041661	0.06704
SPLEDCD	-0.029174	0.439811	0.245062	0.430673	0.525639	0.274143	0.07532	0.343911	-0.367223	0.287615
SPLEDGW	-0.131526	0.194531	-0.270743	0.190478	-0.04659	0.122035	-0.508308	0.153331	-0.544253	0.12854
YOUNG	0.197548	0.182424	-0.269339	0.14033	-0.010854	0.087746	-0.243377	0.113329	-0.012309	0.084937
YOUNGSQ	-0.020567	0.089281	0.041017	0.058335	-0.018859	0.036048	0.03712	0.04689	-0.021779	0.033435
INVOUTYN	-0.90953	0.267173	-1.42797	0.257474	-1.09312	0.154657	-1.586961	0.181827	-1.026945	0.122956
INVOUTDR	-0.064481	0.105952	-0.184528	0.098564	-0.033138	0.051115	0.031313	0.096883	-0.226782	0.05451
RELED	0.000186	0.000206	0.507878	0.122851	0.101139	0.069306	0.164421	0.061934	0.005294	0.001767
RELAGE	-0.000135	0.000157	-0.388458	0.143738	-0.124665	0.079072	-0.139108	0.065227	-0.004771	0.001494
NOTWELL	-0.36278	0.118622	0.890979	0.113736	0.370757	0.074517	-0.004836	0.09541	0.732382	0.077477
ASSYPOV	0.006705	0.021843	-0.026903	0.053933	0.047546	0.032312	-0.008425	0.02301	0.017872	0.023567
AGED	0.003459	0.000508	0.030207	0.000449	0.017586	0.000319	0.027817	0.000365	0.022384	0.000315
BLACK	-0.353728	0.145228	-0.578606	0.141746	-0.234758	0.091529	-0.338313	0.112303	-0.333211	0.094407
HISP	-0.090896	0.167705	-1.139605	0.14977	-0.69544	0.094155	-0.772152	0.114367	-0.652705	0.093935

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Males **SATCVML**

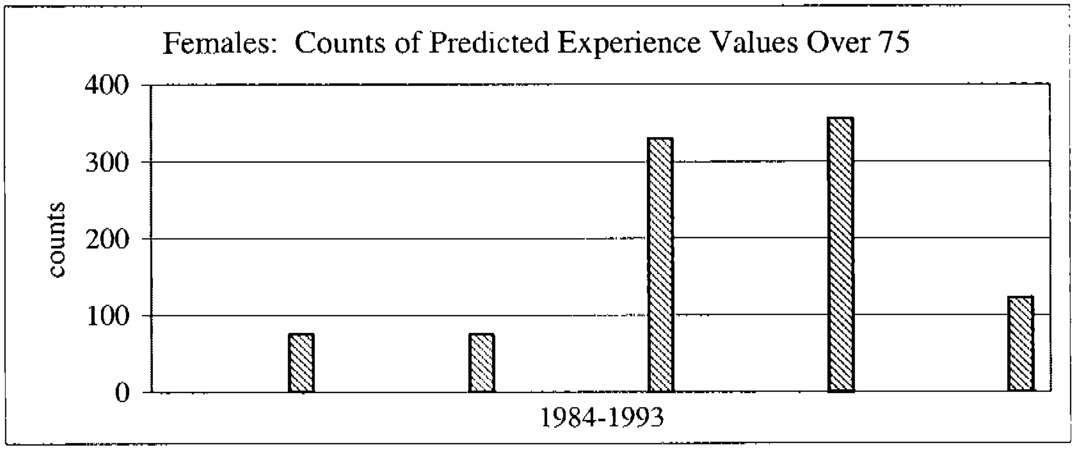
	1984		1985		1986		1987		1988	
	Rsquare	0.3739	Rsquare	0.4093	Rsquare	0.3117	Rsquare	0.3526	Rsquare	0.3584
	MSE	53.41505	MSE	40.57175	MSE	60.80713	MSE	55.3668	MSE	54.19339
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	2.99973	0.066986	3.14341	0.068639	2.786597	0.122246	2.644426	0.078759	2.622288	0.078567
INVPOT	-2.741768	0.114036	-2.265895	0.122988	-2.331694	0.168231	-1.887427	0.117794	-2.040098	0.13098
SPLED	-0.091741	0.006794	-0.117547	0.007139	-0.10568	0.012189	-0.108422	0.007755	-0.112967	0.007665
SPLEDHS	0.069814	0.048927	0.065358	0.050405	0.041802	0.0892	0.049514	0.056033	-0.052629	0.05504
SPLEDSC	0.048055	0.021285	0.042105	0.021874	-0.014974	0.037026	0.041636	0.023189	-0.006925	0.022756
SPLEDCD	-0.053851	0.090675	0.000134	0.093878	0.022254	0.161799	-0.045229	0.101334	-0.239034	0.09947
SPLEDGW	0.013076	0.038641	0.045452	0.040222	-0.05228	0.068746	-0.093413	0.044229	-0.180098	0.043729
YOUNG	-0.069012	0.029307	-0.028987	0.02855	-0.065206	0.048201	-0.051883	0.033174	0.066831	0.031331
YOUNGSQ	0.007459	0.011709	-0.002065	0.010899	0.019051	0.018131	0.021802	0.013559	-0.022754	0.012802
INVOUTYN	-0.197341	0.03479	0.132368	0.024282	-0.292419	0.069258	-0.402709	0.050423	-0.396665	0.061847
INVOUTDR	0.016436	0.012369			0.010878	0.030438	0.031218	0.021745	0.03702	0.029626
RELED	0.130361	0.026348	0.117406	0.020942	0.035552	0.043491	0.116577	0.025415	0.117472	0.024621
RELAGE	-0.041604	0.032118	-0.078899	0.024524	-0.049321	0.05191	-0.114419	0.028827	-0.147907	0.029239
NOTWELL	-0.294356	0.023664	-0.290947	0.025417	-0.047027	0.045446	-0.084972	0.02824	-0.101669	0.026908
ASSYPOV	-0.009449	0.005358	-0.008602	0.00591	-0.031343	0.017627	-0.009582	0.01709	-0.004321	0.01192
AGED	0.002243	7.562E-05	0.002548	7.971E-05	0.002839	0.000138	0.003078	8.96E-05	0.003407	8.242E-05
BLACK	-0.149059	0.028596	-0.194512	0.030008	-0.121201	0.053243	-0.078494	0.034296	-0.096915	0.032803
HISP	-0.12613	0.034053	-0.124205	0.035219	-0.211935	0.05684	-0.127342	0.035569	-0.142974	0.033654

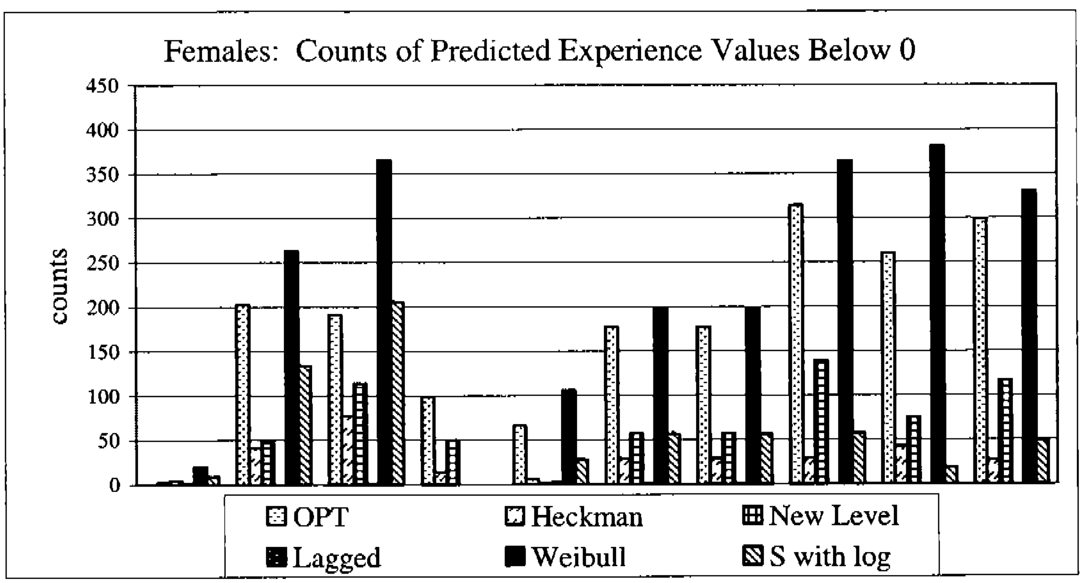
NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

	1989		1990		1991		1992		1993	
Males	Rsquare	0.5253	Rsquare	0.4283	Rsquare	0.7332	Rsquare	0.3202	Rsquare	0.3494
SATCVML	MSE	56.34424	MSE	48.88269	MSE	22.77689	MSE	48.36055	MSE	43.518
INTERCEP	2.941346	0.12708	2.834312	0.069491	1.910773	0.033863	2.688223	0.065793	2.814436	0.056547
INVPOT	-2.81501	0.343976	-1.878382	0.109193	0.055493	0.000583	-1.420314	0.085292	-1.39532	0.068726
SPLED	-0.13374	0.012464	-0.120391	0.006742	-2.028319	0.043984	-0.12106	0.006416	-0.132226	0.005614
SPLEDHS	-0.09454	0.094176	0.061568	0.046857	0.026041	0.003484	0.11341	0.045467	0.122054	0.04008
SPLEDSC	-0.022878	0.036849	0.035048	0.019991	0.055492	0.021771	0.034888	0.018782	0.042926	0.016734
SPLEDCD	-0.264494	0.159379	-0.037665	0.084607	0.020966	0.00917	-0.019976	0.081002	-0.025942	0.071806
SPLEDGW	-0.173574	0.070486	-0.069804	0.037384	0.08598	0.039217	-0.102991	0.036081	-0.069255	0.03206
YOUNG	0.14627	0.066114	-0.001273	0.02773	0.018013	0.017453	-0.022803	0.026814	0.001663	0.021352
YOUNGSQ	-0.037428	0.032383	-0.022488	0.011471	0.065448	0.012619	0.002185	0.011041	-0.005869	0.008357
INVOUTYN	-0.15746	0.096829	-0.260601	0.050536	-0.024928	0.005157	-0.351119	0.042747	-0.280054	0.030649
INVOUTDR	-0.021333	0.0384	-0.035227	0.019343	-0.228051	0.022093	-0.019139	0.022741	-0.032852	0.013581
RELED	-9.43E-06	7.65E-05	0.101416	0.024116	0.005664	0.007303	0.051461	0.014622	0.000706	0.000441
RELAGE	5.912E-05	5.98E-05	-0.078808	0.02827	0.048459	0.00992	-0.039573	0.015479	-0.000785	0.000373
NOTWELL	-0.189605	0.042848	-0.106488	0.02206	-0.088183	0.011374	-0.140293	0.022336	-0.159149	0.019152
ASSYPOV	-0.001016	0.007916	-0.019297	0.010579	0.0133	0.010637	-0.0007	0.005411	-0.00022	0.005881
AGED	0.003367	0.000122	0.003192	0.074525	-0.000769	0.004615	0.003359	6.926E-05	0.003419	6.016E-05
BLACK	-0.181269	0.052564	-0.202947	0.027816	-0.000315	0.049726	-0.128434	0.026403	-0.083114	0.023552
HISP	-0.015012	0.060723	-0.186163	0.029346	-0.04753	0.013082	-0.085739	0.026854	-0.133638	0.023389

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

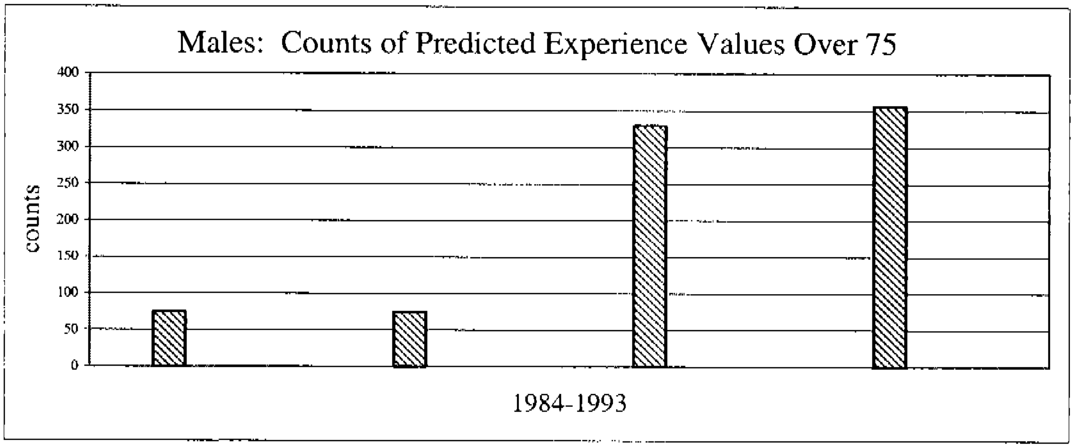
Sample Observations with Predicted Experience Outside [0,75) Range

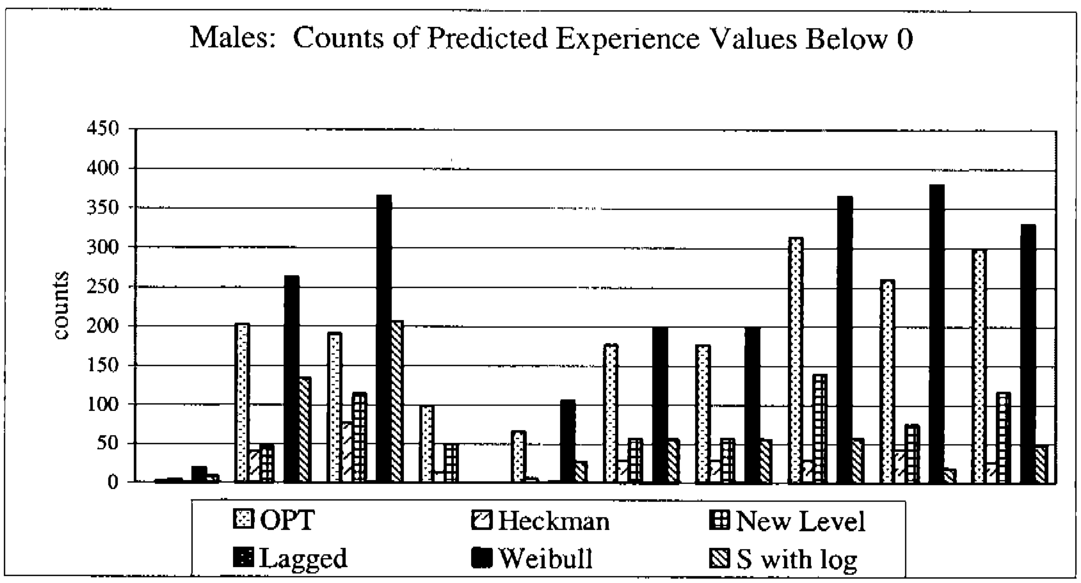




<u>Sample Observations with Predicted Experience Outside [0,75) Range</u>

(Con't)





Sample Observations with Predicted Experience Outside [0,75) Range
(Con't)

Females: Counts of Predicted Sample Observations Outside [0,75) Range

Variable	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
TPOPTWK	0	0	0	0	0	0	0	0	0	0
TPHECWK	0	0	0	0	0	0	0	0	0	0
TPLVLWK	0	0	0	0	0	0	0	0	0	0
TPLAGWK	4	6	0	0	0	0	0	0	0	0
TPWBLNWK	0	0	0	0		0	0	0	0	0
TPSCLNWK	0	2	12	0		75	75	330	356	123
BPOPTWK	0	203	191	99	66	177	177	314	260	299
BPHECWK	2	41	77	14	6	29	29	29	43	27
BPLVLWK	4	47	114	50	1	57	57	139	75	117
BPLAGWK	1	0	1	0	2	1	1	0		0
BPWBLNWK	20	263	366	0	106	199	199	365	381	330
BPSCLNWK	9	134	206	0	28	56	56	57	19	49

Males: Counts of Predicted Sample Observations Outside [0,75) Range

Variable	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
TPOPTWK	0	0	0	0	0	0	0	0	0	0
TPHECWK	0	0	0	0	0	0	0	0	0	0
TPLVLWK	0	0	0	0	0	0	0	0	0	0
TPLAGWK	4	6	0	0	0	0	0	0	0	0
TPWBLNWK	0	0	0	0			0	0	0	0
TPSCLNWK	0	2	12	0		75	75	330	356	123
BPOPTWK	0	203	191	99	66	177	177	314	260	299
BPHECWK	2	41	77	14	6	29	29	29	43	27
BPLVLWK	4	47	114	50	1	57	57	139	75	117
BPLAGWK	1	0	1	0	2	1	1	0		0
BPWBLNWK	20	263	366	0	106	199	199	365	381	330
BPSCLNWK	9	134	206	0	28	56	56	57	19	49

Not surprisingly, the specification with lagged work experience on the RHS (BPLAGWK) performs best when evaluated in terms of these criteria. The current specification (BPOPTWK) does not perform well; the alternative specifications in levels (BPHECWK and BPLVLWK) both perform better. The specifications with the log of work experience on the LHS are flagged when the predicted value falls below 1 or above ln(75).

Wage Equations

Females **POTNOADJ**

	1984		1985		1986		1987		1988	
	N	5958	N	10299	N	9161	N	9099	N	9424
	Rsquare	0.2581	Rsquare	0.3049	Rsquare	0.2914	Rsquare	0.2912	Rsquare	0.3068
	MSE	36.48258	MSE	291.72276	MSE	33.15638	MSE	33.65707	MSE	32.28209
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.423026	0.04061	1.313966	0.03076	1.429664	0.034493	1.422736	0.03773	1.459545	0.03677
S0TO4	-0.189455	0.078969	0.054846	0.057451	-0.057614	0.065988	-0.062614	0.073202	-0.063975	0.071767
S9TO11	0.070099	0.034922	0.130909	0.027796	0.078012	0.030657	0.068202	0.033962	0.091566	0.032984
S12	0.254693	0.031708	0.315279	0.025188	0.247609	0.027857	0.258944	0.031039	0.292356	0.030202
S13T15	0.423198	0.033835	0.497766	0.026645	0.442963	0.029252	0.453394	0.032226	0.477053	0.031161
S16	0.58071	0.036689	0.667314	0.028719	0.612251	0.03162	0.665242	0.034282	0.687803	0.032898
S17UP	0.707426	0.037567	0.86789	0.029889	0.814554	0.032372	0.8032	0.035129	0.823958	0.033819
POTEXP	0.013097	0.002079	0.017413	0.00146	0.016877	0.001654	0.020336	0.001733	0.01874	0.00166
POTEXPSQ	-0.000231	4.468E-05	-0.000248	3.287E-05	-0.000275	3.638E-05	-0.000335	3.806E-05	-0.000301	3.49E-05
BLACK	-0.088333	0.020064	-0.033344	0.015318	-0.064046	0.016388	-0.096843	0.016898	-0.065578	0.015732
HISP	-0.041958	0.027531	-0.003773	0.020571	-0.029921	0.021809	-0.070791	0.022016	-0.054245	0.021135
PTIME	-0.350528	0.012843	-0.388281	0.009846	-0.36093	0.01058	-0.382974	0.010881	-0.375644	0.01033
CITY	0.056329	0.014095	0.051734	0.010604	0.064077	0.01142	0.064755	0.011686	0.061754	0.011027
NEWENG	0.033497	0.030122	0.087929	0.022675	0.074181	0.024882	0.149926	0.025507	0.149707	0.023542
MIDATL	0.054503	0.021399	0.037749	0.016788	0.036417	0.018072	0.076442	0.01865	0.088696	0.017483
ENCENT	-0.015622	0.020697	-0.040782	0.016009	-0.028755	0.017227	-0.025567	0.017722	-0.052452	0.016749
WNCENT	-0.08404	0.028394	-0.09462	0.019537	-0.120438	0.020747	-0.11638	0.021296	-0.119766	0.020216
SATL	-0.061792	0.021467	-0.045006	0.01646	-0.062753	0.017739	-0.036941	0.018169	-0.028906	0.017126
ESCENT	-0.146421	0.031434	-0.150343	0.023836	-0.180614	0.026392	-0.12417	0.027195	-0.168779	0.025962
WSCENT	-0.050136	0.0253	-0.094299	0.018523	-0.087354	0.01989	-0.061266	0.02038	-0.135379	0.019354
MOUNTAIN	-0.029211	0.042692	-0.096113	0.026945	-0.096875	0.029165	-0.07457	0.028647	-0.064402	0.026318
WKDOLD			-0.009716	0.004631	0.017165	0.006941				
WKDYNG					-0.03829	0.048659				
INTOLD			0.355815	0.228117	-0.963289	0.346094				
INTYNG					0.002346	0.098074				

	1989		1990		1991		1992		1993	
	N	3289	N	9747	N	14877	N	14975	N	16802
POTNOADJ	Rsquare	.3021	Rsquare	0.33	Rsquare	0.3331	Rsquare	0.308	Rsquare	0.315
Females	MSE	48.46853	MSE	34.34868	MSE	26.29931	MSE	27.82396	MSE	25.5309
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.40088	0.067308	1.502778	0.03668	1.59375	0.0294	1.604855	0.030897	1.602692	0.029686
S0TO4	0.171892	0.125052	-0.064647	0.080287	-0.01407	0.060953	0.126529	0.061665	0.008402	0.065642
S9TO11	0.099861	0.057544	0.057843	0.03361	0.09602	0.026991	0.104875	0.02864	0.098447	0.027954
S12	0.299579	0.052668	0.302857	0.030873	0.28096	0.02477	0.263205	0.026011	0.291694	0.025472
S13T15	0.476424	0.05413	0.482024	0.031876	0.46113	0.025513	0.456116	0.026785	0.493384	0.02607
S16	0.734823	0.057391	0.760958	0.033705	0.73099	0.026871	0.706826	0.028047	0.761014	0.02714
S17UP	0.829989	0.058883	0.889505	0.034549	0.87394	0.027444	0.844715	0.028725	0.892971	0.027742
POTEXP	0.023479	0.003258	0.020744	0.001674	0.02066	0.001317	0.02235	0.001373	0.022284	0.001251
POTEXPSQ	-0.000355	6.415E-05	-0.000357 0.	37522	-0.00036	2.931E-05	-0.000374	3.065E-05	-0.000379	2.793E-05
BLACK	-0.076431	0.027988	-0.064327	0.015741	-0.07481	0.012556	-0.062048	0.012528	-0.057762	0.011482
HISP	-0.035321	0.036377	-0.032254	0.020523	-0.05602	0.015864	-0.045033	0.015849	-0.040221	0.014501
PTIME	-0.370673	0.018484	-0.34104	0.010631	-0.34811	0.008319	-0.340835	0.00858	-0.320193	0.007923
CITY	0.068221	0.019451	0.050946	0.011251	0.04605	0.008854	0.037372	0.011889	0.013773	0.010376
NEWENG	0.143454	0.040527	0.16581	0.024932	0.16075	0.019004	0.147902	0.019735	0.12347	0.018465
MIDATL	0.071494	0.030609	0.103228	0.0177	0.07023	0.013823	0.06793	0.014378	0.091635	0.01343
ENCENT	-0.046397	0.02946	-0.030226	0.01687	-0.04632	0.013181	-0.058553	0.013631	-0.031015	0.012659
WNCENT	-0.189955	0.035196	-0.136572	0.020502	-0.15712	0.015907	-0.152994	0.016541	-0.139432	0.015631
SATL	-0.05953	0.030343	-0.004777	0.017063	-0.03896	0.013427	-0.070416	0.013788	-0.05085	0.01269
ESCENT	-0.158425	0.047208	-0.164418	0.026276	-0.19819	0.020818	-0.17351	0.020889	-0.160327	0.019305
WSCENT	-0.178713	0.034784	-0.179356	0.019107	-0.17088	0.015155	-0.165954	0.01584	-0.153406	0.014869
MOUNTAIN	-0.065885	0.043794	-0.074549	0.026881	-0.10454	0.021206	-0.100644	0.02211	-0.071663	0.02009
WKDOLD			0.026689	0.005201	0.02597	0.005406	0.010476	0.004406	0.011761	0.006135
WKDYNG			0.025487	0.023909	-0.01229	0.018343	0.035461	0.025182	0.077066	0.040565
INTOLD			-1.308284	0.254349	-1.23719	0.269843	-0.465859	0.217394	-0.564621	0.304364
INTYNG			-0.091444	0.045139	-0.00213	0.050107	-0.112721	0.045669	-0.141779	0.07668

Females **OPTNOADJ**

	1984		1985		1986		1987		1988	
	Rsquare	0.2589	Rsquare	0.3058	Rsquare	0.2898	Rsquare	0.2944	Rsquare	0.3073
	MSE	36.46227	MSE	291.52728	MSE	33.19471	MSE	33.58972	MSE	32.2699
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.355367	0.046393	1.326633	0.032349	1.439769	0.037282	1.333338	0.041152	1.409944	0.040172
S0TO4	-0.175162	0.078938	0.065908	0.057411	-0.036387	0.066284	-0.057681	0.073083	-0.061933	0.07173
S9TO11	0.094329	0.03472	0.13576	0.027689	0.079405	0.030528	0.067813	0.033727	0.083505	0.03287
S12	0.26055	0.030775	0.288367	0.024596	0.22923	0.027354	0.221347	0.030388	0.259859	0.029794
S13T15	0.420586	0.03263	0.454019	0.025817	0.401968	0.028471	0.389126	0.0313	0.430328	0.03056
S16	0.571418	0.035385	0.602626	0.02768	0.56384	0.030672	0.588342	0.033228	0.636211	0.032201
S17UP	0.689029	0.035977	0.779781	0.028945	0.752678	0.031437	0.717576	0.033994	0.763714	0.033239
POPTWK	0.027445	0.004819	0.02278	0.002496	0.024234	0.003696	0.050782	0.004273	0.04036	0.003916
POPTWKSQ	-0.00076	0.000175	-0.000283	8.589E-05	-0.000494	0.000136	-0.001455	0.000158	-0.001081	0.000137
BLACK	-0.095131	0.020043	-0.053053	0.015308	-0.060588	0.016401	-0.093094	0.016865	-0.06642	0.015726
HISP	-0.024944	0.027601	0.023506	0.020602	-0.013921	0.021863	-0.058181	0.021969	-0.037433	0.021145
PTIME	-0.34749	0.012858	-0.384368	0.009852	-0.359352	0.010612	-0.378522	0.010876	-0.371387	0.010354
CITY	0.055603	0.01409	0.046514	0.010584	0.060009	0.01142	0.06439	0.011655	0.061163	0.011022
NEWENG	0.031317	0.0301	0.085653	0.022673	0.072036	0.024911	0.144016	0.025443	0.14588	0.023529
MIDATL	0.052521	0.021388	0.034106	0.016789	0.034071	0.018096	0.070334	0.01861	0.086032	0.017477
ENCENT	-0.016072	0.020684	-0.04115	0.015998	-0.029285	0.017247	-0.029545	0.017681	-0.053186	0.016742
WNCENT	-0.086509	0.02837	-0.094132	0.019526	-0.123412	0.020766	-0.118566	0.021241	-0.119766	0.020207
SATL	-0.064185	0.021458	-0.046389	0.01645	-0.06424	0.01776	-0.042543	0.018119	-0.031222	0.017115
ESCENT	-0.145901	0.031416	-0.149776	0.023823	-0.182819	0.026421	-0.128141	0.027135	-0.169988	0.025952
WSCENT	-0.050818	0.02528	-0.091641	0.018512	-0.087722	0.019916	-0.0648	0.02033	-0.135259	0.019347
MOUNTAIN	-0.031793	0.042675	-0.094355	0.026929	-0.096309	0.029199	-0.078282	0.028583	-0.064378	0.026308
WKDOLD			-0.018924	0.004264	0.006607	0.006856				
WKDYNG					-0.016254	0.048705				
INTOLD			0.703947	0.218341	-0.567426	0.344312				
INTYNG					-0.044418	0.097984				

OPTNOADJ	1989		1990		1991		1992		1993	
Females	Rsquare	.3041	Rsquare	0.3294	Rsquare	0.3349	Rsquare	0.3091	Rsquare	0.3154
	MSE	48.40012	MSE	34.36327	MSE	26.2625	MSE	27.80175	MSE	25.52445
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.36681	0.069309	1.460051	0.039801	1.51587	0.031663	1.552848	0.033418	1.551644	0.032157
S0TO4	0.239911	0.125757	-0.041132	0.080265	-0.0097	0.060891	0.153161	0.061605	0.034034	0.065638
S9TO11	0.079493	0.057319	0.083459	0.033502	0.10425	0.0269	0.105875	0.0286	0.101756	0.027908
S12	0.263269	0.052221	0.297494	0.03027	0.26457	0.024444	0.237151	0.025842	0.264936	0.025289
S13T15	0.430319	0.05355	0.456037	0.030989	0.42644	0.025009	0.412374	0.026412	0.448628	0.025712
S16	0.687583	0.056625	0.721115	0.032681	0.68307	0.026229	0.647047	0.027522	0.698616	0.026638
S17UP	0.774499	0.058313	0.844095	0.033573	0.82147	0.026876	0.777405	0.028344	0.826095	0.027327
POPTWK	0.04721	0.006284	0.033253	0.003163	0.04048	0.002621	0.038831	0.002607	0.039247	0.002683
POPTWKSQ	-0.00119	0.000205	-0.000776	0.000104	-0.00104	8.549E-05	-0.000902	8.423E-05	-0.000942	9.018E-05
BLACK	-0.076206	0.027917	-0.065526	0.015746	-0.07571	0.012541	-0.0576	0.012525	-0.054392	0.01148
HISP	-0.016745	0.036414	-0.010424	0.020601	-0.03475	0.015874	-0.021743	0.015884	-0.015494	0.014565
PTIME	-0.365339	0.018487	-0.34058	0.010634	-0.3447	0.00832	-0.337939	0.008584	-0.317477	0.007931
CITY	0.066463	0.019412	0.04902	0.011251	0.04522	0.008837	0.036358	0.011877	0.012391	0.010371
NEWENG	0.138775	0.040469	0.162631	0.024943	0.15676	0.018977	0.1443	0.019718	0.118109	0.018458
MIDATL	0.066874	0.030561	0.100503	0.017709	0.06675	0.013802	0.064189	0.014361	0.087659	0.013425
ENCENT	-0.044142	0.029418	-0.032407	0.016875	-0.04881	0.013161	-0.060686	0.013616	-0.034068	0.012654
WNCENT	-0.187882	0.03515	-0.141685	0.020502	-0.15983	0.015883	-0.153666	0.016526	-0.141229	0.015626
SATL	-0.062389	0.030294	-0.008463	0.017064	-0.04236	0.013404	-0.072674	0.013774	-0.054118	0.012685
ESCENT	-0.163195	0.047127	-0.167659	0.026282	-0.20132	0.020783	-0.177467	0.020867	-0.163182	0.0193
WSCENT	-0.176041	0.034744	-0.18027	0.019116	-0.17204	0.015135	-0.166048	0.015827	-0.153684	0.014866
MOUNTAIN	-0.062824	0.043741	-0.077196	0.02689	-0.10617	0.021176	-0.10174	0.022089	-0.072478	0.020084
WKDOLD			0.01471	0.00484	0.0092	0.005071	-0.004436	0.004123	-0.007872	0.005904
WKDYNG			0.042176	0.02385	0.00973	0.018241	0.046236	0.025126	0.097976	0.040537
INTOLD			-0.841055	0.24415	-0.50724	0.259502	0.148383	0.210761	0.280275	0.29829
INTYNG			-0.090424	0.045605	0.03239	0.050472	-0.079196	0.046315	-0.114568	0.077107

Females **LNADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2879	Rsquare	0.3512	Rsquare	0.2944	Rsquare	0.291	Rsquare	0.3023
	MSE	35.72098	MSE	289.462	MSE	33.07481	MSE	33.65069	MSE	32.37329
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.59987	0.094454	0.985537	0.062365	0.990289	0.062471	1.098824	0.061404	1.076283	0.070598
PLNWK	0.335194	0.07484	0.082104	0.03921	0.096402	0.039975	0.115928	0.040071	0.130393	0.049393
PLNWKSQ	-0.08921	0.020087	0.018478	0.011152	0.0055	0.011093	0.002962	0.010462	-0.000682	0.01203
SPLED	0.048121	0.00494	0.061453	0.004046	0.05735	0.004509	0.042185	0.00461	0.044006	0.004472
SPLEDHS	0.05008	0.036795	-0.019487	0.028345	-0.05521	0.030327	-0.061095	0.031364	-0.023062	0.029846
SPLEDSC	0.063363	0.016688	0.028896	0.012684	0.020983	0.013654	0.03619	0.013661	0.045479	0.012953
SPLEDCD	0.223918	0.072547	0.194007	0.055143	0.171295	0.060123	0.319302	0.060818	0.332754	0.05807
SPLEDGW	0.106568	0.032905	0.144127	0.025825	0.138932	0.027563	0.159644	0.028126	0.164539	0.027166
PTIME	-0.271221	0.013177	-0.34563	0.010039	-0.32427	0.010825	-0.344882	0.011115	-0.338716	0.010595
HVY	0.027641	0.033973	-0.013419	0.027916	0.008936	0.028849	-0.015971	0.028005	-0.017413	0.025542
TNF	-0.153882	0.033854	-0.217701	0.027594	-0.164246	0.028356	-0.181285	0.027495	-0.197673	0.025214
SVS	-0.135156	0.033085	-0.210927	0.027123	-0.172001	0.027762	-0.164704	0.026859	-0.154883	0.024485
OLDER	-0.008267	0.019133	0.048927	0.016109	0.023108	0.016677	-0.001068	0.017818	-0.039375	0.019625
WKDOLD	0.317146	0.025191	-0.020011	0.004358	0.005286	0.006717				
WKDYNG			0.787249	0.220797	-0.039625	0.048475				
INTOLD					-0.423852	0.340211				
INTYNG					0.06294	0.102328				
LAMBDABA			-0.047634	0.030148	0.046648	0.030049	0.130487	0.022587	0.153801	0.021143

LNADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	.2942	Rsquare	0.3165	Rsquare	0.3276	Rsquare	0.3008	Rsquare	0.3099
	MSE	48.69010	MSE	34.67995	MSE	26.40001	MSE	27.96281	MSE	25.62101
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.795971	0.151576	1.035698	0.067993	1.12866	0.05374	1.300753	0.054898	1.177573	0.054536
PLNWK	0.300396	0.106972	0.023925	0.043533	0.05668	0.03533	0.106518	0.036434	0.133458	0.035802
PLNWKSQ	-0.029922	0.024945	0.025453	0.010792	0.01324	0.008565	0.008738	0.008822	0.003139	0.008694
SPLED	0.049106	0.00772	0.063069	0.004492	0.05388	0.003447	0.039693	0.003565	0.051665	0.003512
SPLEDHS	0.052889	0.051689	-0.055668	0.030749	-0.05305	0.023866	-0.090953	0.024591	-0.051547	0.022865
SPLEDSC	0.067039	0.022568	-0.0012	0.013379	0.019	0.010472	0.029984	0.010777	0.036565	0.009847
SPLEDCD	0.472486	0.100912	0.2818	0.0587	0.31386	0.045402	0.340842	0.046471	0.341536	0.043619
SPLEDGW	0.190159	0.047513	0.099219	0.027491	0.13499	0.02106	0.18277	0.021732	0.168152	0.020395
PTIME	-0.337042	0.018991	-0.305783	0.01094	-0.30119	0.008535	-0.298162	0.008808	-0.279334	0.008205
HVY	0.046358	0.043162	-0.021273	0.025564	-0.02546	0.020209	-0.056212	0.021506	-0.084853	0.018878
TNF	-0.16894	0.042445	-0.207581	0.025008	-0.20679	0.01976	-0.208982	0.021139	-0.196503	0.018587
SVS	-0.09695	0.041004	-0.155607	0.024142	-0.14388	0.019107	-0.171137	0.020502	-0.194047	0.018436
OLDER	-0.056287	0.037358	-0.035502	0.019095	-0.03231	0.015197	-0.025235	0.015527	-0.005061	0.013989
WKDOLD			0.01594	0.004883	0.01371	0.005117	-0.002036	0.004202	-0.004488	0.005968
WKDYNG			0.020907	0.024283	0.00037	0.018346	0.032242	0.025334	0.048159	0.040689
INTOLD			-0.824558	0.247562	-0.69255	0.26186	0.089399	0.213686	0.134517	0.300406
INTYNG			-0.109357	0.054362	-0.00798	0.054983	-0.079979	0.052634	-0.081882	0.080918
LAMBDABA	0.093355	0.036205	0.128136	0.021952	0.17304	0.014571	0.136915	0.016161	0.113026	0.015423

Females		LNADJST								
	1984		1985		1986		1987		1988	
	Rsquare	0.275	Rsquare	0.3159	Rsquare	0.2942	Rsquare	0.2891	Rsquare	0.3017
	MSE	36.04252	MSE	289.30301	MSE	33.07771	MSE	33.69487	MSE	32.38886
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.805067	0.093437	1.030404	0.062788	0.998296	0.062674	1.118001	0.061612	1.071571	0.070744
PLNWK	0.192602	0.074233	0.054191	0.039417	0.097036	0.040227	0.121802	0.040108	0.137797	0.049372
PLNWKSQ	-0.033849	0.019544	0.02399	0.010854	0.005615	0.011128	0.002946	0.010493	-0.002647	0.012037
SPLED	0.055416	0.004941	0.062482	0.003859	0.058888	0.004366	0.045469	0.004616	0.044869	0.004468
SPLEDHS	0.031076	0.03708	-0.019266	0.028319	-0.054518	0.03033	-0.062767	0.031409	-0.022932	0.029862
SPLEDSC	0.059063	0.016837	0.031574	0.012693	0.020995	0.013659	0.03602	0.013679	0.045213	0.012961
SPLEDCD	0.216082	0.073196	0.202608	0.055171	0.173279	0.060108	0.320217	0.060915	0.332415	0.058104
SPLEDGW	0.103617	0.033201	0.146966	0.025808	0.139172	0.027566	0.162574	0.028167	0.164076	0.027184
PTIME	-0.297015	0.013058	-0.348425	0.010005	-0.325238	0.010844	-0.348711	0.011169	-0.337181	0.010656
HVY	0.024563	0.034287	-0.011926	0.027897	0.008936	0.028854	-0.01534	0.028042	-0.014445	0.025545
TNF	-0.160013	0.034177	-0.21593	0.027577	-0.164032	0.028359	-0.178811	0.027527	-0.193331	0.025212
SVS	-0.140303	0.033382	-0.21067	0.027094	-0.171952	0.027768	-0.163894	0.026894	-0.152821	0.024492
OLDER	-0.015656	0.019313	0.047321	0.016107	0.022575	0.016682	-0.00825	0.017859	-0.042259	0.019617
WKDOLD	0.052678	0.007444	-0.01978	0.004244	0.004276	0.00667				
WKDYNG			0.766269	0.2172	-0.037845	0.048597				
INTOLD					-0.382897	0.338751				
INTYNG					0.059089	0.102598				
LAMBDAST			-0.066128	0.017797	0.020035	0.02235	0.067968	0.022079	0.135486	0.020469

LNADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2954	Rsquare	0.3155	Rsquare	0.3245	Rsquare	0.2991	Rsquare	0.3084
	MSE	48.64785	MSE	34.70726	MSE	26.46176	MSE	27.99596	MSE	25.64785
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.77385	0.151575	1.062365	0.067705	1.13934	0.054064	1.31609	0.055008	1.200158	0.054518
PLNWK	0.304907	0.106678	0.017195	0.043571	0.06656	0.035415	0.107568	0.036477	0.127949	0.03583
PLNWKSQ	-0.030899	0.024925	0.028621	0.010771	0.01325	0.008604	0.010006	0.008835	0.006625	0.008684
SPLED	0.047602	0.007685	0.066147	0.004427	0.0551	0.003477	0.041301	0.003576	0.054122	0.00351
SPLEDHS	0.053301	0.051643	-0.059027	0.030767	-0.05722	0.023921	-0.094427	0.024617	-0.053587	0.022887
SPLEDSC	0.06548	0.022542	-0.002293	0.013387	0.01824	0.010496	0.029306	0.010789	0.036844	0.009857
SPLEDCD	0.466467	0.100814	0.281242	0.05875	0.31351	0.045511	0.343241	0.046526	0.346867	0.043658
SPLEDGW	0.188386	0.047439	0.099372	0.027515	0.13511	0.021112	0.184502	0.021757	0.171498	0.02041
PTIME	-0.331287	0.019126	-0.308451	0.010943	-0.30333	0.008598	-0.299271	0.00887	-0.281926	0.008252
HVY	0.049277	0.043119	-0.021126	0.025584	-0.02432	0.020257	-0.056953	0.021531	-0.083328	0.018896
TNF	-0.166877	0.042396	-0.206181	0.025026	-0.20505	0.019807	-0.208371	0.021164	-0.194711	0.018606
SVS	-0.096327	0.040965	-0.155415	0.024162	-0.14438	0.019151	-0.171972	0.020526	-0.19403	0.018457
OLDER	-0.060565	0.036657	-0.04035	0.019145	-0.05118	0.015065	-0.032869	0.015539	-0.013918	0.013976
WKDOLD			0.013534	0.004849	0.01178	0.00513	-0.004164	0.004194	-0.007282	0.005961
WKDYNG			0.021039	0.024306	-0.0006	0.018389	0.031326	0.025365	0.047601	0.040732
INTOLD			-0.727882	0.246587	-0.60388	0.262365	0.182288	0.213387	0.249176	0.300257
INTYNG			-0.109896	0.054428	-0.00143	0.055106	-0.07804	0.0527	-0.081766	0.081005
LAMBDAST	0.120272	0.034219	0.074859	0.017304	0.13254	0.015718	0.09751	0.016206	0.061723	0.014356

Females **HECADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2837	Rsquare	0.307	Rsquare	0.2874	Rsquare	0.2899	Rsquare	0.2995
	MSE	35.81972	MSE	291.1559	MSE	33.23383	MSE	33.67074	MSE	32.43563
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.236834	0.050444	1.390275	0.041372	1.361267	0.045739	1.271254	0.043024	1.378007	0.041495
S12	0.180813	0.018519	0.224268	0.015245	0.195008	0.016599	0.191429	0.017185	0.208037	0.016495
S13T15	0.329605	0.02194	0.391112	0.018187	0.372617	0.019597	0.359115	0.019525	0.36861	0.018655
RS16UP	0.501823	0.023689	0.625146	0.021158	0.608979	0.023253	0.58158	0.022063	0.601889	0.020884
PHECWK	0.013151	0.00583	0.031496	0.003528	0.037173	0.004169	0.046362	0.004541	0.032481	0.004848
PHECWKSQ	-0.000674	0.000224	-0.000602	0.000136	-0.000954	0.000174	-0.001322	0.000181	-0.000801	0.000189
PTIME	-0.271562	0.013187	-0.341938	0.010083	-0.322525	0.010867	-0.338735	0.01114	-0.330968	0.010622
HVY	0.042033	0.03412	-0.003785	0.028089	0.017108	0.029017	-0.001291	0.028055	-0.016289	0.025604
TNF	-0.140904	0.03394	-0.208299	0.02776	-0.152485	0.028511	-0.165439	0.027528	-0.190623	0.025291
SVS	-0.119938	0.033166	-0.194929	0.027282	-0.161304	0.02791	-0.148569	0.026875	-0.147014	0.024536
OLDER	0.045526	0.028504	-0.011906	0.022028	-0.006714	0.025782	0.037633	0.02725	0.000422	0.027933
WKDOLD	0.320335	0.022713	-0.019477	0.004345	0.013473	0.006974				
WKDYNG			0.792415	0.22136	-0.025282	0.048716				
INTOLD					-0.781446	0.347507				
INTYNG					0.064114	0.099028				
LAMBDABA		0.054742	0.026892	0.095959	0.028677	0.170722	0.021756	0.184079	0.020811	

HECADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	0.2922	Rsquare	0.3182	Rsquare	0.3256	Rsquare	0.296	Rsquare	0.3032
	MSE	48.74404	MSE	34.63331	MSE	26.43729	MSE	28.05498	MSE	25.74353
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.341998	0.070966	1.407842	0.040094	1.47277	0.031355	1.561277	0.033398	1.560096	0.031772
S12	0.220869	0.028879	0.254769	0.01709	0.2017	0.013371	0.154092	0.014144	0.192352	0.013581
S13T15	0.378129	0.031861	0.403765	0.019303		0.014847	0.317169	0.015749	0.362275	0.014917
RS16UP	0.654508	0.034888	0.700817	0.021428	0.64362	0.016128	0.579169	0.01752	0.639382	0.016553
PHECWK	0.040219	0.008872	0.032069	0.003869	0.03015	0.003148	0.031672	0.003247	0.036317	0.003449
PHECWKSQ	-0.000992	0.000338	-0.00075	0.000136	-0.00072	0.00011	-0.000674	0.000113	-0.000847	0.000123
PTIME	-0.327529	0.019037	-0.302345	0.01091	-0.29982	0.008543	-0.298158	0.00883	-0.277313	0.00824
HVY	0.037724	0.043173	-0.01275	0.025551	-0.01605	0.020253	-0.052008	0.021584	-0.087496	0.01897
TNF	-0.174589	0.042459	-0.195607	0.024991	-0.19299	0.019803	-0.201296	0.021216	-0.196068	0.018673
SVS	-0.09227	0.041008	-0.1446	0.024101	-0.1294	0.019127	-0.160265	0.020564	-0.188146	0.018519
OLDER	-0.003909	0.052538	-0.00757	0.025797	0.00808	0.020397	-0.004594	0.020837	0.023102	0.020038
WKDOLD			0.022943	0.005041	0.01912	0.005292	0.002733	0.004214	0.001105	0.006034
WKDYNG			0.044175	0.024025	0.01001	0.018353	0.055816	0.025326	0.07923	0.040868
INTOLD			-1.099408	0.250268	-0.88759	0.26653	-0.10752	0.213757	-0.068712	0.302154
INTYNG			-0.105328	0.045737	0.02164	0.050695	-0.135258	0.046187	-0.138799	0.077477
LAMBDABA	0.138347	0.034983	0.158281	0.021431	0.19539	0.01441	0.167157	0.016056	0.15465	0.015219

Females **HECADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2688	Rsquare	0.3071	Rsquare	0.2869	Rsquare	0.287	Rsquare	0.2987
	MSE	36.19131	MSE	291.13832	MSE	33.24607	MSE	33.74086	MSE	32.45415
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.37665	0.050222	1.465225	0.040635	1.397894	0.044151	1.322935	0.042691	1.386985	0.041471
S12	0.21087	0.018589	0.239832	0.014686	0.205222	0.016135	0.203905	0.017256	0.210447	0.016514
S13T15	0.377456	0.021812	0.418268	0.017221	0.387529	0.018798	0.378314	0.019686	0.371813	0.018712
RS16UP	0.572703	0.02321	0.669565	0.019025	0.633601	0.021366	0.612714	0.022336	0.607819	0.020934
PHECWK	0.019554	0.005983	0.032679	0.003463	0.038353	0.004158	0.047439	0.004612	0.032714	0.004866
PHECWKSQ	-0.000714	0.000229	-0.000624	0.000136	-0.000991	0.000174	-0.001343	0.000182	-0.000827	0.000189
PTIME	-0.2979	0.013109	-0.347742	0.010065	-0.324278	0.010883	-0.342601	0.011195	-0.32902	0.010673
HVY	0.037885	0.034483	-0.00134	0.028086	0.017173	0.02903	-2.06E-05	0.028113	-0.012975	0.025611
TNF	-0.149329	0.034314	-0.204114	0.027761	-0.151573	0.02852	-0.161629	0.027579	-0.185733	0.025289
SVS	-0.123142	0.033513	-0.191573	0.027266	-0.160928	0.027924	-0.146481	0.026929	-0.144679	0.024544
OLDER	0.022171	0.028739	-0.013312	0.022027	-0.007436	0.025808	0.028933	0.027294	0.002267	0.02796
WKDOLD	0.062766	0.007328	-0.022519	0.00425	0.01166	0.006942				
WKDYNG			0.904453	0.218304	-0.021118	0.048856				
INTOLD					-0.706099	0.346422				
INTYNG					0.057664	0.099684				
LAMBDAST			-0.038082	0.016408	0.045048	0.021339	0.104053	0.021426	0.165627	0.020173

HECADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2934	Rsquare	0.3165	Rsquare	0.3222	Rsquare	0.294	Rsquare	0.3008
	MSE	48.70364	MSE	34.67661	MSE	26.50526	MSE	28.09677	MSE	25.78703
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.309884	0.072167	1.455486	0.03897	1.48012	0.031902	1.579555	0.033552	1.588304	0.031766
S12	0.219051	0.028756	0.268383	0.016887	0.2082	0.013448	0.16037	0.014187	0.203434	0.013567
S13T15	0.371919	0.031852	0.424925	0.018847	0.36127	0.014989	0.327556	0.015823	0.380268	0.014869
RS16UP	0.644223	0.034955	0.733506	0.020407	0.65645	0.016503	0.596943	0.017634	0.669028	0.016374
PHECWK	0.042301	0.008656	0.034343	0.003873	0.03394	0.003135	0.033846	0.003261	0.039615	0.003455
PHECWKSQ	-0.001068	0.000331	-0.000815	0.000136	-0.00084	0.00011	-0.000738	0.000113	-0.000938	0.000124
PTIME	-0.32186	0.019164	-0.305573	0.010921	-0.30142	0.008603	-0.29863	0.008892	-0.279511	0.008292
HVY	0.041579	0.043147	-0.012691	0.025583	-0.01443	0.020305	-0.052859	0.021616	-0.085835	0.019002
TNF	-0.171736	0.042424	-0.193614	0.02502	-0.19052	0.019853	-0.200379	0.021247	-0.193619	0.018704
SVS	-0.09138	0.040973	-0.143788	0.024131	-0.12934	0.019177	-0.160856	0.020594	-0.18768	0.018551
OLDER	-0.004338	0.052493	-0.006802	0.025852	0.00168	0.020436	-0.005929	0.02087	0.020637	0.02007
WKDOLD			0.02056	0.005028	0.01882	0.00531	0.00076	0.00421	-0.001609	0.006035
WKDYNG			0.044651	0.024057	0.0099	0.0184	0.055767	0.025365	0.079622	0.040937
INTOLD			-1.000154	0.249978	-0.85758	0.267264	-0.013354	0.213609	0.048099	0.302309
INTYNG			-0.098892	0.045788	0.02774	0.050848	-0.131763	0.046278	-0.129994	0.077608
LAMBDAST	0.153216	0.033351	0.094124	0.017149	0.15997	0.01548	0.128497	0.016113	0.097415	0.014315

Females **LVLADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2891	Rsquare	0.3121	Rsquare	0.2918	Rsquare	0.2901	Rsquare	0.3028
	MSE	35.68952	MSE	290.11343	MSE	33.13535	MSE	33.67123	MSE	32.36224
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.79105	0.075027	0.880608	0.058757	0.859012	0.061805	0.817033	0.064797	0.802681	0.066967
PLINWK	0.0233	0.006792	0.03429	0.004459	0.042758	0.005327	0.051336	0.005695	0.043558	0.005462
PLINWKSQ	-0.001147	0.000257	-0.000709	0.000175	-0.001264	0.000227	-0.001508	0.000226	-0.001162	0.0002
SPLED	0.047258	0.005001	0.066137	0.004081	0.064006	0.004496	0.055226	0.00459	0.060656	0.004508
SPLEDHS	0.039846	0.03641	0.002771	0.028302	-0.039805	0.030285	-0.007365	0.030945	0.020448	0.02957
SPLEDSC	0.054169	0.016562	0.036334	0.012666	0.025472	0.01346	0.039421	0.013539	0.044071	0.012917
SPLEDCD	0.196535	0.072366	0.195299	0.055375	0.164756	0.060073	0.289182	0.060677	0.291723	0.0579
SPLEDGW	0.096884	0.032768	0.142445	0.025766	0.131307	0.027385	0.129438	0.02794	0.129209	0.027037
PTIME	-0.270572	0.013158	-0.344248	0.010035	-0.324938	0.010839	-0.343436	0.011136	-0.338915	0.010586
HVY	0.026126	0.033942	-0.016022	0.027959	0.008024	0.028898	-0.014664	0.028018	-0.014775	0.025543
TNF	-0.156194	0.033828	-0.222083	0.027643	-0.165035	0.028407	-0.178184	0.027525	-0.19196	0.025238
SVS	-0.135806	0.033056	-0.212648	0.027175	-0.174023	0.027812	-0.16348	0.026876	-0.152549	0.024478
OLDER	0.083077	0.026666	0.022737	0.021661	0.037443	0.027663	0.046961	0.027775	0.024048	0.026522
WKDOLD	0.335347	0.024171	-0.016771	0.004327	0.013311	0.006916				
WKDYNG			0.622448	0.22003	-0.042994	0.048574				
INTOLD					-0.786678	0.345579				
INTYNG					0.086497	0.099977				
LAMBDABA		-0.030894	0.029122	0.033042	0.030082	0.134786	0.022557	0.14808	0.021253	

LVLADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	.2937	Rsquare	0.3151	Rsquare	0.3264	Rsquare	0.2989	Rsquare	0.3083
	MSE	48.70794	MSE	34.71663	MSE	26.42342	MSE	28.00061	MSE	25.64973
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.751097	0.119065	0.837068	0.062921	0.94687	0.04867	1.135775	0.051726	1.020721	0.049869
PLINWK	0.053905	0.010137	0.032464	0.004829	0.03346	0.003521	0.037464	0.003686	0.041493	0.003668
PLINWKSQ	-0.00139	0.000357	-0.000754	0.000171	-0.00085	0.000121	-0.000854	0.000126	-0.001014	0.000129
SPLED	0.056598	0.007815	0.069854	0.004533	0.06151	0.003467	0.048619	0.003616	0.060769	0.003543
SPLEDHS	0.068035	0.051672	0.00176	0.030146	-0.01143	0.023584	-0.054106	0.024418	-0.018732	0.022738
SPLEDSC	0.07005	0.022579	0.012123	0.013229	0.02811	0.010383	0.038154	0.010714	0.040228	0.00982
SPLEDCD	0.472098	0.101005	0.281235	0.058694	0.31278	0.045384	0.347769	0.046413	0.333874	0.043585
SPLEDGW	0.180322	0.047587	0.092824	0.027473	0.12725	0.021005	0.172837	0.021672	0.149522	0.020374
PTIME	-0.335521	0.018999	-0.303673	0.010934	-0.30144	0.008534	-0.298725	0.00881	-0.280328	0.008206
HVY	0.043443	0.043192	-0.024888	0.025586	-0.02785	0.020222	-0.055742	0.021533	-0.085353	0.018898
TNF	-0.170767	0.042484	-0.208895	0.025039	-0.20662	0.019784	-0.207604	0.021177	-0.196596	0.01861
SVS	-0.09852	0.04104	-0.157598	0.024166	-0.14439	0.019123	-0.171338	0.020529	-0.193994	0.018457
OLDER	0.022151	0.049888	-0.010464	0.026443	0.02776	0.019949	0.006999	0.02001	0.035866	0.018343
WKDOLD			0.0196	0.004953	0.01839	0.005154	0.001049	0.004195	-0.002567	0.005971
WKDYNG			0.026763	0.024043	0.00333	0.018335	0.041918	0.025262	0.058983	0.040692
INTOLD			-0.980885	0.248961	-0.8667	0.262639	-0.034317	0.213748	0.072962	0.30099
INTYNG			-0.086685	0.047825	0.0261	0.051525	-0.095358	0.047374	-0.090557	0.078089
LAMBDABA	0.114427	0.03543	0.141719	0.021844	0.17736	0.014597	0.143075	0.016197	0.121762	0.015324

Females **LVLADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.274	Rsquare	0.3133	Rsquare	0.2917	Rsquare	0.288	Rsquare	0.302
	MSE	36.0676	MSE	289.84506	MSE	33.13754	MSE	33.72117	MSE	32.38165
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.86989	0.076521	0.935606	0.059677	0.871157	0.061954	0.82552	0.064873	0.80207	0.067013
PLINWK	0.024724	0.006954	0.029958	0.004564	0.042793	0.005341	0.053864	0.005734	0.04427	0.005478
PLINWKSQ	-0.000897	0.000261	-0.000554	0.000177	-0.001262	0.000227	-0.001584	0.000227	-0.001196	0.0002
SPLED	0.057212	0.004989	0.068368	0.003856	0.065986	0.004329	0.059581	0.004607	0.061882	0.004513
SPLEDHS	0.040022	0.036804	0.002692	0.028276	-0.039324	0.030284	-0.006428	0.030991	0.020427	0.029589
SPLEDSC	0.057717	0.016735	0.040345	0.012685	0.025889	0.013468	0.039451	0.013562	0.043617	0.012926
SPLEDCD	0.203655	0.07313	0.210879	0.055403	0.167243	0.060058	0.288774	0.060784	0.290181	0.057938
SPLEDGW	0.09909	0.033116	0.147583	0.025769	0.131985	0.027394	0.131251	0.027985	0.128275	0.027054
PTIME	-0.297914	0.013069	-0.348408	0.010005	-0.326667	0.01085	-0.347807	0.011187	-0.337952	0.010646
HVY	0.022115	0.034309	-0.01399	0.027933	0.008273	0.028901	-0.01396	0.02806	-0.01196	0.025549
TNF	-0.163542	0.034204	-0.219324	0.02762	-0.164615	0.02841	-0.175543	0.027561	-0.187904	0.025237
SVS	-0.140846	0.033406	-0.212017	0.027141	-0.173692	0.027817	-0.162568	0.026915	-0.150509	0.024487
OLDER	0.036146	0.026677	0.014052	0.021593	0.035674	0.027688	0.042121	0.027855	0.024537	0.02655
WKDOLD	0.058956	0.007342	-0.017236	0.004245	0.012235	0.006875				
WKDYNG			0.617203	0.217898	-0.044024	0.048696				
INTOLD					-0.746412	0.344282				
INTYNG					0.091145	0.100487				
LAMBDAST			-0.077857	0.017331	-3.89E-05	0.022153	0.065542	0.02221	0.126138	0.020677

LVLADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2948	Rsquare	0.3137	Rsquare	0.3231	Rsquare	0.279	Rsquare	0.3066
	MSE	48.67019	MSE	34.75315	MSE	26.48797	MSE	28.03706	MSE	25.68158
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.724395	0.118759	0.849181	0.062966	0.93785	0.048823	1.135385	0.051798	1.02225	0.049931
PLINWK	0.055558	0.009955	0.034293	0.004863	0.03766	0.003502	0.03992	0.003689	0.044092	0.003673
PLINWKSQ	-0.001447	0.000352	-0.000801	0.000172	-0.00097	0.00012	-0.000921	0.000126	-0.001077	0.000129
SPLED	0.055754	0.007741	0.073792	0.004454	0.06363	0.003498	0.050875	0.003629	0.064044	0.003539
SPLEDHS	0.068646	0.051632	0.001875	0.030178	-0.01154	0.023642	-0.055611	0.024449	-0.018246	0.022766
SPLEDSC	0.06814	0.022558	0.012047	0.013244	0.0281	0.010408	0.037994	0.010728	0.041132	0.009832
SPLEDCD	0.464287	0.100905	0.281092	0.058758	0.31131	0.045501	0.350716	0.046475	0.340387	0.04363
SPLEDGW	0.177585	0.04751	0.093159	0.027502	0.12623	0.021059	0.174304	0.0217	0.152492	0.020394
PTIME	-0.330061	0.019136	-0.306715	0.010943	-0.30374	0.008594	-0.299924	0.008872	-0.283163	0.008256
HVY	0.046632	0.043159	-0.02519	0.025612	-0.02698	0.020272	-0.056623	0.021561	-0.083857	0.018921
TNF	-0.168532	0.042446	-0.207687	0.025064	-0.20484	0.019833	-0.207029	0.021204	-0.194754	0.018632
SVS	-0.097908	0.041007	-0.157594	0.024192	-0.14492	0.019169	-0.172305	0.020556	-0.194007	0.018481
OLDER	0.021164	0.049832	-0.012401	0.026475	0.01944	0.019981	0.004314	0.020049	0.030585	0.018352
WKDOLD			0.017074	0.004928	0.01713	0.005171	-0.001063	0.004189	-0.005456	0.005967
WKDYNG			0.0265	0.024071	0.00271	0.01838	0.041138	0.025296	0.058398	0.040743
INTOLD			-0.87998	0.248347	-0.80126	0.263273	0.060518	0.213497	0.192215	0.300978
INTYNG			-0.080794	0.047905	0.03659	0.051658	-0.088964	0.047453	-0.081606	0.078185
LAMBDAST	0.133404	0.03385	0.080896	0.01742	0.13627	0.015778	0.101583	0.016276	0.066434	0.01437

Females **LAGADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2867	Rsquare	3183	Rsquare	0.2881	Rsquare	0.2777	Rsquare	0.292
	MSE	35.75083	MSE	288.7999	MSE	33.22129	MSE	33.96416	MSE	32.6111
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.908535	0.061054	1.078752	0.049669	1.11921	0.054029	1.178594	0.055188	1.160469	0.053
LAST5	0.005903	0.002022	0.02302	0.002052	0.014806	0.00178	0.007001	0.002282	0.002155	0.002191
LASTSQ	-8.75E-05	4.447E-05	-0.000237	9.645E-05	-0.000336	7.317E-05	-0.000209	7.508E-05	-4.62E-05	7.01E-05
SPLED	0.052679	0.005105	0.064982	0.004044	0.059538	0.004517	0.053511	0.004778	0.055475	0.004604
SPLEDHS	0.032153	0.036465	0.003236	0.028175	-0.037929	0.030364	-0.003904	0.031184	0.021499	0.029798
SPLEDSC	0.054993	0.016582	0.044078	0.01262	0.030432	0.013497	0.040389	0.013657	0.041287	0.01301
SPLEDCD	0.207299	0.072476	0.23797	0.055152	0.17615	0.060236	0.276918	0.06112	0.255024	0.05811
SPLEDGW	0.094354	0.032801	0.154595	0.025612	0.149518	0.027404	0.147332	0.028154	0.138615	0.02719
PTIME	-0.271651	0.013162	-0.338547	0.010001	-0.326594	0.010868	-0.349383	0.011248	-0.343334	0.010687
HVY	0.029873	0.033995	-0.013889	0.027835	0.003969	0.028971	-0.024107	0.028255	-0.030387	0.025704
TNF	-0.150183	0.033859	-0.225382	0.02751	-0.176275	0.028461	-0.200524	0.027711	-0.218409	0.025334
SVS	-0.135892	0.033116	-0.237508	0.027135	-0.175804	0.027888	-0.166577	0.027109	-0.160157	0.024658
OLDER	-0.049039	0.020528	-0.054564	0.018681	0.035735	0.017415	0.086702	0.017854	0.061793	0.01716
WKDOLD	0.220689	0.028865	-0.016793	0.004305	0.008798	0.006745				
WKDYNG			0.609247	0.218645	-0.031238	0.04868				
INTOLD					-0.666165	0.341625				
INTYNG					-0.115654	0.097341				
LAMBDABA		-0.040898	0.027971	0.066188	0.030182	0.144707	0.031574	0.194438	0.03065	

LAGADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	.2796	Rsquare	0.3083	Rsquare	0.3193	Rsquare	0.2861	Rsquare	0.2945
	MSE	49.19102	MSE	34.88866	MSE	26.56398	MSE	28.25405	MSE	25.90447
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.201562	0.094043	1.101189	0.054994	1.19464	0.042337	1.415417	0.044145	1.331546	0.042948
LAST5	-0.005076	0.003686	0.011754	0.002113	0.00605	0.001716	0.001448	0.001699	0.001151	0.001544
LASTSQ	0.000163	0.000115	-0.000321	6.949E-05	-0.00016	5.259E-05	-2.06E-05	5.663E-05	1.661E-06	5.088E-05
SPLED	0.045326	0.00794	0.071322	0.00461	0.06077	0.003517	0.046003	0.003652	0.057808	0.00361
SPLEDHS	0.066925	0.052181	0.020054	0.030193	0.00137	0.023637	-0.030853	0.024567	-0.001088	0.022926
SPLEDSC	0.068935	0.022799	0.015851	0.013288	0.0291	0.010434	0.036734	0.010809	0.037332	0.009917
SPLEDCD	0.434333	0.101876	0.268923	0.058952	0.29948	0.045603	0.314743	0.046797	0.303144	0.043971
SPLEDGW	0.208611	0.047934	0.105471	0.027594	0.13386	0.021125	0.172205	0.021876	0.151791	0.02057
PTIME	-0.33484	0.019275	-0.310937	0.010992	-0.30622	0.008575	-0.304623	0.008893	-0.287248	0.008288
HVY	0.03443	0.043581	-0.034621	0.025694	-0.03348	0.02032	-0.063565	0.021721	-0.092455	0.019082
TNF	-0.189845	0.042795	-0.224931	0.025109	-0.22079	0.019858	-0.228947	0.021326	-0.212707	0.018773
SVS	-0.102792	0.041413	-0.162384	0.024279	-0.14723	0.019227	-0.173061	0.020715	-0.198955	0.018641
OLDER	0.056943	0.030878	0.062464	0.018988	0.06278	0.014366	0.074706	0.014868	0.085295	0.013452
WKDOLD			0.017019	0.004947	0.01636	0.005172	0.004742	0.004256	0.002647	0.006067
WKDYNG			0.032279	0.024153	0.00684	0.018431	0.051272	0.025486	0.06752	0.041094
INTOLD			-0.863961	0.250299	-0.79088	0.26437	-0.193518	0.216194	-0.167891	0.305068
INTYNG			-0.254603	0.043506	-0.15474	0.049182	-0.324354	0.044783	-0.34788	0.076988
LAMBDABA	0.249487	0.049629	0.106695	0.028689	0.18977	0.020865	0.214272	0.021205	0.189889	0.020085

Females **LAGADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2806	Rsquare	0.3194	Rsquare	0.2877	Rsquare	0.2771	Rsquare	0.2924
	MSE	35.90318	MSE	288.56735	MSE	33.22996	MSE	33.97824	MSE	32.60374
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.953879	0.061179	1.103988	0.049672	1.147133	0.053622	1.18962	0.055094	1.161442	0.052904
LAST5	0.013469	0.001829	0.021376	0.002037	0.014663	0.001785	0.011213	0.001847	0.005812	0.001805
LASTSQ	-0.000202	4.273E-05	-0.000181	9.705E-05	-0.000335	7.338E-05	-0.000335	6.478E-05	-0.000158	6.104E-05
SPLED	0.062205	0.004995	0.066746	0.003835	0.063785	0.004355	0.056418	0.004663	0.056792	0.004495
SPLEDHS	0.033533	0.036625	0.003697	0.028152	-0.037054	0.030369	-0.004228	0.0312	0.020625	0.029793
SPLEDSC	0.056197	0.016654	0.047435	0.012635	0.031375	0.013507	0.039998	0.013666	0.040658	0.013008
SPLEDCD	0.210676	0.072784	0.249027	0.055151	0.180754	0.060237	0.276857	0.061154	0.256921	0.058091
SPLEDGW	0.099432	0.032933	0.158894	0.025612	0.151269	0.027413	0.148152	0.028168	0.138102	0.027185
PTIME	-0.284614	0.013092	-0.341865	0.009978	-0.33056	0.010868	-0.350736	0.011266	-0.340928	0.010729
HVY	0.025824	0.034141	-0.012597	0.027812	0.004522	0.028981	-0.024462	0.028267	-0.027508	0.025696
TNF	-0.155172	0.034014	-0.223041	0.027492	-0.175472	0.02847	-0.198845	0.027726	-0.213946	0.025331
SVS	-0.138656	0.033258	-0.237014	0.027111	-0.174964	0.027897	-0.166337	0.02712	-0.158598	0.02465
OLDER	-0.063526	0.020515	-0.053674	0.018658	0.034696	0.017463	0.089704	0.017884	0.062645	0.017159
WKDOLD	0.022522	0.008164	-0.017033	0.004226	0.006641	0.006705				
WKDYNG			0.604948	0.21629	-0.033936	0.048819				
INTOLD					-0.585512	0.340402				
INTYNG					-0.105724	0.098084				
LAMBDAST			-0.073317	0.016944	-0.004327	0.022218	0.090355	0.024629	0.160981	0.024129

LAGADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2793	Rsquare	0.3074	Rsquare	0.3176	Rsquare	0.284	Rsquare	0.2917
	MSE	49.20078	MSE	34.91204	MSE	26.59602	MSE	28.29574	MSE	25.95596
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.20738	0.093939	1.135155	0.054767	1.21129	0.042387	1.434344	0.044211	1.358886	0.043018
LAST5	0.001892	0.002896	0.015582	0.002201	0.01244	0.00139	0.006144	0.001547	0.006372	0.001469
LASTSQ	-6.34E-05	9.474E-05	-0.000427	7.061E-05	-0.00034	4.503E-05	-0.000159	5.278E-05	-0.000144	4.869E-05
SPLED	0.047956	0.007794	0.076055	0.004499	0.06327	0.003513	0.049101	0.003646	0.063619	0.003592
SPLEDHS	0.06612	0.05219	0.020071	0.030213	0.00194	0.023665	-0.032123	0.024603	0.000245	0.022971
SPLEDSC	0.066187	0.022803	0.016116	0.013298	0.02919	0.010446	0.036358	0.010825	0.038173	0.009937
SPLEDCD	0.423522	0.101898	0.270788	0.059	0.30255	0.045656	0.320539	0.046858	0.311971	0.04405
SPLEDGW	0.20414	0.047931	0.107784	0.027618	0.1357	0.02115	0.17542	0.021903	0.156583	0.020603
PTIME	-0.33302	0.019361	-0.315607	0.011001	-0.30693	0.008627	-0.305366	0.008963	-0.291936	0.008351
HVY	0.039459	0.043599	-0.035782	0.025711	-0.0318	0.020346	-0.064372	0.021752	-0.090457	0.019119
TNF	-0.186822	0.042812	-0.224444	0.025125	-0.21799	0.019883	-0.228831	0.021359	-0.210825	0.018813
SVS	-0.100677	0.041422	-0.161863	0.024296	-0.14588	0.01925	-0.173639	0.020746	-0.198256	0.018678
OLDER	0.062855	0.030907	0.063235	0.019025	0.06148	0.014381	0.078541	0.014891	0.089037	0.013485
WKDOLD			0.01378	0.004894	0.01368	0.005159	0.001546	0.004235	-0.002516	0.006054
WKDYNG			0.031273	0.024173	0.00608	0.018453	0.050283	0.025524	0.066631	0.041176
INTOLD			-0.73615	0.248635	-0.6637	0.263837	-0.04977	0.215453	0.050893	0.304753
INTYNG			-0.250962	0.043546	-0.14756	0.049229	-0.31935	0.044843	-0.343611	0.077141
LAMBDAST	0.192485	0.039322	0.021408	0.024144	0.12518	0.01831	0.147324	0.019385	0.086595	0.018256

Females **SCVADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2855	Rsquare	0.3124	Rsquare	0.2926	Rsquare	0.2907	Rsquare	0.3014
	MSE	35.7781	MSE	290.02489	MSE	33.11507	MSE	33.65449	MSE	32.39325
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.927624	0.065339	0.941963	0.05142	1.030778	0.054683	1.138281	0.054562	1.11384	0.052607
PSLNWK	-0.006868	0.018412	0.155519	0.010192	0.121696	0.009743	0.137713	0.010362	0.12531	0.011093
SPLED	0.048513	0.004944	0.061078	0.004047	0.05768	0.004509	0.039037	0.004625	0.043599	0.004487
SPLEDHS	0.035012	0.036673	-0.018769	0.028336	-0.056048	0.030283	-0.064908	0.031238	-0.023977	0.029861
SPLEDSC	0.054734	0.0166	0.030797	0.01266	0.016109	0.01348	0.034831	0.013538	0.043706	0.012924
SPLEDCD	0.204113	0.072524	0.189295	0.055234	0.1487	0.059968	0.316321	0.060629	0.322368	0.058019
SPLEDGW	0.094249	0.032844	0.142095	0.025758	0.130388	0.027361	0.159173	0.02791	0.162362	0.027091
PTIME	-0.272414	0.01317	-0.344333	0.010025	-0.323352	0.01084	-0.337756	0.011136	-0.33554	0.010609
HVY	0.030001	0.034021	-0.011023	0.027958	0.009412	0.02888	-0.015752	0.028	-0.020018	0.025546
TNF	-0.151783	0.033893	-0.218205	0.02765	-0.165465	0.028387	-0.186112	0.027479	-0.202623	0.025201
SVS	-0.135342	0.033138	-0.205908	0.027174	-0.171051	0.027795	-0.16603	0.026861	-0.155566	0.024494
OLDER	-0.021858	0.020171	0.018652	0.01657	-0.027411	0.018171	-0.05251	0.019345	-0.052914	0.018929
WKDOLD	0.292861	0.023714	-0.015106	0.00432	0.009431	0.006718				
WKDYNG			0.504173	0.219442	-0.055474	0.048568				
INTOLD					-0.692085	0.340275				
INTYNG			-0.039858	0.028475	0.058651	0.098555				
LAMBDABA				0.018967	0.030116	0.131697	0.022569	0.14765	0.021391	

SCVADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	.2942	Rsquare	0.3151	Rsquare	0.3199	Rsquare	0.2968	Rsquare	0.3073
	MSE	48.68171	MSE	34.7135	MSE	26.55094	MSE	28.04144	MSE	25.6675
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.980827	0.096777	0.975882	0.055094	1.17918	0.042208	1.313342	0.044229	1.209711	0.043068
PSLNWK	0.175691	0.021001	0.130227	0.011342	0.0344	0.006674	0.138173	0.009129	0.14945	0.008412
SPLED	0.047753	0.007668	0.059495	0.004523	0.05864	0.003452	0.037142	0.003598	0.049392	0.003532
SPLEDHS	0.050213	0.051669	-0.05137	0.030724	-0.01109	0.023737	-0.089173	0.024688	-0.05542	0.022923
SPLEDSC	0.065366	0.022567	0.001042	0.013286	0.02714	0.010434	0.028881	0.01074	0.033758	0.009828
SPLEDCD	0.457805	0.100835	0.278642	0.058654	0.3003	0.045569	0.330982	0.04643	0.328048	0.043576
SPLEDGW	0.185624	0.047513	0.102007	0.027448	0.13573	0.02112	0.181387	0.02171	0.164773	0.020393
PTIME	-0.333786	0.018992	-0.302416	0.010937	-0.30511	0.008567	-0.296782	0.00883	-0.278852	0.008216
HVY	0.040926	0.043136	-0.02026	0.025586	-0.03333	0.02031	-0.057532	0.021561	-0.085003	0.018911
TNF	-0.175082	0.042387	-0.209254	0.025029	-0.21988	0.019847	-0.213172	0.021191	-0.199467	0.018616
SVS	-0.099445	0.040979	-0.154705	0.024168	-0.14689	0.019216	-0.17124	0.020558	-0.195374	0.018469
OLDER	-0.097155	0.034437	-0.060087	0.020029	0.037	0.013779	-0.057929	0.01643	-0.042501	0.014577
WKDOLD			0.01723	0.004878	0.01743	0.005139	0.001626	0.0042	-0.002337	0.005972
WKDYNG			0.050395	0.024069	0.00629	0.018422	0.052485	0.025292	0.037383	0.040753
INTOLD			-0.926944	0.247233	-0.83057	0.263189	-0.127339	0.213633	-0.019893	0.300596
INTYNG			-0.147741	0.044598	-0.1354	0.049426	-0.178319	0.045385	-0.106909	0.077448
LAMBDABA	0.078038	0.03686	0.145464	0.021649	0.19051	0.017408	0.153104	0.016136	0.115801	0.015496

Females **SCVADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2735	Rsquare	0.3136	Rsquare	0.2925	Rsquare	0.2888	Rsquare	0.3007
	MSE	36.07605	MSE	289.77694	MSE	33.11577	MSE	33.70051	MSE	32.41028
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.951334	0.066548	0.973243	0.05186	1.038305	0.054571	1.16065	0.054655	1.117515	0.052659
PSLNWK	0.053357	0.017935	0.148277	0.009666	0.122149	0.009725	0.144093	0.010519	0.124889	0.011256
SPLED	0.055243	0.004945	0.063191	0.003864	0.058892	0.004369	0.042334	0.004624	0.044564	0.004481
SPLEDHS	0.026344	0.036968	-0.017508	0.028312	-0.055831	0.030281	-0.066777	0.031283	-0.02402	0.029879
SPLEDSC	0.054933	0.016743	0.034591	0.012681	0.016358	0.013491	0.034598	0.013558	0.043327	0.012932
SPLEDCD	0.202427	0.073129	0.201669	0.055256	0.150165	0.059955	0.317129	0.060736	0.321826	0.058059
SPLEDGW	0.097213	0.033118	0.147191	0.025764	0.130819	0.02737	0.162163	0.027959	0.161632	0.027113
PTIME	-0.294973	0.013085	-0.347852	0.01	-0.324441	0.010857	-0.341465	0.011183	-0.334363	0.010664
HVY	0.02493	0.034311	-0.009646	0.027931	0.009589	0.028882	-0.015098	0.028038	-0.017068	0.025551
TNF	-0.161153	0.034186	-0.215842	0.027626	-0.165177	0.028387	-0.183855	0.027514	-0.198367	0.025201
SVS	-0.140252	0.033413	-0.205701	0.027137	-0.170818	0.027798	-0.165267	0.026897	-0.153465	0.024501
OLDER	-0.030695	0.020319	0.020532	0.016562	-0.028378	0.018133	-0.062269	0.019426	-0.056922	0.018911
WKDOLD	0.053445	0.007397	-0.01546	0.004244	0.008797	0.006675				
WKDYNG			0.506862	0.217348	-0.056417	0.048684				
INTOLD					-0.668732	0.338962				
INTYNG					0.062761	0.099118				
LAMBDAST			-0.074777	0.016903	-0.001676	0.02211	0.066836	0.022088	0.127744	0.020805

SCVADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2953	Rsquare	0.3139	Rsquare	0.3171	Rsquare	0.2948	Rsquare	0.3059
	MSE	48.64515	MSE	34.74421	MSE	26.60522	MSE	28.0807	MSE	25.39546
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.966224	0.096854	0.992811	0.055	1.192	0.042386	1.326212	0.04431	1.219892	0.043138
PSLNWK	0.17436	0.020169	0.136661	0.011274	0.05316	0.006284	0.144798	0.009187	0.159708	0.008295
SPLED	0.046173	0.007637	0.062612	0.004467	0.05988	0.003483	0.03866	0.003608	0.051566	0.003533
SPLEDHS	0.050675	0.051629	-0.054134	0.030747	-0.01741	0.023772	-0.092766	0.02472	-0.057721	0.022946
SPLEDSC	0.064073	0.022541	0.000276	0.013296	0.02611	0.010454	0.028211	0.010755	0.034159	0.009838
SPLEDCD	0.452579	0.100738	0.278336	0.058708	0.30116	0.045666	0.333507	0.046495	0.333937	0.043613
SPLEDGW	0.184355	0.047437	0.102567	0.027473	0.13757	0.021167	0.183386	0.021739	0.168505	0.020406
PTIME	-0.328412	0.01913	-0.30472	0.010946	-0.30657	0.008628	-0.297626	0.008891	-0.281052	0.008264
HVY	0.04342	0.043103	-0.020201	0.025609	-0.03222	0.020353	-0.058442	0.021591	-0.083483	0.018929
TNF	-0.173396	0.042348	-0.207805	0.02505	-0.21778	0.01989	-0.212677	0.021221	-0.1977	0.018636
SVS	-0.098923	0.040946	-0.154573	0.02419	-0.14652	0.019255	-0.172166	0.020587	-0.195372	0.01849
OLDER	-0.099739	0.033419	-0.06519	0.020084	0.0148	0.013523	-0.067311	0.016465	-0.053271	0.014549
WKDOLD			0.014656	0.004845	0.01572	0.005149	-0.000509	0.004194	-0.004979	0.005967
WKDYNG			0.051445	0.024089	0.00544	0.01846	0.052267	0.025328	0.035272	0.040795
INTOLD			-0.824721	0.246395	-0.7441	0.263556	-0.0358	0.213464	0.083982	0.300522
INTYNG			-0.144437	0.04463	-0.12717	0.049521	-0.177971	0.045457	-0.096653	0.077513
LAMBDAST	0.106369	0.034662	0.09006	0.017059	0.13522	0.017649	0.112401	0.016228	0.06505	0.014409

Wage Equations

Males **POTNOADJ**

	1984		1985		1986		1987		1988	
	N	6261	N	10623	N	9253	N	9024	N	9236
	Rsquare	0.2259	Rsquare	0.2766	Rsquare	0.2943	Rsquare	0.2946	Rsquare	0.2838
	MSE	40.23749	MSE	318.73318	MSE	34.4736	MSE	33.80473	MSE	33.61207
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.504249	0.040301	1.485135	0.028648	1.500339	0.031225	1.554856	0.032106	1.617285	0.033259
S0TO4	-0.168983	0.067243	-0.179743	0.052792	-0.124593	0.054042	-0.228175	0.057415	-0.134135	0.05636
S9TO11	0.150387	0.033716	0.050187	0.025211	0.133013	0.027038	0.075427	0.027511	0.111433	0.028086
S12	0.309151	0.030366	0.239229	0.022207	0.330613	0.024144	0.312821	0.024885	0.292181	0.025349
S13T15	0.420827	0.032501	0.361137	0.023911	0.478457	0.025555	0.473553	0.026178	0.45467	0.026576
S16	0.65693	0.034871	0.641871	0.025738	0.735692	0.027714	0.721649	0.028007	0.674117	0.027979
S17UP	0.682803	0.035039	0.668927	0.025698	0.788401	0.027389	0.775464	0.027974	0.75211	0.028021
POTEXP	0.035595	0.002372	0.041303	0.001615	0.034183	0.001739	0.03476	0.001813	0.031013	0.001827
POTEXPSQ	-0.000556	5.01E-05	-0.00063	3.528E-05	-0.000488	3.753E-05	-0.000504	3.896E-05	-0.00044	3.744E-05
BLACK	-0.185759	0.02436	-0.152217	0.018475	-0.165589	0.019559	-0.203544	0.019527	-0.199457	0.018852
HISP	-0.023042	0.028742	-0.137203	0.021958	-0.116427	0.022211	-0.081643	0.020818	-0.100627	0.020486
PTIME	-0.371505	0.021205	-0.314814	0.015229	-0.365753	0.016276	-0.368395	0.017134	-0.34151	0.017108
CITY	-0.002546	0.015213	0.014365	0.011528	-0.013881	0.011912	-0.022661	0.011829	-0.031341	0.01162
NEWENG	-0.025052	0.033207	0.05433	0.024335	0.03737	0.025951	0.085869	0.025321	0.112859	0.024291
MIDATL	0.021168	0.02226	0.027373	0.017813	0.031289	0.018407	0.071717	0.018328	0.096198	0.018117
ENCENT	-0.032753	0.02143	-0.01314	0.016826	-0.004446	0.017302	0.009352	0.017177	0.036267	0.017062
WNCENT	-0.069678	0.030275	-0.108151	0.020868	-0.12781	0.021503	-0.117182	0.021429	-0.1207	0.020865
SATL	-0.086389	0.023153	-0.063003	0.017653	-0.072602	0.018333	-0.061404	0.018082	-0.044929	0.017479
ESCENT	-0.173301	0.033862	-0.137447	0.025923	-0.163813	0.026317	-0.14313	0.027387	-0.132804	0.026178
WSCENT	-0.024238	0.026773	-0.05644	0.019242	-0.105345	0.020101	-0.127515	0.019771	-0.143929	0.019813
MOUNTAIN	0.009523	0.046392	-0.030403	0.029865	-0.072757	0.030926	-0.085971	0.028352	-0.098733	0.027733
WKDOLD			0.000379	0.003806	0.006756	0.004598				
WKDYNG					-0.005392	0.054143				
INTOLD			-0.160123	0.184768	-0.446759	0.225697				
INTYNG					-0.116965	0.130156				

POTNOADJ	1989		1990		1991		1992		1993	
	N	1803	N	9228	N	14286	N	14602	N	16348
Males	Rsquare	.2505	Rsquare	0.2983	Rsquare	0.2997	Rsquare	0.3106	Rsquare	0.2976
	MSE	52.14618	MSE	37.08702	MSE	28.68853	MSE	28.8454	MSE	26.83664
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.763499	0.094187	1.747698	0.033937	1.69283	0.027883	1.674375	0.027348	1.787641	0.026354
S0TO4	-0.000376	0.169795	-0.125758	0.058362	-0.21612	0.047756	-0.072921	0.047896	-0.140898	0.048874
S9TO11	-0.057886	0.080064	0.020313	0.030305	0.12296	0.024791	0.12622	0.024644	0.078269	0.023875
S12	0.191848	0.070575	0.243621	0.027172	0.28902	0.022353	0.308723	0.022153	0.249935	0.021599
S13T15	0.38378	0.072131	0.363491	0.028514	0.43498	0.023343	0.456385	0.023117	0.403603	0.022326
S16	0.549767	0.073901	0.651926	0.029873	0.73616	0.024429	0.719094	0.024138	0.686773	0.023346
S17UP	0.598638	0.073777	0.743851	0.030078	0.82425	0.024596	0.818505	0.024422	0.783471	0.023568
POTEXP	0.031144	0.004965	0.032043	0.001836	0.03264	0.001463	0.03261	0.001404	0.032684	0.001333
POTEXPSQ	-0.000451	9.659E-05	-0.000462	3.999E-05	-0.00046	3.188E-05	-0.000464	3.072E-05	-0.000478	2.924E-05
BLACK	-0.160317	0.044946	-0.168821	0.019665	-0.16205	0.015827	-0.137509	0.015194	-0.113395	0.014041
HISP	-0.234326	0.053939	-0.117366	0.021317	-0.08683	0.01644	-0.104884	0.015432	-0.106528	0.014299
PTIME	-0.399391	0.039855	-0.333104	0.017103	-0.29054	0.012942	-0.340224	0.012136	-0.335987	0.011581
CITY	-0.023629	0.027124	-0.006328	0.012228	-0.00712	0.009678	0.01853	0.012646	-0.034254	0.011134
NEWENG	-0.00585	0.05701	0.058372	0.027425	0.06806	0.021271	0.114424	0.02074	0.069736	0.019395
MIDATL	0.03787	0.04384	0.053643	0.01864	0.07406	0.014633	0.098625	0.014579	0.047393	0.013897
ENCENT	-0.047591	0.041079	-0.015057	0.017848	-0.00262	0.014039	-0.022414	0.013862	-0.025753	0.013046
WNCENT	-0.204194	0.048718	-0.133454	0.022211	-0.15249	0.017468	-0.109115	0.0174	-0.152938	0.016603
SATL	-0.082848	0.042833	-0.042844	0.018253	-0.05373	0.014536	-0.049924	0.014332	-0.070594	0.013399
ESCENT	-0.177961	0.068433	-0.16732	0.028793	-0.16885	0.022856	-0.149788	0.02164	-0.154488	0.020031
WSCENT	-0.103159	0.051336	-0.115643	0.020685	-0.09503	0.016553	-0.097944	0.016339	-0.121112	0.015186
MOUNTAIN	-0.0748	0.064715	-0.119862	0.02863	-0.11626	0.022503	-0.079743	0.022621	-0.09802	0.020754
WKDOLD			-0.00174	0.003842	0.00287	0.004674	-0.004081	0.0034	0.001664	0.005018
WKDYNG			0.01747	0.037657	0.05223	0.045199	-0.042744	0.024118	-0.021469	0.032887
INTOLD			-0.119684	0.180588	-0.34448	0.226397	0.036078	0.163267	-0.202439	0.246575
INTYNG			-0.119773	0.073724	-0.24573	0.104141	-0.050757	0.061417	-0.033401	0.085825

Males **OPTNOADJ**

	1984	Males	1985	males	1986	males	1987	males	1988	males
	Rsquare	0.2265	Rsquare	0.2812	Rsquare	0.2946	Rsquare	0.2952	Rsquare	0.2879
	MSE	40.22429	MSE	317.72177	MSE	34.46565	MSE	33.78981	MSE	33.51647
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.444013	0.043588	1.40646	0.030091	1.423666	0.034872	1.492242	0.035328	1.531123	0.035729
S0TO4	-0.179142	0.067277	-0.2118	0.052753	-0.089757	0.054018	-0.168065	0.057389	-0.100061	0.056172
S9TO11	0.161009	0.033326	0.043983	0.024968	0.150389	0.026819	0.088739	0.027344	0.120907	0.027934
S12	0.30929	0.029382	0.21963	0.021569	0.329384	0.023531	0.304061	0.024283	0.285714	0.024902
S13T15	0.403774	0.031305	0.320119	0.023096	0.461033	0.024749	0.441599	0.025362	0.429203	0.025982
S16	0.629009	0.033693	0.59146	0.024954	0.70814	0.026909	0.678808	0.027193	0.654133	0.027429
S17UP	0.647767	0.033592	0.613464	0.024708	0.745994	0.026438	0.728282	0.027078	0.727883	0.027527
POPTWK	0.041408	0.003064	0.051205	0.002046	0.044808	0.002416	0.045061	0.002469	0.04536	0.002454
POPTWKSQ	-0.000692	7.049E-05	-0.000854	4.778E-05	-0.000736	5.828E-05	-0.000749	5.902E-05	-0.000788	5.726E-05
BLACK	-0.155871	0.024429	-0.117358	0.018454	-0.136794	0.019576	-0.183209	0.019518	-0.183923	0.018785
HISP	0.005659	0.028686	-0.107057	0.021892	-0.06895	0.022282	-0.044231	0.020853	-0.069596	0.020492
PTIME	-0.368842	0.02123	-0.310056	0.015196	-0.367361	0.016286	-0.366542	0.017166	-0.338252	0.017054
CITY	-0.002006	0.015206	0.015688	0.011491	-0.014311	0.011907	-0.022533	0.011824	-0.02863	0.011592
NEWENG	-0.025236	0.033195	0.04859	0.024256	0.037078	0.025942	0.08432	0.02531	0.109283	0.024217
MIDATL	0.018344	0.022247	0.024269	0.017756	0.029737	0.018402	0.06742	0.018314	0.09321	0.018065
ENCENT	-0.034077	0.021421	-0.014423	0.016773	-0.004742	0.017296	0.005086	0.017162	0.033272	0.01701
WNCENT	-0.071035	0.030261	-0.109087	0.020805	-0.129074	0.021499	-0.120722	0.021414	-0.121996	0.020804
SATL	-0.085213	0.023146	-0.063218	0.017597	-0.072431	0.018328	-0.063545	0.018072	-0.046555	0.017428
ESCENT	-0.171258	0.033848	-0.136647	0.025835	-0.162197	0.026311	-0.145688	0.027374	-0.135971	0.026103
WSCENT	-0.024714	0.026765	-0.055999	0.01918	-0.105932	0.020097	-0.131179	0.019759	-0.146814	0.019756
MOUNTAIN	0.010172	0.046383	-0.034327	0.029769	-0.071883	0.03092	-0.088111	0.028339	-0.10257	0.027654
WKDOLD			-0.008561	0.003584	0.003179	0.004515				
WKDYNG					0.003992	0.054101				
INTOLD			0.2491	0.178151	-0.286413	0.223303				
INTYNG					-0.108592	0.13015				

OPTNOADJ	1989		1990		1991		1992		1993	
Males	Rsquare	.2530	Rsquare	0.2985	Rsquare	0.3	Rsquare	0.3124	Rsquare	0.2992
	MSE	52.06071	MSE	37.08308	MSE	28.68388	MSE	28.80773	MSE	26.80602
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.773698	0.093165	1.703486	0.036909	1.64321	0.030515	1.587862	0.030253	1.715718	0.028554
S0TO4	0.059095	0.168962	-0.14357	0.058364	-0.24122	0.047784	-0.065279	0.047831	-0.129706	0.04883
S9TO11	-0.065694	0.079872	0.036057	0.030108	0.13602	0.024634	0.136205	0.024491	0.089841	0.023738
S12	0.180444	0.070086	0.231447	0.026619	0.27529	0.021903	0.299778	0.021719	0.234223	0.021209
S13T15	0.369909	0.071527	0.334769	0.027763	0.40345	0.022718	0.427226	0.022507	0.365852	0.021807
S16	0.555092	0.073409	0.611841	0.029086	0.69168	0.02376	0.679968	0.023492	0.643729	0.022777
S17UP	0.604497	0.073483	0.699886	0.029187	0.77449	0.023856	0.773626	0.023752	0.733487	0.02299
POPTWK	0.037595	0.005908	0.038391	0.002381	0.04014	0.001969	0.043638	0.001907	0.042878	0.001803
POPTWKSQ	-0.00065	0.000139	-0.000597	5.528E-05	-0.00063	4.65E-05	-0.000702	4.434E-05	-0.000704	4.232E-05
BLACK	-0.14498	0.044797	-0.152554	0.01967	-0.14774	0.01583	-0.121728	0.015189	-0.098415	0.014033
HISP	-0.226123	0.053866	-0.083174	0.021375	-0.05489	0.016484	-0.077887	0.015448	-0.078548	0.014301
PTIME	-0.398086	0.039826	-0.336041	0.017099	-0.29216	0.012944	-0.3396	0.012118	-0.333633	0.011589
CITY	-0.021125	0.027098	-0.005141	0.012231	-0.00639	0.009678	0.019322	0.01263	-0.033176	0.011122
NEWENG	-0.012764	0.056874	0.054526	0.02742	0.06531	0.021269	0.111034	0.020712	0.066183	0.01937
MIDATL	0.037568	0.04377	0.05038	0.018639	0.07143	0.014632	0.094746	0.014559	0.044188	0.013878
ENCENT	-0.049208	0.041009	-0.018471	0.017841	-0.00505	0.014035	-0.025745	0.013843	-0.028714	0.013029
WNCENT	-0.204493	0.048638	-0.137302	0.022211	-0.15482	0.017466	-0.112776	0.017376	-0.15564	0.016579
SATL	-0.084231	0.042766	-0.045355	0.018247	-0.05645	0.014534	-0.053136	0.014314	-0.074419	0.013381
ESCENT	-0.18172	0.068315	-0.168214	0.02879	-0.16929	0.022852	-0.152328	0.021612	-0.157127	0.020008
WSCENT	-0.105672	0.051244	-0.11701	0.020684	-0.09584	0.016551	-0.101931	0.016318	-0.123061	0.01517
MOUNTAIN	-0.07756	0.064611	-0.121441	0.028629	-0.11784	0.022501	-0.082367	0.022589	-0.101625	0.020727
WKDOLD			-0.006464	0.003703	-0.00516	0.00451	-0.007114	0.003299	-0.000806	0.004973
WKDYNG			0.03511	0.037608	0.06595	0.045171	-0.025764	0.024049	0.000436	0.032819
INTOLD			0.089678	0.176293	0.02643	0.221164	0.206841	0.15991	-0.054716	0.244774
INTYNG			-0.120831	0.073814	-0.23019	0.104278	-0.04305	0.0614	-0.01469	0.085852

Males		LNADJBA								
	1984		1985		1986		1987		1988	
	Rsquare	0.2589	Rsquare	0.3063	Rsquare	0.3135	Rsquare	0.3118	Rsquare	0.295
	MSE	39.3485	MSE	312.02313	MSE	33.98688	MSE	33.37787	MSE	33.3361
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.878454	0.09977	0.826421	0.063579	0.813694	0.070918	0.613053	0.08611	0.961872	0.078355
PLNWK	-0.041214	0.061381	0.058484	0.034868	-0.002117	0.043131	0.115004	0.062531	-0.035883	0.048827
PLNWKSQ	0.061407	0.012969	0.05008	0.00775	0.061628	0.009839	0.033973	0.013394	0.06343	0.01044
SPLED	0.059167	0.004713	0.04984	0.003594	0.055971	0.003709	0.059304	0.003745	0.052079	0.003775
SPLEDHS	0.00768	0.040018	0.049764	0.030681	0.039409	0.031604	0.036881	0.031068	0.013398	0.031079
SPLEDSC	0.011221	0.017346	0.04296	0.013042	0.046506	0.013265	0.022236	0.013121	0.031148	0.012955
SPLEDCD	0.325187	0.073526	0.545831	0.0561	0.431611	0.057644	0.393713	0.056713	0.403498	0.056256
SPLEDGW	0.090824	0.031862	0.177928	0.024187	0.159072	0.024693	0.132218	0.024786	0.174507	0.024659
PTIME	-0.33874	0.021023	-0.279626	0.015052	-0.340472	0.016312	-0.346098	0.017017	-0.311128	0.017191
HVY	0.159306	0.029803	0.16095	0.022927	0.134867	0.022131	0.126375	0.020821	0.101572	0.021181
TNF	-0.006194	0.03177	-0.02667	0.024203	-0.028417	0.023706	-0.05835	0.022512	-0.088582	0.022657
SVS	-0.120596	0.032098	-0.078256	0.024498	-0.126287	0.024048	-0.125964	0.02267	-0.13662	0.022889
OLDER	-0.090863	0.022869	-0.111841	0.0196	-0.089974	0.020418	-0.040596	0.021164	-0.134667	0.022132
WKDOLD	0.091714	0.027935	-0.018386	0.003501	-0.004535	0.00435				
WKDYNG			0.619321	0.176158	-0.027938	0.053653				
INTOLD					0.052683	0.21918				
INTYNG					-0.047954	0.132319				
LAMBDABA			0.054191	0.024277	0.13089	0.023217	0.210189	0.021544	0.208257	0.021921

LNADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2553	Rsquare	0.3092	Rsquare	0.3111	Rsquare	0.3231	Rsquare	0.3074
	MSE	51.87565	MSE	36.78503	MSE	28.44697	MSE	28.57676	MSE	26.64295
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.679565	0.215156	1.13646	0.077064	0.9294	0.062404	0.986365	0.061136	0.967086	0.059542
PLNWK	0.2453	0.138542	-0.082012	0.048427	0.0001	0.037897	0.038888	0.038207	0.1128	0.038011
PLNWKSQ	-0.005086	0.02876	0.069916	0.010219	0.05263	0.008094	0.046387	0.00807	0.029485	0.007994
SPLED	0.059248	0.009589	0.054764	0.003937	0.0623	0.003139	0.055113	0.003062	0.054775	0.002969
SPLEDHS	-0.018861	0.078906	0.019131	0.033166	-0.05197	0.026091	-0.022209	0.02562	-0.060114	0.023814
SPLEDSC	0.045726	0.030635	0.018964	0.014245	0.00337	0.011	0.0117	0.010602	0.000728	0.009858
SPLEDCD	0.335414	0.133164	0.447622	0.059287	0.36344	0.04636	0.352137	0.045218	0.351979	0.042487
SPLEDGW	0.114752	0.05869	0.184152	0.025988	0.13961	0.020447	0.15333	0.020026	0.145964	0.018929
PTIME	-0.329245	0.040066	-0.308358	0.017183	-0.25573	0.013028	-0.305909	0.012199	-0.293728	0.011645
HVY	0.042077	0.048865	0.105806	0.021743	0.08103	0.017394	0.057696	0.016957	0.00862	0.015857
TNF	-0.112489	0.051966	-0.08229	0.0234	-0.09446	0.018686	-0.12201	0.018173	-0.117775	0.016484
SVS	-0.171174	0.051761	-0.110356	0.023436	-0.11885	0.018694	-0.136585	0.018138	-0.171345	0.017299
OLDER	-0.026681	0.055618	-0.123147	0.022135	-0.06689	0.017764	-0.071571	0.01785	-0.048985	0.016355
WKDOLD			-0.016825	0.003563	-0.00885	0.004414	-0.014781	0.003165	-0.011972	0.004858
WKDYNG			0.006637	0.038121	0.02079	0.045072	-0.042173	0.024175	-0.008584	0.032712
INTOLD			0.547581	0.174829	0.15401	0.218971	0.493023	0.157817	0.409796	0.242361
INTYNG			-0.138127	0.080658	-0.16403	0.106754	-0.028061	0.064788	-0.017357	0.087538
LAMBDABA	0.210281	0.043838	0.124902	0.025138	0.18491	0.01732	0.188979	0.017317	0.206754	0.016463

Males		LNADJST								
	1984		1985		1986		1987		1988	
	Rsquare	0.2632	Rsquare	0.306	Rsquare	0.3151	Rsquare	0.3135	Rsquare	0.2916
	MSE	39.23408	MSE	312.09626	MSE	33.94819	MSE	33.3356	MSE	33.41673
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.75952	0.099898	0.88568	0.063325	0.747232	0.072121	0.505604	0.087809	1.006092	0.078886
PLNWK	-0.009961	0.061387	0.062828	0.035795	0.016514	0.042789	0.178058	0.061506	0.039713	0.048352
PLNWKSQ	0.050618	0.013053	0.049429	0.007825	0.059346	0.009737	0.021062	0.013153	0.04456	0.010294
SPLED	0.056477	0.004713	0.051093	0.003552	0.056131	0.003681	0.059865	0.003727	0.054701	0.003763
SPLEDHS	0.011769	0.0399	0.050694	0.030756	0.04224	0.031573	0.039631	0.031028	0.019108	0.031151
SPLEDSC	0.012004	0.017296	0.043474	0.013066	0.046741	0.013249	0.023338	0.013104	0.032672	0.012986
SPLEDCD	0.313481	0.073335	0.547502	0.056127	0.429231	0.057574	0.389092	0.056645	0.40258	0.056393
SPLEDGW	0.084612	0.031786	0.177806	0.024202	0.156021	0.024667	0.125709	0.024768	0.168051	0.024727
PTIME	-0.323111	0.021073	-0.283091	0.015043	-0.334113	0.016352	-0.341318	0.017025	-0.316655	0.017246
HVY	0.148026	0.029772	0.161793	0.022937	0.130805	0.022108	0.121996	0.020801	0.100405	0.021235
TNF	-0.013361	0.031699	-0.02604	0.024208	-0.029509	0.023674	-0.060434	0.022482	-0.09015	0.022711
SVS	-0.121887	0.032005	-0.077561	0.024502	-0.127194	0.024014	-0.12703	0.02264	-0.137571	0.022944
OLDER	-0.077528	0.022601	-0.125611	0.018607	-0.090876	0.020296	-0.038854	0.021129	-0.143422	0.022173
WKDOLD	0.170792	0.024823	-0.019962	0.003437	-0.004808	0.004336				
WKDYNG			0.671303	0.1748	-0.033601	0.053605				
INTOLD					0.075043	0.218838				
INTYNG					-0.069485	0.132197				
LAMBDAST			-0.000788	0.008022	0.148318	0.020388	0.220875	0.020308	0.104766	0.015554

LNADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2518	Rsquare	0.3074	Rsquare	0.3094	Rsquare	0.3221	Rsquare	0.302
	MSE	51.99820	MSE	36.8339	MSE	28.48354	MSE	28.5974	MSE	26.74654
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.583343	0.222546	1.13646	0.077064	0.90528	0.064524	1.004283	0.061116	1.054603	0.059927
PLNWK	0.346431	0.137945	-0.082012	0.048427	0.04621	0.03758	0.097127	0.037889	0.161816	0.037997
PLNWKSQ	-0.023547	0.028594	0.069916	0.010219	0.04355	0.008024	0.03235	0.007994	0.018444	0.007986
SPLED	0.062247	0.009559	0.054764	0.003937	0.06401	0.003134	0.05672	0.00305	0.058004	0.002971
SPLEDHS	-0.005174	0.079193	0.019131	0.033166	-0.04909	0.026123	-0.019361	0.025641	-0.055812	0.023908
SPLEDSC	0.04756	0.03072	0.018964	0.014245	0.00308	0.011015	0.012377	0.01061	0.002486	0.009895
SPLEDCD	0.327643	0.133452	0.447622	0.059287	0.35623	0.046443	0.349517	0.045255	0.35732	0.042662
SPLEDGW	0.109697	0.058807	0.184152	0.025988	0.13382	0.020489	0.150152	0.020047	0.147826	0.019012
PTIME	-0.32681	0.040452	-0.308358	0.017183	-0.25673	0.01308	-0.306692	0.012216	-0.301332	0.011724
HVY	0.047197	0.048953	0.105806	0.021743	0.07962	0.017422	0.058324	0.016968	0.010748	0.015924
TNF	-0.107559	0.052068	-0.08229	0.0234	-0.09533	0.018711	-0.119876	0.018188	-0.117822	0.016554
SVS	-0.174937	0.051884	-0.110356	0.023436	-0.12272	0.018719	-0.134501	0.018153	-0.173855	0.017368
OLDER	-0.053263	0.055186	-0.123147	0.022135	-0.08243	0.017615	-0.081237	0.017758	-0.070124	0.016399
WKDOLD			-0.016825	0.003563	-0.00992	0.004416	-0.01602	0.003159	-0.015324	0.004875
WKDYNG			0.006637	0.038121	0.01436	0.045127	-0.046145	0.024188	-0.011441	0.03284
INTOLD			0.547581	0.174829	0.2172	0.219041	0.556995	0.1577	0.528224	0.243221
INTYNG			-0.138127	0.080658	-0.142	0.10688	-0.019891	0.064821	-0.000685	0.087867
LAMBDAST	0.154062	0.040497	0.124902	0.025138	0.14735	0.016783	0.117664	0.011893	0.085868	0.015611

Males **HECADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.248	Rsquare	0.3019	Rsquare	0.3111	Rsquare	0.3103	Rsquare	2964
	MSE	39.63183	MSE	312.98689	MSE	34.04335	MSE	33.41044	MSE	33.29945
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.073673	0.060404	0.944936	0.046411	1.109756	0.048902	1.050057	0.045682	1.169386	0.045546
S12	0.228124	0.018896	0.24036	0.014522	0.266148	0.015254	0.275696	0.015188	0.24418	0.015332
S13T15	0.350332	0.021617	0.365158	0.016677	0.409775	0.01712	0.424281	0.016899	0.409445	0.017086
RS16UP	0.617597	0.021582	0.654983	0.016599	0.707133	0.017305	0.701548	0.016953	0.693209	0.01687
PHECWK	0.037494	0.003991	0.053139	0.002373	0.030077	0.00221	0.038346	0.003107	0.039032	0.003051
PHECWKSQ	-0.000537	0.000103	-0.00087	6.417E-05	-0.000178	5.887E-05	-0.000496	8.882E-05	-0.000521	8.647E-05
PTIME	-0.339468	0.021086	-0.288491	0.014983	-0.356379	0.016072	-0.348938	0.017005	-0.313932	0.01704
HVY	0.167365	0.030045	0.173191	0.023008	0.143622	0.02218	0.13336	0.020841	0.106803	0.021161
TNF	-0.002051	0.032002	-0.013352	0.024271	-0.022068	0.023751	-0.05183	0.022533	-0.080701	0.022634
SVS	-0.097398	0.032211	-0.062792	0.024487	-0.111136	0.023991	-0.116999	0.022629	-0.116436	0.022761
OLDER	-0.054078	0.035446	0.031344	0.026592	-0.167651	0.024671	-0.018938	0.030047	-0.050408	0.030125
WKDOLD	0.211378	0.027499	0.00061	0.003549	0.002611	0.004395				
WKDYNG			-0.029922	0.176038	-0.032518	0.053442				
INTOLD					-0.317387	0.219423				
INTYNG					-0.063865	0.128637	-			
LAMBDABA		0.194894	0.025231	0.215503	0.023778	0.264678	0.021797	0.233928	0.02238	

HECADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2631	Rsquare	0.3084	Rsquare	0.3093	Rsquare	0.3211	Rsquare	0.3059
	MSE	51.57618	MSE	36.80284	MSE	28.59341	MSE	28.61738	MSE	26.6711
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.245933	0.098827	1.324164	0.049417	1.32915	0.03718	1.281647	0.035729	1.332979	0.034211
S12	0.265961	0.042937	0.260622	0.0164	0.23579	0.013252	0.242966	0.01312	0.208112	0.012548
S13T15	0.471637	0.045618	0.391978	0.01821	0.38593	0.0146	0.385486	0.014456	0.346497	0.013655
RS16UP	0.705618	0.043938	0.732332	0.017921	0.7275	0.014363	0.6835	0.014419	0.652078	0.013752
PHECWK	0.033005	0.006639	0.033005	0.002782	0.02879	0.002372	0.035354	0.002223	0.038333	0.002254
PHECWKSQ	-0.000469	0.000188	-0.000352	7.588E-05	-0.00024	6.505E-05	-0.000406	6.023E-05	-0.000507	6.243E-05
PTIME	-0.327269	0.039774	-0.320513	0.016984	-0.27503	0.012952	-0.315603	0.012085	-0.300734	0.011599
HVY	0.058729	0.048648	0.118479	0.021767	0.09636	0.017494	0.070259	0.017001	0.019336	0.015891
TNF	-0.09868	0.051759	-0.068978	0.023411	-0.08005	0.018771	-0.109873	0.018199	-0.10714	0.016518
SVS	-0.142923	0.051106	-0.088601	0.023385	-0.09222	0.018764	-0.114153	0.018117	-0.15065	0.017267
OLDER	0.017507	0.069024	-0.096851	0.029223	-0.08545	0.023762	-0.042391	0.022881	-0.008052	0.022644
WKDOLD			-0.003951	0.003584	-0.00611	0.004503	-0.004988	0.003247	0.001982	0.005026
WKDYNG			0.009977	0.0373	0.03256	0.04501	-0.025158	0.02388	-0.003635	0.032632
INTOLD			-0.019242	0.173613	0.06904	0.2205	0.117329	0.158274	-0.145615	0.24563
INTYNG			-0.045111	0.073711	-0.14317	0.103997	0.004647	0.061165	0.027469	0.085556
LAMBDABA	0.251112	0.044338	0.172511	0.026864	0.22645	0.017953	0.24697	0.018161	0.266349	0.017206

Males **HECADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2546	Rsquare	0.2984	Rsquare	0.3121	Rsquare	0.312	Rsquare	0.2939
	MSE	39.45611	MSE	313.76581	MSE	34.01836	MSE	33.36766	MSE	33.35727
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.008769	0.05813	1.145787	0.038698	1.100256	0.047608	1.008509	0.046338	1.279678	0.041455
S12	0.219488	0.018833	0.255599	0.014408	0.272952	0.015185	0.280578	0.015134	0.252023	0.015308
S13T15	0.334145	0.021625	0.387957	0.016444	0.41722	0.016996	0.431757	0.0168	0.418661	0.017044
RS16UP	0.585946	0.021898	0.689843	0.015942	0.71274	0.017083	0.70177	0.016862	0.70202	0.016833
PHECWK	0.034955	0.003986	0.059013	0.002451	0.031618	0.002211	0.041148	0.003081	0.043031	0.003017
PHECWKSQ	-0.000511	0.000102	-0.00104	6.371E-05	-0.00021	5.842E-05	-0.00058	8.76E-05	-0.000679	8.457E-05
PTIME	-0.323804	0.021083	-0.297467	0.014976	-0.352898	0.016087	-0.344667	0.017006	-0.316964	0.01708
HVY	0.151182	0.029968	0.173717	0.023066	0.138038	0.022167	0.12884	0.02082	0.105684	0.0212
TNF	-0.012124	0.031879	-0.012333	0.024332	-0.02438	0.023729	-0.053954	0.022503	-0.080874	0.022674
SVS	-0.100768	0.032071	-0.060669	0.024552	-0.113601	0.023968	-0.118179	0.0226	-0.116705	0.022801
OLDER	-0.050278	0.03529	0.040994	0.026657	-0.171954	0.024659	-0.006988	0.029971	-0.0267	0.030149
WKDOLD	0.255796	0.023811	-0.00214	0.003546	0.002138	0.004386				
WKDYNG			0.092002	0.175774	-0.033856	0.053403				
INTOLD					-0.291788	0.219138				
INTYNG					-0.118761	0.128541				
LAMBDAST			0.02074	0.00798	0.203424	0.02078	0.26785	0.020486	0.135674	0.015469

HECADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2586	Rsquare	0.3053	Rsquare	0.3013	Rsquare	0.3192	Rsquare	0.2983
	MSE	51.73166	MSE	36.8848	MSE	28.6472	MSE	28.65757	MSE	26.81575
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.257547	0.105419	1.559312	0.04144	1.35881	0.038795	1.394834	0.032117	1.502442	0.033768
S12	0.284389	0.042913	0.269192	0.016382	0.24534	0.013242	0.249179	0.01311	0.222423	0.01257
S13T15	0.49039	0.045496	0.403205	0.018179	0.3973	0.014576	0.394785	0.014415	0.367739	0.013643
RS16UP	0.72415	0.043723	0.754731	0.017743	0.7383	0.014314	0.697061	0.014289	0.684603	0.013708
PHECWK	0.041063	0.006597	0.037524	0.002768	0.03349	0.002332	0.039221	0.002181	0.042723	0.00225
PHECWKSQ	-0.000688	0.000184	-0.000517	7.457E-05	-0.00038	6.35E-05	-0.000555	5.819E-05	-0.000662	6.204E-05
PTIME	-0.322131	0.040217	-0.333913	0.01698	-0.2775	0.012999	-0.317593	0.012104	-0.308508	0.011697
HVY	0.064443	0.048772	0.122825	0.021812	0.09568	0.017531	0.070938	0.017025	0.021259	0.015982
TNF	-0.092797	0.0519	-0.065527	0.023474	-0.07976	0.018807	-0.106968	0.018227	-0.107837	0.016614
SVS	-0.146233	0.051263	-0.087399	0.02345	-0.09594	0.018801	-0.11118	0.018144	-0.153449	0.017364
OLDER	0.026843	0.069245	-0.077812	0.029176	-0.07595	0.023799	-0.019506	0.022852	0.012465	0.022718
WKDOLD			-0.005477	0.003584	-0.00589	0.004515	-0.005125	0.003252	0.001539	0.005054
WKDYNG			0.009413	0.037384	0.03134	0.045095	-0.023497	0.023914	-0.004291	0.032809
INTOLD			0.055604	0.173606	0.11576	0.220826	0.182076	0.158386	-0.110216	0.246969
INTYNG			-0.036586	0.073863	-0.13745	0.104194	-0.00827	0.061278	0.037282	0.086017
LAMBDAST	0.187134	0.040712	-0.007315	0.018688	0.17534	0.017115	0.143162	0.011949	0.12645	0.016144

Males **LVLADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2562	Rsquare	0.3023	Rsquare	0.3127	Rsquare	0.3102	Rsquare	0.2998
	MSE	39.4203	MSE	312.92085	MSE	34.00861	MSE	33.41448	MSE	33.22144
.	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.695261	0.073842	0.716236	0.055547	0.695405	0.059579	0.581587	0.058145	0.642612	0.059392
PLINWK	0.030625	0.003654	0.044575	0.002333	0.039153	0.002793	0.041683	0.003013	0.045326	0.002837
PLINWKSQ	-0.000375	9.32E-05	-0.000657	6.219E-05	-0.000503	7.745E-05	-0.000606	8.321E-05	-0.000706	7.609E-05
SPLED	0.062128	0.004736	0.052481	0.00362	0.062044	0.003731	0.063698	0.00376	0.064888	0.003781
SPLEDHS	0.025527	0.040055	0.069358	0.030732	0.037757	0.031628	0.046991	0.03108	0.008365	0.030972
SPLEDSC	0.014235	0.01736	0.040813	0.013085	0.030405	0.013286	0.02548	0.013141	0.022056	0.012926
SPLEDCD	0.298109	0.073711	0.511902	0.05629	0.412065	0.057734	0.387091	0.056843	0.345139	0.05613
SPLEDGW	0.078955	0.032012	0.16547	0.02431	0.14385	0.024803	0.121835	0.024884	0.138893	0.024644
PTIME	-0.339679	0.020972	-0.286125	0.014982	-0.344194	0.016136	-0.349147	0.017014	-0.307373	0.017013
HVY	0.159681	0.02986	0.163788	0.022987	0.135344	0.022145	0.1263	0.020839	0.101095	0.021105
TNF	-0.006607	0.031841	-0.022733	0.024286	-0.028012	0.023726	-0.058404	0.022538	-0.085063	0.022582
SVS	-0.121377	0.032161	-0.077383	0.024563	-0.128391	0.02406	-0.127586	0.02269	-0.134264	0.022811
OLDER	-0.065401	0.032201	-0.01936	0.026703	-0.071574	0.028082	0.009881	0.029269	-0.001682	0.029006
WKDOLD	0.145991	0.027517	-0.003402	0.003793	0.00363	0.004739				
WKDYNG			0.038281	0.184011	-0.015549	0.053346				
INTOLD					-0.27301	0.228844				
INTYNG					-0.082487	0.128376				
LAMBDABA		0.101115	0.024793	0.117836	0.023289	0.21505	0.02152	0.193428	0.02201	

LVLADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2580	Rsquare	0.3062	Rsquare	0.3013	Rsquare	0.3229	Rsquare	0.3067
	MSE	51.78321	MSE	36.86596	MSE	28.46493	MSE	28.58102	MSE	26.6564
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.732823	0.141974	0.951241	0.061252	0.82831	0.048511	0.860054	0.046256	0.930515	0.044564
PLINWK	0.038693	0.006691	0.030853	0.002776	0.03034	0.002247	0.037307	0.002145	0.038186	0.002135
PLINWKSQ	-0.000651	0.000182	-0.000325	7.442E-05	-0.00031	6.003E-05	-0.000487	5.684E-05	-0.000534	5.785E-05
SPLED	0.066903	0.009555	0.058767	0.003969	0.06697	0.003157	0.06136	0.003089	0.058242	0.002982
SPLEDHS	-0.00863	0.078755	0.031275	0.033221	-0.03716	0.026092	-0.007745	0.025605	-0.039041	0.023803
SPLEDSC	0.038318	0.030504	0.020608	0.014285	0.0022	0.011015	0.010595	0.010604	0.001887	0.009862
SPLEDCD	0.292403	0.132258	0.432673	0.059469	0.35886	0.046441	0.342899	0.045263	0.341276	0.042553
SPLEDGW	0.091493	0.058284	0.170143	0.026139	0.129	0.020526	0.136974	0.020074	0.135779	0.018978
PTIME	-0.323832	0.040072	-0.309315	0.017092	-0.2599	0.012936	-0.309231	0.0121	-0.29693	0.011606
HVY	0.053041	0.048854	0.107949	0.021793	0.08301	0.017407	0.057933	0.016959	0.010329	0.015865
TNF	-0.099826	0.051981	-0.080489	0.023461	-0.09206	0.018707	-0.119881	0.01818	-0.115986	0.016495
SVS	-0.163145	0.05171	-0.111513	0.023487	-0.11726	0.018713	-0.137114	0.018139	-0.170558	0.017308
OLDER	0.075144	0.069959	-0.093783	0.029416	-0.0517	0.023013	-0.016626	0.022886	0.005972	0.02219
WKDOLD			-0.008577	0.004001	-0.00422	0.004615	-0.003172	0.003481	0.002032	0.005143
WKDYNG			-0.001687	0.037347	0.03122	0.04479	-0.037201	0.023835	0.002312	0.032616
INTOLD			0.190076	0.18586	-0.01557	0.223605	0.048715	0.165029	-0.137683	0.249505
INTYNG			-0.076749	0.073659	-0.18436	0.103444	-0.025341	0.060949	-0.039052	0.085318
LAMBDABA	0.213817	0.044118	0.131716	0.026082	0.19131	0.017568	0.195656	0.017826	0.226217	0.016916

Males **LVLADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2616	Rsquare	0.3012	Rsquare	0.3138	Rsquare	0.3116	Rsquare	0.2975
	MSE	39.27768	MSE	313.16571	MSE	33.98065	MSE	33.38074	MSE	33.28009
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.628674	0.072234	0.820817	0.052779	0.65475	0.05968	0.536133	0.059053	0.729244	0.05754
PLINWK	0.029123	0.003643	0.046604	0.00243	0.040367	0.00279	0.04397	0.002995	0.047996	0.002824
PLINWKSQ	-0.000372	9.269E-05	-0.000715	6.296E-05	-0.000524	7.697E-05	-0.000673	8.241E-05	-0.000817	7.521E-05
SPLED	0.059154	0.004737	0.054875	0.003575	0.062353	0.003703	0.06438	0.003743	0.067087	0.003768
SPLEDHS	0.029158	0.0399	0.07117	0.030815	0.040112	0.031607	0.049202	0.031049	0.014254	0.031022
SPLEDSC	0.01445	0.017297	0.0412	0.013128	0.030141	0.013274	0.025916	0.013128	0.022662	0.012949
SPLEDCD	0.287198	0.073462	0.512825	0.056374	0.408706	0.057676	0.37986	0.056787	0.341193	0.056228
SPLEDGW	0.072531	0.031909	0.164339	0.02435	0.14076	0.024782	0.114795	0.024871	0.131881	0.024694
PTIME	-0.324343	0.020992	-0.292107	0.014954	-0.340016	0.016156	-0.34549	0.017018	-0.312447	0.017041
HVY	0.146436	0.029807	0.164935	0.023007	0.131755	0.02213	0.122248	0.020824	0.100007	0.021145
TNF	-0.01487	0.031745	-0.021556	0.024304	-0.029171	0.023703	-0.060509	0.022514	-0.08581	0.022621
SVS	-0.122667	0.032045	-0.076478	0.024585	-0.129443	0.024033	-0.128596	0.022666	-0.134609	0.022852
OLDER	-0.054972	0.03209	-0.025308	0.02677	-0.071855	0.028055	0.019494	0.02926	0.015141	0.029203
WKDOLD	0.207819	0.02419	-0.004732	0.003816	0.003783	0.004735				
WKDYNG			0.077639	0.184748	-0.017627	0.053301				
INTOLD					-0.269553	0.228657				
INTYNG					-0.115262	0.128289				
LAMBDAST			0.001275	0.007995	0.130158	0.020365	0.221407	0.020357	0.103317	0.015491

LVLADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2546	Rsquare	0.3043	Rsquare	0.3083	Rsquare	0.3219	Rsquare	0.3006
	MSE	51.90158	MSE	36.91506	MSE	28.50573	MSE	28.60116	MSE	26.77336
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.713574	0.14761	1.121036	0.057241	0.83431	0.050398	0.924795	0.044683	1.059917	0.044677
PLINWK	0.044707	0.006672	0.034236	0.002776	0.03406	0.00222	0.039753	0.002116	0.041541	0.002133
PLINWKSQ	-0.000806	0.00018	-0.000442	7.392E-05	-0.00042	5.9E-05	-0.000583	5.545E-05	-0.00065	5.758E-05
SPLED	0.070226	0.009516	0.061342	0.003952	0.06916	0.003149	0.063306	0.003072	0.062042	0.002984
SPLEDHS	0.008131	0.079047	0.033067	0.033271	-0.03342	0.026127	-0.005159	0.025624	-0.034519	0.02391
SPLEDSC	0.039969	0.030585	0.020055	0.014304	0.00118	0.011031	0.01042	0.010612	0.003056	0.009905
SPLEDCD	0.284709	0.132535	0.433886	0.059553	0.34846	0.04653	0.336837	0.045299	0.342904	0.042747
SPLEDGW	0.087247	0.058403	0.167875	0.02617	0.12119	0.020571	0.132456	0.020092	0.135802	0.019069
PTIME	-0.320231	0.040462	-0.321473	0.017065	-0.26218	0.012978	-0.310892	0.012106	-0.305207	0.01169
HVY	0.059309	0.04893	0.112635	0.021818	0.0823	0.017437	0.058399	0.016971	0.012525	0.01594
TNF	-0.093504	0.052072	-0.076484	0.023504	-0.09207	0.018734	-0.117539	0.018195	-0.116059	0.016574
SVS	-0.166051	0.051829	-0.109783	0.023532	-0.12055	0.018741	-0.135007	0.018154	-0.173456	0.017386
OLDER	0.07446	0.070142	-0.08828	0.02944	-0.04731	0.023083	-0.004118	0.022912	0.014795	0.022275
WKDOLD			-0.00771	0.004014	-0.00322	0.004628	-0.00197	0.003484	0.002053	0.005167
WKDYNG			-0.001804	0.037398	0.03098	0.044855	-0.035631	0.023853	0.00264	0.032759
INTOLD			0.136613	0.186607	-0.02079	0.223959	0.032344	0.165127	-0.137871	0.250608
INTYNG			-0.071813	0.07375	-0.18159	0.103594	-0.038539	0.061018	-0.035505	0.085692
LAMBDAST	0.158128	0.040523	-0.017991	0.01847	0.14816	0.016837	0.119229	0.011937	0.094037	0.015914

Males	LAGADJBA									
	1984		1985		1986		1987		1988	
	Rsquare	0.2539	Rsquare	0.3017	Rsquare	0.2663	Rsquare	0.2536	Rsquare	0.2419
	MSE	39.4825	MSE	313.06289	MSE	35.13783	MSE	34.75999	MSE	34.5681
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.894554	0.06713	0.875623	0.0539	1.241082	0.055734	1.216839	0.05385	1.381921	0.05474
LAST5	0.023937	0.001656	0.041888	0.002028	0.016629	0.001739	0.002569	0.001711	0.006062	0.001767
LASTSQ	-0.000323	4.108E-05	-0.000767	7.296E-05	-0.00036	6.332E-05	1.544E-06	5.817E-05	-0.000154	6.064E-05
SPLED	0.058108	0.004722	0.047867	0.003613	0.057716	0.003829	0.058382	0.003885	0.059269	0.003862
SPLEDHS	0.038214	0.04009	0.088551	0.030738	0.078834	0.032644	0.068245	0.032329	0.006376	0.03223
SPLEDSC	0.018943	0.01738	0.051638	0.013075	0.039332	0.013716	0.035433	0.013663	0.022787	0.013436
SPLEDCD	0.319869	0.073783	0.530708	0.056314	0.408714	0.059593	0.373284	0.059075	0.330041	0.058267
SPLEDGW	0.098712	0.031937	0.192092	0.024246	0.164226	0.025553	0.150022	0.025801	0.163092	0.025541
PTIME	-0.332628	0.021016	-0.291675	0.014954	-0.388136	0.016525	-0.402255	0.017577	-0.36375	0.017567
HVY	0.154953	0.029888	0.166119	0.023	0.107634	0.022862	0.106695	0.021666	0.071912	0.021935
TNF	-0.013821	0.031848	-0.023266	0.024295	-0.075343	0.024462	-0.10673	0.023384	-0.139047	0.023416
SVS	-0.125715	0.032168	-0.07796	0.024575	-0.173752	0.024802	-0.166152	0.023563	-0.180448	0.023684
OLDER	-0.053211	0.024821	0.00104	0.026354	0.168838	0.020983	0.208386	0.018674	0.183049	0.019201
WKDOLD	0.164141	0.027633	-0.004181	0.003669	0.007655	0.00479				
WKDYNG			0.10005	0.18046	-0.004736	0.055122				
INTOLD					-0.479165	0.234489				
INTYNG					-0.346116	0.131918				
LAMBDABA		0.144649	0.025452	0.056793	0.025398	0.160139	0.023943	0.096804	0.02553	

LAGADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2214	Rsquare	0.2601	Rsquare	0.264	Rsquare	0.271	Rsquare	0.2534
	MSE	53.04398	MSE	38.07393	MSE	29.40489	MSE	29.65554	MSE	27.66216
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.355712	0.129357	1.564363	0.059571	1.32116	0.045382	1.423984	0.043683	1.50982	0.042231
LAST5	0.008019	0.004264	0.010647	0.001795	0.00602	0.0014	0.001505	0.001385	-0.000579	0.001333
LASTSQ	-0.000275	0.000146	-0.000308	6.125E-05	-0.00011	4.6E-05	-9.28E-06	4.694E-05	4.311E-05	4.454E-05
SPLED	0.060252	0.009653	0.058207	0.004069	0.0652	0.003221	0.058498	0.003165	0.057212	0.003073
SPLEDHS	-0.039973	0.080612	0.060832	0.034279	-0.00727	0.026929	0.021995	0.026547	-0.017688	0.024693
SPLEDSC	0.02975	0.031164	0.026773	0.014739	0.00701	0.011371	0.020856	0.010997	0.008801	0.01023
SPLEDCD	0.240334	0.135154	0.430979	0.061355	0.34698	0.047917	0.341063	0.046925	0.328109	0.044098
SPLEDGW	0.106686	0.059601	0.189612	0.026891	0.14894	0.021115	0.16073	0.020777	0.154761	0.01964
PTIME	-0.359512	0.040658	-0.374916	0.017401	-0.31575	0.013218	-0.366276	0.012415	-0.354183	0.011912
HVY	0.02382	0.049933	0.084414	0.022484	0.0655	0.017971	0.04498	0.01759	-0.012314	0.01645
TNF	-0.153034	0.052947	-0.131682	0.024137	-0.14111	0.019253	-0.164797	0.018813	-0.158062	0.017073
SVS	-0.190816	0.052885	-0.156207	0.024184	-0.15943	0.019278	-0.168792	0.018795	-0.215315	0.017914
OLDER	0.226967	0.046419	0.194523	0.020947	0.20311	0.016481	0.208837	0.01637	0.194949	0.015416
WKDOLD			-0.006856	0.003665	-0.00352	0.0046	-0.00495	0.00329	-0.002128	0.005094
WKDYNG			0.004204	0.038565	0.03896	0.046268	-0.029349	0.024728	0.006114	0.033846
INTOLD			0.105357	0.17961	0.02285	0.227566	0.129481	0.163691	0.019576	0.253285
INTYNG			-0.361958	0.074224	-0.4778	0.106	-0.360883	0.062046	-0.400309	0.087651
LAMBDABA	0.150054	0.052559	-0.012346	0.028468	0.13967	0.019418	0.159915	0.019372	0.178374	0.018792

Males **LAGADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2592	Rsquare	0.2996	Rsquare	0.2666	Rsquare	0.2559	Rsquare	0.2469
	MSE	39.34157	MSE	313.51912	MSE	35.13012	MSE	34.70612	MSE	34.45441
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.829626	0.065083	1.020986	0.04851	1.221192	0.054818	1.156992	0.054202	1.287704	0.051333
LAST5	0.02268	0.001659	0.045512	0.002113	0.017342	0.001743	0.006585	0.00161	0.01108	0.001591
LASTSQ	-0.000326	4.059E-05	-0.00091	7.243E-05	-0.000379	6.206E-05	-0.000112	5.366E-05	-0.000275	5.274E-05
SPLED	0.055307	0.004723	0.051148	0.00357	0.05776	0.003804	0.058083	0.003872	0.057463	0.003848
SPLEDHS	0.041174	0.039937	0.091171	0.030821	0.080547	0.032645	0.069931	0.032279	0.008933	0.032118
SPLEDSC	0.018939	0.017318	0.051559	0.013118	0.039276	0.013712	0.034989	0.013641	0.022835	0.013391
SPLEDCD	0.308954	0.073537	0.529161	0.05643	0.407004	0.059574	0.366171	0.058993	0.328888	0.058073
SPLEDGW	0.091608	0.03184	0.191329	0.024291	0.162644	0.025548	0.14349	0.025781	0.156024	0.025471
PTIME	-0.317924	0.021039	-0.299469	0.014925	-0.385905	0.016555	-0.395236	0.0176	-0.349217	0.017587
HVY	0.141369	0.029833	0.167103	0.023034	0.105518	0.02287	0.102153	0.021644	0.069209	0.021865
TNF	-0.022333	0.031751	-0.022033	0.02433	-0.076351	0.02446	-0.109432	0.02335	-0.13924	0.023339
SVS	-0.127292	0.032054	-0.075354	0.024614	-0.174725	0.024794	-0.168108	0.023528	-0.179432	0.023606
OLDER	-0.04001	0.024808	0.007304	0.026438	0.172195	0.021044	0.221379	0.018789	0.190427	0.019134
WKDOLD	0.216593	0.024158	-0.005397	0.003688	0.008037	0.00479				
WKDYNG			0.135204	0.181065	-0.005823	0.055105				
INTOLD					-0.489197	0.234346				
INTYNG					-0.363975	0.131928				
LAMBDAST			0.00942	0.008093	0.065587	0.021797	0.18608	0.021799	0.149148	0.017172

LAGADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2198	Rsquare	0.2632	Rsquare	0.2633	Rsquare	0.2761	Rsquare	0.2496
	MSE	53.10052	MSE	37.98962	MSE	29.41791	MSE	29.55288	MSE	27.73277
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.405077	0.128556	1.702635	0.05363	1.33438	0.04622	1.36825	0.04176	1.656259	0.041623
LAST5	0.014593	0.003732	0.016282	0.001915	0.00982	0.001296	0.008059	0.001306	0.003579	0.001291
LASTSQ	-0.000489	0.000124	-0.000468	6.154E-05	-0.00022	4.208E-05	-0.000183	4.306E-05	-0.000111	4.212E-05
SPLED	0.061488	0.009643	0.058524	0.004047	0.06607	0.003217	0.05761	0.003145	0.060195	0.00307
SPLEDHS	-0.03305	0.080778	0.052949	0.034228	-0.00479	0.026941	0.02308	0.026455	-0.016295	0.024762
SPLEDSC	0.030899	0.031202	0.026421	0.014708	0.0063	0.011376	0.020123	0.010958	0.00963	0.010256
SPLEDCD	0.236706	0.135288	0.44151	0.061241	0.341	0.047961	0.33328	0.046769	0.334551	0.044225
SPLEDGW	0.10578	0.059663	0.193769	0.026841	0.14439	0.021143	0.153873	0.020714	0.157243	0.019703
PTIME	-0.360642	0.040908	-0.381989	0.017323	-0.31534	0.013264	-0.353933	0.012428	-0.362433	0.011976
HVY	0.025905	0.049975	0.089379	0.022429	0.06462	0.017985	0.045173	0.017528	-0.009855	0.0165
TNF	-0.152174	0.053008	-0.123996	0.0241	-0.14168	0.019264	-0.160145	0.018751	-0.157112	0.017125
SVS	-0.19386	0.052951	-0.148926	0.024155	-0.16129	0.01929	-0.163566	0.018733	-0.216485	0.017964
OLDER	0.236031	0.046775	0.176898	0.020992	0.20696	0.016601	0.214504	0.016301	0.18956	0.015592
WKDOLD			-0.008441	0.003622	-0.00525	0.004579	-0.005381	0.003252	-0.008015	0.005083
WKDYNG			0.002866	0.038483	0.03887	0.046289	-0.026614	0.024643	0.006513	0.033933
INTOLD			0.118386	0.178796	0.11391	0.226805	0.199899	0.162537	0.238892	0.253189
INTYNG			-0.356129	0.074069	-0.47512	0.10605	-0.349472	0.061836	-0.396641	0.087875
LAMBDAST										

Males **SCVADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2551	Rsquare	0.298	Rsquare	0.3072	Rsquare	0.3072	Rsquare	0.2966
	MSE	39.44675	MSE	313.88103	MSE	34.14181	MSE	33.48722	MSE	33.29555
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.450805	0.074941	0.46524	0.058626	0.527641	0.061692	0.43903	0.059024	0.56821	0.058853
PSLNWK	0.273696	0.01446	0.300601	0.009065	0.282477	0.010525	0.279938	0.010415	0.283901	0.010461
SPLED	0.059939	0.004724	0.051534	0.003621	0.055531	0.003716	0.059832	0.003743	0.055228	0.003722
SPLEDHS	0.011555	0.040108	0.06143	0.030838	0.052305	0.031724	0.038792	0.031158	0.017751	0.031043
SPLEDSC	0.014331	0.017372	0.045816	0.013114	0.050212	0.013328	0.022294	0.013162	0.0328	0.012941
SPLEDCD	0.326053	0.07371	0.539521	0.056433	0.449506	0.057912	0.395115	0.056898	0.396184	0.056165
SPLEDGW	0.086613	0.031938	0.175094	0.024344	0.159061	0.024803	0.127147	0.024862	0.168156	0.024601
PTIME	-0.33217	0.020946	-0.292639	0.014983	-0.343635	0.016156	-0.350862	0.017023	-0.308263	0.017037
HVY	0.158685	0.029865	0.165346	0.023059	0.135904	0.022235	0.12799	0.020885	0.101263	0.021152
TNF	-0.006889	0.031834	-0.023011	0.02436	-0.029567	0.023817	-0.05923	0.022588	-0.088069	0.022627
SVS	-0.117091	0.032157	-0.074604	0.024644	-0.12874	0.024158	-0.126443	0.022742	-0.135055	0.022863
OLDER	-0.079111	0.021826	-0.089149	0.018508	-0.063807	0.018835	-0.041717	0.018921	-0.098467	0.019483
WKDOLD	0.112469	0.027824	-0.007787	0.003496	0.005008	0.004366				
WKDYNG			0.074845	0.176341	-0.073255	0.053619				
INTOLD					-0.452437	0.220076				
INTYNG					0.142761	0.129798				
LAMBDABA		0.082181	0.024318	0.118476	0.023114	0.197466	0.021152	0.179803	0.021508	

SCVADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2551	Rsquare	0.306	Rsquare	0.2689	Rsquare	0.3239	Rsquare	0.3055
	MSE	51.87107	MSE	36.8672	MSE	29.30565	MSE	28.55842	MSE	26.68011
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.667763	0.140937	0.704543	0.064597	1.13614	0.047636	0.630086	0.047753	0.729866	0.046067
PSLNWK	0.233473	0.025375	0.274461	0.01075	0.08107	0.006726	0.296644	0.008747	0.28388	0.008103
SPLED	0.060489	0.009436	0.055571	0.003942	0.065	0.00321	0.055578	0.003047	0.054105	0.002962
SPLEDHS	-0.018805	0.078854	0.016809	0.033242	-0.01422	0.026843	-0.02896	0.025609	-0.064737	0.023854
SPLEDSC	0.044068	0.030509	0.016034	0.014279	0.00609	0.011332	0.00923	0.010594	-0.000781	0.009871
SPLEDCD	0.328522	0.132498	0.434564	0.059415	0.34684	0.047751	0.340624	0.045188	0.346084	0.042533
SPLEDGW	0.108354	0.058278	0.172391	0.026049	0.14525	0.021047	0.14383	0.020014	0.136839	0.018948
PTIME	-0.331486	0.039854	-0.318051	0.017	-0.30812	0.013195	-0.31467	0.012049	-0.30325	0.011579
HVY	0.039402	0.048842	0.104934	0.021788	0.06701	0.017911	0.063817	0.016949	0.010773	0.015879
TNF	-0.116079	0.051927	-0.084178	0.02345	-0.13787	0.01919	-0.119049	0.018166	-0.115346	0.016512
SVS	-0.173392	0.051748	-0.112137	0.023486	-0.15516	0.019216	-0.129619	0.018136	-0.168459	0.017329
OLDER	-0.047428	0.047981	-0.097586	0.020767	0.17007	0.014863	-0.078103	0.016497	-0.0736	0.015388
WKDOLD			-0.00324	0.003537	-0.00116	0.004545	-0.00386	0.003148	-0.001951	0.004858
WKDYNG			0.032052	0.037361	0.02743	0.046122	-0.033037	0.023813	-0.020697	0.032653
INTOLD			-0.133103	0.174049	-0.06403	0.225521	-0.061076	0.157402	-0.121725	0.24255
INTYNG			-0.045278	0.072947	-0.36804	0.106188	0.011475	0.060616	0.019757	0.085268
LAMBDABA	0.203401	0.043465	0.12626	0.024883	0.15791	0.017635	0.194076	0.017154	0.214565	0.016273

Males		SCVADJST								
	1984		1985		1986		1987		1988	
	Rsquare	0.2608	Rsquare	0.2973	Rsquare	0.309	Rsquare	0.3094	Rsquare	0.295
	MSE	39.29553	MSE	314.03254	MSE	34.09649	MSE	33.4326	MSE	33.33447
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.389792	0.072903	0.58072	0.055757	0.452948	0.062112	0.381391	0.059659	0.672922	0.054961
PSLNWK	0.251079	0.014736	0.298762	0.009701	0.293636	0.010749	0.284651	0.010431	0.274798	0.010425
SPLED	0.056818	0.004721	0.053476	0.00358	0.055313	0.003692	0.059932	0.003729	0.056281	0.00372
SPLEDHS	0.015196	0.03995	0.064895	0.030921	0.055219	0.031687	0.040576	0.031108	0.02303	0.031075
SPLEDSC	0.014469	0.017305	0.047361	0.013142	0.050737	0.01331	0.023016	0.013141	0.034361	0.012955
SPLEDCD	0.31305	0.07345	0.543427	0.056478	0.447957	0.057828	0.390161	0.056809	0.398162	0.05623
SPLEDGW	0.080131	0.031829	0.175733	0.024367	0.156121	0.024773	0.121126	0.024835	0.163686	0.024638
PTIME	-0.316169	0.020943	-0.299232	0.014912	-0.337364	0.016174	-0.346249	0.017013	-0.313243	0.017028
HVY	0.145597	0.029807	0.167022	0.023069	0.132239	0.022207	0.12422	0.020857	0.1007	0.021179
TNF	-0.015226	0.031733	-0.022218	0.024371	-0.030225	0.02378	-0.060858	0.02255	-0.088228	0.022654
SVS	-0.119279	0.032035	-0.073951	0.024658	-0.12912	0.024119	-0.12683	0.022705	-0.134829	0.022891
OLDER	-0.071611	0.021417	-0.108951	0.017459	-0.067002	0.01853	-0.050008	0.018607	-0.122624	0.019014
WKDOLD	0.196279	0.024411	-0.010375	0.003437	0.00522	0.00435				
WKDYNG			0.161026	0.175211	-0.079007	0.053555				
INTOLD					-0.451305	0.219651				
INTYNG					0.119026	0.129495				
LAMBDAST			-0.008521	0.007861	0.146519	0.020534	0.219332	0.020285	0.107694	0.015513

SCVADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2517	Rsquare	0.3041	Rsquare	0.2679	Rsquare	0.3229	Rsquare	0.2999
	MSE	51.98966	MSE	36.91854	MSE	29.32562	MSE	28.58012	MSE	26.78643
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.674135	0.145646	0.893093	0.059655	1.12882	0.050052	0.732263	0.044761	0.870302	0.046074
PSLNWK	0.248552	0.02578	0.26635	0.010689	0.09057	0.006866	0.286164	0.008747	0.279653	0.008136
SPLED	0.062505	0.009431	0.057445	0.003932	0.06603	0.003206	0.056823	0.00304	0.056937	0.002966
SPLEDHS	-0.00382	0.079134	0.018672	0.033296	-0.01237	0.026861	-0.026628	0.025631	-0.060268	0.02395
SPLEDSC	0.047418	0.030592	0.016574	0.014299	0.00561	0.01134	0.009606	0.010602	0.000771	0.009909
SPLEDCD	0.32851	0.132813	0.43944	0.059508	0.34059	0.047808	0.338609	0.045226	0.352069	0.042712
SPLEDGW	0.107196	0.05841	0.173247	0.026096	0.14014	0.021082	0.141595	0.020034	0.139266	0.019035
PTIME	-0.331896	0.040157	-0.331179	0.016968	-0.30901	0.013229	-0.317829	0.01204	-0.311437	0.011662
HVY	0.043852	0.048931	0.109914	0.021812	0.06587	0.017929	0.064739	0.016961	0.012895	0.015948
TNF	-0.110804	0.05202	-0.0804	0.023493	-0.13853	0.019205	-0.116639	0.018182	-0.115565	0.016584
SVS	-0.177097	0.051868	-0.110777	0.023531	-0.15813	0.019231	-0.127253	0.018152	-0.171067	0.0174
OLDER	-0.094654	0.046372	-0.126734	0.020663	0.14978	0.014348	-0.099918	0.016168	-0.101901	0.015356
WKDOLD			-0.005777	0.003516	-0.00175	0.004547	-0.005821	0.003135	-0.005463	0.004874
WKDYNG			0.031805	0.037414	0.02609	0.046155	-0.030918	0.023832	-0.019664	0.032783
INTOLD			-0.059977	0.173724	-0.01691	0.225458	0.033098	0.157167	0.003943	0.243412
INTYNG			-0.059708	0.07308	-0.36475	0.106277	-0.018863	0.06065	0.007871	0.085609
LAMBDAST	0.14922	0.040407	-0.004786	0.017891	0.13644	0.017521	0.122101	0.011878	0.101829	0.015514

Appendix F: Labor Composition Indexes

	Mean													Average Hedonic, by Partition
OPTP	WAGE	POTEX	OPT	LNABA	LNAST	HCABA	HCAST	LVABA	LVAST	LGABA	LGAST	SCABA	SCAST	AVG OPTP
males	0.0265	0.0301	0.0297	0.0307	0.0310	0.0315	0.0320	0.0309	0.0312	0.0304	0.0306	0.0308	0.0312	0.0309
females	0.0267	0.0291	0.0289	0.0291	0.0291	0.0293	0.0294	0.0295	0.0295	0.0296	0.0296	0.0293	0.0293	0.0293
OPTW														AVG OPTW
males	0.0456	0.0443	0.0440	0.0446	0.0445	0.0448	0.0445	0.0450	0.0448	0.0418	0.0422	0.0446	0.0444	0.0441
females	0.0718	0.0679	0.0682	0.0682	0.0678	0.0673	0.0667	0.0680	0.0676	0.0686	0.0688	0.0685	0.0679	0.0680
OPTA														AVG OPTA
males	0.0031	0.0034	0.0033	0.0031	0.0032	0.0038	0.0038	0.0034	0.0035	0.0034	0.0034	0.0035	0.0035	0.0034
females	0.0025	0.0026	0.0026	0.0025	0.0025	0.0027	0.0027	0.0025	0.0025	0.0026	0.0026	0.0026	0.0026	0.0026
NEWN														AVG NEWN
males	0.0004	0.0000	-0.0001	-0.0002	-0.0002	-0.0002	-0.0002	-0.0002	-0.0001	-0.0003	-0.0003	-0.0002	-0.0001	-0.0002
females	0.0010	0.0001	0.0001	0.0008	0.0008	0.0011	0.0011	0.0009	0.0009	0.0008	0.0008	0.0009	0.0009	0.0008
NEWW														AVG NEWW
males	0.0539	0.05322	0.0534	0.0535	0.0534	0.0534	0.0533	0.0536	0.0536	0.0531	0.0533	0.0532	0.0531	0.0533
females	0.0469	0.0456	0.0460	0.0469	0.0468	0.0467	0.0466	0.0469	0.0469	0.0468	0.0469	0.0464	0.0464	0.0466

OPTP: 72 age vales (0-1, 1-2, …, 71 and over), 7 discrete categorical variables for years of school completed (fewer than 4 years, 4-8, 8-11, 12, 12-14, 14-16, 16, over 16), gender, 4 discrete categorical variables for number of children (none, 1, 2, more than 2), and marital status (ever married, never married).
OPTA: Identical to OPTP except that 5-year age intervals replace the 1-year age intervals.

OPTW: Identical to OPTA except that 5-year intervals in actual work experience replace the 5-year age intervals.
NEWN: 4 broad regions (northeast, south, central and west); 3 broad industry categories (manufacturing, mining, transportation and agriculture; finance and wholesale and retail trade; and services), 3 broad age categories (younger than 30, 30-55, and 55 and older) 4 broad schooling categories (less than 12 years, 12 years, 13-16 years, 16 years, and some graduate work completed), and gender. Among male employees in heavy industry there is a further partition into production and non-production employment. Cells sample size limitations prevent a parallel partition among female employees in heavy industry.
NEWW: Identical to NEWN, but with an additional partition for up to 10 years of work experience or an age less than 21, between 10 and 20 years of work experience, and more than 20 years of work experience.

Appendix E to:

Accounting for Actual Work Experience:

Prototype Hedonic Labor Quality Indexes

TO BE PRESENTED AT THE NBER SUMMER INSTITUTE 2002

PRODUCTIVITY POTPOURRI WORKSHOP

PRELIMINARY DRAFT

NOT FOR CITATION OR QUOTATION

Linda Moeller

Office of Productivity and Technology

Bureau of Labor Statistics

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July 17, 2002

This paper reports on research undertaken by Linda Moeller under an inter-agency agreement between the Bureau of Labor Statistics and the Bureau of the Census. The results and conclusions discussed here are those of the author and do not represent the views of the Office of Productivity of the Bureau of Labor Statistics (BLS), Department of Labor, or the Bureau of the Census (BOC), Department of Commerce. The results are preliminary and should not be quoted or cited. This draft is being released to inform interested parties of this research and to encourage discussion.

Accounting for Actual Work Experience

Appendix E: Experience Equation Coefficients
Charts and Tables on Predicted Experience Outliers
Wage Equation Coefficients

Experience Equations

Females	**OPTEXPFM**									
	1984		1985		1986		1987		1988	
	N	9054	N	7326	N	4627	N	9021	N	9190
	Rsquare	0.282	Rsquare	0.2882	Rsquare	0.3576	Rsquare	0.3719	Rsquare	0.3853
	MSE	675.15878	MSE	544.57305	MSE	476.82448	MSE	490.34826	MSE	493.21513
	Coeff	Standard	Coeff	Standard	Coeff	Standard	Coeff	Standard	Coeff	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-3.494429	1.022661	-3.294335	1.142093	-3.196783	1.068	-3.478584	0.769656	-2.567774	0.834025
POTEXP	0.940446	0.111055	0.891656	0.120779	0.781301	0.115956	0.856583	0.081676	0.75697	0.084295
POTEXPSQ	-0.003673	0.002514	-0.000584	0.002785	-1.3E-05	0.002791	-0.002664	0.001948	-0.001216	0.002061
MARRIED	1.364078	0.871641	1.529306	0.949507	1.221975	0.858844	1.454566	0.609669	1.61005	0.706024
POMAR	-0.126348	0.112383	-0.093552	0.122065	-0.107582	0.116063	-0.134601	0.081655	-0.086741	0.085949
POSQMAR	-0.00342	0.002588	-0.006267	0.002869	-0.002598	0.002869	-0.000964	0.002008	-0.001288	0.002134
POTKID1	-0.046146	0.01104	-0.051748	0.012174	-0.053289	0.013929	-0.031448	0.010213	-0.032467	0.009489
POTKID23	-0.130272	0.013867	-0.128835	0.015122	-0.068539	0.016637	-0.069671	0.011653	-0.08819	0.01109
POTKID4	-0.178611	0.032048	-0.138063	0.033087	-0.158374	0.038194	-0.195089	0.026771	-0.222115	0.025494
S0TO4	-0.731741	3.225672	-1.861515	3.458507	-9.474112	4.165227	0.365967	2.603462	-0.704275	2.760397
S5TO8	0.047808	1.385652	-0.048592	1.595557	-1.72478	1.513602	-3.136462	1.190776	-2.519177	1.313806
S12	3.759162	0.691536	3.499157	0.792717	4.52939	0.765646	3.961704	0.563187	3.029077	0.58301
S13T15	5.094312	0.75991	4.925211	0.866687	6.426276	0.824956	5.813785	0.601583	4.188506	0.619389
S16	5.779453	0.859359	6.297338	0.972403	6.488776	0.923486	6.568997	0.677681	4.945572	0.695285
S17UP	6.430339	0.919055	5.87489	1.051964	7.310732	0.989016	6.654321	0.733773	5.303325	0.76102
POS0TO4	-0.033604	0.088846	0.030337	0.100773	0.273797	0.117972	-0.121704	0.078268	-0.021963	0.084361
POS5TO8	-0.011048	0.03977	-0.016899	0.04548	-0.025055	0.047473	0.009283	0.037406	-0.02496	0.040733
POS12	-0.059048	0.023914	-0.045052	0.027212	-0.130197	0.029116	-0.088153	0.021126	-0.056784	0.021696
POS13T15	-0.084597	0.028772	-0.063882	0.032527	-0.144384	0.03443	-0.110747	0.024653	-0.065967	0.02445
POS16	-0.081436	0.035802	-0.096317	0.04084	-0.140178	0.044984	-0.145505	0.032584	-0.127591	0.030808
POS17UP	0.015165	0.041577	0.066379	0.047012	-0.065881	0.048078	-0.02163	0.036402	-0.050937	0.032644
BLACK	1.215245	0.307837	1.486931	0.345256	-0.089537	0.344462	-0.15393	0.248091	0.216978	0.246043
HISP	-0.616613	0.426808	-0.891953	0.469112	-0.339504	0.443081	-0.138882	0.313595	-0.44375	0.315253

Females	1989		1990		1991		1992		1993	
	N	3343	N	9593	N	15220	N	15154	N	17887
OPTEXPFM	Rsquare	.4007 710.11689	Rsquare	0.4239	Rsquare	0.4345	Rsquare	0.4455	Rsquare	0.4347
	MSE		MSE	505.71214	MSE	397.35777	MSE	394.14583	MSE	371.49266
	Coefficien	Standard	Coefficien	Standard	Coefficien	Standard	Coefficien	Standard	Coefficien	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-2.187516	1.663432	-3.449418	0.799406	-2.725993	0.616233	-1.325264	0.561597	-2.379897	0.517188
POTEXP	0.622352	0.163158	0.787213	0.079171	0.786269	0.06017	0.737248	0.057007	0.794498	0.052307
POTEXPSQ	0.004973	0.003895	0.000514	0.001931	-0.000431	0.001481	-0.000118	0.001469	-0.000755	0.001354
MARRIED	2.434186	1.527631	0.461915	0.624914	0.646106	0.489304	0.305447	0.432968	0.149754	0.388932
POMAR	-0.032779	0.167856	0.037281	0.079103	-0.000405	0.060605	0.059825	0.057464	0.095151	0.052508
POSQMAR	-0.005724	0.004016	-0.005591	0.001992	-0.00459	0.001534	-0.006453	0.001526	-0.006872	0.001406
POTKID1	-0.039537	0.01459	-0.029381	0.009948	-0.032082	0.007621	-0.051002	0.007743	-0.042933	0.007122
POTKID23	-0.102122	0.017099	-0.096432	0.011486	-0.093987	0.008809	-0.092645	0.008665	-0.098167	0.008113
POTKID4	-0.211215	0.049865	-0.161564	0.027686	-0.16104	0.02083	-0.196905	0.020476	-0.195142	0.01854
S0TO4	-12.60557	5.11217	0.385434	2.739385	0.033113	2.159353	2.01945	2.022279	1.859446	2.233149
S5TO8	-3.137543	2.199756	-0.130109	1.202381	-2.035	0.933934	-1.230517	0.920772	-1.726731	0.832261
S12	2.302924	1.00311	4.310656	0.58972	3.27211	0.466328	1.979395	0.446654	3.055045	0.419324
S13T15	2.882718	1.071856	6.438105	0.626112	5.232238	0.493847	3.619639	0.469997	4.814529	0.437332
S16	3.424878	1.230717	7.220064	0.675856	6.098704	0.538801	4.616806	0.510073	5.828194	0.472549
S17UP	3.717969	1.406899	7.878628	0.75049	6.763728	0.591196	5.225145	0.554202	6.661065	0.521288
POS0TO4	0.451581	0.151239	-0.077871	0.083044	-0.100051	0.066441	-0.166048	0.066673	-0.162841	0.0712
POS5TO8	0.017614	0.068328	-0.054385	0.037443	0.025654	0.029823	0.000819	0.030337	0.019337	0.027733
POS12	-0.064138	0.036671	-0.042797	0.02219	0.006893	0.017413	0.056381	0.017157	-0.00925	0.016337
POS13T15	-0.06655	0.040652	-0.075499	0.025358	-0.014545	0.019805	0.052081	0.019497	-0.022735	0.018173
POS16	-0.110179	0.052078	-0.093939	0.030367	-0.030794	0.024169	0.043635	0.023318	-0.018049	0.02188
POS17UP	-0.053567	0.055541	-0.05347	0.035721	0.018327	0.027527	0.087572	0.025844	-0.012359	0.024405
BLACK	0.533019	0.423798	0.312283	0.238282	0.125676	0.187544	-0.310926	0.178238	-0.163208	0.163399
HISP	-0.282507	0.526643	-0.768894	0.298286	-0.564522	0.23198	-0.750266	0.216349	-1.008628	0.197673

Females **HECKSPFM**

	1984		1985		1986		1987		1988	
	Rsquare	0.277	Rsquare	0.278	Rsquare	0.3552	Rsquare	0.3735	Rsquare	0.3942
	MSE	677.80114	MSE	548.72234	MSE	478.08317	MSE	489.93232	MSE	489.83127
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-3.532158	3.120778	-0.479473	3.324369	-11.91102	3.502081	-9.939825	2.587383	-4.937496	1.916195
ED	-0.153988	0.204547	-0.309628	0.224708	0.388842	0.227675	0.130559	0.171143	-0.192747	0.140237
AGE	0.355604	0.053238	0.288732	0.05803	0.606971	0.062589	0.502698	0.04711	0.415545	0.041345
YOUNG	-4.289872	1.502974	-4.20274	1.379384	-1.629642	1.891464	-0.891227	1.066446	-1.407668	0.832277
ASSYPOV	2.690823	1.706801	4.724024	2.511157	-2.247523	2.704208	0.476972	2.102593	1.733488	2.429124
YOUNGSQ	0.09712	0.172659	-0.01317	0.160358	-0.172912	0.164077	-0.133098	0.122901	-0.044884	0.106886
RELAGE	0.724577	1.379912	0.060383	1.310409	-3.336184	1.685208	-0.542534	1.174414	-2.340406	1.022495
RELED	2.367776	1.222554	0.234488	1.092414	3.764185	1.45153	3.015875	0.927644	2.306769	0.905747
OTHWAGE	-0.003022	0.045504	0.096813	0.067205	0.064192	0.060543	0.091105	0.047171	0.127553	0.028602
YNGASSY	-0.872772	0.680268	-1.062264	0.944794	0.683071	0.954766	-0.240443	0.829383	0.137026	0.629772
YRELAGE	0.117609	0.746105	-0.454227	0.469915	1.326592	0.894093	0.184519	0.445372	0.477428	0.551873
YRELED	-0.082762	0.491319	0.537284	0.331868	-0.709818	0.828238	-0.567383	0.421874	-0.617192	0.550223
YNGOTHWG	0.001434	0.005837	0.002567	0.009116	0.004425	0.006677	0.016035	0.008433	-0.002617	0.00438
YNGED	0.09499	0.06861	0.11638	0.072841	-0.008712	0.067058	0.012617	0.046981	0.030207	0.045637
YNGAGE	0.068955	0.024023	0.065675	0.022812	0.031828	0.028041	0.026934	0.018208	0.020888	0.017042
ASRELAGE	2.873968	0.798428	0.810013	0.916277	4.981468	2.09358	2.282887	1.500164	0.339166	2.813174
ASRELED	-2.057971	0.6733	-1.71772	0.907654	-4.080973	2.166427	-2.007786	1.655911	-0.400371	2.949618
ASOTHWG	0.00632	0.010517	0.050423	0.023106	-0.013399	0.01977	0.001705	0.013972	-0.009654	0.01884
ASSYED	-0.088058	0.084178	-0.101329	0.11292	0.048634	0.141098	0.029642	0.116344	-0.058356	0.094016
ASSYAGE	-0.045797	0.01975	-0.067775	0.029355	0.001239	0.033007	-0.042851	0.020626	-0.01764	0.026395
REAGREED	0.83172	0.459123	0.957479	0.302309	0.299164	0.730306	0.204501	0.286791	-0.493259	0.598646
RELAGOWG	0.018719	0.022136	-0.037617	0.027143	-0.029352	0.018746	-0.008555	0.025443	0.00437	0.020432
RELAGED	-0.19726	0.098137	-0.1326	0.093881	0.091465	0.114945	-0.035362	0.07942	0.149244	0.058678
RELEDOWG	-0.015756	0.022472	0.012784	0.018406	0.004036	0.022544	0.003926	0.026832	-0.012371	0.021869
RELEDAG	-0.097458	0.021695	-0.048902	0.020288	-0.094697	0.027	-0.081719	0.017973	-0.044247	0.015072
OTHWGED	0.000147	0.002192	-0.002442	0.00337	-0.000153	0.003279	-0.002252	0.00233	-0.004467	0.00165
OTHWGAGE	-2.77E-05	0.00051	-0.001339	0.000657	-0.001293	0.000715	-0.002806	0.000719	-0.00264	0.000434
AGED	0.012808	0.003557	0.016478	0.004037	-0.005741	0.004191	0.005113	0.003207	0.009839	0.003099
BLACK	1.093102	0.303458	1.253465	0.340357	-0.113514	0.337749	-0.364196	0.242836	-0.007364	0.239222
HISP	-0.76259	0.423822	-0.899111	0.467252	-0.463164	0.437489	-0.49952	0.309484	-0.823435	0.308718

Females	1989		1990		1991		1992		1993	
HECKSPFM	Rsquare	0.4009	Rsquare	0.4167	Rsquare	0.4279	Rsquare	0.4354	Rsquare	0.4238
	MSE	709.56841	MSE	509.03727	MSE	399.74728	MSE	397.80204	MSE	375.15009
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-10.27577	3.088715	-9.527906	2.563754	-6.652118	2.023224	2.758691	1.470498	-1.245312	1.317574
ED	0.189964	0.233475	0.043543	0.168035	-0.113419	0.133735	-0.739616	0.1069	-0.422611	0.097065
AGE	0.558197	0.067901	0.500983	0.046476	0.445754	0.037116	0.207261	0.032082	0.315246	0.029156
YOUNG	0.705851	1.610189	-3.643903	1.291539	-2.927532	0.804361	-2.819654	0.636584	-2.396117	0.588048
ASSYPOV	-4.932424	2.733285	3.885353	1.597002	5.682749	1.441258	3.03712	1.760404	3.116773	1.644545
YOUNGSQ	-0.111633	0.216858	0.084754	0.115337	0.116975	0.090271	0.041303	0.088625	0.002546	0.076961
RELAGE			1.620559	1.243914	0.001814	0.894512	0.029239	0.663044	0.037362	0.024033
RELED			2.90935	1.03235	2.146555	0.745244	0.176739	0.561869	-0.044963	0.030533
OTHWAGE	0.092364	0.053087	0.033714	0.029791	0.053916	0.020675	0.032188	0.009861	0.003412	0.007976
YNGASSY	0.122632	1.530158	-0.12566	0.296455	-0.607797	0.512706	-0.224756	0.793724	-0.988991	0.606347
YRELAGE			0.883302	0.668011	0.541772	0.347742	-0.268277	0.2644	0.040035	0.026611
YRELED			-0.155219	0.504141	-0.092572	0.296349	0.220139	0.245324	-0.082727	0.05148
YNGOTHWG	0.000217	0.012714	8.169E-05	0.002307	-0.003051	0.002998	-0.002676	0.002164	0.000397	0.001624
YNGED	0.061219	0.091162	0.072748	0.049786	0.030157	0.037309	0.073529	0.03512	0.056148	0.031316
YNGAGE	-0.059448	0.03456	0.040773	0.018802	0.038568	0.01364	0.0381	0.013031	0.03308	0.011569
ASRELAGE			0.572837	1.345669	-0.238767	0.736707	-0.132703	0.859596	0.016392	0.040489
ASRELED			1.110758	1.192575	0.063299	0.672656	0.140428	0.727011	0.012	0.054318
ASOTHWG	-0.009031	0.040006	0.004218	0.00587	0.006736	0.0077	-0.046543	0.018884	0.001028	0.004398
ASSYED	0.245455	0.131201	-0.221771	0.072444	-0.277199	0.071612	-0.069414	0.082463	-0.05194	0.069
ASSYAGE	0.01509	0.023701	-0.054289	0.019351	-0.03947	0.014156	-0.042673	0.021065	-0.056136	0.017476
REAGREED			-0.041126	0.519675	-0.264378	0.233861	-0.533777	0.209955	0.0000197 53 0	2.281E-05
RELAGOWG			0.000187	0.011255	0.001738	0.005828	0.024543	0.022061	0.000105	0.000722
RELAGED			-0.184569	0.083572	-0.046436	0.060083	-0.006707	0.041688	-0.00218	0.001259
RELEDOWG			0.00126	0.012483	-0.00745	0.008588	-0.025353	0.021709	-0.000976	0.001227
RELEDAG			-0.083317	0.018798	-0.057578	0.014017	0.010643	0.010242	0.000408	0.00045
OTHWGED	0.000412	0.004003	-0.000451	0.001195	-0.003463	0.001103	-0.00164	0.000554	0.000063	0.000552
OTHWGAGE	-0.004158	0.000915	-0.001133	0.000429	-0.000201	0.000238	-0.000429	0.000157	-0.000151	0.000136
AGED	-0.00011	0.005243	0.009264	0.003131	0.011881	0.002504	0.026185	0.002376	0.017348	0.002189
BLACK	0.277417	0.412092	0.094495	0.234207	0.005618	0.184229	-0.384966	0.176443	-0.185606	0.160986
HISP	-0.775363	0.51846	-1.093175	0.295606	-0.82757	0.229654	-0.980898	0.215144	-1.303101	0.196388

Females **LVLSPFM**

	1984		1985		1986		1987		1988	
	Rsquare	0.2931	Rsquare	0.2863	Rsquare	0.3534	Rsquare	0.3736	Rsquare	0.3946
	MSE	669.79539	MSE	545.14243	MSE	478.17557	MSE	489.5759	MSE	489.34869
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.424517	1.913764	1.739015	2.155717	-2.810282	2.141235	-2.808401	1.559048	4.796579	1.223718
POTEXP	0.636209	0.064897	0.575576	0.075094	0.549749	0.075028	0.536057	0.055045	0.232538	0.040914
POTEXPSQ	-0.0055	0.000749	-0.004878	0.000857	-0.001404	0.000888	-0.002414	0.000638	-0.000979	0.000582
SPLED	0.181305	0.202623	0.105006	0.228952	0.621154	0.232198	0.429956	0.168117	-0.59189	0.12673
SPLEDHS	0.590893	0.559004	0.711379	0.620297	0.71314	0.626013	0.818635	0.451026	0.30515	0.453266
SPLEDSC	0.156336	0.262488	0.307453	0.288377	0.78747	0.284163	0.435095	0.200662	0.000711	0.200671
SPLEDCD	0.072914	1.141581	0.636919	1.255173	0.633924	1.26005	-0.780948	0.901736	-2.268621	0.899638
SPLEDGW	1.104927	0.518188	1.29125	0.5758	1.165767	0.562712	0.305731	0.412056	-0.740358	0.419251
OWNKID	-1.146644	0.183415	-1.271581	0.175083	-0.476426	0.221495	-0.40813	0.151714	-0.565848	0.142661
KIDSQ	0.054299	0.040823	0.072795	0.033077	-0.02285	0.05178	-0.061367	0.034518	-0.065753	0.033064
INVOUTYN	-0.573082	0.470066	-0.220018	1.845748	-0.347972	0.62539	-1.068132	0.504128	-2.832953	0.584271
INVOUTDR	-0.363343	0.053393			-0.361649	0.283649	-0.469414	0.215013	-0.383352	0.225885
RELED	-1.53808	0.325597	-0.313271	0.194413	-0.257903	0.450807	-0.700426	0.279482	-0.139278	0.380192
RELAGE	-0.554504	0.359423	-1.199641	0.281105	-1.375617	0.442188	-0.480122	0.257204	0.096383	0.367963
NOTWELL	-2.403493	0.281067	-2.568885	0.321591	-0.21174	0.359641	-0.547598	0.253024	-0.528351	0.246682
ASSYPOV	-0.283406	0.063032	-0.712542	0.219993	-0.748629	0.293956	-0.991758	0.196806	-0.093833	0.139508
AGED	0.004209	0.003418	0.006704	0.003913	-0.00322	0.004087	0.004106	0.002997	0.025129	0.00218
BLACK	1.360017	0.300193	1.642823	0.337277	0.060269	0.338833	-0.032874	0.24306	0.394356	0.239304
HISP	-0.565305	0.422076	-0.699584	0.467529	-0.259781	0.442848	-0.158317	0.312219	-0.545782	0.31049

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females	1989		1990		1991				1993	
LVLSPFM	Rsquare	0.4004	Rsquare	0.4237	Rsquare	0.4375	Rsquare	0.4473	Rsquare	0.4366
	MSE	709.68547	MSE	505.70734	MSE	396.26593	MSE	393.4557	MSE	370.82706
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	7.580207	1.909163	-5.00324	1.535414	-3.297461	1.158298	-1.89912	1.095107	-5.052545	1.052382
POTEXP	0.23344	0.065887	0.700095	0.053967	0.612944	0.040827	0.559047	0.039439	0.71065	0.037432
POTEXPSQ	0.000468	0.000979	-0.004174	0.000624	-0.003705	0.000486	-0.005073	0.000471	-0.006042	0.000435
SPLED	-0.677983	0.197957	0.594747	0.163532	0.344112	0.122977	-0.006708	0.118563	0.408095	0.113729
SPLEDHS	-0.067879	0.754851	1.908276	0.44233	1.728047	0.346915	1.382067	0.339341	0.979266	0.317186
SPLEDSC	0.015785	0.335828	0.662007	0.195024	0.578651	0.154234	0.390158	0.150246	0.283202	0.138346
SPLEDCD	-0.748652	1.522316	0.074979	0.855925	-0.417392	0.671567	-0.827741	0.651707	-0.382931	0.609919
SPLEDGW	0.319063	0.717224	0.063323	0.404856	-0.20551	0.315845	-0.561433	0.307593	-0.506537	0.286365
OWNKID	-1.050034	0.288699	-0.77552	0.15786	-0.768618	0.120866	-0.78772	0.123554	-0.797134	0.110873
KIDSQ	0.018845	0.077794	0.014198	0.03926	0.015177	0.029379	-0.00037	0.03194	0.000513	0.028057
INVOUTYN	-2.739063	0.95187	-2.276972	0.57245	-1.883699	0.452506	-1.389692	0.417634	-1.274807	0.301494
INVOUTDR	-0.355074	0.373444	-0.158729	0.223669	-0.232072	0.168273	-0.347325	0.172208	-0.370821	0.139071
RELED			-0.65436	0.303666	-0.521673	0.210216	0.141444	0.175621	0.008985	0.005421
RELAGE			-0.47741	0.307761	-0.553177	0.203834	-0.320668	0.185242	-0.0055	0.004026
NOTWELL	-1.755483	0.411235	-0.931958	0.220237	-1.497587	0.177551	-1.410925	0.175557	-1.237814	0.155539
ASSYPOV	-0.106968	0.214123	-0.395697	0.141454	-0.544662	0.124837	-0.241288	0.177505	-0.520109	0.136482
AGED	0.0201	0.003529	0.001938	0.002902	0.008494	0.002178	0.016936	0.002124	0.007566	0.002026
BLACK	0.945451	0.412752	0.305732	0.232535	0.157604	0.182826	-0.201659	0.1747	-0.05607	0.15964
HISP	-0.542243	0.521382	-0.578529	0.297929	-0.45074	0.230824	-0.636732	0.215142	-0.926141	0.196536

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females		LNEXPFM								
	1984		1985		1986		1987		1988	
	Rsquare	0.1982	Rsquare	0.1937	Rsquare	0.1079	Rsquare	0.1166	Rsquare	0.1063
	MSE	75.29071	MSE	60.06235	MSE	129.78287	MSE	131.67999	MSE	121.02716
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-1.627234	0.193032	-1.556659	0.218043	-3.948943	0.506021	-4.333054	0.369265	-1.410481	0.296627
LNPOT	0.565922	0.085704	0.748804	0.096549	0.356887	0.210706	0.085136	0.149801	0.364117	0.17194
LNPOTSQ	0.129386	0.026029	0.070003	0.029014	0.334219	0.069024	0.392193	0.049307	0.089383	0.045461
SPLED	0.235762	0.020943	0.205114	0.023323	0.459909	0.057294	0.498033	0.040868	0.15571	0.029393
SPLEDHS	0.224473	0.062767	0.173826	0.068215	0.19759	0.169854	0.453015	0.121243	0.325359	0.112103
SPLEDSC	0.068244	0.029551	0.083578	0.031811	0.131673	0.077198	0.077619	0.054003	0.003059	0.049664
SPLEDCD	0.100706	0.128262	0.202083	0.138557	0.122975	0.341157	-0.220165	0.242305	-0.473516	0.222345
SPLEDGW	0.085108	0.058147	0.135549	0.063388	0.078353	0.152357	-0.139682	0.110767	-0.25981	0.103667
OWNKID	-0.162893	0.02089	-0.179415	0.019759	-0.348867	0.06052	-0.174847	0.041124	-0.038717	0.035061
KIDSQ	0.004396	0.00461	0.0058	0.003687	0.039051	0.014105	-0.008483	0.009324	-0.034878	0.008169
INVOUTYN*	-0.154014	0.052847	0.090523	0.203395	0.107163	0.169742	-0.169332	0.135614	-0.647702	0.144515
INVOUTDR	-0.026305	0.005999			-0.035084	0.076976	0.046987	0.057827	0.104583	0.055864
RELED	-0.042654	0.036573	0.026797	0.021372	0.168307	0.122147	0.017062	0.075222	-0.017113	0.095047
RELAGE	-0.107619	0.040737	-0.09366	0.031757	-0.198425	0.120489	-0.022046	0.070086	0.065457	0.092261
NOTWELL	-0.289767	0.031485	-0.30956	0.035351	0.027416	0.09748	-0.040201	0.067904	-0.119192	0.060935
ASSYPOV	-0.034127	0.007085	-0.061138	0.024227	-0.033735	0.079771	-0.055188	0.052924	-0.017324	0.034502
AGED	-0.003258	0.000354	-0.002715	0.000399	-0.006911	0.001012	-0.006593	0.000728	-0.000241	0.000501
BLACK	0.074735	0.03375	0.092196	0.037165	-0.147503	0.091993	-0.283163	0.06538	-0.198705	0.059179
HISP	-0.076387	0.047394	-0.091108	0.051458	0.052578	0.120035	0.025683	0.083876	-0.271762	0.076761

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females	1989		1990		1991				1993	
LNEXPFM	Rsquare	0.1145	Rsquare	0.1243	Rsquare	0.1356	Rsquare	0.1499	Rsquare	0.142
	MSE	153.19493	MSE	113.08284	MSE	87.75628	MSE	77.95822	MSE	88.8666
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-0.017321	0.511699	-2.809059	0.30241	-2.256563	0.23017	-2.566459	0.218493	-2.546662	0.19265
LNPOT	0.75749	0.394201	0.285949	0.125275	0.261554	0.100101	0.252652	0.089205	0.225899	0.078533
LNPOTSQ	-0.036165	0.091119	0.244113	0.040829	0.226164	0.031926	0.254313	0.029618	0.260683	0.026677
SPLED	-0.012807	0.04138	0.330145	0.033133	0.281383	0.025155	0.31441	0.024274	0.3212	0.021771
SPLEDHS	0.036161	0.162944	0.522212	0.098869	0.421451	0.076756	0.352701	0.076589	0.277766	0.066636
SPLEDSC	0.021526	0.07249	0.128619	0.043605	0.114694	0.03417	0.102454	0.033946	0.061771	0.029093
SPLEDCD	-0.004458	0.329413	-0.026233	0.191115	0.027953	0.148669	0.071034	0.147198	0.028014	0.128251
SPLEDGW	0.024634	0.154851	-0.063208	0.09046	-0.045098	0.069905	-0.044074	0.06944	-0.095612	0.060172
OWNKID	-0.04042	0.06131	-0.123812	0.035641	-0.116601	0.026969	-0.14665	0.027937	-0.105207	0.023347
KIDSQ	-0.044692	0.016681	-0.010896	0.00881	-0.005667	0.006524	0.006144	0.007226	-0.008066	0.005908
INVOUTYN	-0.345589	0.205452	-0.391741	0.127956	-0.220154	0.100188	-0.207895	0.094322	-0.206551	0.06338
INVOUTDR	0.002609	0.080612	0.026749	0.049982	-0.002252	0.037256	-0.00512	0.038895	-0.003785	0.029238
RELED			0.072668	0.067722	0.030917	0.046448	0.074356	0.039572	0.003152	0.001136
RELAGE			-0.020934	0.069027	-0.07688	0.045401	-0.089783	0.041819	-0.00139	0.000846
NOTWELL	-0.457342	0.088709	-0.16723	0.049194	-0.16239	0.039239	-0.158506	0.039549	-0.181771	0.032616
ASSYPOV	-0.02788	0.046218	-0.031207	0.031612	-0.03738	0.027624	-0.012927	0.040086	-0.029799	0.028683
AGED	0.001309	0.000733	-0.003974	0.000588	-0.003142	0.000445	-0.003797	0.000433	-0.003945	0.000386
BLACK	-0.037174	0.089091	-0.119196	0.051994	-0.174709	0.040488	-0.166604	0.039457	-0.091423	0.033556
HISP	-0.22229	0.112562	-0.001388	0.06655	-0.143682	0.051093	-0.170257	0.048556	-0.119884	0.04129

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females		**LAGSPFM**								
	1984		1985		1986		1987		1988	
	Rsquare	0.8773	Rsquare	0.9045	Rsquare	0.8104	Rsquare	0.8865	Rsquare	0.9001
	MSE	279.04939	MSE	199.38931	MSE	258.9009	MSE	208.43309	MSE	198.74921
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	3.884408	0.355543	2.686157	0.340304	7.283492	0.548425	4.730977	0.320795	4.964948	0.289756
LAST5	1.004167	0.009601	0.944407	0.009015	0.850272	0.018142	0.95462	0.010276	0.942397	0.009662
LASTSQ	-0.000992	0.000258	8.388E-05	0.000229	0.000832	0.000621	-0.000453	0.000334	-0.000246	0.000304
SPLED	-0.06589	0.033617	-0.092455	0.032659	-0.529027	0.05079	-0.237772	0.02935	-0.23991	0.028051
SPLEDHS	0.246724	0.232499	0.015413	0.22622	0.284091	0.338492	0.113664	0.191666	-0.01291	0.184044
SPLEDSC	-0.027664	0.109276	-0.089455	0.105471	0.490274	0.153435	0.168207	0.085372	0.088846	0.081414
SPLEDCD	-0.062663	0.474132	-0.564662	0.458121	1.387639	0.676807	0.426516	0.382801	0.383297	0.363199
SPLEDGW	0.029784	0.215267	-0.172065	0.210394	1.147792	0.303218	0.179664	0.175197	0.088091	0.169925
YOUNG	-0.326313	0.161409	0.101313	0.138993	-0.029051	0.209639	-0.076314	0.121601	-0.018797	0.106515
YOUNGSQ	0.042035	0.069081	-0.043558	0.054726	-0.10006	0.084582	-0.049234	0.050741	-0.047284	0.04265
INVOUTYN	-0.670271	0.195806	0.732586	0.674769	-1.235568	0.338646	-0.913087	0.214665	-1.04602	0.237453
INVOUTDR	0.034898	0.022312			0.414532	0.153653	-0.002164	0.091549	0.054008	0.091756
RELED	-0.12155	0.134015	0.049623	0.070413	-0.695429	0.241048	-0.328468	0.117267	-0.782971	0.154085
RELAGE	-0.285425	0.148954	-0.157229	0.102284	0.1271	0.238991	-0.056243	0.108876	-0.270372	0.147213
NOTWELL	-0.257068	0.116723	0.047418	0.11753	1.107544	0.194154	0.353061	0.107358	0.367284	0.10015
ASSYPOV	-0.061909	0.026245	-0.000374	0.079977	0.036478	0.158074	-0.094551	0.083535	0.045383	0.056629
AGED	0.00331	0.000343	0.004086	0.000342	0.010413	0.000534	0.005994	0.000312	0.00628	0.000296
BLACK	0.147632	0.124857	0.09149	0.123316	-0.0097	0.183119	-0.047695	0.103266	0.04676	0.096845
HISP	-0.185189	0.174758	-0.403441	0.170093	-0.423516	0.238012	-0.08739	0.132341	-0.332925	0.125754

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females	1989		1990		1991		1992		1993	
LAGSPFM	Rsquare	0.97	Rsquare	0.8357	Rsquare	0.9244	Rsquare	0.8728	Rsquare	0.8872
	MSE	158.68411	MSE	269.97606	MSE	145.30541	MSE	188.76799	MSE	165.96582
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	3.247805	0.279935	6.21346	0.401894	4.13765	0.218127	4.572053	0.261004	4.477949	0.230758
LAST5	1.063926	0.008928	0.77855	0.011847	0.927875	0.006587	0.857591	0.008387	0.879212	0.007324
LASTSQ	-0.001447	0.000261	0.00192	0.000388	0.000247	0.000203	0.000737	0.000276	0.000715	0.000236
SPLED	-0.041297	0.027005	-0.48409	0.036374	-0.163504	0.019963	-0.288641	0.024809	-0.246184	0.021891
SPLEDHS	0.106626	0.168783	0.899359	0.235635	0.271612	0.126978	0.589421	0.16262	0.264144	0.141851
SPLEDSC	0.055822	0.074954	0.261877	0.104127	0.040298	0.056555	0.241653	0.072055	0.155199	0.061917
SPLEDCD	0.468623	0.338313	0.360569	0.455942	-0.192266	0.245835	0.56133	0.312177	0.300408	0.272641
SPLEDGW	0.254953	0.159891	-0.023937	0.215826	-0.186399	0.11559	0.062431	0.14721	-0.094519	0.128024
YOUNG	-0.254918	0.108004	-0.003234	0.141056	-0.233053	0.077066	-0.103512	0.099427	-0.010661	0.081399
YOUNGSQ	0.103601	0.047416	-0.082899	0.057925	0.015726	0.031586	-0.053603	0.041175	-0.097786	0.032854
INVOUTYN	-0.744498	0.213113	-1.640198	0.305536	-0.961376	0.165935	-1.630999	0.200282	-1.240791	0.134913
INVOUTDR	-0.100488	0.083512	0.331976	0.119303	0.116231	0.061693	0.312782	0.082651	0.130061	0.062271
RELED			-0.425389	0.160533	-0.144641	0.076217	0.035795	0.083828	0.003829	0.002404
RELAGE			0.019972	0.163431	-0.138745	0.074513	-0.049571	0.08864	-0.002176	0.001799
NOTWELL	-0.226709	0.091928	0.537103	0.117699	-0.021687	0.065061	0.196532	0.084275	0.212529	0.069609
ASSYPOV	-0.009488	0.047794	-0.107376	0.075322	-0.043691	0.045635	-0.125009	0.084835	0.127384	0.060988
AGED	0.000586	0.000282	0.013386	0.000374	0.005929	0.000214	0.010015	0.000267	0.007773	0.000229
BLACK	-0.129191	0.091494	0.005437	0.123649	0.061287	0.066821	-0.023239	0.083645	0.057637	0.071285
HISP	-0.172886	0.116339	-0.475922	0.158335	-0.214899	0.084385	-0.189562	0.102919	-0.36349	0.087621

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females **SATCVFM**

	1984		1985		1986		1987		1988	
	Rsquare	0.1713	Rsquare	0.1666	Rsquare	0.0882	Rsquare	0.0966	Rsquare	0.0985
	MSE	76.53905	MSE	61.06096	MSE	131.19722	MSE	133.15563	MSE	121.54817
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	2.083454	0.096275	2.013867	0.102592	1.501771	0.276305	0.678903	0.203795	0.889955	0.176753
INVPOT	-1.768549	0.134284	-1.897201	0.156582	-2.060804	0.31889	-1.654851	0.222673	-1.618613	0.27707
SPLED	-0.026937	0.009421	-0.025134	0.010278	-0.012267	0.026152	0.032045	0.019082	0.019093	0.017414
SPLEDHS	0.19355	0.063751	0.153122	0.069241	0.161865	0.171522	0.367766	0.122467	0.3136	0.112554
SPLEDSC	0.073391	0.030041	0.077354	0.032347	0.184821	0.077882	0.082603	0.054587	0.016503	0.049806
SPLEDCD	0.143794	0.130259	0.23181	0.140841	0.397044	0.343413	-0.140712	0.24462	-0.343333	0.222015
SPLEDGW	0.102733	0.059063	0.131979	0.064441	0.148276	0.153752	-0.146615	0.111929	-0.235564	0.103892
YOUNG	-0.2124	0.044433	-0.169896	0.042869	-0.175861	0.106689	-0.131221	0.078232	-0.140069	0.06531
YOUNGSQ	0.011812	0.018971	0.001411	0.01682	-0.045094	0.042898	-0.058307	0.032484	-0.040027	0.026118
INVOUTYN	-0.16189	0.053711	0.094296	0.206711	0.065392	0.171601	-0.204885	0.137163	-0.688692	0.145109
INVOUTDR	-0.025736	0.006097			-0.018168	0.077781	0.060295	0.05847	0.104751	0.056097
RELED	-0.065135	0.037017	0.00842	0.021665	0.12774	0.122432	0.037229	0.07529	-0.029054	0.095328
RELAGE	-0.156151	0.041145	-0.142657	0.031928	-0.303717	0.121369	-0.121793	0.070593	-0.032134	0.092599
NOTWELL	-0.259156	0.031912	-0.280137	0.03585	0.086873	0.098264	0.004426	0.06855	-0.099162	0.061104
ASSYPOV	-0.03845	0.007191	-0.079741	0.024504	-0.096942	0.079947	-0.104343	0.05329	-0.014321	0.034633
AGED	0.00159	0.000103	0.001584	0.000116	0.002027	0.000299	0.002523	0.000208	0.00258	0.000185
BLACK	0.049219	0.034219	0.061363	0.037712	-0.178329	0.092791	-0.317395	0.065958	-0.236358	0.05922
HISP	-0.155586	0.047918	-0.166684	0.052075	-0.067601	0.120601	-0.068847	0.084534	-0.309763	0.076897

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Females	1989		1990		1991		1992		1993	
SATCVFM	Rsquare	0.1036	Rsquare	0.1103	Rsquare	0.2441	Rsquare	0.1242	Rsquare	0.1321
	MSE	154.10706	MSE	113.97492	MSE	82.06239	MSE	89.77845	MSE	78.76881
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error P	Estimate	Error P	Estimate	Error Par	Estimate	Error P	Estimate	Error Pa
INTERCEP	2.065966	0.270247	1.137782	0.168738	0.624131	0.123488	1.273015	0.123694	1.304288	0.109078
INVPOT	-2.222359	0.682339	-1.602744	0.183928	0.082346	0.001665	-1.081037	0.110792	-1.581813	0.113295
SPLED	-0.073692	0.02643	0.000707	0.015595	-1.221697	0.127615	-0.02217	0.011936	-0.008939	0.010643
SPLEDHS	0.0276	0.163924	0.485537	0.099491	0.088306	0.011473	0.33692	0.077341	0.282873	0.067311
SPLEDSC	0.030478	0.07278	0.127111	0.043956	0.28845	0.071722	0.092867	0.034283	0.06893	0.029398
SPLEDCD	0.108837	0.328552	-0.018691	0.192523	0.065246	0.031971	0.033061	0.148524	0.066633	0.129523
SPLEDGW	0.044336	0.155281	-0.086602	0.091115	0.035014	0.138943	-0.116096	0.069998	-0.132673	0.060755
YOUNG	-0.199833	0.104811	-0.047131	0.059919	-0.065814	0.065306	-0.243844	0.047546	-0.1488	0.038929
YOUNGSQ	0.001496	0.04605	-0.073762	0.0245	-0.046677	0.043705	0.02466	0.019615	-0.018827	0.015626
INVOUTYN	-0.39258	0.206626	-0.396756	0.128975	-0.048608	0.017861	-0.237319	0.095266	-0.211465	0.064035
INVOUTDR	0.002456	0.081091	0.027285	0.050363	-0.132081	0.093705	0.001141	0.039287	-0.003386	0.029542
RELED			0.076333	0.067896	0.027959	0.034838	0.065318	0.039881	0.001387	0.001142
RELAGE			-0.088312	0.069194	0.098029	0.043081	-0.099403	0.042164	-0.000997	0.000854
NOTWELL	-0.436392	0.088897	-0.145361	0.049533	-0.091099	0.042247	-0.148295	0.039922	-0.167306	0.032915
ASSYPOV	-0.027436	0.04642	-0.048864	0.031795	-0.031473	0.036731	-0.056481	0.040331	-0.050759	0.028915
AGED	0.002733	0.000281	0.002465	0.000168	-0.010615	0.025771	0.002887	0.000124	0.002543	0.000112
BLACK	-0.103847	0.088854	-0.149364	0.052209	-0.000418	0.000135	-0.178705	0.039779	-0.108322	0.033834
HISP	-0.271378	0.112906	-0.075867	0.066825	-0.186587	0.037744	-0.217447	0.048922	-0.178725	0.041558

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Males	OPTEXPML									
	1984		1985		1986		1987		1988	
	N	7833	N	6316	N	4010	N	7867	N	7970
	Rsquare	0.6569	Rsquare	0.6763	Rsquare	0.6973	Rsquare	0.7116	Rsquare	0.7096
	MSE	568.34686	MSE	443.59234	MSE	414.31766	MSE	413.98171	MSE	413.02959
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-0.80871	0.942584	-0.666109	1.04266	0.533622	0.991057	-0.997602	0.676293	0.248669	0.720665
POTEXP	1.058921	0.098493	1.022112	0.104884	0.853228	0.104132	0.959468	0.070182	0.659718	0.068698
POTEXPSQ	-0.008574	0.00224	-0.006709	0.002375	-0.005385	0.00243	-0.007083	0.00162	0.001099	0.001544
MARRIED	-0.391154	0.795432	0.11993	0.868252	0.225571	0.805111	1.498138	0.546162	1.127988	0.618598
POMAR	0.087525	0.10084	0.027988	0.107473	-0.039563	0.106155	-0.17069	0.071699	0.01074	0.071444
POSQMAR	0.001788	0.002329	0.002359	0.002471	0.004934	0.002526	0.007854	0.001695	0.002028	0.001626
POTKID1	-0.015082	0.009259	0.003619	0.009812	-0.041776	0.012035	-0.029283	0.008595	-0.016105	0.008012
POTKID23	-0.022191	0.01105	-0.016057	0.011577	-0.036142	0.013878	-0.024335	0.0096	-0.010797	0.008949
POTKID4	-0.069223	0.023517	-0.035148	0.02494	-0.027657	0.028912	-0.079415	0.020126	-0.091624	0.019236
S0TO4	-3.370804	2.646779	-0.646022	3.568334	-3.520974	2.390714	-7.43242	2.285084	-7.288687	2.20607
S5TO8	-4.264331	1.204956	-4.852812	1.331096	-0.125736	1.325743	0.77796	0.927348	0.209015	0.976514
S12	0.940413	0.656698	1.164279	0.726303	0.668603	0.734528	1.321092	0.509448	1.063986	0.518977
S13T15	2.213474	0.70745	2.295684	0.785197	1.679484	0.783843	2.59524	0.54168	2.292005	0.55705
S16	3.146897	0.757611	3.015462	0.840195	1.837693	0.832297	3.235671	0.577463	2.048861	0.596744
S17UP	2.684104	0.776664	2.589887	0.862003	2.93235	0.854333	3.02129	0.599013	2.74916	0.619454
POS0TO4	0.048857	0.071967	-0.041934	0.094019	0.0077	0.07322	0.068252	0.065775	0.058656	0.060515
POS5TO8	0.106276	0.034622	0.117183	0.038146	-0.052269	0.041623	-0.091984	0.0288	-0.064121	0.029717
POS12	0.046523	0.022767	0.035949	0.025048	0.061409	0.028188	0.02971	0.019337	0.015783	0.018981
POS13T15	0.046259	0.026294	0.037919	0.02919	0.049044	0.032567	0.025978	0.022319	0.00065	0.02172
POS16	0.002319	0.030172	0.005003	0.033357	0.075407	0.03721	0.002426	0.025745	-0.003606	0.02434
POS17UP	0.104102	0.031906	0.103141	0.035157	0.040082	0.039024	0.052174	0.027152	-0.043029	0.024864
BLACK	-2.271819	0.303429	-2.423805	0.327351	-1.907649	0.362146	-1.332212	0.256637	-1.098198	0.250302
HISP	-0.889861	0.364727	-0.734977	0.386537	-1.664557	0.396369	-1.245685	0.268972	-1.232243	0.258344

	1989		1990		1991		1992		1993	
	N	1527	N	8184	N	13240	N	13333	N	15395
Males	Rsquare	0.7349	Rsquare	0.7837	Rsquare	0.7571	Rsquare	0.7515	Rsquare	0.7564
OPTEXPML	MSE	591.79425	MSE	367.22029	MSE	297.65098	MSE	305.88081	MSE	287.42727
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.295089	1.76911	-1.036791	0.599472	-0.792526	0.485578	0.502583	0.47215	-1.226914	0.435305
POTEXP	0.583604	0.135604	0.840201	0.058451	0.802423	0.046091	0.712251	0.044619	0.865119	0.041254
POTEXPSQ	0.002162	0.002794	0.000304	0.001372	0.001108	0.001116	0.002125	0.001076	-0.00167	0.001003
MARRIED	-0.072508	1.527052	-0.00586	0.489186	-0.068016	0.384153	0.249365	0.364294	0.75842	0.328581
POMAR	0.142704	0.147843	0.085613	0.060113	0.120805	0.047207	0.086656	0.045763	-0.023598	0.04211
POSQMAR	-0.000203	0.003066	-0.001115	0.001445	-0.002686	0.001174	-0.001628	0.001137	0.002242	0.00106
POTKID1	-0.034954	0.01729	-0.014381	0.007156	-0.013739	0.005788	-0.014345	0.006044	0.000758	0.005645
POTKID23	-0.020344	0.020584	-0.024942	0.00776	-0.021999	0.006251	-0.01634	0.006469	-0.013117	0.006027
POTKID4	-0.264962	0.073906	-0.028088	0.018146	-0.038386	0.014313	-0.033894	0.014157	-0.012133	0.013249
S0TO4	-48.91324	13.459981	0.08424	1.717475	2.220686	1.50286	-1.420264	1.360022	-0.031462	1.428705
S5TO8	-1.023901	2.675486	-0.578333	0.800922	0.36046	0.676229	-0.235486	0.658139	0.128217	
S12	0.513068	1.420862	2.588799	0.447766	2.046482	0.375941	1.166583	0.380164	2.485974	0.351793
S13T15	0.783823	1.480832	3.391679	0.475364	2.973946	0.39789	2.30461	0.401769	3.701637	0.371193
S16	-0.900264	1.532603	4.053388	0.503436	3.762594	0.419709	2.756498	0.421241	3.776048	0.391182
S17UP	-0.681863	1.613216	3.8673	0.522415	3.727584	0.440205	2.923463	0.440313	4.221242	0.409241
POS0TO4	1.011422	0.316314	-0.047899	0.052135	-0.143208	0.045552	-0.057115	0.043151	-0.126999	0.044946
POS5TO8	-0.016693	0.076934	-0.060059	0.025362	-0.088703	0.021538	-0.077945	0.021431	-0.08109	0.020047
POS12	-0.005666	0.046276	-0.023627	0.01721	0.012318	0.014554	0.044565	0.014853	-0.010965	0.013642
POS13T15	-0.013708	0.050204	0.004243	0.019403	0.02701	0.016298	0.050914	0.016516	0.000611	0.015208
POS16	0.032084	0.053351	-0.003409	0.021774	0.017539	0.018221	0.056948	0.018314	0.018027	0.016938
POS17UP	-0.010479	0.054543	0.04799	0.022907	0.053398	0.019246	0.075092	0.019205	0.016785	0.017893
BLACK	-1.204256	0.553404	-1.364456	0.209568	-1.08567	0.171266	-1.187576	0.167498	-1.205876	0.156065
HISP	-0.100182	0.639014	-1.211104	0.22391	-1.212398	0.177722	-0.84647	0.171681	-0.99875	0.155676

Males **HECKSPML**

	1984		1985		1986		1987		1988	
	Rsquare	0.6538	Rsquare	0.6748	Rsquare	0.6962	Rsquare	0.7097	Rsquare	0.7291
	MSE	571.12391	MSE	444.92664	MSE	415.39747	MSE	415.56725	MSE	399.04816
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-1.999966	2.240069	-3.978524	2.499127	-1.804167	2.321082	-6.640393	1.710404	-5.841359	1.595533
ED	-0.844494	0.151439	-0.790813	0.170396	-0.819104	0.157958	-0.55759	0.11738	-0.718405	0.109767
AGE	0.548545	0.042021	0.617722	0.046044	0.56712	0.047912	0.651062	0.034344	0.662986	0.032349
YOUNG	-2.622513	1.177484	-0.765009	1.126287	1.138787	1.323916	1.809656	0.830766	2.184061	0.816044
ASSYPOV	1.719843	0.989033	-0.012232	1.183764	2.700842	1.261347	3.168347	0.98237	1.802561	0.921787
YOUNGSQ	0.041499	0.130082	-0.121868	0.125512	0.110524	0.130229	0.029023	0.104496	-0.179478	0.097125
RELAGE	4.478298	1.180596	3.179464	1.073045	1.375572	1.267922	1.532488	0.89092	0.612235	0.893698
RELED	-1.435331	0.987576	-0.14202	0.89928	-2.988474	1.124342	-1.314231	0.723438	-0.487429	0.695273
OTHWAGE	0.069404	0.058351	-0.012849	0.083656	0.272801	0.152673	0.060436	0.077188	0.058711	0.059258
YNGASSY	-0.105724	0.511134	0.10704	0.286689	-1.201253	0.434866	0.004487	0.411984	-0.152497	0.369525
YRELAGE	1.037413	0.773175	0.775131	0.489669	-0.342942	0.766739	-0.365701	0.350524	-0.143279	0.466358
YRELED	-0.086515	0.378988	0.027022	0.430886	1.200811	0.568768	0.515746	0.317453	0.064583	0.319811
YNGOTHWG	-0.002394	0.010003	-0.009939	0.017518	-0.016268	0.016724	-0.001666	0.015952	0.004875	0.007689
YNGED	0.042417	0.046986	0.025598	0.051267	0.046647	0.051133	0.043487	0.036017	0.015726	0.036732
YNGAGE	0.021386	0.019537	-0.00915	0.018735	-0.091051	0.021551	-0.07975	0.014369	-0.057447	0.013774
ASRELAGE	1.059818	0.397376	0.84424	0.452601	-3.453394	1.603192	1.013044	0.529944	0.489958	0.621986
ASRELED	-0.419418	0.362492	0.239383	0.396463	3.93447	1.539641	-1.012741	0.394337	-0.627603	0.613662
ASOTHWG	0.041053	0.026623	0.024075	0.022798	0.036005	0.023254	0.055477	0.031454	0.028624	0.025876
ASSYED	-0.101873	0.04867	-0.038858	0.06386	-0.233631	0.073834	-0.273898	0.066079	-0.119273	0.041477
ASSYAGE	-0.013702	0.007136	-0.007232	0.012181	0.010959	0.019318	0.014491	0.014948	0.001714	0.014054
REAGREED	-1.148741	0.539736	-0.87185	0.333131	-0.911061	0.649053	-0.64227	0.274603	-0.829627	0.412654
RELAGOWG	-0.065584	0.030697	0.044942	0.041542	0.044739	0.046481	0.068889	0.049422	0.008615	0.036062
RELAGED	-0.199629	0.080063	-0.193728	0.076614	0.019212	0.084415	-0.048686	0.060527	0.035946	0.059481
RELEDOWG	0.124117	0.036456	-0.026207	0.014955	-0.158242	0.078148	-0.047571	0.050995	-0.022209	0.031665
RELEDAG	0.047012	0.017175	0.027998	0.017149	0.071395	0.02048	0.0391	0.013355	0.01815	0.012571
OTHWGED	-0.011063	0.00338	-0.003745	0.004162	-0.007139	0.005915	-0.009899	0.004055	-0.004529	0.002891
OTHWGAGE	0.000921	0.000918	0.001866	0.001113	-0.001829	0.00159	0.001497	0.001248	8.501E-05	0.000836
AGED	0.019966	0.002817	0.017439	0.003112	0.015381	0.003248	0.011641	0.002349	0.013979	0.002216
BLACK	-1.985366	0.305947	-2.226988	0.330017	-1.795473	0.36353	-1.356827	0.258719	-0.868974	0.242336
HISP	-1.160615	0.364004	-1.095531	0.385042	-2.057499	0.390539	-1.686502	0.267705	-1.814308	0.246995

	1989		1990		1991		1992		1993	
Males	Rsquare	0.753	Rsquare	0.7811	Rsquare	0.756	Rsquare	0.7534	Rsquare	0.7527
HECKSPML	MSE	572.58622	MSE	369.65098	MSE	298.38957	MSE	304.75034	MSE	289.63453
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-1.2967	3.101314	-5.377418	1.434582	-4.720557	1.176597	-6.498377	1.137992	-7.54468	0.953086
ED	-1.056543	0.222103	-0.768042	0.098483	-0.803227	0.081447	-0.646158	0.078193	-0.584249	0.070115
AGE	0.608893	0.06298	0.694495	0.029081	0.646454	0.024168	0.680932	0.023536	0.742685	0.020412
YOUNG	-0.29012	2.313784	-0.401865	0.7735	-0.269423	0.583723	1.303805	0.512688	1.00649	0.446457
ASSYPOV	-0.359696	1.214638	1.530633	0.7159	0.400643	0.732866	1.290345	0.392918	1.111448	0.349812
YOUNGSQ	-0.135406	0.344277	0.046907	0.091132	-0.052816	0.072268	-0.089739	0.071148	-0.085668	0.057362
RELAGE	-0.004625	0.005878	0.386456	0.801319	1.731145	0.618608	0.772352	0.352504	-0.036317	0.016801
RELED	0.00092	0.008097	0.202523	0.625341	0.809853	0.461673	-0.74383	0.270052	0.013053	0.023227
OTHWAGE	-0.0507	0.134251	0.03467	0.037079	-0.03698	0.026031	0.04977	0.03217	0.003243	0.014961
YNGASSY	-0.634066	1.239873	0.06538	0.164843	0.471414	0.113174	-0.130415	0.086929	-0.262563	0.161353
YRELAGE	-0.014043	0.008182	0.004726	0.448273	0.28437	0.279789	0.124657	0.180876	-0.005541	0.017079
YRELED	0.020813	0.012191	0.239965	0.214813	0.062178	0.163299	-0.131555	0.155391	0.006914	0.031404
YNGOTHW G	-0.006604	0.038259	-0.005031	0.00473	-0.000857	0.005048	-0.006219	0.005891	-0.003017	0.002788
YNGED	0.284284	0.118354	0.036827	0.032674	0.007827	0.026023	0.018577	0.025409	0.060576	0.021513
YNGAGE	-0.089758	0.047965	-0.015583	0.012971	-0.005647	0.009979	-0.040797	0.010278	-0.049732	0.009273
ASRELAGE	-0.001916	0.002359	1.586231	0.731081	1.344617	0.524637	0.245836	0.378588	-0.085084	0.107479
ASRELED	0.002311	0.002617	-1.970249	0.763261	-2.001782	0.510712	-0.008916	0.368396	0.139258	0.127957
ASOTHWG	-0.024537	0.071215	-0.009272	0.017284	0.012168	0.00672	-0.012106	0.006824	0.003362	0.00613
ASSYED	0.069668	0.115692	-0.043718	0.043993	-0.056119	0.033881	-0.082069	0.02648	-0.065254	0.020108
ASSYAGE	-0.019017	0.023396	-0.016377	0.010056	0.012908	0.009054	-0.006409	0.005606	-0.002481	0.004608
REAGREED	1.645E-06	1.46E-06	-1.014194	0.405116	-1.100342	0.224181	-0.013915	0.081998	0.0000586 96 0	2.794E-05
RELAGOWG	0.004372	0.000821	0.015219	0.018878	0.011509	0.011527	-0.009781	0.00871	0.00309	0.001954
RELAGED	0.000146	0.000236	0.038597	0.052726	-0.066675	0.042108	-0.027018	0.021762	0.001388	0.000881
RELEDOWG	-0.006605	0.00109	-0.026662	0.015694	0.003387	0.005059	0.000449	0.010662	-0.002955	0.001811
RELEDAG	-2.21E-05	0.000108	0.013135	0.011255	-0.0026	0.008541	0.01539	0.005306	-0.000504	0.000352
OTHWGED	-0.009267	0.008745	-0.002197	0.001533	5.565E-05	0.001541	-0.001147	0.001495	-0.00069	0.000857
OTHWGAGE	0.005795	0.002437	0.000458	0.000442	0.000828	0.000382	-0.000284	0.00053	0.00022	0.000285
AGED	0.018793	0.004605	0.012931	0.001983	0.015982	0.001656	0.012675	0.001606	0.009269	0.001523
BLACK	-1.172987	0.538179	-1.376858	0.210675	-1.044088	0.171494	-1.209696	0.166426	-1.178953	0.156576
HISP	-0.948685	0.616821	-1.821279	0.219182	-1.79305	0.173722	-1.387586	0.168037	-1.494074	0.154375

Males		LVLSPML								
	1984		1985		1986		1987		1988	
	Rsquare	0.6636	Rsquare	0.6815	Rsquare	0.7015	Rsquare	0.7161	Rsquare	0.731
	MSE	562.63175	MSE	439.87641	MSE	411.22751	MSE	410.64941	MSE	397.37861
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-6.257603	1.605499	-4.071989	1.827553	-0.266707	1.684973	-0.308032	1.201425	9.385736	0.876514
POTEXP	1.115429	0.058852	0.941009	0.06707	0.622422	0.066642	0.539376	0.046119	0.16678	0.03153
POTEXPSQ	-0.00569	0.000717	-0.002583	0.000812	0.000807	0.00085	0.001962	0.00058	0.004948	0.000496
SPLED	0.401864	0.165466	0.216835	0.18715	-0.117271	0.176327	-0.1235	0.125162	-1.155492	0.088901
SPLEDHS	1.153631	0.51642	1.182789	0.547624	1.791432	0.606554	1.026498	0.417061	0.177061	0.404202
SPLEDSC	0.602837	0.22414	0.53207	0.236891	0.337454	0.250738	0.18476	0.171995	0.0377	0.166821
SPLEDCD	-0.32472	0.956365	-0.474875	1.018967	-0.546328	1.09542	-2.223603	0.750767	-2.682022	0.730759
SPLEDGW	0.270539	0.408022	0.1366	0.437016	-0.825556	0.46591	-1.637331	0.327996	-2.048634	0.321247
OWNKID	-0.360147	0.154999	-0.104115	0.158316	-0.03775	0.165896	0.011531	0.128923	0.351957	0.13957
KIDSQ	0.013343	0.033513	-0.009047	0.033411	-0.029137	0.032936	-0.034356	0.029248	-0.105755	0.03503
INVOUTYN	-0.793874	0.367193	0.551399	0.271662	-2.375525	0.468591	-2.731556	0.37416	-1.938765	0.453868
INVOUTDR	-0.401399	0.130376			-0.206096	0.205769	-0.294916	0.161226	-0.60765	0.217313
RELED	0.585301	0.277682	0.642194	0.226617	0.249417	0.29502	0.667325	0.187252	0.487786	0.180015
RELAGE	0.720182	0.342616	0.238194	0.264722	0.132534	0.35381	-0.375846	0.212764	-0.35362	0.216443
NOTWELL	-2.969539	0.251365	-2.982968	0.277598	-1.883036	0.309463	-1.706108	0.210664	-1.298328	0.198343
ASSYPOV	-0.020958	0.056516	-0.001407	0.064218	0.012464	0.119729	-0.059894	0.126933	-0.056564	0.087453
AGED	0.002029	0.002765	0.006065	0.003088	0.013814	0.003132	0.017038	0.002181	0.035628	0.001423
BLACK	-1.867287	0.30145	-2.112306	0.325557	-1.569421	0.360876	-1.184572	0.254961	-0.927917	0.240905
HISP	-0.862157	0.36329	-0.748376	0.385146	-1.471617	0.389733	-1.202075	0.266202	-1.549787	0.247733

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

	1989		1990		1991		1992		1993	
Males	Rsquare	0.7489	Rsquare	0.7888	Rsquare	0.7658	Rsquare	0.7599	Rsquare	0.7642
LVLSPML	MSE	575.19328	MSE	362.85	MSE	292.22577	MSE	300.62612	MSE	282.74339
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	9.972833	2.314337	-3.834458	1.056071	0.604279	0.813093	1.750322	0.766495	-2.023395	0.749925
POTEXP	0.29208	0.081896	0.751175	0.039249	0.624462	0.03031	0.520992	0.029632	0.679491	0.028352
POTEXPSQ	0.003195	0.001158	0.000214	0.000482	5.24E-05	0.000387	0.001703	0.000391	0.000932	0.000357
SPLED	-1.185572	0.219333	0.211232	0.109894	-0.309343	0.084235	-0.4109	0.079925	0.060805	0.079215
SPLEDHS	-0.781183	0.965088	0.816742	0.3484	1.2773	0.279599	1.467502	0.283008	1.087827	0.26068
SPLEDSC	-0.286633	0.377152	0.221606	0.148339	0.279294	0.117509	0.40484	0.116626	0.326945	0.108669
SPLEDCD	-3.411926	1.643371	-1.415538	0.628286	-0.919751	0.503574	-0.682652	0.503783	-1.268274	0.466766
SPLEDGW	-2.31483	0.727505	-1.042634	0.277831	-1.036214	0.224078	-1.064762	0.224926	-1.230251	0.208743
OWNKID	0.583071	0.423162	-0.250221	0.110218	-0.047508	0.087957	0.056072	0.09435	0.197428	0.08185
KIDSQ	-0.256666	0.149572	0.053566	0.026369	-0.006391	0.020816	-0.039496	0.023601	-0.046754	0.020238
INVOUTYN	-1.807728	0.990999	-2.136734	0.374856	-3.380849	0.282392	-2.121556	0.265882	-2.048468	0.199274
INVOUTDR	-0.452168	0.392112	-0.576421	0.143565	-0.230248	0.093682	-0.733182	0.141317	-0.752328	0.088242
RELED	0.000765	0.000775	0.659575	0.17849	0.347993	0.126471	0.343043	0.090258	0.014601	0.002889
RELAGE	9.937E-05	0.000619	-0.193699	0.211958	-0.13622	0.146625	-0.038628	0.096095	-0.006191	0.002422
NOTWELL	-2.160273	0.440542	-1.382485	0.164955	-1.714727	0.136305	-1.537978	0.139513	-1.413318	0.125207
ASSYPOV	-0.017051	0.0809	-0.112992	0.078729	-0.039461	0.059276	0.02005	0.033654	0.022309	0.038239
AGED	0.031738	0.003534	0.010106	0.001901	0.019532	0.001443	0.021425	0.001388	0.012447	0.001385
BLACK	-1.301869	0.536711	-1.27162	0.206676	-1.004244	0.167834	-1.078855	0.164217	-1.13888	0.15306
HISP	-0.449529	0.620982	-1.129367	0.220208	-1.279048	0.173464	-0.935239	0.168349	-1.02725	0.153107

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Males		LNEXPML								
	1984		1985		1986		1987		1988	
	Rsquare	0.4103	Rsquare	0.4401	Rsquare	0.3247	Rsquare	0.3723	Rsquare	0.3674
	MSE	52.06921	MSE	39.50214	MSE	60.23778	MSE	54.52018	MSE	53.81528
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	-0.862077	0.143449	-0.59827	0.162307	-0.436914	0.237707	-0.293331	0.152616	0.669671	0.129593
LNPOT	0.796447	0.066401	0.676745	0.07021	0.678054	0.102705	0.425183	0.069825	0.696881	0.080358
LNPOTSQ	0.073983	0.018909	0.093688	0.019908	0.070114	0.031003	0.114865	0.020597	-0.042347	0.019424
SPLED	0.11911	0.014591	0.105317	0.016095	0.075059	0.024598	0.08594	0.015919	-0.055705	0.011699
SPLEDHS	0.119689	0.047769	0.12109	0.049175	0.101926	0.088713	0.088263	0.055276	-0.042152	0.054689
SPLEDSC	0.055242	0.020745	0.04944	0.02129	-0.005528	0.036724	0.039188	0.022836	-0.012573	0.02261
SPLEDCD	-0.036518	0.088415	-0.00429	0.091433	0.07751	0.160643	-0.05482	0.099843	-0.273925	0.09909
SPLEDGW	0.030959	0.037693	0.049354	0.039178	-0.007898	0.06827	-0.076971	0.04357	-0.194991	0.043542
OWNKID	0.018362	0.014283	0.025115	0.014218	0.007055	0.023977	0.012256	0.017038	0.074354	0.01865
KIDSQ	-0.005236	0.003101	-0.005316	0.003005	-0.002537	0.00482	-0.003595	0.00389	-0.01601	0.004734
INVOUTYN	-0.16995	0.033985	0.037512	0.024296	-0.282148	0.068635	-0.412183	0.049662	-0.411847	0.061423
INVOUTDR	0.008901	0.012066			0.000159	0.030139	0.030148	0.021405	0.034936	0.029425
RELED	0.075321	0.025706	0.070406	0.020386	-0.003036	0.043236	0.089682	0.024973	0.101443	0.024424
RELAGE	-0.008585	0.031783	-0.029549	0.024142	-0.023971	0.052042	-0.097332	0.028738	-0.154527	0.029409
NOTWELL	-0.305076	0.023125	-0.296555	0.024783	-0.066991	0.04515	-0.102806	0.027887	-0.10055	0.026803
ASSYPOV	-0.005248	0.00523	-0.002551	0.005766	-0.017287	0.017533	0.002425	0.016851	-0.000722	0.011843
AGED	-0.001602	0.000244	-0.001421	0.000266	-0.000715	0.000436	-0.000615	0.000276	0.002266	0.000186
BLACK	-0.180076	0.027916	-0.20814	0.029234	-0.141916	0.052844	-0.113718	0.033859	-0.109966	0.032627
HISP	-0.078046	0.033535	-0.084597	0.034531	-0.156289	0.056917	-0.079379	0.035296	-0.134326	0.033541

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Males	1989		1990		1991		1992		1993	
LNEXPML	Rsquare	0.54	Rsquare	0.4602	Rsquare	0.5769	Rsquare	0.3435	Rsquare	0.3806
Variable	MSE	55.48	MSE	47.49962	MSE	28.68019	MSE	47.52621	MSE	42.46235
INTERCEP	0.326376	0.269332	-0.379891	0.131186	0.015303	0.076014	0.0168	0.116943	-0.228746	0.104399
LNPOT	0.887536	0.181392	0.195433	0.064381	0.53477	0.035271	0.266065	0.054533	0.229141	0.04593
LNPOTSQ	-0.046175	0.041161	0.200463	0.018758	0.07263	0.010516	0.144166	0.016024	0.181215	0.014422
SPLED	-0.063506	0.020182	0.125877	0.013739	0.047525	0.007938	0.073798	0.012095	0.104367	0.011209
SPLEDHS	-0.064583	0.093188	0.076359	0.045574	0.111426	0.02743	0.12354	0.044704	0.13054	0.039129
SPLEDSC	-0.032625	0.036362	0.029083	0.019424	0.024664	0.011542	0.038403	0.018453	0.044624	0.016328
SPLEDCD	-0.348017	0.158194	-0.052258	0.082239	0.017055	0.049412	0.027399	0.079658	0.002311	0.070085
SPLEDGW	-0.215943	0.070059	-0.049854	0.036344	-0.04514	0.021975	-0.053113	0.035542	-0.035354	0.031329
OWNKID	0.122207	0.040296	-0.019332	0.014379	0.013968	0.008554	0.015054	0.014753	0.034721	0.012197
KIDSQ	-0.032762	0.014406	0.003923	0.003455	-0.003015	0.002042	-0.003068	0.003723	-0.008337	0.003037
INVOUTYN	-0.205072	0.095501	-0.261994	0.049072	-0.409397	0.027709	-0.3525	0.04201	-0.294895	0.029914
INVOUTDR	-0.018843	0.037823	-0.039037	0.018793	-0.007518	0.009194	-0.021306	0.022341	-0.034705	0.013252
RELED	-6.65E-05	0.0000758	0.082072	0.023398	0.056549	0.012445	0.032626	0.01435	0.001878	0.000433
RELAGE	0.000159	6.081E-05	-0.052627	0.0278	-0.078023	0.01449	-0.022652	0.015321	-0.000855	0.000364
NOTWELL	-0.20248	0.042414	-0.124192	0.021499	-0.113193	0.013327	-0.161062	0.022008	-0.179401	0.018756
ASSYPOV	-2.19E-05	0.007801	-0.004836	0.010304	-0.004832	0.005817	0.001914	0.00532	0.004144	0.005743
AGED	0.00197	0.000325	-0.001433	0.000237	7.936E-06	0.000136	-0.000434	0.00021	-0.001106	0.000196
BLACK	-0.182463	0.051761	-0.219893	0.027055	-0.108054	0.016471	-0.151586	0.025967	-0.104037	0.022989
HISP	0.001778	0.059886	-0.120817	0.028786	-0.104755	0.017018	-0.043712	0.026597	-0.089388	0.022967

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

Males **LAGEXPML**

	1984		1985		1986		1987		1988	
	Rsquare	0.9588	Rsquare	0.9827	Rsquare	0.8956	Rsquare	0.9113	Rsquare	0.9156
	MSE	196.84186	MSE	102.61194	MSE	243.15452	MSE	229.49902	MSE	222.5846
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	5.774072	0.26366	3.486637	0.191814	11.23968	0.501153	9.172587	0.336496	8.952658	0.334377
LAST5	0.962492	0.00775	1.01577	0.005984	0.757805	0.017337	0.790787	0.011622	0.797761	0.011304
LASTSQ	4.113E-05	0.00015	-0.000404	0.000109	-0.000458	0.000478	-0.000445	0.000306	-0.000668	0.000293
SPLED	-0.198392	0.02652	-0.099525	0.019518	-0.981636	0.050575	-0.796836	0.033771	-0.793194	0.033988
SPLEDHS	0.087494	0.180258	0.188864	0.127465	0.708678	0.356659	0.021637	0.232282	-0.265348	0.22608
SPLEDSC	0.041425	0.078453	0.116567	0.055276	0.323799	0.148003	0.069251	0.096061	0.017173	0.093435
SPLEDCD	0.095295	0.334142	0.606876	0.237275	1.026372	0.645803	-0.116006	0.419184	-0.230035	0.408629
SPLEDGW	0.045164	0.14241	0.275353	0.101709	0.248283	0.274988	-0.349373	0.183326	-0.381543	0.179821
YOUNG	0.127437	0.107284	0.048659	0.071748	-0.255295	0.190979	-0.11532	0.136062	0.021488	0.128408
YOUNGSQ	-0.028882	0.043069	0.004333	0.027523	0.061926	0.07231	0.043202	0.056032	-0.012805	0.0526
INVOUTYN	-0.934547	0.128279	-0.008602	0.061437	-1.650837	0.277127	-1.758263	0.209153	-1.521488	0.25407
INVOUTDR	0.079617	0.045612			0.226353	0.121805	0.299365	0.090239	0.330544	0.121817
RELED	0.1587	0.097105	0.066609	0.052917	0.362282	0.173513	0.150781	0.104836	0.017784	0.101134
RELAGE	-0.067351	0.118	-0.106866	0.060903	-0.516799	0.206242	-0.283366	0.117177	0.060876	0.11973
NOTWELL	0.116754	0.088201	0.291781	0.065076	1.771	0.185241	0.784201	0.117888	0.904779	0.111513
ASSYPOV	0.057846	0.01977	0.023036	0.014953	-0.124153	0.07052	0.062597	0.070845	0.209374	0.048999
AGED	0.003964	0.000336	0.001101	0.000253	0.019263	0.000644	0.017484	0.00044	0.017578	0.000445
BLACK	-0.267655	0.105505	-0.170755	0.076125	-0.645045	0.213071	-0.483694	0.142178	-0.326539	0.134768
HISP	-0.089515	0.125743	0.105717	0.089258	-1.379769	0.227752	-0.69112	0.147869	-0.697187	0.138576

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

	1989		1990		1991		1992		1993	
Males	Rsquare	0.9817	Rsquare	0.9006	Rsquare	0.9303	Rsquare	0.8876	Rsquare	0.9103
LAGSPML	MSE	155.41269	MSE	248.94469	MSE	159.41872	MSE	205.63897	MSE	174.37337
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	4.346736	0.378094	13.392539	0.36382	9.579785	0.236951	11.877596	0.288098	10.194467	0.2376
LAST5	1.0541	0.012989	0.588948	0.011457	0.766998	0.007862	0.554295	0.009239	0.693365	0.007974
LASTSQ	-0.002214	0.000308	0.000404	0.000306	5.142E-05	0.0002	0.002142	0.000256	0.000322	0.00021
SPLED	-0.17336	0.03877	-1.389872	0.035762	-0.836206	0.023774	-1.174726	0.028999	-0.971966	0.02395
SPLEDHS	-0.122003	0.259843	0.321105	0.238745	0.335236	0.152383	0.635969	0.193352	0.269314	0.16064
SPLEDSC	-0.035019	0.101622	0.215669	0.101785	0.183472	0.06411	0.17927	0.079753	0.041661	0.06704
SPLEDCD	-0.029174	0.439811	0.245062	0.430673	0.525639	0.274143	0.07532	0.343911	-0.367223	0.287615
SPLEDGW	-0.131526	0.194531	-0.270743	0.190478	-0.04659	0.122035	-0.508308	0.153331	-0.544253	0.12854
YOUNG	0.197548	0.182424	-0.269339	0.14033	-0.010854	0.087746	-0.243377	0.113329	-0.012309	0.084937
YOUNGSQ	-0.020567	0.089281	0.041017	0.058335	-0.018859	0.036048	0.03712	0.04689	-0.021779	0.033435
INVOUTYN	-0.90953	0.267173	-1.42797	0.257474	-1.09312	0.154657	-1.586961	0.181827	-1.026945	0.122956
INVOUTDR	-0.064481	0.105952	-0.184528	0.098564	-0.033138	0.051115	0.031313	0.096883	-0.226782	0.05451
RELED	0.000186	0.000206	0.507878	0.122851	0.101139	0.069306	0.164421	0.061934	0.005294	0.001767
RELAGE	-0.000135	0.000157	-0.388458	0.143738	-0.124665	0.079072	-0.139108	0.065227	-0.004771	0.001494
NOTWELL	-0.36278	0.118622	0.890979	0.113736	0.370757	0.074517	-0.004836	0.09541	0.732382	0.077477
ASSYPOV	0.006705	0.021843	-0.026903	0.053933	0.047546	0.032312	-0.008425	0.02301	0.017872	0.023567
AGED	0.003459	0.000508	0.030207	0.000449	0.017586	0.000319	0.027817	0.000365	0.022384	0.000315
BLACK	-0.353728	0.145228	-0.578606	0.141746	-0.234758	0.091529	-0.338313	0.112303	-0.333211	0.094407
HISP	-0.090896	0.167705	-1.139605	0.14977	-0.69544	0.094155	-0.772152	0.114367	-0.652705	0.093935

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

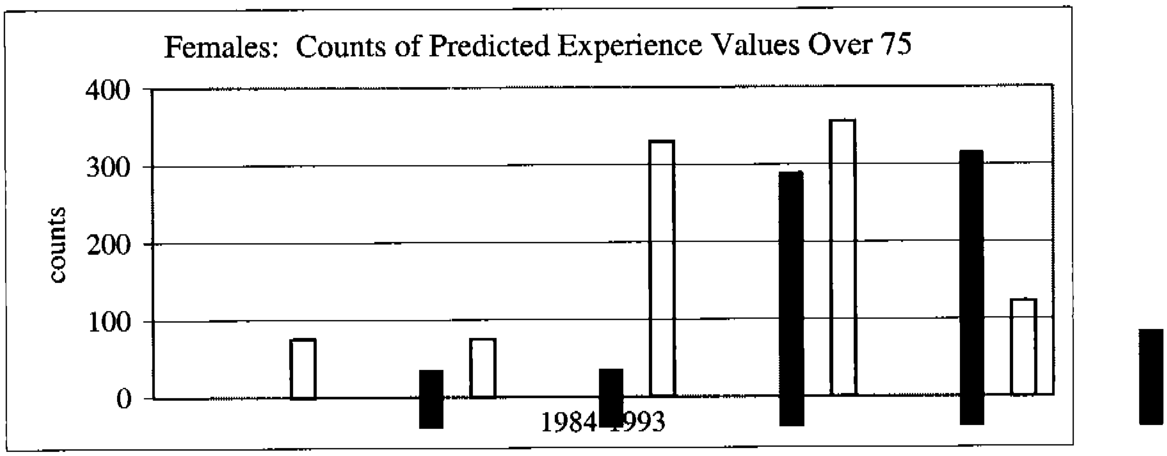
Males		SATCVML								
	1984		1985		1986		1987		1988	
	Rsquare	0.3739	Rsquare	0.4093	Rsquare	0.3117	Rsquare	0.3526	Rsquare	0.3584
	MSE	53.41505	MSE	40.57175	MSE	60.80713	MSE	55.3668	MSE	54.19339
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	2.99973	0.066986	3.14341	0.068639	2.786597	0.122246	2.644426	0.078759	2.622288	0.078567
INVPOT	-2.741768	0.114036	-2.265895	0.122988	-2.331694	0.168231	-1.887427	0.117794	-2.040098	0.13098
SPLED	-0.091741	0.006794	-0.117547	0.007139	-0.10568	0.012189	-0.108422	0.007755	-0.112967	0.007665
SPLEDHS	0.069814	0.048927	0.065358	0.050405	0.041802	0.0892	0.049514	0.056033	-0.052629	0.05504
SPLEDSC	0.048055	0.021285	0.042105	0.021874	-0.014974	0.037026	0.041636	0.023189	-0.006925	0.022756
SPLEDCD	-0.053851	0.090675	0.000134	0.093878	0.022254	0.161799	-0.045229	0.101334	-0.239034	0.09947
SPLEDGW	0.013076	0.038641	0.045452	0.040222	-0.05228	0.068746	-0.093413	0.044229	-0.180098	0.043729
YOUNG	-0.069012	0.029307	-0.028987	0.02855	-0.065206	0.048201	-0.051883	0.033174	0.066831	0.031331
YOUNGSQ	0.007459	0.011709	-0.002065	0.010899	0.019051	0.018131	0.021802	0.013559	-0.022754	0.012802
INVOUTYN	-0.197341	0.03479	0.132368	0.024282	-0.292419	0.069258	-0.402709	0.050423	-0.396665	0.061847
INVOUTDR	0.016436	0.012369			0.010878	0.030438	0.031218	0.021745	0.03702	0.029626
RELED	0.130361	0.026348	0.117406	0.020942	0.035552	0.043491	0.116577	0.025415	0.117472	0.024621
RELAGE	-0.041604	0.032118	-0.078899	0.024524	-0.049321	0.05191	-0.114419	0.028827	-0.147907	0.029239
NOTWELL	-0.294356	0.023664	-0.290947	0.025417	-0.047027	0.045446	-0.084972	0.02824	-0.101669	0.026908
ASSYPOV	-0.009449	0.005358	-0.008602	0.00591	-0.031343	0.017627	-0.009582	0.01709	-0.004321	0.01192
AGED	0.002243	7.562E-05	0.002548	7.971E-05	0.002839	0.000138	0.003078	8.96E-05	0.003407	8.242E-05
BLACK	-0.149059	0.028596	-0.194512	0.030008	-0.121201	0.053243	-0.078494	0.034296	-0.096915	0.032803
HISP	-0.12613	0.034053	-0.124205	0.035219	-0.211935	0.05684	-0.127342	0.035569	-0.142974	0.033654

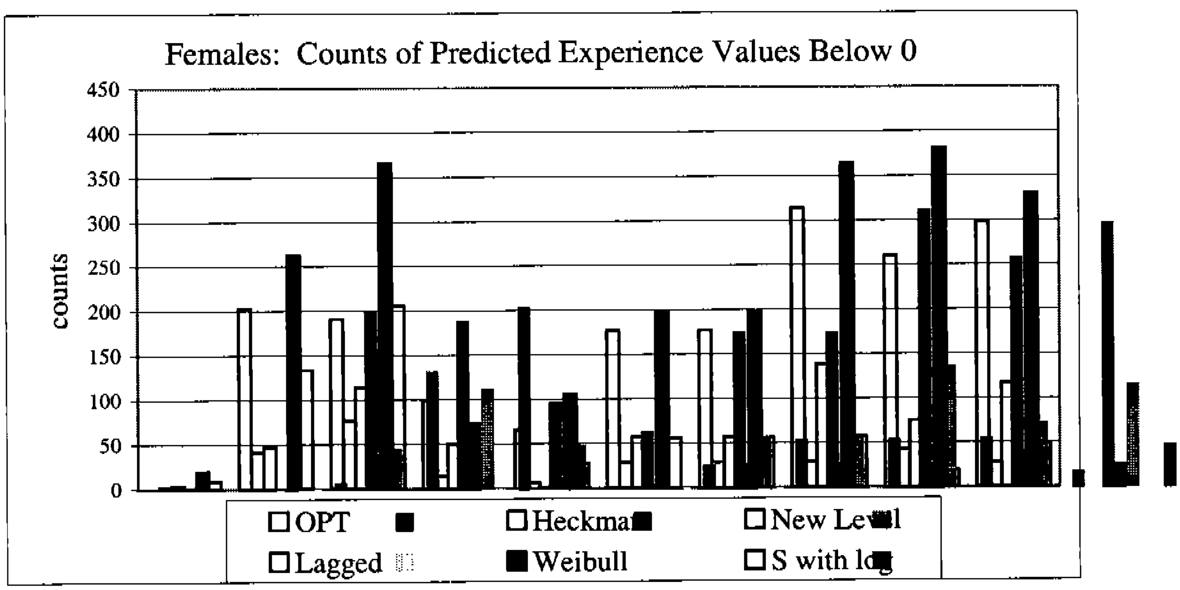
NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

	1989		1990		1991		1992		1993	
Males	Rsquare	0.5253	Rsquare	0.4283	Rsquare	0.7332	Rsquare	0.3202	Rsquare	0.3494
SATCVML	MSE	56.34424	MSE	48.88269	MSE	22.77689	MSE	48.36055	MSE	43.518
INTERCEP	2.941346	0.12708	2.834312	0.069491	1.910773	0.033863	2.688223	0.065793	2.814436	0.056547
INVPOT	-2.81501	0.343976	-1.878382	0.109193	0.055493	0.000583	-1.420314	0.085292	-1.39532	0.068726
SPLED	-0.13374	0.012464	-0.120391	0.006742	-2.028319	0.043984	-0.12106	0.006416	-0.132226	0.005614
SPLEDHS	-0.09454	0.094176	0.061568	0.046857	0.026041	0.003484	0.11341	0.045467	0.122054	0.04008
SPLEDSC	-0.022878	0.036849	0.035048	0.019991	0.055492	0.021771	0.034888	0.018782	0.042926	0.016734
SPLEDCD	-0.264494	0.159379	-0.037665	0.084607	0.020966	0.00917	-0.019976	0.081002	-0.025942	0.071806
SPLEDGW	-0.173574	0.070486	-0.069804	0.037384	0.08598	0.039217	-0.102991	0.036081	-0.069255	0.03206
YOUNG	0.14627	0.066114	-0.001273	0.02773	0.018013	0.017453	-0.022803	0.026814	0.001663	0.021352
YOUNGSQ	-0.037428	0.032383	-0.022488	0.011471	0.065448	0.012619	0.002185	0.011041	-0.005869	0.008357
INVOUTYN	-0.15746	0.096829	-0.260601	0.050536	-0.024928	0.005157	-0.351119	0.042747	-0.280054	0.030649
INVOUTDR	-0.021333	0.0384	-0.035227	0.019343	-0.228051	0.022093	-0.019139	0.022741	-0.032852	0.013581
RELED	-9.43E-06	7.65E-05	0.101416	0.024116	0.005664	0.007303	0.051461	0.014622	0.000706	0.000441
RELAGE	5.912E-05	5.98E-05	-0.078808	0.02827	0.048459	0.00992	-0.039573	0.015479	-0.000785	0.000373
NOTWELL	-0.189605	0.042848	-0.106488	0.02206	-0.088183	0.011374	-0.140293	0.022336	-0.159149	0.019152
ASSYPOV	-0.001016	0.007916	-0.019297	0.010579	0.0133	0.010637	-0.0007	0.005411	-0.00022	0.005881
AGED	0.003367	0.000122	0.003192	0.074525	-0.000769	0.004615	0.003359	6.926E-05	0.003419	6.016E-05
BLACK	-0.181269	0.052564	-0.202947	0.027816	-0.000315	0.049726	-0.128434	0.026403	-0.083114	0.023552
HISP	-0.015012	0.060723	-0.186163	0.029346	-0.04753	0.013082	-0.085739	0.026854	-0.133638	0.023389

NVOUTYN and INVOUTDR are NA in the 1985 SIPP panel. VET was substituted in that year only.

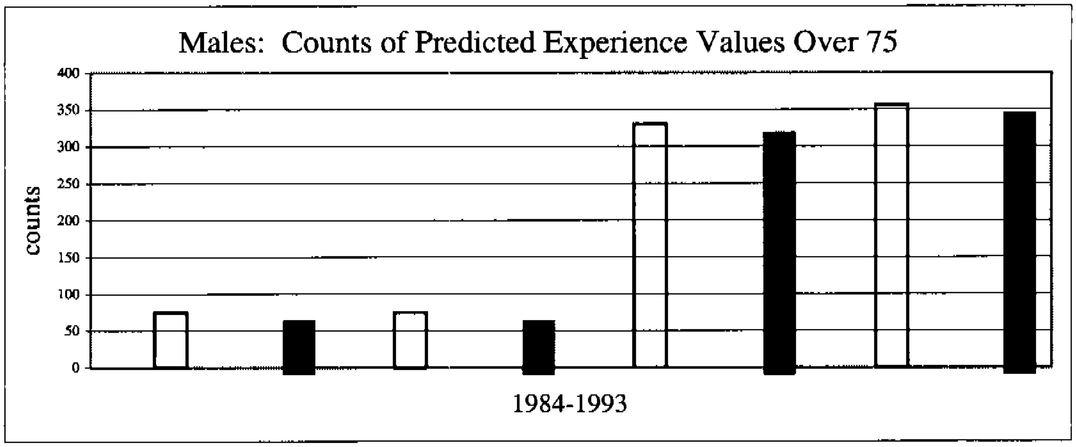
Sample Observations with Predicted Experience Outside [0,75) Range

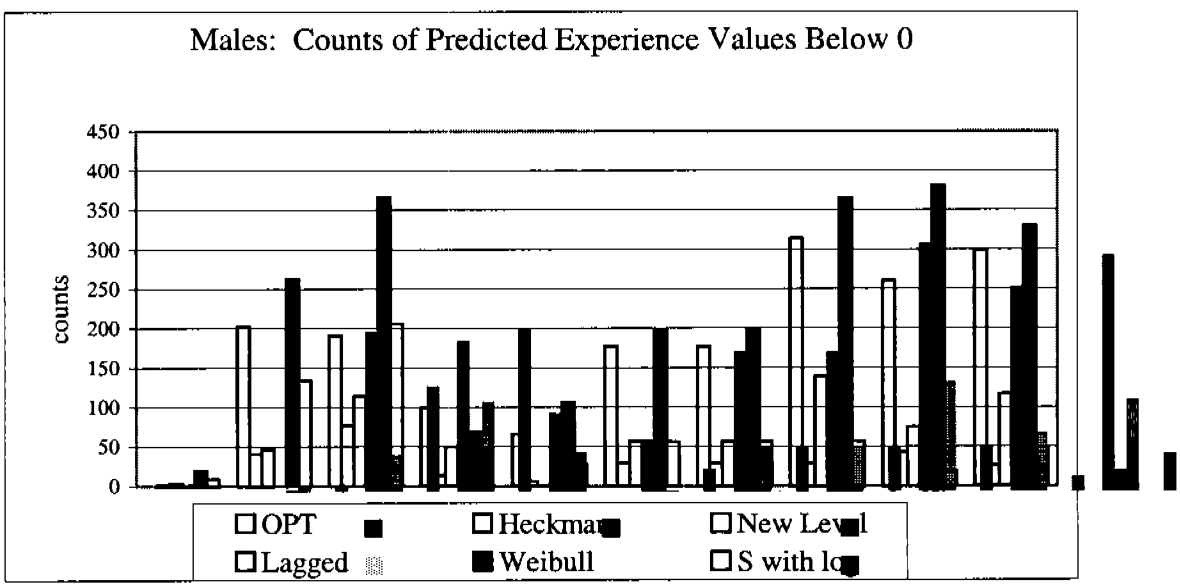




Sample Observations with Predicted Experience Outside [0,75) Range

(Con't)





Sample Observations with Predicted Experience Outside [0,75) Range
(Con't)

Females: Counts of Predicted Sample Observations Outside [0,75) Range

Variable	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
TPOPTWK	0	0	0	0	0	0	0	0	0	0
TPHECWK	0	0	0	0	0	0	0	0	0	0
TPLVLWK	0	0	0	0	0	0	0	0	0	0
TPLAGWK	4	6	0	0	0	0	0	0	0	0
TPWBLNWK	0	0	0	0		0	0	0	0	0
TPSCLNWK	0	2	12	0		75	75	330	356	123
BPOPTWK	0	203	191	99	66	177	177	314	260	299
BPHECWK	2	41	77	14	6	29	29	29	43	27
BPLVLWK	4	47	114	50	1	57	57	139	75	117
BPLAGWK	1	0	1	0	2	1	1	0		0
BPWBLNWK	20	263	366	0	106	199	199	365	381	330
BPSCLNWK	9	134	206	0	28	56	56	57	19	49

Males: Counts of Predicted Sample Observations Outside [0,75) Range

Variable	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
TPOPTWK	0	0	0	0	0	0	0	0	0	0
TPHECWK	0	0	0	0	0	0	0	0	0	0
TPLVLWK	0	0	0	0	0	0	0	0	0	0
TPLAGWK	4	6	0	0	0	0	0	0	0	0
TPWBLNWK	0	0	0	0			0	0	0	0
TPSCLNWK	0	2	12	0		75	75	330	356	123
BPOPTWK	0	203	191	99	66	177	177	314	260	299
BPHECWK	2	41	77	14	6	29	29	29	43	27
BPLVLWK	4	47	114	50	1	57	57	139	75	117
BPLAGWK	1	0	1	0	2	1	1	0		0
BPWBLNWK	20	263	366	0	106	199	199	365	381	330
BPSCLNWK	9	134	206	0	28	56	56	57	19	49

Not surprisingly, the specification with lagged work experience on the RHS (BPLAGWK) performs best when evaluated in terms of these criteria. The current specification (BPOPTWK) does not perform well; the alternative specifications in levels (BPHECWK and BPLVLWK) both perform better. The specifications with the log of work experience on the LHS are flagged when the predicted value falls below 1 or above ln(75).

Wage Equations

Females **POTNOADJ**

	1984		1985		1986		1987		1988	
	N	5958	N	10299	N	9161	N	9099	N	9424
	Rsquare	0.2581	Rsquare	0.3049	Rsquare	0.2914	Rsquare	0.2912	Rsquare	0.3068
	MSE	36.48258	MSE	291.72276	MSE	33.15638	MSE	33.65707	MSE	32.28209
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.423026	0.04061	1.313966	0.03076	1.429664	0.034493	1.422736	0.03773	1.459545	0.03677
S0TO4	-0.189455	0.078969	0.054846	0.057451	-0.057614	0.065988	-0.062614	0.073202	-0.063975	0.071767
S9TO11	0.070099	0.034922	0.130909	0.027796	0.078012	0.030657	0.068202	0.033962	0.091566	0.032984
S12	0.254693	0.031708	0.315279	0.025188	0.247609	0.027857	0.258944	0.031039	0.292356	0.030202
S13T15	0.423198	0.033835	0.497766	0.026645	0.442963	0.029252	0.453394	0.032226	0.477053	0.031161
S16	0.58071	0.036689	0.667314	0.028719	0.612251	0.03162	0.665242	0.034282	0.687803	0.032898
S17UP	0.707426	0.037567	0.86789	0.029889	0.814554	0.032372	0.8032	0.035129	0.823958	0.033819
POTEXP	0.013097	0.002079	0.017413	0.00146	0.016877	0.001654	0.020336	0.001733	0.01874	0.00166
POTEXPSQ	-0.000231	4.468E-05	-0.000248	3.287E-05	-0.000275	3.638E-05	-0.000335	3.806E-05	-0.000301	3.49E-05
BLACK	-0.088333	0.020064	-0.033344	0.015318	-0.064046	0.016388	-0.096843	0.016898	-0.065578	0.015732
HISP	-0.041958	0.027531	-0.003773	0.020571	-0.029921	0.021809	-0.070791	0.022016	-0.054245	0.021135
PTIME	-0.350528	0.012843	-0.388281	0.009846	-0.36093	0.01058	-0.382974	0.010881	-0.375644	0.01033
CITY	0.056329	0.014095	0.051734	0.010604	0.064077	0.01142	0.064755	0.011686	0.061754	0.011027
NEWENG	0.033497	0.030122	0.087929	0.022675	0.074181	0.024882	0.149926	0.025507	0.149707	0.023542
MIDATL	0.054503	0.021399	0.037749	0.016788	0.036417	0.018072	0.076442	0.01865	0.088696	0.017483
ENCENT	-0.015622	0.020697	-0.040782	0.016009	-0.028755	0.017227	-0.025567	0.017722	-0.052452	0.016749
WNCENT	-0.08404	0.028394	-0.09462	0.019537	-0.120438	0.020747	-0.11638	0.021296	-0.119766	0.020216
SATL	-0.061792	0.021467	-0.045006	0.01646	-0.062753	0.017739	-0.036941	0.018169	-0.028906	0.017126
ESCENT	-0.146421	0.031434	-0.150343	0.023836	-0.180614	0.026392	-0.12417	0.027195	-0.168779	0.025962
WSCENT	-0.050136	0.0253	-0.094299	0.018523	-0.087354	0.01989	-0.061266	0.02038	-0.135379	0.019354
MOUNTAIN	-0.029211	0.042692	-0.096113	0.026945	-0.096875	0.029165	-0.07457	0.028647	-0.064402	0.026318
WKDOLD			-0.009716	0.004631	0.017165	0.006941				
WKDYNG					-0.03829	0.048659				
INTOLD			0.355815	0.228117	-0.963289	0.346094				
INTYNG					0.002346	0.098074				

	1989		1990		1991		1992		1993	
	N	3289	N	9747	N	14877	N	14975	N	16802
POTNOADJ	Rsquare	.3021	Rsquare	0.33	Rsquare	0.3331	Rsquare	0.308	Rsquare	0.315
Females	MSE	48.46853	MSE	34.34868	MSE	26.29931	MSE	27.82396	MSE	25.5309
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.40088	0.067308	1.502778	0.03668	1.59375	0.0294	1.604855	0.030897	1.602692	0.029686
S0TO4	0.171892	0.125052	-0.064647	0.080287	-0.01407	0.060953	0.126529	0.061665	0.008402	0.065642
S9TO11	0.099861	0.057544	0.057843	0.03361	0.09602	0.026991	0.104875	0.02864	0.098447	0.027954
S12	0.299579	0.052668	0.302857	0.030873	0.28096	0.02477	0.263205	0.026011	0.291694	0.025472
S13T15	0.476424	0.05413	0.482024	0.031876	0.46113	0.025513	0.456116	0.026785	0.493384	0.02607
S16	0.734823	0.057391	0.760958	0.033705	0.73099	0.026871	0.706826	0.028047	0.761014	0.02714
S17UP	0.829989	0.058883	0.889505	0.034549	0.87394	0.027444	0.844715	0.028725	0.892971	0.027742
POTEXP	0.023479	0.003258	0.020744	0.001674	0.02066	0.001317	0.02235	0.001373	0.022284	0.001251
POTEXPSQ	-0.000355	6.415E-05	-0.000357 0.	37522	-0.00036	2.931E-05	-0.000374	3.065E-05	-0.000379	2.793E-05
BLACK	-0.076431	0.027988	-0.064327	0.015741	-0.07481	0.012556	-0.062048	0.012528	-0.057762	0.011482
HISP	-0.035321	0.036377	-0.032254	0.020523	-0.05602	0.015864	-0.045033	0.015849	-0.040221	0.014501
PTIME	-0.370673	0.018484	-0.34104	0.010631	-0.34811	0.008319	-0.340835	0.00858	-0.320193	0.007923
CITY	0.068221	0.019451	0.050946	0.011251	0.04605	0.008854	0.037372	0.011889	0.013773	0.010376
NEWENG	0.143454	0.040527	0.16581	0.024932	0.16075	0.019004	0.147902	0.019735	0.12347	0.018465
MIDATL	0.071494	0.030609	0.103228	0.0177	0.07023	0.013823	0.06793	0.014378	0.091635	0.01343
ENCENT	-0.046397	0.02946	-0.030226	0.01687	-0.04632	0.013181	-0.058553	0.013631	-0.031015	0.012659
WNCENT	-0.189955	0.035196	-0.136572	0.020502	-0.15712	0.015907	-0.152994	0.016541	-0.139432	0.015631
SATL	-0.05953	0.030343	-0.004777	0.017063	-0.03896	0.013427	-0.070416	0.013788	-0.05085	0.01269
ESCENT	-0.158425	0.047208	-0.164418	0.026276	-0.19819	0.020818	-0.17351	0.020889	-0.160327	0.019305
WSCENT	-0.178713	0.034784	-0.179356	0.019107	-0.17088	0.015155	-0.165954	0.01584	-0.153406	0.014869
MOUNTAIN	-0.065885	0.043794	-0.074549	0.026881	-0.10454	0.021206	-0.100644	0.02211	-0.071663	0.02009
WKDOLD			0.026689	0.005201	0.02597	0.005406	0.010476	0.004406	0.011761	0.006135
WKDYNG			0.025487	0.023909	-0.01229	0.018343	0.035461	0.025182	0.077066	0.040565
INTOLD			-1.308284	0.254349	-1.23719	0.269843	-0.465859	0.217394	-0.564621	0.304364
INTYNG			-0.091444	0.045139	-0.00213	0.050107	-0.112721	0.045669	-0.141779	0.07668

Females **OPTNOADJ**

	1984		1985		1986		1987		1988	
	Rsquare	0.2589	Rsquare	0.3058	Rsquare	0.2898	Rsquare	0.2944	Rsquare	0.3073
	MSE	36.46227	MSE	291.52728	MSE	33.19471	MSE	33.58972	MSE	32.2699
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.355367	0.046393	1.326633	0.032349	1.439769	0.037282	1.333338	0.041152	1.409944	0.040172
S0TO4	-0.175162	0.078938	0.065908	0.057411	-0.036387	0.066284	-0.057681	0.073083	-0.061933	0.07173
S9TO11	0.094329	0.03472	0.13576	0.027689	0.079405	0.030528	0.067813	0.033727	0.083505	0.03287
S12	0.26055	0.030775	0.288367	0.024596	0.22923	0.027354	0.221347	0.030388	0.259859	0.029794
S13T15	0.420586	0.03263	0.454019	0.025817	0.401968	0.028471	0.389126	0.0313	0.430328	0.03056
S16	0.571418	0.035385	0.602626	0.02768	0.56384	0.030672	0.588342	0.033228	0.636211	0.032201
S17UP	0.689029	0.035977	0.779781	0.028945	0.752678	0.031437	0.717576	0.033994	0.763714	0.033239
POPTWK	0.027445	0.004819	0.02278	0.002496	0.024234	0.003696	0.050782	0.004273	0.04036	0.003916
POPTWKSQ	-0.00076	0.000175	-0.000283	8.589E-05	-0.000494	0.000136	-0.001455	0.000158	-0.001081	0.000137
BLACK	-0.095131	0.020043	-0.053053	0.015308	-0.060588	0.016401	-0.093094	0.016865	-0.06642	0.015726
HISP	-0.024944	0.027601	0.023506	0.020602	-0.013921	0.021863	-0.058181	0.021969	-0.037433	0.021145
PTIME	-0.34749	0.012858	-0.384368	0.009852	-0.359352	0.010612	-0.378522	0.010876	-0.371387	0.010354
CITY	0.055603	0.01409	0.046514	0.010584	0.060009	0.01142	0.06439	0.011655	0.061163	0.011022
NEWENG	0.031317	0.0301	0.085653	0.022673	0.072036	0.024911	0.144016	0.025443	0.14588	0.023529
MIDATL	0.052521	0.021388	0.034106	0.016789	0.034071	0.018096	0.070334	0.01861	0.086032	0.017477
ENCENT	-0.016072	0.020684	-0.04115	0.015998	-0.029285	0.017247	-0.029545	0.017681	-0.053186	0.016742
WNCENT	-0.086509	0.02837	-0.094132	0.019526	-0.123412	0.020766	-0.118566	0.021241	-0.119766	0.020207
SATL	-0.064185	0.021458	-0.046389	0.01645	-0.06424	0.01776	-0.042543	0.018119	-0.031222	0.017115
ESCENT	-0.145901	0.031416	-0.149776	0.023823	-0.182819	0.026421	-0.128141	0.027135	-0.169988	0.025952
WSCENT	-0.050818	0.02528	-0.091641	0.018512	-0.087722	0.019916	-0.0648	0.02033	-0.135259	0.019347
MOUNTAIN	-0.031793	0.042675	-0.094355	0.026929	-0.096309	0.029199	-0.078282	0.028583	-0.064378	0.026308
WKDOLD			-0.018924	0.004264	0.006607	0.006856				
WKDYNG					-0.016254	0.048705				
INTOLD			0.703947	0.218341	-0.567426	0.344312				
INTYNG					-0.044418	0.097984				

OPTNOADJ	1989		1990		1991		1992		1993	
Females	Rsquare	.3041	Rsquare	0.3294	Rsquare	0.3349	Rsquare	0.3091	Rsquare	0.3154
	MSE	48.40012	MSE	34.36327	MSE	26.2625	MSE	27.80175	MSE	25.52445
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.36681	0.069309	1.460051	0.039801	1.51587	0.031663	1.552848	0.033418	1.551644	0.032157
S0TO4	0.239911	0.125757	-0.041132	0.080265	-0.0097	0.060891	0.153161	0.061605	0.034034	0.065638
S9TO11	0.079493	0.057319	0.083459	0.033502	0.10425	0.0269	0.105875	0.0286	0.101756	0.027908
S12	0.263269	0.052221	0.297494	0.03027	0.26457	0.024444	0.237151	0.025842	0.264936	0.025289
S13T15	0.430319	0.05355	0.456037	0.030989	0.42644	0.025009	0.412374	0.026412	0.448628	0.025712
S16	0.687583	0.056625	0.721115	0.032681	0.68307	0.026229	0.647047	0.027522	0.698616	0.026638
S17UP	0.774499	0.058313	0.844095	0.033573	0.82147	0.026876	0.777405	0.028344	0.826095	0.027327
POPTWK	0.04721	0.006284	0.033253	0.003163	0.04048	0.002621	0.038831	0.002607	0.039247	0.002683
POPTWKSQ	-0.00119	0.000205	-0.000776	0.000104	-0.00104	8.549E-05	-0.000902	8.423E-05	-0.000942	9.018E-05
BLACK	-0.076206	0.027917	-0.065526	0.015746	-0.07571	0.012541	-0.0576	0.012525	-0.054392	0.01148
HISP	-0.016745	0.036414	-0.010424	0.020601	-0.03475	0.015874	-0.021743	0.015884	-0.015494	0.014565
PTIME	-0.365339	0.018487	-0.34058	0.010634	-0.3447	0.00832	-0.337939	0.008584	-0.317477	0.007931
CITY	0.066463	0.019412	0.04902	0.011251	0.04522	0.008837	0.036358	0.011877	0.012391	0.010371
NEWENG	0.138775	0.040469	0.162631	0.024943	0.15676	0.018977	0.1443	0.019718	0.118109	0.018458
MIDATL	0.066874	0.030561	0.100503	0.017709	0.06675	0.013802	0.064189	0.014361	0.087659	0.013425
ENCENT	-0.044142	0.029418	-0.032407	0.016875	-0.04881	0.013161	-0.060686	0.013616	-0.034068	0.012654
WNCENT	-0.187882	0.03515	-0.141685	0.020502	-0.15983	0.015883	-0.153666	0.016526	-0.141229	0.015626
SATL	-0.062389	0.030294	-0.008463	0.017064	-0.04236	0.013404	-0.072674	0.013774	-0.054118	0.012685
ESCENT	-0.163195	0.047127	-0.167659	0.026282	-0.20132	0.020783	-0.177467	0.020867	-0.163182	0.0193
WSCENT	-0.176041	0.034744	-0.18027	0.019116	-0.17204	0.015135	-0.166048	0.015827	-0.153684	0.014866
MOUNTAIN	-0.062824	0.043741	-0.077196	0.02689	-0.10617	0.021176	-0.10174	0.022089	-0.072478	0.020084
WKDOLD			0.01471	0.00484	0.0092	0.005071	-0.004436	0.004123	-0.007872	0.005904
WKDYNG			0.042176	0.02385	0.00973	0.018241	0.046236	0.025126	0.097976	0.040537
INTOLD			-0.841055	0.24415	-0.50724	0.259502	0.148383	0.210761	0.280275	0.29829
INTYNG			-0.090424	0.045605	0.03239	0.050472	-0.079196	0.046315	-0.114568	0.077107

Females **LNADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2879	Rsquare	0.3512	Rsquare	0.2944	Rsquare	0.291	Rsquare	0.3023
	MSE	35.72098	MSE	289.462	MSE	33.07481	MSE	33.65069	MSE	32.37329
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.59987	0.094454	0.985537	0.062365	0.990289	0.062471	1.098824	0.061404	1.076283	0.070598
PLNWK	0.335194	0.07484	0.082104	0.03921	0.096402	0.039975	0.115928	0.040071	0.130393	0.049393
PLNWKSQ	-0.08921	0.020087	0.018478	0.011152	0.0055	0.011093	0.002962	0.010462	-0.000682	0.01203
SPLED	0.048121	0.00494	0.061453	0.004046	0.05735	0.004509	0.042185	0.00461	0.044006	0.004472
SPLEDHS	0.05008	0.036795	-0.019487	0.028345	-0.05521	0.030327	-0.061095	0.031364	-0.023062	0.029846
SPLEDSC	0.063363	0.016688	0.028896	0.012684	0.020983	0.013654	0.03619	0.013661	0.045479	0.012953
SPLEDCD	0.223918	0.072547	0.194007	0.055143	0.171295	0.060123	0.319302	0.060818	0.332754	0.05807
SPLEDGW	0.106568	0.032905	0.144127	0.025825	0.138932	0.027563	0.159644	0.028126	0.164539	0.027166
PTIME	-0.271221	0.013177	-0.34563	0.010039	-0.32427	0.010825	-0.344882	0.011115	-0.338716	0.010595
HVY	0.027641	0.033973	-0.013419	0.027916	0.008936	0.028849	-0.015971	0.028005	-0.017413	0.025542
TNF	-0.153882	0.033854	-0.217701	0.027594	-0.164246	0.028356	-0.181285	0.027495	-0.197673	0.025214
SVS	-0.135156	0.033085	-0.210927	0.027123	-0.172001	0.027762	-0.164704	0.026859	-0.154883	0.024485
OLDER	-0.008267	0.019133	0.048927	0.016109	0.023108	0.016677	-0.001068	0.017818	-0.039375	0.019625
WKDOLD	0.317146	0.025191	-0.020011	0.004358	0.005286	0.006717				
WKDYNG			0.787249	0.220797	-0.039625	0.048475				
INTOLD					-0.423852	0.340211				
INTYNG					0.06294	0.102328				
LAMBDABA			-0.047634	0.030148	0.046648	0.030049	0.130487	0.022587	0.153801	0.021143

LNADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	.2942	Rsquare	0.3165	Rsquare	0.3276	Rsquare	0.3008	Rsquare	0.3099
	MSE	48.69010	MSE	34.67995	MSE	26.40001	MSE	27.96281	MSE	25.62101
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.795971	0.151576	1.035698	0.067993	1.12866	0.05374	1.300753	0.054898	1.177573	0.054536
PLNWK	0.300396	0.106972	0.023925	0.043533	0.05668	0.03533	0.106518	0.036434	0.133458	0.035802
PLNWKSQ	-0.029922	0.024945	0.025453	0.010792	0.01324	0.008565	0.008738	0.008822	0.003139	0.008694
SPLED	0.049106	0.00772	0.063069	0.004492	0.05388	0.003447	0.039693	0.003565	0.051665	0.003512
SPLEDHS	0.052889	0.051689	-0.055668	0.030749	-0.05305	0.023866	-0.090953	0.024591	-0.051547	0.022865
SPLEDSC	0.067039	0.022568	-0.0012	0.013379	0.019	0.010472	0.029984	0.010777	0.036565	0.009847
SPLEDCD	0.472486	0.100912	0.2818	0.0587	0.31386	0.045402	0.340842	0.046471	0.341536	0.043619
SPLEDGW	0.190159	0.047513	0.099219	0.027491	0.13499	0.02106	0.18277	0.021732	0.168152	0.020395
PTIME	-0.337042	0.018991	-0.305783	0.01094	-0.30119	0.008535	-0.298162	0.008808	-0.279334	0.008205
HVY	0.046358	0.043162	-0.021273	0.025564	-0.02546	0.020209	-0.056212	0.021506	-0.084853	0.018878
TNF	-0.16894	0.042445	-0.207581	0.025008	-0.20679	0.01976	-0.208982	0.021139	-0.196503	0.018587
SVS	-0.09695	0.041004	-0.155607	0.024142	-0.14388	0.019107	-0.171137	0.020502	-0.194047	0.018436
OLDER	-0.056287	0.037358	-0.035502	0.019095	-0.03231	0.015197	-0.025235	0.015527	-0.005061	0.013989
WKDOLD			0.01594	0.004883	0.01371	0.005117	-0.002036	0.004202	-0.004488	0.005968
WKDYNG			0.020907	0.024283	0.00037	0.018346	0.032242	0.025334	0.048159	0.040689
INTOLD			-0.824558	0.247562	-0.69255	0.26186	0.089399	0.213686	0.134517	0.300406
INTYNG			-0.109357	0.054362	-0.00798	0.054983	-0.079979	0.052634	-0.081882	0.080918
LAMBDABA	0.093355	0.036205	0.128136	0.021952	0.17304	0.014571	0.136915	0.016161	0.113026	0.015423

Females **LNADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.275	Rsquare	0.3159	Rsquare	0.2942	Rsquare	0.2891	Rsquare	0.3017
	MSE	36.04252	MSE	289.30301	MSE	33.07771	MSE	33.69487	MSE	32.38886
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.805067	0.093437	1.030404	0.062788	0.998296	0.062674	1.118001	0.061612	1.071571	0.070744
PLNWK	0.192602	0.074233	0.054191	0.039417	0.097036	0.040227	0.121802	0.040108	0.137797	0.049372
PLNWKSQ	-0.033849	0.019544	0.02399	0.010854	0.005615	0.011128	0.002946	0.010493	-0.002647	0.012037
SPLED	0.055416	0.004941	0.062482	0.003859	0.058888	0.004366	0.045469	0.004616	0.044869	0.004468
SPLEDHS	0.031076	0.03708	-0.019266	0.028319	-0.054518	0.03033	-0.062767	0.031409	-0.022932	0.029862
SPLEDSC	0.059063	0.016837	0.031574	0.012693	0.020995	0.013659	0.03602	0.013679	0.045213	0.012961
SPLEDCD	0.216082	0.073196	0.202608	0.055171	0.173279	0.060108	0.320217	0.060915	0.332415	0.058104
SPLEDGW	0.103617	0.033201	0.146966	0.025808	0.139172	0.027566	0.162574	0.028167	0.164076	0.027184
PTIME	-0.297015	0.013058	-0.348425	0.010005	-0.325238	0.010844	-0.348711	0.011169	-0.337181	0.010656
HVY	0.024563	0.034287	-0.011926	0.027897	0.008936	0.028854	-0.01534	0.028042	-0.014445	0.025545
TNF	-0.160013	0.034177	-0.21593	0.027577	-0.164032	0.028359	-0.178811	0.027527	-0.193331	0.025212
SVS	-0.140303	0.033382	-0.21067	0.027094	-0.171952	0.027768	-0.163894	0.026894	-0.152821	0.024492
OLDER	-0.015656	0.019313	0.047321	0.016107	0.022575	0.016682	-0.00825	0.017859	-0.042259	0.019617
WKDOLD	0.052678	0.007444	-0.01978	0.004244	0.004276	0.00667				
WKDYNG			0.766269	0.2172	-0.037845	0.048597				
INTOLD					-0.382897	0.338751				
INTYNG					0.059089	0.102598				
LAMBDAST			-0.066128	0.017797	0.020035	0.02235	0.067968	0.022079	0.135486	0.020469

LNADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2954	Rsquare	0.3155	Rsquare	0.3245	Rsquare	0.2991	Rsquare	0.3084
	MSE	48.64785	MSE	34.70726	MSE	26.46176	MSE	27.99596	MSE	25.64785
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.77385	0.151575	1.062365	0.067705	1.13934	0.054064	1.31609	0.055008	1.200158	0.054518
PLNWK	0.304907	0.106678	0.017195	0.043571	0.06656	0.035415	0.107568	0.036477	0.127949	0.03583
PLNWKSQ	-0.030899	0.024925	0.028621	0.010771	0.01325	0.008604	0.010006	0.008835	0.006625	0.008684
SPLED	0.047602	0.007685	0.066147	0.004427	0.0551	0.003477	0.041301	0.003576	0.054122	0.00351
SPLEDHS	0.053301	0.051643	-0.059027	0.030767	-0.05722	0.023921	-0.094427	0.024617	-0.053587	0.022887
SPLEDSC	0.06548	0.022542	-0.002293	0.013387	0.01824	0.010496	0.029306	0.010789	0.036844	0.009857
SPLEDCD	0.466467	0.100814	0.281242	0.05875	0.31351	0.045511	0.343241	0.046526	0.346867	0.043658
SPLEDGW	0.188386	0.047439	0.099372	0.027515	0.13511	0.021112	0.184502	0.021757	0.171498	0.02041
PTIME	-0.331287	0.019126	-0.308451	0.010943	-0.30333	0.008598	-0.299271	0.00887	-0.281926	0.008252
HVY	0.049277	0.043119	-0.021126	0.025584	-0.02432	0.020257	-0.056953	0.021531	-0.083328	0.018896
TNF	-0.166877	0.042396	-0.206181	0.025026	-0.20505	0.019807	-0.208371	0.021164	-0.194711	0.018606
SVS	-0.096327	0.040965	-0.155415	0.024162	-0.14438	0.019151	-0.171972	0.020526	-0.19403	0.018457
OLDER	-0.060565	0.036657	-0.04035	0.019145	-0.05118	0.015065	-0.032869	0.015539	-0.013918	0.013976
WKDOLD			0.013534	0.004849	0.01178	0.00513	-0.004164	0.004194	-0.007282	0.005961
WKDYNG			0.021039	0.024306	-0.0006	0.018389	0.031326	0.025365	0.047601	0.040732
INTOLD			-0.727882	0.246587	-0.60388	0.262365	0.182288	0.213387	0.249176	0.300257
INTYNG			-0.109896	0.054428	-0.00143	0.055106	-0.07804	0.0527	-0.081766	0.081005
LAMBDAST	0.120272	0.034219	0.074859	0.017304	0.13254	0.015718	0.09751	0.016206	0.061723	0.014356

Females		HECADJBA								
	1984		1985		1986		1987		1988	
	Rsquare	0.2837	Rsquare	0.307	Rsquare	0.2874	Rsquare	0.2899	Rsquare	0.2995
	MSE	35.81972	MSE	291.1559	MSE	33.23383	MSE	33.67074	MSE	32.43563
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.236834	0.050444	1.390275	0.041372	1.361267	0.045739	1.271254	0.043024	1.378007	0.041495
S12	0.180813	0.018519	0.224268	0.015245	0.195008	0.016599	0.191429	0.017185	0.208037	0.016495
S13T15	0.329605	0.02194	0.391112	0.018187	0.372617	0.019597	0.359115	0.019525	0.36861	0.018655
RS16UP	0.501823	0.023689	0.625146	0.021158	0.608979	0.023253	0.58158	0.022063	0.601889	0.020884
PHECWK	0.013151	0.00583	0.031496	0.003528	0.037173	0.004169	0.046362	0.004541	0.032481	0.004848
PHECWKSQ	-0.000674	0.000224	-0.000602	0.000136	-0.000954	0.000174	-0.001322	0.000181	-0.000801	0.000189
PTIME	-0.271562	0.013187	-0.341938	0.010083	-0.322525	0.010867	-0.338735	0.01114	-0.330968	0.010622
HVY	0.042033	0.03412	-0.003785	0.028089	0.017108	0.029017	-0.001291	0.028055	-0.016289	0.025604
TNF	-0.140904	0.03394	-0.208299	0.02776	-0.152485	0.028511	-0.165439	0.027528	-0.190623	0.025291
SVS	-0.119938	0.033166	-0.194929	0.027282	-0.161304	0.02791	-0.148569	0.026875	-0.147014	0.024536
OLDER	0.045526	0.028504	-0.011906	0.022028	-0.006714	0.025782	0.037633	0.02725	0.000422	0.027933
WKDOLD	0.320335	0.022713	-0.019477	0.004345	0.013473	0.006974				
WKDYNG			0.792415	0.22136	-0.025282	0.048716				
INTOLD					-0.781446	0.347507				
INTYNG					0.064114	0.099028				
LAMBDABA		0.054742	0.026892	0.095959	0.028677	0.170722	0.021756	0.184079	0.020811	

HECADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	0.2922	Rsquare	0.3182	Rsquare	0.3256	Rsquare	0.296	Rsquare	0.3032
	MSE	48.74404	MSE	34.63331	MSE	26.43729	MSE	28.05498	MSE	25.74353
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.341998	0.070966	1.407842	0.040094	1.47277	0.031355	1.561277	0.033398	1.560096	0.031772
S12	0.220869	0.028879	0.254769	0.01709	0.2017	0.013371	0.154092	0.014144	0.192352	0.013581
S13T15	0.378129	0.031861	0.403765	0.019303		0.014847	0.317169	0.015749	0.362275	0.014917
RS16UP	0.654508	0.034888	0.700817	0.021428	0.64362	0.016128	0.579169	0.01752	0.639382	0.016553
PHECWK	0.040219	0.008872	0.032069	0.003869	0.03015	0.003148	0.031672	0.003247	0.036317	0.003449
PHECWKSQ	-0.000992	0.000338	-0.00075	0.000136	-0.00072	0.00011	-0.000674	0.000113	-0.000847	0.000123
PTIME	-0.327529	0.019037	-0.302345	0.01091	-0.29982	0.008543	-0.298158	0.00883	-0.277313	0.00824
HVY	0.037724	0.043173	-0.01275	0.025551	-0.01605	0.020253	-0.052008	0.021584	-0.087496	0.01897
TNF	-0.174589	0.042459	-0.195607	0.024991	-0.19299	0.019803	-0.201296	0.021216	-0.196068	0.018673
SVS	-0.09227	0.041008	-0.1446	0.024101	-0.1294	0.019127	-0.160265	0.020564	-0.188146	0.018519
OLDER	-0.003909	0.052538	-0.00757	0.025797	0.00808	0.020397	-0.004594	0.020837	0.023102	0.020038
WKDOLD			0.022943	0.005041	0.01912	0.005292	0.002733	0.004214	0.001105	0.006034
WKDYNG			0.044175	0.024025	0.01001	0.018353	0.055816	0.025326	0.07923	0.040868
INTOLD			-1.099408	0.250268	-0.88759	0.26653	-0.10752	0.213757	-0.068712	0.302154
INTYNG			-0.105328	0.045737	0.02164	0.050695	-0.135258	0.046187	-0.138799	0.077477
LAMBDABA	0.138347	0.034983	0.158281	0.021431	0.19539	0.01441	0.167157	0.016056	0.15465	0.015219

Females **HECADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2688	Rsquare	0.3071	Rsquare	0.2869	Rsquare	0.287	Rsquare	0.2987
	MSE	36.19131	MSE	291.13832	MSE	33.24607	MSE	33.74086	MSE	32.45415
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.37665	0.050222	1.465225	0.040635	1.397894	0.044151	1.322935	0.042691	1.386985	0.041471
S12	0.21087	0.018589	0.239832	0.014686	0.205222	0.016135	0.203905	0.017256	0.210447	0.016514
S13T15	0.377456	0.021812	0.418268	0.017221	0.387529	0.018798	0.378314	0.019686	0.371813	0.018712
RS16UP	0.572703	0.02321	0.669565	0.019025	0.633601	0.021366	0.612714	0.022336	0.607819	0.020934
PHECWK	0.019554	0.005983	0.032679	0.003463	0.038353	0.004158	0.047439	0.004612	0.032714	0.004866
PHECWKSQ	-0.000714	0.000229	-0.000624	0.000136	-0.000991	0.000174	-0.001343	0.000182	-0.000827	0.000189
PTIME	-0.2979	0.013109	-0.347742	0.010065	-0.324278	0.010883	-0.342601	0.011195	-0.32902	0.010673
HVY	0.037885	0.034483	-0.00134	0.028086	0.017173	0.02903	-2.06E-05	0.028113	-0.012975	0.025611
TNF	-0.149329	0.034314	-0.204114	0.027761	-0.151573	0.02852	-0.161629	0.027579	-0.185733	0.025289
SVS	-0.123142	0.033513	-0.191573	0.027266	-0.160928	0.027924	-0.146481	0.026929	-0.144679	0.024544
OLDER	0.022171	0.028739	-0.013312	0.022027	-0.007436	0.025808	0.028933	0.027294	0.002267	0.02796
WKDOLD	0.062766	0.007328	-0.022519	0.00425	0.01166	0.006942				
WKDYNG			0.904453	0.218304	-0.021118	0.048856				
INTOLD					-0.706099	0.346422				
INTYNG					0.057664	0.099684				
LAMBDAST			-0.038082	0.016408	0.045048	0.021339	0.104053	0.021426	0.165627	0.020173

HECADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2934	Rsquare	0.3165	Rsquare	0.3222	Rsquare	0.294	Rsquare	0.3008
	MSE	48.70364	MSE	34.67661	MSE	26.50526	MSE	28.09677	MSE	25.78703
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.309884	0.072167	1.455486	0.03897	1.48012	0.031902	1.579555	0.033552	1.588304	0.031766
S12	0.219051	0.028756	0.268383	0.016887	0.2082	0.013448	0.16037	0.014187	0.203434	0.013567
S13T15	0.371919	0.031852	0.424925	0.018847	0.36127	0.014989	0.327556	0.015823	0.380268	0.014869
RS16UP	0.644223	0.034955	0.733506	0.020407	0.65645	0.016503	0.596943	0.017634	0.669028	0.016374
PHECWK	0.042301	0.008656	0.034343	0.003873	0.03394	0.003135	0.033846	0.003261	0.039615	0.003455
PHECWKSQ	-0.001068	0.000331	-0.000815	0.000136	-0.00084	0.00011	-0.000738	0.000113	-0.000938	0.000124
PTIME	-0.32186	0.019164	-0.305573	0.010921	-0.30142	0.008603	-0.29863	0.008892	-0.279511	0.008292
HVY	0.041579	0.043147	-0.012691	0.025583	-0.01443	0.020305	-0.052859	0.021616	-0.085835	0.019002
TNF	-0.171736	0.042424	-0.193614	0.02502	-0.19052	0.019853	-0.200379	0.021247	-0.193619	0.018704
SVS	-0.09138	0.040973	-0.143788	0.024131	-0.12934	0.019177	-0.160856	0.020594	-0.18768	0.018551
OLDER	-0.004338	0.052493	-0.006802	0.025852	0.00168	0.020436	-0.005929	0.02087	0.020637	0.02007
WKDOLD			0.02056	0.005028	0.01882	0.00531	0.00076	0.00421	-0.001609	0.006035
WKDYNG			0.044651	0.024057	0.0099	0.0184	0.055767	0.025365	0.079622	0.040937
INTOLD			-1.000154	0.249978	-0.85758	0.267264	-0.013354	0.213609	0.048099	0.302309
INTYNG			-0.098892	0.045788	0.02774	0.050848	-0.131763	0.046278	-0.129994	0.077608
LAMBDAST	0.153216	0.033351	0.094124	0.017149	0.15997	0.01548	0.128497	0.016113	0.097415	0.014315

Females **LVLADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2891	Rsquare	0.3121	Rsquare	0.2918	Rsquare	0.2901	Rsquare	0.3028
	MSE	35.68952	MSE	290.11343	MSE	33.13535	MSE	33.67123	MSE	32.36224
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.79105	0.075027	0.880608	0.058757	0.859012	0.061805	0.817033	0.064797	0.802681	0.066967
PLINWK	0.0233	0.006792	0.03429	0.004459	0.042758	0.005327	0.051336	0.005695	0.043558	0.005462
PLINWKSQ	-0.001147	0.000257	-0.000709	0.000175	-0.001264	0.000227	-0.001508	0.000226	-0.001162	0.0002
SPLED	0.047258	0.005001	0.066137	0.004081	0.064006	0.004496	0.055226	0.00459	0.060656	0.004508
SPLEDHS	0.039846	0.03641	0.002771	0.028302	-0.039805	0.030285	-0.007365	0.030945	0.020448	0.02957
SPLEDSC	0.054169	0.016562	0.036334	0.012666	0.025472	0.01346	0.039421	0.013539	0.044071	0.012917
SPLEDCD	0.196535	0.072366	0.195299	0.055375	0.164756	0.060073	0.289182	0.060677	0.291723	0.0579
SPLEDGW	0.096884	0.032768	0.142445	0.025766	0.131307	0.027385	0.129438	0.02794	0.129209	0.027037
PTIME	-0.270572	0.013158	-0.344248	0.010035	-0.324938	0.010839	-0.343436	0.011136	-0.338915	0.010586
HVY	0.026126	0.033942	-0.016022	0.027959	0.008024	0.028898	-0.014664	0.028018	-0.014775	0.025543
TNF	-0.156194	0.033828	-0.222083	0.027643	-0.165035	0.028407	-0.178184	0.027525	-0.19196	0.025238
SVS	-0.135806	0.033056	-0.212648	0.027175	-0.174023	0.027812	-0.16348	0.026876	-0.152549	0.024478
OLDER	0.083077	0.026666	0.022737	0.021661	0.037443	0.027663	0.046961	0.027775	0.024048	0.026522
WKDOLD	0.335347	0.024171	-0.016771	0.004327	0.013311	0.006916				
WKDYNG			0.622448	0.22003	-0.042994	0.048574				
INTOLD					-0.786678	0.345579				
INTYNG					0.086497	0.099977				
LAMBDABA		-0.030894	0.029122	0.033042	0.030082	0.134786	0.022557	0.14808	0.021253	

LVLADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	.2937	Rsquare	0.3151	Rsquare	0.3264	Rsquare	0.2989	Rsquare	0.3083
	MSE	48.70794	MSE	34.71663	MSE	26.42342	MSE	28.00061	MSE	25.64973
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.751097	0.119065	0.837068	0.062921	0.94687	0.04867	1.135775	0.051726	1.020721	0.049869
PLINWK	0.053905	0.010137	0.032464	0.004829	0.03346	0.003521	0.037464	0.003686	0.041493	0.003668
PLINWKSQ	-0.00139	0.000357	-0.000754	0.000171	-0.00085	0.000121	-0.000854	0.000126	-0.001014	0.000129
SPLED	0.056598	0.007815	0.069854	0.004533	0.06151	0.003467	0.048619	0.003616	0.060769	0.003543
SPLEDHS	0.068035	0.051672	0.00176	0.030146	-0.01143	0.023584	-0.054106	0.024418	-0.018732	0.022738
SPLEDSC	0.07005	0.022579	0.012123	0.013229	0.02811	0.010383	0.038154	0.010714	0.040228	0.00982
SPLEDCD	0.472098	0.101005	0.281235	0.058694	0.31278	0.045384	0.347769	0.046413	0.333874	0.043585
SPLEDGW	0.180322	0.047587	0.092824	0.027473	0.12725	0.021005	0.172837	0.021672	0.149522	0.020374
PTIME	-0.335521	0.018999	-0.303673	0.010934	-0.30144	0.008534	-0.298725	0.00881	-0.280328	0.008206
HVY	0.043443	0.043192	-0.024888	0.025586	-0.02785	0.020222	-0.055742	0.021533	-0.085353	0.018898
TNF	-0.170767	0.042484	-0.208895	0.025039	-0.20662	0.019784	-0.207604	0.021177	-0.196596	0.01861
SVS	-0.09852	0.04104	-0.157598	0.024166	-0.14439	0.019123	-0.171338	0.020529	-0.193994	0.018457
OLDER	0.022151	0.049888	-0.010464	0.026443	0.02776	0.019949	0.006999	0.02001	0.035866	0.018343
WKDOLD			0.0196	0.004953	0.01839	0.005154	0.001049	0.004195	-0.002567	0.005971
WKDYNG			0.026763	0.024043	0.00333	0.018335	0.041918	0.025262	0.058983	0.040692
INTOLD			-0.980885	0.248961	-0.8667	0.262639	-0.034317	0.213748	0.072962	0.30099
INTYNG			-0.086685	0.047825	0.0261	0.051525	-0.095358	0.047374	-0.090557	0.078089
LAMBDABA	0.114427	0.03543	0.141719	0.021844	0.17736	0.014597	0.143075	0.016197	0.121762	0.015324

Females **LVLADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.274	Rsquare	0.3133	Rsquare	0.2917	Rsquare	0.288	Rsquare	0.302
	MSE	36.0676	MSE	289.84506	MSE	33.13754	MSE	33.72117	MSE	32.38165
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.86989	0.076521	0.935606	0.059677	0.871157	0.061954	0.82552	0.064873	0.80207	0.067013
PLINWK	0.024724	0.006954	0.029958	0.004564	0.042793	0.005341	0.053864	0.005734	0.04427	0.005478
PLINWKSQ	-0.000897	0.000261	-0.000554	0.000177	-0.001262	0.000227	-0.001584	0.000227	-0.001196	0.0002
SPLED	0.057212	0.004989	0.068368	0.003856	0.065986	0.004329	0.059581	0.004607	0.061882	0.004513
SPLEDHS	0.040022	0.036804	0.002692	0.028276	-0.039324	0.030284	-0.006428	0.030991	0.020427	0.029589
SPLEDSC	0.057717	0.016735	0.040345	0.012685	0.025889	0.013468	0.039451	0.013562	0.043617	0.012926
SPLEDCD	0.203655	0.07313	0.210879	0.055403	0.167243	0.060058	0.288774	0.060784	0.290181	0.057938
SPLEDGW	0.09909	0.033116	0.147583	0.025769	0.131985	0.027394	0.131251	0.027985	0.128275	0.027054
PTIME	-0.297914	0.013069	-0.348408	0.010005	-0.326667	0.01085	-0.347807	0.011187	-0.337952	0.010646
HVY	0.022115	0.034309	-0.01399	0.027933	0.008273	0.028901	-0.01396	0.02806	-0.01196	0.025549
TNF	-0.163542	0.034204	-0.219324	0.02762	-0.164615	0.02841	-0.175543	0.027561	-0.187904	0.025237
SVS	-0.140846	0.033406	-0.212017	0.027141	-0.173692	0.027817	-0.162568	0.026915	-0.150509	0.024487
OLDER	0.036146	0.026677	0.014052	0.021593	0.035674	0.027688	0.042121	0.027855	0.024537	0.02655
WKDOLD	0.058956	0.007342	-0.017236	0.004245	0.012235	0.006875				
WKDYNG			0.617203	0.217898	-0.044024	0.048696				
INTOLD					-0.746412	0.344282				
INTYNG					0.091145	0.100487				
LAMBDAST			-0.077857	0.017331	-3.89E-05	0.022153	0.065542	0.02221	0.126138	0.020677

LVLADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2948	Rsquare	0.3137	Rsquare	0.3231	Rsquare	0.279	Rsquare	0.3066
	MSE	48.67019	MSE	34.75315	MSE	26.48797	MSE	28.03706	MSE	25.68158
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.724395	0.118759	0.849181	0.062966	0.93785	0.048823	1.135385	0.051798	1.02225	0.049931
PLINWK	0.055558	0.009955	0.034293	0.004863	0.03766	0.003502	0.03992	0.003689	0.044092	0.003673
PLINWKSQ	-0.001447	0.000352	-0.000801	0.000172	-0.00097	0.00012	-0.000921	0.000126	-0.001077	0.000129
SPLED	0.055754	0.007741	0.073792	0.004454	0.06363	0.003498	0.050875	0.003629	0.064044	0.003539
SPLEDHS	0.068646	0.051632	0.001875	0.030178	-0.01154	0.023642	-0.055611	0.024449	-0.018246	0.022766
SPLEDSC	0.06814	0.022558	0.012047	0.013244	0.0281	0.010408	0.037994	0.010728	0.041132	0.009832
SPLEDCD	0.464287	0.100905	0.281092	0.058758	0.31131	0.045501	0.350716	0.046475	0.340387	0.04363
SPLEDGW	0.177585	0.04751	0.093159	0.027502	0.12623	0.021059	0.174304	0.0217	0.152492	0.020394
PTIME	-0.330061	0.019136	-0.306715	0.010943	-0.30374	0.008594	-0.299924	0.008872	-0.283163	0.008256
HVY	0.046632	0.043159	-0.02519	0.025612	-0.02698	0.020272	-0.056623	0.021561	-0.083857	0.018921
TNF	-0.168532	0.042446	-0.207687	0.025064	-0.20484	0.019833	-0.207029	0.021204	-0.194754	0.018632
SVS	-0.097908	0.041007	-0.157594	0.024192	-0.14492	0.019169	-0.172305	0.020556	-0.194007	0.018481
OLDER	0.021164	0.049832	-0.012401	0.026475	0.01944	0.019981	0.004314	0.020049	0.030585	0.018352
WKDOLD			0.017074	0.004928	0.01713	0.005171	-0.001063	0.004189	-0.005456	0.005967
WKDYNG			0.0265	0.024071	0.00271	0.01838	0.041138	0.025296	0.058398	0.040743
INTOLD			-0.87998	0.248347	-0.80126	0.263273	0.060518	0.213497	0.192215	0.300978
INTYNG			-0.080794	0.047905	0.03659	0.051658	-0.088964	0.047453	-0.081606	0.078185
LAMBDAST	0.133404	0.03385	0.080896	0.01742	0.13627	0.015778	0.101583	0.016276	0.066434	0.01437

Females **LAGADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2867	Rsquare	3183	Rsquare	0.2881	Rsquare	0.2777	Rsquare	0.292
	MSE	35.75083	MSE	. 288.7999	MSE	33.22129	MSE	33.96416	MSE	32.6111
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.908535	0.061054	1.078752	0.049669	1.11921	0.054029	1.178594	0.055188	1.160469	0.053
LAST5	0.005903	0.002022	0.02302	0.002052	0.014806	0.00178	0.007001	0.002282	0.002155	0.002191
LASTSQ	-8.75E-05	4.447E-05	-0.000237	9.645E-05	-0.000336	7.317E-05	-0.000209	7.508E-05	-4.62E-05	7.01E-05
SPLED	0.052679	0.005105	0.064982	0.004044	0.059538	0.004517	0.053511	0.004778	0.055475	0.004604
SPLEDHS	0.032153	0.036465	0.003236	0.028175	-0.037929	0.030364	-0.003904	0.031184	0.021499	0.029798
SPLEDSC	0.054993	0.016582	0.044078	0.01262	0.030432	0.013497	0.040389	0.013657	0.041287	0.01301
SPLEDCD	0.207299	0.072476	0.23797	0.055152	0.17615	0.060236	0.276918	0.06112	0.255024	0.05811
SPLEDGW	0.094354	0.032801	0.154595	0.025612	0.149518	0.027404	0.147332	0.028154	0.138615	0.02719
PTIME	-0.271651	0.013162	-0.338547	0.010001	-0.326594	0.010868	-0.349383	0.011248	-0.343334	0.010687
HVY	0.029873	0.033995	-0.013889	0.027835	0.003969	0.028971	-0.024107	0.028255	-0.030387	0.025704
TNF	-0.150183	0.033859	-0.225382	0.02751	-0.176275	0.028461	-0.200524	0.027711	-0.218409	0.025334
SVS	-0.135892	0.033116	-0.237508	0.027135	-0.175804	0.027888	-0.166577	0.027109	-0.160157	0.024658
OLDER	-0.049039	0.020528	-0.054564	0.018681	0.035735	0.017415	0.086702	0.017854	0.061793	0.01716
WKDOLD	0.220689	0.028865	-0.016793	0.004305	0.008798	0.006745				
WKDYNG			0.609247	0.218645	-0.031238	0.04868				
INTOLD					-0.666165	0.341625				
INTYNG					-0.115654	0.097341				
LAMBDABA		-0.040898	0.027971	0.066188	0.030182	0.144707	0.031574	0.194438	0.03065	

LAGADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	.2796	Rsquare	0.3083	Rsquare	0.3193	Rsquare	0.2861	Rsquare	0.2945
	MSE	49.19102	MSE	34.88866	MSE	26.56398	MSE	28.25405	MSE	25.90447
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.201562	0.094043	1.101189	0.054994	1.19464	0.042337	1.415417	0.044145	1.331546	0.042948
LAST5	-0.005076	0.003686	0.011754	0.002113	0.00605	0.001716	0.001448	0.001699	0.001151	0.001544
LASTSQ	0.000163	0.000115	-0.000321	6.949E-05	-0.00016	5.259E-05	-2.06E-05	5.663E-05	1.661E-06	5.088E-05
SPLED	0.045326	0.00794	0.071322	0.00461	0.06077	0.003517	0.046003	0.003652	0.057808	0.00361
SPLEDHS	0.066925	0.052181	0.020054	0.030193	0.00137	0.023637	-0.030853	0.024567	-0.001088	0.022926
SPLEDSC	0.068935	0.022799	0.015851	0.013288	0.0291	0.010434	0.036734	0.010809	0.037332	0.009917
SPLEDCD	0.434333	0.101876	0.268923	0.058952	0.29948	0.045603	0.314743	0.046797	0.303144	0.043971
SPLEDGW	0.208611	0.047934	0.105471	0.027594	0.13386	0.021125	0.172205	0.021876	0.151791	0.02057
PTIME	-0.33484	0.019275	-0.310937	0.010992	-0.30622	0.008575	-0.304623	0.008893	-0.287248	0.008288
HVY	0.03443	0.043581	-0.034621	0.025694	-0.03348	0.02032	-0.063565	0.021721	-0.092455	0.019082
TNF	-0.189845	0.042795	-0.224931	0.025109	-0.22079	0.019858	-0.228947	0.021326	-0.212707	0.018773
SVS	-0.102792	0.041413	-0.162384	0.024279	-0.14723	0.019227	-0.173061	0.020715	-0.198955	0.018641
OLDER	0.056943	0.030878	0.062464	0.018988	0.06278	0.014366	0.074706	0.014868	0.085295	0.013452
WKDOLD			0.017019	0.004947	0.01636	0.005172	0.004742	0.004256	0.002647	0.006067
WKDYNG			0.032279	0.024153	0.00684	0.018431	0.051272	0.025486	0.06752	0.041094
INTOLD			-0.863961	0.250299	-0.79088	0.26437	-0.193518	0.216194	-0.167891	0.305068
INTYNG			-0.254603	0.043506	-0.15474	0.049182	-0.324354	0.044783	-0.34788	0.076988
LAMBDABA	0.249487	0.049629	0.106695	0.028689	0.18977	0.020865	0.214272	0.021205	0.189889	0.020085

Females **LAGADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2806	Rsquare	0.3194	Rsquare	0.2877	Rsquare	0.2771	Rsquare	0.2924
	MSE	35.90318	MSE	288.56735	MSE	33.22996	MSE	33.97824	MSE	32.60374
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.953879	0.061179	1.103988	0.049672	1.147133	0.053622	1.18962	0.055094	1.161442	0.052904
LAST5	0.013469	0.001829	0.021376	0.002037	0.014663	0.001785	0.011213	0.001847	0.005812	0.001805
LASTSQ	-0.000202	4.273E-05	-0.000181	9.705E-05	-0.000335	7.338E-05	-0.000335	6.478E-05	-0.000158	6.104E-05
SPLED	0.062205	0.004995	0.066746	0.003835	0.063785	0.004355	0.056418	0.004663	0.056792	0.004495
SPLEDHS	0.033533	0.036625	0.003697	0.028152	-0.037054	0.030369	-0.004228	0.0312	0.020625	0.029793
SPLEDSC	0.056197	0.016654	0.047435	0.012635	0.031375	0.013507	0.039998	0.013666	0.040658	0.013008
SPLEDCD	0.210676	0.072784	0.249027	0.055151	0.180754	0.060237	0.276857	0.061154	0.256921	0.058091
SPLEDGW	0.099432	0.032933	0.158894	0.025612	0.151269	0.027413	0.148152	0.028168	0.138102	0.027185
PTIME	-0.284614	0.013092	-0.341865	0.009978	-0.33056	0.010868	-0.350736	0.011266	-0.340928	0.010729
HVY	0.025824	0.034141	-0.012597	0.027812	0.004522	0.028981	-0.024462	0.028267	-0.027508	0.025696
TNF	-0.155172	0.034014	-0.223041	0.027492	-0.175472	0.02847	-0.198845	0.027726	-0.213946	0.025331
SVS	-0.138656	0.033258	-0.237014	0.027111	-0.174964	0.027897	-0.166337	0.02712	-0.158598	0.02465
OLDER	-0.063526	0.020515	-0.053674	0.018658	0.034696	0.017463	0.089704	0.017884	0.062645	0.017159
WKDOLD	0.022522	0.008164	-0.017033	0.004226	0.006641	0.006705				
WKDYNG			0.604948	0.21629	-0.033936	0.048819				
INTOLD					-0.585512	0.340402				
INTYNG					-0.105724	0.098084				
LAMBDAST			-0.073317	0.016944	-0.004327	0.022218	0.090355	0.024629	0.160981	0.024129

LAGADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2793	Rsquare	0.3074	Rsquare	0.3176	Rsquare	0.284	Rsquare	0.2917
	MSE	49.20078	MSE	34.91204	MSE	26.59602	MSE	28.29574	MSE	25.95596
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.20738	0.093939	1.135155	0.054767	1.21129	0.042387	1.434344	0.044211	1.358886	0.043018
LAST5	0.001892	0.002896	0.015582	0.002201	0.01244	0.00139	0.006144	0.001547	0.006372	0.001469
LASTSQ	-6.34E-05	9.474E-05	-0.000427	7.061E-05	-0.00034	4.503E-05	-0.000159	5.278E-05	-0.000144	4.869E-05
SPLED	0.047956	0.007794	0.076055	0.004499	0.06327	0.003513	0.049101	0.003646	0.063619	0.003592
SPLEDHS	0.06612	0.05219	0.020071	0.030213	0.00194	0.023665	-0.032123	0.024603	0.000245	0.022971
SPLEDSC	0.066187	0.022803	0.016116	0.013298	0.02919	0.010446	0.036358	0.010825	0.038173	0.009937
SPLEDCD	0.423522	0.101898	0.270788	0.059	0.30255	0.045656	0.320539	0.046858	0.311971	0.04405
SPLEDGW	0.20414	0.047931	0.107784	0.027618	0.1357	0.02115	0.17542	0.021903	0.156583	0.020603
PTIME	-0.33302	0.019361	-0.315607	0.011001	-0.30693	0.008627	-0.305366	0.008963	-0.291936	0.008351
HVY	0.039459	0.043599	-0.035782	0.025711	-0.0318	0.020346	-0.064372	0.021752	-0.090457	0.019119
TNF	-0.186822	0.042812	-0.224444	0.025125	-0.21799	0.019883	-0.228831	0.021359	-0.210825	0.018813
SVS	-0.100677	0.041422	-0.161863	0.024296	-0.14588	0.01925	-0.173639	0.020746	-0.198256	0.018678
OLDER	0.062855	0.030907	0.063235	0.019025	0.06148	0.014381	0.078541	0.014891	0.089037	0.013485
WKDOLD			0.01378	0.004894	0.01368	0.005159	0.001546	0.004235	-0.002516	0.006054
WKDYNG			0.031273	0.024173	0.00608	0.018453	0.050283	0.025524	0.066631	0.041176
INTOLD			-0.73615	0.248635	-0.6637	0.263837	-0.04977	0.215453	0.050893	0.304753
INTYNG			-0.250962	0.043546	-0.14756	0.049229	-0.31935	0.044843	-0.343611	0.077141
LAMBDAST	0.192485	0.039322	0.021408	0.024144	0.12518	0.01831	0.147324	0.019385	0.086595	0.018256

Females **SCVADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2855	Rsquare	0.3124	Rsquare	0.2926	Rsquare	0.2907	Rsquare	0.3014
	MSE	35.7781	MSE	290.02489	MSE	33.11507	MSE	33.65449	MSE	32.39325
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.927624	0.065339	0.941963	0.05142	1.030778	0.054683	1.138281	0.054562	1.11384	0.052607
PSLNWK	-0.006868	0.018412	0.155519	0.010192	0.121696	0.009743	0.137713	0.010362	0.12531	0.011093
SPLED	0.048513	0.004944	0.061078	0.004047	0.05768	0.004509	0.039037	0.004625	0.043599	0.004487
SPLEDHS	0.035012	0.036673	-0.018769	0.028336	-0.056048	0.030283	-0.064908	0.031238	-0.023977	0.029861
SPLEDSC	0.054734	0.0166	0.030797	0.01266	0.016109	0.01348	0.034831	0.013538	0.043706	0.012924
SPLEDCD	0.204113	0.072524	0.189295	0.055234	0.1487	0.059968	0.316321	0.060629	0.322368	0.058019
SPLEDGW	0.094249	0.032844	0.142095	0.025758	0.130388	0.027361	0.159173	0.02791	0.162362	0.027091
PTIME	-0.272414	0.01317	-0.344333	0.010025	-0.323352	0.01084	-0.337756	0.011136	-0.33554	0.010609
HVY	0.030001	0.034021	-0.011023	0.027958	0.009412	0.02888	-0.015752	0.028	-0.020018	0.025546
TNF	-0.151783	0.033893	-0.218205	0.02765	-0.165465	0.028387	-0.186112	0.027479	-0.202623	0.025201
SVS	-0.135342	0.033138	-0.205908	0.027174	-0.171051	0.027795	-0.16603	0.026861	-0.155566	0.024494
OLDER	-0.021858	0.020171	0.018652	0.01657	-0.027411	0.018171	-0.05251	0.019345	-0.052914	0.018929
WKDOLD	0.292861	0.023714	-0.015106	0.00432	0.009431	0.006718				
WKDYNG			0.504173	0.219442	-0.055474	0.048568				
INTOLD					-0.692085	0.340275				
INTYNG			-0.039858	0.028475	0.058651	0.098555				
LAMBDABA				0.018967	0.030116	0.131697	0.022569	0.14765	0.021391	

SCVADJBA	1989		1990		1991		1992		1993	
Females	Rsquare	.2942	Rsquare	0.3151	Rsquare	0.3199	Rsquare	0.2968	Rsquare	0.3073
	MSE	48.68171	MSE	34.7135	MSE	26.55094	MSE	28.04144	MSE	25.6675
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.980827	0.096777	0.975882	0.055094	1.17918	0.042208	1.313342	0.044229	1.209711	0.043068
PSLNWK	0.175691	0.021001	0.130227	0.011342	0.0344	0.006674	0.138173	0.009129	0.14945	0.008412
SPLED	0.047753	0.007668	0.059495	0.004523	0.05864	0.003452	0.037142	0.003598	0.049392	0.003532
SPLEDHS	0.050213	0.051669	-0.05137	0.030724	-0.01109	0.023737	-0.089173	0.024688	-0.05542	0.022923
SPLEDSC	0.065366	0.022567	0.001042	0.013286	0.02714	0.010434	0.028881	0.01074	0.033758	0.009828
SPLEDCD	0.457805	0.100835	0.278642	0.058654	0.3003	0.045569	0.330982	0.04643	0.328048	0.043576
SPLEDGW	0.185624	0.047513	0.102007	0.027448	0.13573	0.02112	0.181387	0.02171	0.164773	0.020393
PTIME	-0.333786	0.018992	-0.302416	0.010937	-0.30511	0.008567	-0.296782	0.00883	-0.278852	0.008216
HVY	0.040926	0.043136	-0.02026	0.025586	-0.03333	0.02031	-0.057532	0.021561	-0.085003	0.018911
TNF	-0.175082	0.042387	-0.209254	0.025029	-0.21988	0.019847	-0.213172	0.021191	-0.199467	0.018616
SVS	-0.099445	0.040979	-0.154705	0.024168	-0.14689	0.019216	-0.17124	0.020558	-0.195374	0.018469
OLDER	-0.097155	0.034437	-0.060087	0.020029	0.037	0.013779	-0.057929	0.01643	-0.042501	0.014577
WKDOLD			0.01723	0.004878	0.01743	0.005139	0.001626	0.0042	-0.002337	0.005972
WKDYNG			0.050395	0.024069	0.00629	0.018422	0.052485	0.025292	0.037383	0.040753
INTOLD			-0.926944	0.247233	-0.83057	0.263189	-0.127339	0.213633	-0.019893	0.300596
INTYNG			-0.147741	0.044598	-0.1354	0.049426	-0.178319	0.045385	-0.106909	0.077448
LAMBDABA	0.078038	0.03686	0.145464	0.021649	0.19051	0.017408	0.153104	0.016136	0.115801	0.015496

Females **SCVADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2735	Rsquare	0.3136	Rsquare	0.2925	Rsquare	0.2888	Rsquare	0.3007
	MSE	36.07605	MSE	289.77694	MSE	33.11577	MSE	33.70051	MSE	32.41028
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.951334	0.066548	0.973243	0.05186	1.038305	0.054571	1.16065	0.054655	1.117515	0.052659
PSLNWK	0.053357	0.017935	0.148277	0.009666	0.122149	0.009725	0.144093	0.010519	0.124889	0.011256
SPLED	0.055243	0.004945	0.063191	0.003864	0.058892	0.004369	0.042334	0.004624	0.044564	0.004481
SPLEDHS	0.026344	0.036968	-0.017508	0.028312	-0.055831	0.030281	-0.066777	0.031283	-0.02402	0.029879
SPLEDSC	0.054933	0.016743	0.034591	0.012681	0.016358	0.013491	0.034598	0.013558	0.043327	0.012932
SPLEDCD	0.202427	0.073129	0.201669	0.055256	0.150165	0.059955	0.317129	0.060736	0.321826	0.058059
SPLEDGW	0.097213	0.033118	0.147191	0.025764	0.130819	0.02737	0.162163	0.027959	0.161632	0.027113
PTIME	-0.294973	0.013085	-0.347852	0.01	-0.324441	0.010857	-0.341465	0.011183	-0.334363	0.010664
HVY	0.02493	0.034311	-0.009646	0.027931	0.009589	0.028882	-0.015098	0.028038	-0.017068	0.025551
TNF	-0.161153	0.034186	-0.215842	0.027626	-0.165177	0.028387	-0.183855	0.027514	-0.198367	0.025201
SVS	-0.140252	0.033413	-0.205701	0.027137	-0.170818	0.027798	-0.165267	0.026897	-0.153465	0.024501
OLDER	-0.030695	0.020319	0.020532	0.016562	-0.028378	0.018133	-0.062269	0.019426	-0.056922	0.018911
WKDOLD	0.053445	0.007397	-0.01546	0.004244	0.008797	0.006675				
WKDYNG			0.506862	0.217348	-0.056417	0.048684				
INTOLD					-0.668732	0.338962				
INTYNG					0.062761	0.099118				
LAMBDAST			-0.074777	0.016903	-0.001676	0.02211	0.066836	0.022088	0.127744	0.020805

SCVADJST	1989		1990		1991		1992		1993	
Females	Rsquare	.2953	Rsquare	0.3139	Rsquare	0.3171	Rsquare	0.2948	Rsquare	0.3059
	MSE	48.64515	MSE	34.74421	MSE	26.60522	MSE	28.0807	MSE	25.39546
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.966224	0.096854	0.992811	0.055	1.192	0.042386	1.326212	0.04431	1.219892	0.043138
PSLNWK	0.17436	0.020169	0.136661	0.011274	0.05316	0.006284	0.144798	0.009187	0.159708	0.008295
SPLED	0.046173	0.007637	0.062612	0.004467	0.05988	0.003483	0.03866	0.003608	0.051566	0.003533
SPLEDHS	0.050675	0.051629	-0.054134	0.030747	-0.01741	0.023772	-0.092766	0.02472	-0.057721	0.022946
SPLEDSC	0.064073	0.022541	0.000276	0.013296	0.02611	0.010454	0.028211	0.010755	0.034159	0.009838
SPLEDCD	0.452579	0.100738	0.278336	0.058708	0.30116	0.045666	0.333507	0.046495	0.333937	0.043613
SPLEDGW	0.184355	0.047437	0.102567	0.027473	0.13757	0.021167	0.183386	0.021739	0.168505	0.020406
PTIME	-0.328412	0.01913	-0.30472	0.010946	-0.30657	0.008628	-0.297626	0.008891	-0.281052	0.008264
HVY	0.04342	0.043103	-0.020201	0.025609	-0.03222	0.020353	-0.058442	0.021591	-0.083483	0.018929
TNF	-0.173396	0.042348	-0.207805	0.02505	-0.21778	0.01989	-0.212677	0.021221	-0.1977	0.018636
SVS	-0.098923	0.040946	-0.154573	0.02419	-0.14652	0.019255	-0.172166	0.020587	-0.195372	0.01849
OLDER	-0.099739	0.033419	-0.06519	0.020084	0.0148	0.013523	-0.067311	0.016465	-0.053271	0.014549
WKDOLD			0.014656	0.004845	0.01572	0.005149	-0.000509	0.004194	-0.004979	0.005967
WKDYNG			0.051445	0.024089	0.00544	0.01846	0.052267	0.025328	0.035272	0.040795
INTOLD			-0.824721	0.246395	-0.7441	0.263556	-0.0358	0.213464	0.083982	0.300522
INTYNG			-0.144437	0.04463	-0.12717	0.049521	-0.177971	0.045457	-0.096653	0.077513
LAMBDAST	0.106369	0.034662	0.09006	0.017059	0.13522	0.017649	0.112401	0.016228	0.06505	0.014409

Wage Equations

Males **POTNOADJ**

	1984		1985		1986		1987		1988	
	N	6261	N	10623	N	9253	N	9024	N	9236
	Rsquare	0.2259	Rsquare	0.2766	Rsquare	0.2943	Rsquare	0.2946	Rsquare	0.2838
	MSE	40.23749	MSE	318.73318	MSE	34.4736	MSE	33.80473	MSE	33.61207
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.504249	0.040301	1.485135	0.028648	1.500339	0.031225	1.554856	0.032106	1.617285	0.033259
S0TO4	-0.168983	0.067243	-0.179743	0.052792	-0.124593	0.054042	-0.228175	0.057415	-0.134135	0.05636
S9TO11	0.150387	0.033716	0.050187	0.025211	0.133013	0.027038	0.075427	0.027511	0.111433	0.028086
S12	0.309151	0.030366	0.239229	0.022207	0.330613	0.024144	0.312821	0.024885	0.292181	0.025349
S13T15	0.420827	0.032501	0.361137	0.023911	0.478457	0.025555	0.473553	0.026178	0.45467	0.026576
S16	0.65693	0.034871	0.641871	0.025738	0.735692	0.027714	0.721649	0.028007	0.674117	0.027979
S17UP	0.682803	0.035039	0.668927	0.025698	0.788401	0.027389	0.775464	0.027974	0.75211	0.028021
POTEXP	0.035595	0.002372	0.041303	0.001615	0.034183	0.001739	0.03476	0.001813	0.031013	0.001827
POTEXPSQ	-0.000556	5.01E-05	-0.00063	3.528E-05	-0.000488	3.753E-05	-0.000504	3.896E-05	-0.00044	3.744E-05
BLACK	-0.185759	0.02436	-0.152217	0.018475	-0.165589	0.019559	-0.203544	0.019527	-0.199457	0.018852
HISP	-0.023042	0.028742	-0.137203	0.021958	-0.116427	0.022211	-0.081643	0.020818	-0.100627	0.020486
PTIME	-0.371505	0.021205	-0.314814	0.015229	-0.365753	0.016276	-0.368395	0.017134	-0.34151	0.017108
CITY	-0.002546	0.015213	0.014365	0.011528	-0.013881	0.011912	-0.022661	0.011829	-0.031341	0.01162
NEWENG	-0.025052	0.033207	0.05433	0.024335	0.03737	0.025951	0.085869	0.025321	0.112859	0.024291
MIDATL	0.021168	0.02226	0.027373	0.017813	0.031289	0.018407	0.071717	0.018328	0.096198	0.018117
ENCENT	-0.032753	0.02143	-0.01314	0.016826	-0.004446	0.017302	0.009352	0.017177	0.036267	0.017062
WNCENT	-0.069678	0.030275	-0.108151	0.020868	-0.12781	0.021503	-0.117182	0.021429	-0.1207	0.020865
SATL	-0.086389	0.023153	-0.063003	0.017653	-0.072602	0.018333	-0.061404	0.018082	-0.044929	0.017479
ESCENT	-0.173301	0.033862	-0.137447	0.025923	-0.163813	0.026317	-0.14313	0.027387	-0.132804	0.026178
WSCENT	-0.024238	0.026773	-0.05644	0.019242	-0.105345	0.020101	-0.127515	0.019771	-0.143929	0.019813
MOUNTAIN	0.009523	0.046392	-0.030403	0.029865	-0.072757	0.030926	-0.085971	0.028352	-0.098733	0.027733
WKDOLD			0.000379	0.003806	0.006756	0.004598				
WKDYNG					-0.005392	0.054143				
INTOLD			-0.160123	0.184768	-0.446759	0.225697				
INTYNG					-0.116965	0.130156				

POTNOADJ	1989		1990		1991		1992		1993	
	N	1803	N	9228	N	14286	N	14602	N	16348
Males	Rsquare	.2505	Rsquare	0.2983	Rsquare	0.2997	Rsquare	0.3106	Rsquare	0.2976
	MSE	52.14618	MSE	37.08702	MSE	28.68853	MSE	28.8454	MSE	26.83664
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.763499	0.094187	1.747698	0.033937	1.69283	0.027883	1.674375	0.027348	1.787641	0.026354
S0TO4	-0.000376	0.169795	-0.125758	0.058362	-0.21612	0.047756	-0.072921	0.047896	-0.140898	0.048874
S9TO11	-0.057886	0.080064	0.020313	0.030305	0.12296	0.024791	0.12622	0.024644	0.078269	0.023875
S12	0.191848	0.070575	0.243621	0.027172	0.28902	0.022353	0.308723	0.022153	0.249935	0.021599
S13T15	0.38378	0.072131	0.363491	0.028514	0.43498	0.023343	0.456385	0.023117	0.403603	0.022326
S16	0.549767	0.073901	0.651926	0.029873	0.73616	0.024429	0.719094	0.024138	0.686773	0.023346
S17UP	0.598638	0.073777	0.743851	0.030078	0.82425	0.024596	0.818505	0.024422	0.783471	0.023568
POTEXP	0.031144	0.004965	0.032043	0.001836	0.03264	0.001463	0.03261	0.001404	0.032684	0.001333
POTEXPSQ	-0.000451	9.659E-05	-0.000462	3.999E-05	-0.00046	3.188E-05	-0.000464	3.072E-05	-0.000478	2.924E-05
BLACK	-0.160317	0.044946	-0.168821	0.019665	-0.16205	0.015827	-0.137509	0.015194	-0.113395	0.014041
HISP	-0.234326	0.053939	-0.117366	0.021317	-0.08683	0.01644	-0.104884	0.015432	-0.106528	0.014299
PTIME	-0.399391	0.039855	-0.333104	0.017103	-0.29054	0.012942	-0.340224	0.012136	-0.335987	0.011581
CITY	-0.023629	0.027124	-0.006328	0.012228	-0.00712	0.009678	0.01853	0.012646	-0.034254	0.011134
NEWENG	-0.00585	0.05701	0.058372	0.027425	0.06806	0.021271	0.114424	0.02074	0.069736	0.019395
MIDATL	0.03787	0.04384	0.053643	0.01864	0.07406	0.014633	0.098625	0.014579	0.047393	0.013897
ENCENT	-0.047591	0.041079	-0.015057	0.017848	-0.00262	0.014039	-0.022414	0.013862	-0.025753	0.013046
WNCENT	-0.204194	0.048718	-0.133454	0.022211	-0.15249	0.017468	-0.109115	0.0174	-0.152938	0.016603
SATL	-0.082848	0.042833	-0.042844	0.018253	-0.05373	0.014536	-0.049924	0.014332	-0.070594	0.013399
ESCENT	-0.177961	0.068433	-0.16732	0.028793	-0.16885	0.022856	-0.149788	0.02164	-0.154488	0.020031
WSCENT	-0.103159	0.051336	-0.115643	0.020685	-0.09503	0.016553	-0.097944	0.016339	-0.121112	0.015186
MOUNTAIN	-0.0748	0.064715	-0.119862	0.02863	-0.11626	0.022503	-0.079743	0.022621	-0.09802	0.020754
WKDOLD			-0.00174	0.003842	0.00287	0.004674	-0.004081	0.0034	0.001664	0.005018
WKDYNG			0.01747	0.037657	0.05223	0.045199	-0.042744	0.024118	-0.021469	0.032887
INTOLD			-0.119684	0.180588	-0.34448	0.226397	0.036078	0.163267	-0.202439	0.246575
INTYNG			-0.119773	0.073724	-0.24573	0.104141	-0.050757	0.061417	-0.033401	0.085825

Males **OPTNOADJ**

	1984	Males	1985	males	1986	males	1987	males	1988	males
	Rsquare	0.2265	Rsquare	0.2812	Rsquare	0.2946	Rsquare	0.2952	Rsquare	0.2879
	MSE	40.22429	MSE	317.72177	MSE	34.46565	MSE	33.78981	MSE	33.51647
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.444013	0.043588	1.40646	0.030091	1.423666	0.034872	1.492242	0.035328	1.531123	0.035729
S0TO4	-0.179142	0.067277	-0.2118	0.052753	-0.089757	0.054018	-0.168065	0.057389	-0.100061	0.056172
S9TO11	0.161009	0.033326	0.043983	0.024968	0.150389	0.026819	0.088739	0.027344	0.120907	0.027934
S12	0.30929	0.029382	0.21963	0.021569	0.329384	0.023531	0.304061	0.024283	0.285714	0.024902
S13T15	0.403774	0.031305	0.320119	0.023096	0.461033	0.024749	0.441599	0.025362	0.429203	0.025982
S16	0.629009	0.033693	0.59146	0.024954	0.70814	0.026909	0.678808	0.027193	0.654133	0.027429
S17UP	0.647767	0.033592	0.613464	0.024708	0.745994	0.026438	0.728282	0.027078	0.727883	0.027527
POPTWK	0.041408	0.003064	0.051205	0.002046	0.044808	0.002416	0.045061	0.002469	0.04536	0.002454
POPTWKSQ	-0.000692	7.049E-05	-0.000854	4.778E-05	-0.000736	5.828E-05	-0.000749	5.902E-05	-0.000788	5.726E-05
BLACK	-0.155871	0.024429	-0.117358	0.018454	-0.136794	0.019576	-0.183209	0.019518	-0.183923	0.018785
HISP	0.005659	0.028686	-0.107057	0.021892	-0.06895	0.022282	-0.044231	0.020853	-0.069596	0.020492
PTIME	-0.368842	0.02123	-0.310056	0.015196	-0.367361	0.016286	-0.366542	0.017166	-0.338252	0.017054
CITY	-0.002006	0.015206	0.015688	0.011491	-0.014311	0.011907	-0.022533	0.011824	-0.02863	0.011592
NEWENG	-0.025236	0.033195	0.04859	0.024256	0.037078	0.025942	0.08432	0.02531	0.109283	0.024217
MIDATL	0.018344	0.022247	0.024269	0.017756	0.029737	0.018402	0.06742	0.018314	0.09321	0.018065
ENCENT	-0.034077	0.021421	-0.014423	0.016773	-0.004742	0.017296	0.005086	0.017162	0.033272	0.01701
WNCENT	-0.071035	0.030261	-0.109087	0.020805	-0.129074	0.021499	-0.120722	0.021414	-0.121996	0.020804
SATL	-0.085213	0.023146	-0.063218	0.017597	-0.072431	0.018328	-0.063545	0.018072	-0.046555	0.017428
ESCENT	-0.171258	0.033848	-0.136647	0.025835	-0.162197	0.026311	-0.145688	0.027374	-0.135971	0.026103
WSCENT	-0.024714	0.026765	-0.055999	0.01918	-0.105932	0.020097	-0.131179	0.019759	-0.146814	0.019756
MOUNTAIN	0.010172	0.046383	-0.034327	0.029769	-0.071883	0.03092	-0.088111	0.028339	-0.10257	0.027654
WKDOLD			-0.008561	0.003584	0.003179	0.004515				
WKDYNG					0.003992	0.054101				
INTOLD			0.2491	0.178151	-0.286413	0.223303				
INTYNG					-0.108592	0.13015				

OPTNOADJ	1989		1990		1991		1992		1993	
Males	Rsquare	.2530	Rsquare	0.2985	Rsquare	0.3	Rsquare	0.3124	Rsquare	0.2992
	MSE	52.06071	MSE	37.08308	MSE	28.68388	MSE	28.80773	MSE	26.80602
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.773698	0.093165	1.703486	0.036909	1.64321	0.030515	1.587862	0.030253	1.715718	0.028554
S0TO4	0.059095	0.168962	-0.14357	0.058364	-0.24122	0.047784	-0.065279	0.047831	-0.129706	0.04883
S9TO11	-0.065694	0.079872	0.036057	0.030108	0.13602	0.024634	0.136205	0.024491	0.089841	0.023738
S12	0.180444	0.070086	0.231447	0.026619	0.27529	0.021903	0.299778	0.021719	0.234223	0.021209
S13T15	0.369909	0.071527	0.334769	0.027763	0.40345	0.022718	0.427226	0.022507	0.365852	0.021807
S16	0.555092	0.073409	0.611841	0.029086	0.69168	0.02376	0.679968	0.023492	0.643729	0.022777
S17UP	0.604497	0.073483	0.699886	0.029187	0.77449	0.023856	0.773626	0.023752	0.733487	0.02299
POPTWK	0.037595	0.005908	0.038391	0.002381	0.04014	0.001969	0.043638	0.001907	0.042878	0.001803
POPTWKSQ	-0.00065	0.000139	-0.000597	5.528E-05	-0.00063	4.65E-05	-0.000702	4.434E-05	-0.000704	4.232E-05
BLACK	-0.14498	0.044797	-0.152554	0.01967	-0.14774	0.01583	-0.121728	0.015189	-0.098415	0.014033
HISP	-0.226123	0.053866	-0.083174	0.021375	-0.05489	0.016484	-0.077887	0.015448	-0.078548	0.014301
PTIME	-0.398086	0.039826	-0.336041	0.017099	-0.29216	0.012944	-0.3396	0.012118	-0.333633	0.011589
CITY	-0.021125	0.027098	-0.005141	0.012231	-0.00639	0.009678	0.019322	0.01263	-0.033176	0.011122
NEWENG	-0.012764	0.056874	0.054526	0.02742	0.06531	0.021269	0.111034	0.020712	0.066183	0.01937
MIDATL	0.037568	0.04377	0.05038	0.018639	0.07143	0.014632	0.094746	0.014559	0.044188	0.013878
ENCENT	-0.049208	0.041009	-0.018471	0.017841	-0.00505	0.014035	-0.025745	0.013843	-0.028714	0.013029
WNCENT	-0.204493	0.048638	-0.137302	0.022211	-0.15482	0.017466	-0.112776	0.017376	-0.15564	0.016579
SATL	-0.084231	0.042766	-0.045355	0.018247	-0.05645	0.014534	-0.053136	0.014314	-0.074419	0.013381
ESCENT	-0.18172	0.068315	-0.168214	0.02879	-0.16929	0.022852	-0.152328	0.021612	-0.157127	0.020008
WSCENT	-0.105672	0.051244	-0.11701	0.020684	-0.09584	0.016551	-0.101931	0.016318	-0.123061	0.01517
MOUNTAIN	-0.07756	0.064611	-0.121441	0.028629	-0.11784	0.022501	-0.082367	0.022589	-0.101625	0.020727
WKDOLD			-0.006464	0.003703	-0.00516	0.00451	-0.007114	0.003299	-0.000806	0.004973
WKDYNG			0.03511	0.037608	0.06595	0.045171	-0.025764	0.024049	0.000436	0.032819
INTOLD			0.089678	0.176293	0.02643	0.221164	0.206841	0.15991	-0.054716	0.244774
INTYNG			-0.120831	0.073814	-0.23019	0.104278	-0.04305	0.0614	-0.01469	0.085852

Males		LNADJBA								
	1984		1985		1986		1987		1988	
	Rsquare	0.2589	Rsquare	0.3063	Rsquare	0.3135	Rsquare	0.3118	Rsquare	0.295
	MSE	39.3485	MSE	312.02313	MSE	33.98688	MSE	33.37787	MSE	33.3361
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.878454	0.09977	0.826421	0.063579	0.813694	0.070918	0.613053	0.08611	0.961872	0.078355
PLNWK	-0.041214	0.061381	0.058484	0.034868	-0.002117	0.043131	0.115004	0.062531	-0.035883	0.048827
PLNWKSQ	0.061407	0.012969	0.05008	0.00775	0.061628	0.009839	0.033973	0.013394	0.06343	0.01044
SPLED	0.059167	0.004713	0.04984	0.003594	0.055971	0.003709	0.059304	0.003745	0.052079	0.003775
SPLEDHS	0.00768	0.040018	0.049764	0.030681	0.039409	0.031604	0.036881	0.031068	0.013398	0.031079
SPLEDSC	0.011221	0.017346	0.04296	0.013042	0.046506	0.013265	0.022236	0.013121	0.031148	0.012955
SPLEDCD	0.325187	0.073526	0.545831	0.0561	0.431611	0.057644	0.393713	0.056713	0.403498	0.056256
SPLEDGW	0.090824	0.031862	0.177928	0.024187	0.159072	0.024693	0.132218	0.024786	0.174507	0.024659
PTIME	-0.33874	0.021023	-0.279626	0.015052	-0.340472	0.016312	-0.346098	0.017017	-0.311128	0.017191
HVY	0.159306	0.029803	0.16095	0.022927	0.134867	0.022131	0.126375	0.020821	0.101572	0.021181
TNF	-0.006194	0.03177	-0.02667	0.024203	-0.028417	0.023706	-0.05835	0.022512	-0.088582	0.022657
SVS	-0.120596	0.032098	-0.078256	0.024498	-0.126287	0.024048	-0.125964	0.02267	-0.13662	0.022889
OLDER	-0.090863	0.022869	-0.111841	0.0196	-0.089974	0.020418	-0.040596	0.021164	-0.134667	0.022132
WKDOLD	0.091714	0.027935	-0.018386	0.003501	-0.004535	0.00435				
WKDYNG			0.619321	0.176158	-0.027938	0.053653				
INTOLD					0.052683	0.21918				
INTYNG					-0.047954	0.132319				
LAMBDABA			0.054191	0.024277	0.13089	0.023217	0.210189	0.021544	0.208257	0.021921

LNADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2553	Rsquare	0.3092	Rsquare	0.3111	Rsquare	0.3231	Rsquare	0.3074
	MSE	51.87565	MSE	36.78503	MSE	28.44697	MSE	28.57676	MSE	26.64295
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.679565	0.215156	1.13646	0.077064	0.9294	0.062404	0.986365	0.061136	0.967086	0.059542
PLNWK	0.2453	0.138542	-0.082012	0.048427	0.0001	0.037897	0.038888	0.038207	0.1128	0.038011
PLNWKSQ	-0.005086	0.02876	0.069916	0.010219	0.05263	0.008094	0.046387	0.00807	0.029485	0.007994
SPLED	0.059248	0.009589	0.054764	0.003937	0.0623	0.003139	0.055113	0.003062	0.054775	0.002969
SPLEDHS	-0.018861	0.078906	0.019131	0.033166	-0.05197	0.026091	-0.022209	0.02562	-0.060114	0.023814
SPLEDSC	0.045726	0.030635	0.018964	0.014245	0.00337	0.011	0.0117	0.010602	0.000728	0.009858
SPLEDCD	0.335414	0.133164	0.447622	0.059287	0.36344	0.04636	0.352137	0.045218	0.351979	0.042487
SPLEDGW	0.114752	0.05869	0.184152	0.025988	0.13961	0.020447	0.15333	0.020026	0.145964	0.018929
PTIME	-0.329245	0.040066	-0.308358	0.017183	-0.25573	0.013028	-0.305909	0.012199	-0.293728	0.011645
HVY	0.042077	0.048865	0.105806	0.021743	0.08103	0.017394	0.057696	0.016957	0.00862	0.015857
TNF	-0.112489	0.051966	-0.08229	0.0234	-0.09446	0.018686	-0.12201	0.018173	-0.117775	0.016484
SVS	-0.171174	0.051761	-0.110356	0.023436	-0.11885	0.018694	-0.136585	0.018138	-0.171345	0.017299
OLDER	-0.026681	0.055618	-0.123147	0.022135	-0.06689	0.017764	-0.071571	0.01785	-0.048985	0.016355
WKDOLD			-0.016825	0.003563	-0.00885	0.004414	-0.014781	0.003165	-0.011972	0.004858
WKDYNG			0.006637	0.038121	0.02079	0.045072	-0.042173	0.024175	-0.008584	0.032712
INTOLD			0.547581	0.174829	0.15401	0.218971	0.493023	0.157817	0.409796	0.242361
INTYNG			-0.138127	0.080658	-0.16403	0.106754	-0.028061	0.064788	-0.017357	0.087538
LAMBDABA	0.210281	0.043838	0.124902	0.025138	0.18491	0.01732	0.188979	0.017317	0.206754	0.016463

Males		LNADJST								
	1984		1985		1986		1987		1988	
	Rsquare	0.2632	Rsquare	0.306	Rsquare	0.3151	Rsquare	0.3135	Rsquare	0.2916
	MSE	39.23408	MSE	312.09626	MSE	33.94819	MSE	33.3356	MSE	33.41673
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.75952	0.099898	0.88568	0.063325	0.747232	0.072121	0.505604	0.087809	1.006092	0.078886
PLNWK	-0.009961	0.061387	0.062828	0.035795	0.016514	0.042789	0.178058	0.061506	0.039713	0.048352
PLNWKSQ	0.050618	0.013053	0.049429	0.007825	0.059346	0.009737	0.021062	0.013153	0.04456	0.010294
SPLED	0.056477	0.004713	0.051093	0.003552	0.056131	0.003681	0.059865	0.003727	0.054701	0.003763
SPLEDHS	0.011769	0.0399	0.050694	0.030756	0.04224	0.031573	0.039631	0.031028	0.019108	0.031151
SPLEDSC	0.012004	0.017296	0.043474	0.013066	0.046741	0.013249	0.023338	0.013104	0.032672	0.012986
SPLEDCD	0.313481	0.073335	0.547502	0.056127	0.429231	0.057574	0.389092	0.056645	0.40258	0.056393
SPLEDGW	0.084612	0.031786	0.177806	0.024202	0.156021	0.024667	0.125709	0.024768	0.168051	0.024727
PTIME	-0.323111	0.021073	-0.283091	0.015043	-0.334113	0.016352	-0.341318	0.017025	-0.316655	0.017246
HVY	0.148026	0.029772	0.161793	0.022937	0.130805	0.022108	0.121996	0.020801	0.100405	0.021235
TNF	-0.013361	0.031699	-0.02604	0.024208	-0.029509	0.023674	-0.060434	0.022482	-0.09015	0.022711
SVS	-0.121887	0.032005	-0.077561	0.024502	-0.127194	0.024014	-0.12703	0.02264	-0.137571	0.022944
OLDER	-0.077528	0.022601	-0.125611	0.018607	-0.090876	0.020296	-0.038854	0.021129	-0.143422	0.022173
WKDOLD	0.170792	0.024823	-0.019962	0.003437	-0.004808	0.004336				
WKDYNG			0.671303	0.1748	-0.033601	0.053605				
INTOLD					0.075043	0.218838				
INTYNG					-0.069485	0.132197				
LAMBDAST			-0.000788	0.008022	0.148318	0.020388	0.220875	0.020308	0.104766	0.015554

LNADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2518	Rsquare	0.3074	Rsquare	0.3094	Rsquare	0.3221	Rsquare	0.302
	MSE	51.99820	MSE	36.8339	MSE	28.48354	MSE	28.5974	MSE	26.74654
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.583343	0.222546	1.13646	0.077064	0.90528	0.064524	1.004283	0.061116	1.054603	0.059927
PLNWK	0.346431	0.137945	-0.082012	0.048427	0.04621	0.03758	0.097127	0.037889	0.161816	0.037997
PLNWKSQ	-0.023547	0.028594	0.069916	0.010219	0.04355	0.008024	0.03235	0.007994	0.018444	0.007986
SPLED	0.062247	0.009559	0.054764	0.003937	0.06401	0.003134	0.05672	0.00305	0.058004	0.002971
SPLEDHS	-0.005174	0.079193	0.019131	0.033166	-0.04909	0.026123	-0.019361	0.025641	-0.055812	0.023908
SPLEDSC	0.04756	0.03072	0.018964	0.014245	0.00308	0.011015	0.012377	0.01061	0.002486	0.009895
SPLEDCD	0.327643	0.133452	0.447622	0.059287	0.35623	0.046443	0.349517	0.045255	0.35732	0.042662
SPLEDGW	0.109697	0.058807	0.184152	0.025988	0.13382	0.020489	0.150152	0.020047	0.147826	0.019012
PTIME	-0.32681	0.040452	-0.308358	0.017183	-0.25673	0.01308	-0.306692	0.012216	-0.301332	0.011724
HVY	0.047197	0.048953	0.105806	0.021743	0.07962	0.017422	0.058324	0.016968	0.010748	0.015924
TNF	-0.107559	0.052068	-0.08229	0.0234	-0.09533	0.018711	-0.119876	0.018188	-0.117822	0.016554
SVS	-0.174937	0.051884	-0.110356	0.023436	-0.12272	0.018719	-0.134501	0.018153	-0.173855	0.017368
OLDER	-0.053263	0.055186	-0.123147	0.022135	-0.08243	0.017615	-0.081237	0.017758	-0.070124	0.016399
WKDOLD			-0.016825	0.003563	-0.00992	0.004416	-0.01602	0.003159	-0.015324	0.004875
WKDYNG			0.006637	0.038121	0.01436	0.045127	-0.046145	0.024188	-0.011441	0.03284
INTOLD			0.547581	0.174829	0.2172	0.219041	0.556995	0.1577	0.528224	0.243221
INTYNG			-0.138127	0.080658	-0.142	0.10688	-0.019891	0.064821	-0.000685	0.087867
LAMBDAST	0.154062	0.040497	0.124902	0.025138	0.14735	0.016783	0.117664	0.011893	0.085868	0.015611

Males **HECADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.248	Rsquare	0.3019	Rsquare	0.3111	Rsquare	0.3103	Rsquare	2964
	MSE	39.63183	MSE	312.98689	MSE	34.04335	MSE	33.41044	MSE	33.29945
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.073673	0.060404	0.944936	0.046411	1.109756	0.048902	1.050057	0.045682	1.169386	0.045546
S12	0.228124	0.018896	0.24036	0.014522	0.266148	0.015254	0.275696	0.015188	0.24418	0.015332
S13T15	0.350332	0.021617	0.365158	0.016677	0.409775	0.01712	0.424281	0.016899	0.409445	0.017086
RS16UP	0.617597	0.021582	0.654983	0.016599	0.707133	0.017305	0.701548	0.016953	0.693209	0.01687
PHECWK	0.037494	0.003991	0.053139	0.002373	0.030077	0.00221	0.038346	0.003107	0.039032	0.003051
PHECWKSQ	-0.000537	0.000103	-0.00087	6.417E-05	-0.000178	5.887E-05	-0.000496	8.882E-05	-0.000521	8.647E-05
PTIME	-0.339468	0.021086	-0.288491	0.014983	-0.356379	0.016072	-0.348938	0.017005	-0.313932	0.01704
HVY	0.167365	0.030045	0.173191	0.023008	0.143622	0.02218	0.13336	0.020841	0.106803	0.021161
TNF	-0.002051	0.032002	-0.013352	0.024271	-0.022068	0.023751	-0.05183	0.022533	-0.080701	0.022634
SVS	-0.097398	0.032211	-0.062792	0.024487	-0.111136	0.023991	-0.116999	0.022629	-0.116436	0.022761
OLDER	-0.054078	0.035446	0.031344	0.026592	-0.167651	0.024671	-0.018938	0.030047	-0.050408	0.030125
WKDOLD	0.211378	0.027499	0.00061	0.003549	0.002611	0.004395				
WKDYNG			-0.029922	0.176038	-0.032518	0.053442				
INTOLD					-0.317387	0.219423				
INTYNG					-0.063865	0.128637				
LAMBDABA		0.194894	0.025231	0.215503	0.023778	0.264678	0.021797	0.233928	0.02238	

HECADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2631	Rsquare	0.3084	Rsquare	0.3093	Rsquare	0.3211	Rsquare	0.3059
	MSE	51.57618	MSE	36.80284	MSE	28.59341	MSE	28.61738	MSE	26.6711
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.245933	0.098827	1.324164	0.049417	1.32915	0.03718	1.281647	0.035729	1.332979	0.034211
S12	0.265961	0.042937	0.260622	0.0164	0.23579	0.013252	0.242966	0.01312	0.208112	0.012548
S13T15	0.471637	0.045618	0.391978	0.01821	0.38593	0.0146	0.385486	0.014456	0.346497	0.013655
RS16UP	0.705618	0.043938	0.732332	0.017921	0.7275	0.014363	0.6835	0.014419	0.652078	0.013752
PHECWK	0.033005	0.006639	0.033005	0.002782	0.02879	0.002372	0.035354	0.002223	0.038333	0.002254
PHECWKSQ	-0.000469	0.000188	-0.000352	7.588E-05	-0.00024	6.505E-05	-0.000406	6.023E-05	-0.000507	6.243E-05
PTIME	-0.327269	0.039774	-0.320513	0.016984	-0.27503	0.012952	-0.315603	0.012085	-0.300734	0.011599
HVY	0.058729	0.048648	0.118479	0.021767	0.09636	0.017494	0.070259	0.017001	0.019336	0.015891
TNF	-0.09868	0.051759	-0.068978	0.023411	-0.08005	0.018771	-0.109873	0.018199	-0.10714	0.016518
SVS	-0.142923	0.051106	-0.088601	0.023385	-0.09222	0.018764	-0.114153	0.018117	-0.15065	0.017267
OLDER	0.017507	0.069024	-0.096851	0.029223	-0.08545	0.023762	-0.042391	0.022881	-0.008052	0.022644
WKDOLD			-0.003951	0.003584	-0.00611	0.004503	-0.004988	0.003247	0.001982	0.005026
WKDYNG			0.009977	0.0373	0.03256	0.04501	-0.025158	0.02388	-0.003635	0.032632
INTOLD			-0.019242	0.173613	0.06904	0.2205	0.117329	0.158274	-0.145615	0.24563
INTYNG			-0.045111	0.073711	-0.14317	0.103997	0.004647	0.061165	0.027469	0.085556
LAMBDABA	0.251112	0.044338	0.172511	0.026864	0.22645	0.017953	0.24697	0.018161	0.266349	0.017206

Males	HECADJST									
	1984		1985		1986		1987		1988	
	Rsquare	0.2546	Rsquare	0.2984	Rsquare	0.3121	Rsquare	0.312	Rsquare	0.2939
	MSE	39.45611	MSE	313.76581	MSE	34.01836	MSE	33.36766	MSE	33.35727
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.008769	0.05813	1.145787	0.038698	1.100256	0.047608	1.008509	0.046338	1.279678	0.041455
S12	0.219488	0.018833	0.255599	0.014408	0.272952	0.015185	0.280578	0.015134	0.252023	0.015308
S13T15	0.334145	0.021625	0.387957	0.016444	0.41722	0.016996	0.431757	0.0168	0.418661	0.017044
RS16UP	0.585946	0.021898	0.689843	0.015942	0.71274	0.017083	0.70177	0.016862	0.70202	0.016833
PHECWK	0.034955	0.003986	0.059013	0.002451	0.031618	0.002211	0.041148	0.003081	0.043031	0.003017
PHECWKSQ	-0.000511	0.000102	-0.00104	6.371E-05	-0.00021	5.842E-05	-0.00058	8.76E-05	-0.000679	8.457E-05
PTIME	-0.323804	0.021083	-0.297467	0.014976	-0.352898	0.016087	-0.344667	0.017006	-0.316964	0.01708
HVY	0.151182	0.029968	0.173717	0.023066	0.138038	0.022167	0.12884	0.02082	0.105684	0.0212
TNF	-0.012124	0.031879	-0.012333	0.024332	-0.02438	0.023729	-0.053954	0.022503	-0.080874	0.022674
SVS	-0.100768	0.032071	-0.060669	0.024552	-0.113601	0.023968	-0.118179	0.0226	-0.116705	0.022801
OLDER	-0.050278	0.03529	0.040994	0.026657	-0.171954	0.024659	-0.006988	0.029971	-0.0267	0.030149
WKDOLD	0.255796	0.023811	-0.00214	0.003546	0.002138	0.004386				
WKDYNG			0.092002	0.175774	-0.033856	0.053403				
INTOLD					-0.291788	0.219138				
INTYNG					-0.118761	0.128541				
LAMBDAST			0.02074	0.00798	0.203424	0.02078	0.26785	0.020486	0.135674	0.015469

HECADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2586	Rsquare	0.3053	Rsquare	0.3013	Rsquare	0.3192	Rsquare	0.2983
	MSE	51.73166	MSE	36.8848	MSE	28.6472	MSE	28.65757	MSE	26.81575
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.257547	0.105419	1.559312	0.04144	1.35881	0.038795	1.394834	0.032117	1.502442	0.033768
S12	0.284389	0.042913	0.269192	0.016382	0.24534	0.013242	0.249179	0.01311	0.222423	0.01257
S13T15	0.49039	0.045496	0.403205	0.018179	0.3973	0.014576	0.394785	0.014415	0.367739	0.013643
RS16UP	0.72415	0.043723	0.754731	0.017743	0.7383	0.014314	0.697061	0.014289	0.684603	0.013708
PHECWK	0.041063	0.006597	0.037524	0.002768	0.03349	0.002332	0.039221	0.002181	0.042723	0.00225
PHECWKSQ	-0.000688	0.000184	-0.000517	7.457E-05	-0.00038	6.35E-05	-0.000555	5.819E-05	-0.000662	6.204E-05
PTIME	-0.322131	0.040217	-0.333913	0.01698	-0.2775	0.012999	-0.317593	0.012104	-0.308508	0.011697
HVY	0.064443	0.048772	0.122825	0.021812	0.09568	0.017531	0.070938	0.017025	0.021259	0.015982
TNF	-0.092797	0.0519	-0.065527	0.023474	-0.07976	0.018807	-0.106968	0.018227	-0.107837	0.016614
SVS	-0.146233	0.051263	-0.087399	0.02345	-0.09594	0.018801	-0.11118	0.018144	-0.153449	0.017364
OLDER	0.026843	0.069245	-0.077812	0.029176	-0.07595	0.023799	-0.019506	0.022852	0.012465	0.022718
WKDOLD			-0.005477	0.003584	-0.00589	0.004515	-0.005125	0.003252	0.001539	0.005054
WKDYNG			0.009413	0.037384	0.03134	0.045095	-0.023497	0.023914	-0.004291	0.032809
INTOLD			0.055604	0.173606	0.11576	0.220826	0.182076	0.158386	-0.110216	0.246969
INTYNG			-0.036586	0.073863	-0.13745	0.104194	-0.00827	0.061278	0.037282	0.086017
LAMBDAST	0.187134	0.040712	-0.007315	0.018688	0.17534	0.017115	0.143162	0.011949	0.12645	0.016144

Males **LVLADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2562	Rsquare	0.3023	Rsquare	0.3127	Rsquare	0.3102	Rsquare	0.2998
	MSE	39.4203	MSE	312.92085	MSE	34.00861	MSE	33.41448	MSE	33.22144
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.695261	0.073842	0.716236	0.055547	0.695405	0.059579	0.581587	0.058145	0.642612	0.059392
PLINWK	0.030625	0.003654	0.044575	0.002333	0.039153	0.002793	0.041683	0.003013	0.045326	0.002837
PLINWKSQ	-0.000375	9.32E-05	-0.000657	6.219E-05	-0.000503	7.745E-05	-0.000606	8.321E-05	-0.000706	7.609E-05
SPLED	0.062128	0.004736	0.052481	0.00362	0.062044	0.003731	0.063698	0.00376	0.064888	0.003781
SPLEDHS	0.025527	0.040055	0.069358	0.030732	0.037757	0.031628	0.046991	0.03108	0.008365	0.030972
SPLEDSC	0.014235	0.01736	0.040813	0.013085	0.030405	0.013286	0.02548	0.013141	0.022056	0.012926
SPLEDCD	0.298109	0.073711	0.511902	0.05629	0.412065	0.057734	0.387091	0.056843	0.345139	0.05613
SPLEDGW	0.078955	0.032012	0.16547	0.02431	0.14385	0.024803	0.121835	0.024884	0.138893	0.024644
PTIME	-0.339679	0.020972	-0.286125	0.014982	-0.344194	0.016136	-0.349147	0.017014	-0.307373	0.017013
HVY	0.159681	0.02986	0.163788	0.022987	0.135344	0.022145	0.1263	0.020839	0.101095	0.021105
TNF	-0.006607	0.031841	-0.022733	0.024286	-0.028012	0.023726	-0.058404	0.022538	-0.085063	0.022582
SVS	-0.121377	0.032161	-0.077383	0.024563	-0.128391	0.02406	-0.127586	0.02269	-0.134264	0.022811
OLDER	-0.065401	0.032201	-0.01936	0.026703	-0.071574	0.028082	0.009881	0.029269	-0.001682	0.029006
WKDOLD	0.145991	0.027517	-0.003402	0.003793	0.00363	0.004739				
WKDYNG			0.038281	0.184011	-0.015549	0.053346				
INTOLD					-0.27301	0.228844				
INTYNG					-0.082487	0.128376				
LAMBDABA		0.101115	0.024793	0.117836	0.023289	0.21505	0.02152	0.193428	0.02201	

LVLADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2580	Rsquare	0.3062	Rsquare	0.3013	Rsquare	0.3229	Rsquare	0.3067
	MSE	51.78321	MSE	36.86596	MSE	28.46493	MSE	28.58102	MSE	26.6564
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.732823	0.141974	0.951241	0.061252	0.82831	0.048511	0.860054	0.046256	0.930515	0.044564
PLINWK	0.038693	0.006691	0.030853	0.002776	0.03034	0.002247	0.037307	0.002145	0.038186	0.002135
PLINWKSQ	-0.000651	0.000182	-0.000325	7.442E-05	-0.00031	6.003E-05	-0.000487	5.684E-05	-0.000534	5.785E-05
SPLED	0.066903	0.009555	0.058767	0.003969	0.06697	0.003157	0.06136	0.003089	0.058242	0.002982
SPLEDHS	-0.00863	0.078755	0.031275	0.033221	-0.03716	0.026092	-0.007745	0.025605	-0.039041	0.023803
SPLEDSC	0.038318	0.030504	0.020608	0.014285	0.0022	0.011015	0.010595	0.010604	0.001887	0.009862
SPLEDCD	0.292403	0.132258	0.432673	0.059469	0.35886	0.046441	0.342899	0.045263	0.341276	0.042553
SPLEDGW	0.091493	0.058284	0.170143	0.026139	0.129	0.020526	0.136974	0.020074	0.135779	0.018978
PTIME	-0.323832	0.040072	-0.309315	0.017092	-0.2599	0.012936	-0.309231	0.0121	-0.29693	0.011606
HVY	0.053041	0.048854	0.107949	0.021793	0.08301	0.017407	0.057933	0.016959	0.010329	0.015865
TNF	-0.099826	0.051981	-0.080489	0.023461	-0.09206	0.018707	-0.119881	0.01818	-0.115986	0.016495
SVS	-0.163145	0.05171	-0.111513	0.023487	-0.11726	0.018713	-0.137114	0.018139	-0.170558	0.017308
OLDER	0.075144	0.069959	-0.093783	0.029416	-0.0517	0.023013	-0.016626	0.022886	0.005972	0.02219
WKDOLD			-0.008577	0.004001	-0.00422	0.004615	-0.003172	0.003481	0.002032	0.005143
WKDYNG			-0.001687	0.037347	0.03122	0.04479	-0.037201	0.023835	0.002312	0.032616
INTOLD			0.190076	0.18586	-0.01557	0.223605	0.048715	0.165029	-0.137683	0.249505
INTYNG			-0.076749	0.073659	-0.18436	0.103444	-0.025341	0.060949	-0.039052	0.085318
LAMBDABA	0.213817	0.044118	0.131716	0.026082	0.19131	0.017568	0.195656	0.017826	0.226217	0.016916

Males		LVLADJST								
	1984		1985		1986		1987		1988	
	Rsquare	0.2616	Rsquare	0.3012	Rsquare	0.3138	Rsquare	0.3116	Rsquare	0.2975
	MSE	39.27768	MSE	313.16571	MSE	33.98065	MSE	33.38074	MSE	33.28009
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.628674	0.072234	0.820817	0.052779	0.65475	0.05968	0.536133	0.059053	0.729244	0.05754
PLINWK	0.029123	0.003643	0.046604	0.00243	0.040367	0.00279	0.04397	0.002995	0.047996	0.002824
PLINWKSQ	-0.000372	9.269E-05	-0.000715	6.296E-05	-0.000524	7.697E-05	-0.000673	8.241E-05	-0.000817	7.521E-05
SPLED	0.059154	0.004737	0.054875	0.003575	0.062353	0.003703	0.06438	0.003743	0.067087	0.003768
SPLEDHS	0.029158	0.0399	0.07117	0.030815	0.040112	0.031607	0.049202	0.031049	0.014254	0.031022
SPLEDSC	0.01445	0.017297	0.0412	0.013128	0.030141	0.013274	0.025916	0.013128	0.022662	0.012949
SPLEDCD	0.287198	0.073462	0.512825	0.056374	0.408706	0.057676	0.37986	0.056787	0.341193	0.056228
SPLEDGW	0.072531	0.031909	0.164339	0.02435	0.14076	0.024782	0.114795	0.024871	0.131881	0.024694
PTIME	-0.324343	0.020992	-0.292107	0.014954	-0.340016	0.016156	-0.34549	0.017018	-0.312447	0.017041
HVY	0.146436	0.029807	0.164935	0.023007	0.131755	0.02213	0.122248	0.020824	0.100007	0.021145
TNF	-0.01487	0.031745	-0.021556	0.024304	-0.029171	0.023703	-0.060509	0.022514	-0.08581	0.022621
SVS	-0.122667	0.032045	-0.076478	0.024585	-0.129443	0.024033	-0.128596	0.022666	-0.134609	0.022852
OLDER	-0.054972	0.03209	-0.025308	0.02677	-0.071855	0.028055	0.019494	0.02926	0.015141	0.029203
WKDOLD	0.207819	0.02419	-0.004732	0.003816	0.003783	0.004735				
WKDYNG			0.077639	0.184748	-0.017627	0.053301				
INTOLD					-0.269553	0.228657				
INTYNG					-0.115262	0.128289				
LAMBDAST			0.001275	0.007995	0.130158	0.020365	0.221407	0.020357	0.103317	0.015491

LVLADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2546	Rsquare	0.3043	Rsquare	0.3083	Rsquare	0.3219	Rsquare	0.3006
	MSE	51.90158	MSE	36.91506	MSE	28.50573	MSE	28.60116	MSE	26.77336
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.713574	0.14761	1.121036	0.057241	0.83431	0.050398	0.924795	0.044683	1.059917	0.044677
PLINWK	0.044707	0.006672	0.034236	0.002776	0.03406	0.00222	0.039753	0.002116	0.041541	0.002133
PLINWKSQ	-0.000806	0.00018	-0.000442	7.392E-05	-0.00042	5.9E-05	-0.000583	5.545E-05	-0.00065	5.758E-05
SPLED	0.070226	0.009516	0.061342	0.003952	0.06916	0.003149	0.063306	0.003072	0.062042	0.002984
SPLEDHS	0.008131	0.079047	0.033067	0.033271	-0.03342	0.026127	-0.005159	0.025624	-0.034519	0.02391
SPLEDSC	0.039969	0.030585	0.020055	0.014304	0.00118	0.011031	0.01042	0.010612	0.003056	0.009905
SPLEDCD	0.284709	0.132535	0.433886	0.059553	0.34846	0.04653	0.336837	0.045299	0.342904	0.042747
SPLEDGW	0.087247	0.058403	0.167875	0.02617	0.12119	0.020571	0.132456	0.020092	0.135802	0.019069
PTIME	-0.320231	0.040462	-0.321473	0.017065	-0.26218	0.012978	-0.310892	0.012106	-0.305207	0.01169
HVY	0.059309	0.04893	0.112635	0.021818	0.0823	0.017437	0.058399	0.016971	0.012525	0.01594
TNF	-0.093504	0.052072	-0.076484	0.023504	-0.09207	0.018734	-0.117539	0.018195	-0.116059	0.016574
SVS	-0.166051	0.051829	-0.109783	0.023532	-0.12055	0.018741	-0.135007	0.018154	-0.173456	0.017386
OLDER	0.07446	0.070142	-0.08828	0.02944	-0.04731	0.023083	-0.004118	0.022912	0.014795	0.022275
WKDOLD			-0.00771	0.004014	-0.00322	0.004628	-0.00197	0.003484	0.002053	0.005167
WKDYNG			-0.001804	0.037398	0.03098	0.044855	-0.035631	0.023853	0.00264	0.032759
INTOLD			0.136613	0.186607	-0.02079	0.223959	0.032344	0.165127	-0.137871	0.250608
INTYNG			-0.071813	0.07375	-0.18159	0.103594	-0.038539	0.061018	-0.035505	0.085692
LAMBDAST	0.158128	0.040523	-0.017991	0.01847	0.14816	0.016837	0.119229	0.011937	0.094037	0.015914

Males **LAGADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2539	Rsquare	0.3017	Rsquare	0.2663	Rsquare	0.2536	Rsquare	0.2419
	MSE	39.4825	MSE	313.06289	MSE	35.13783	MSE	34.75999	MSE	34.5681
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.894554	0.06713	0.875623	0.0539	1.241082	0.055734	1.216839	0.05385	1.381921	0.05474
LAST5	0.023937	0.001656	0.041888	0.002028	0.016629	0.001739	0.002569	0.001711	0.006062	0.001767
LASTSQ	-0.000323	4.108E-05	-0.000767	7.296E-05	-0.00036	6.332E-05	1.544E-06	5.817E-05	-0.000154	6.064E-05
SPLED	0.058108	0.004722	0.047867	0.003613	0.057716	0.003829	0.058382	0.003885	0.059269	0.003862
SPLEDHS	0.038214	0.04009	0.088551	0.030738	0.078834	0.032644	0.068245	0.032329	0.006376	0.03223
SPLEDSC	0.018943	0.01738	0.051638	0.013075	0.039332	0.013716	0.035433	0.013663	0.022787	0.013436
SPLEDCD	0.319869	0.073783	0.530708	0.056314	0.408714	0.059593	0.373284	0.059075	0.330041	0.058267
SPLEDGW	0.098712	0.031937	0.192092	0.024246	0.164226	0.025553	0.150022	0.025801	0.163092	0.025541
PTIME	-0.332628	0.021016	-0.291675	0.014954	-0.388136	0.016525	-0.402255	0.017577	-0.36375	0.017567
HVY	0.154953	0.029888	0.166119	0.023	0.107634	0.022862	0.106695	0.021666	0.071912	0.021935
TNF	-0.013821	0.031848	-0.023266	0.024295	-0.075343	0.024462	-0.10673	0.023384	-0.139047	0.023416
SVS	-0.125715	0.032168	-0.07796	0.024575	-0.173752	0.024802	-0.166152	0.023563	-0.180448	0.023684
OLDER	-0.053211	0.024821	0.00104	0.026354	0.168838	0.020983	0.208386	0.018674	0.183049	0.019201
WKDOLD	0.164141	0.027633	-0.004181	0.003669	0.007655	0.00479				
WKDYNG			0.10005	0.18046	-0.004736	0.055122				
INTOLD					-0.479165	0.234489				
INTYNG					-0.346116	0.131918				
LAMBDABA		0.144649	0.025452	0.056793	0.025398	0.160139	0.023943	0.096804	0.02553	

LAGADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2214	Rsquare	0.2601	Rsquare	0.264	Rsquare	0.271	Rsquare	0.2534
	MSE	53.04398	MSE	38.07393	MSE	29.40489	MSE	29.65554	MSE	27.66216
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.355712	0.129357	1.564363	0.059571	1.32116	0.045382	1.423984	0.043683	1.50982	0.042231
LAST5	0.008019	0.004264	0.010647	0.001795	0.00602	0.0014	0.001505	0.001385	-0.000579	0.001333
LASTSQ	-0.000275	0.000146	-0.000308	6.125E-05	-0.00011	4.6E-05	-9.28E-06	4.694E-05	4.311E-05	4.454E-05
SPLED	0.060252	0.009653	0.058207	0.004069	0.0652	0.003221	0.058498	0.003165	0.057212	0.003073
SPLEDHS	-0.039973	0.080612	0.060832	0.034279	-0.00727	0.026929	0.021995	0.026547	-0.017688	0.024693
SPLEDSC	0.02975	0.031164	0.026773	0.014739	0.00701	0.011371	0.020856	0.010997	0.008801	0.01023
SPLEDCD	0.240334	0.135154	0.430979	0.061355	0.34698	0.047917	0.341063	0.046925	0.328109	0.044098
SPLEDGW	0.106686	0.059601	0.189612	0.026891	0.14894	0.021115	0.16073	0.020777	0.154761	0.01964
PTIME	-0.359512	0.040658	-0.374916	0.017401	-0.31575	0.013218	-0.366276	0.012415	-0.354183	0.011912
HVY	0.02382	0.049933	0.084414	0.022484	0.0655	0.017971	0.04498	0.01759	-0.012314	0.01645
TNF	-0.153034	0.052947	-0.131682	0.024137	-0.14111	0.019253	-0.164797	0.018813	-0.158062	0.017073
SVS	-0.190816	0.052885	-0.156207	0.024184	-0.15943	0.019278	-0.168792	0.018795	-0.215315	0.017914
OLDER	0.226967	0.046419	0.194523	0.020947	0.20311	0.016481	0.208837	0.01637	0.194949	0.015416
WKDOLD			-0.006856	0.003665	-0.00352	0.0046	-0.00495	0.00329	-0.002128	0.005094
WKDYNG			0.004204	0.038565	0.03896	0.046268	-0.029349	0.024728	0.006114	0.033846
INTOLD			0.105357	0.17961	0.02285	0.227566	0.129481	0.163691	0.019576	0.253285
INTYNG			-0.361958	0.074224	-0.4778	0.106	-0.360883	0.062046	-0.400309	0.087651
LAMBDABA	0.150054	0.052559	-0.012346	0.028468	0.13967	0.019418	0.159915	0.019372	0.178374	0.018792

Males **LAGADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2592	Rsquare	0.2996	Rsquare	0.2666	Rsquare	0.2559	Rsquare	0.2469
	MSE	39.34157	MSE	313.51912	MSE	35.13012	MSE	34.70612	MSE	34.45441
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.829626	0.065083	1.020986	0.04851	1.221192	0.054818	1.156992	0.054202	1.287704	0.051333
LAST5	0.02268	0.001659	0.045512	0.002113	0.017342	0.001743	0.006585	0.00161	0.01108	0.001591
LASTSQ	-0.000326	4.059E-05	-0.00091	7.243E-05	-0.000379	6.206E-05	-0.000112	5.366E-05	-0.000275	5.274E-05
SPLED	0.055307	0.004723	0.051148	0.00357	0.05776	0.003804	0.058083	0.003872	0.057463	0.003848
SPLEDHS	0.041174	0.039937	0.091171	0.030821	0.080547	0.032645	0.069931	0.032279	0.008933	0.032118
SPLEDSC	0.018939	0.017318	0.051559	0.013118	0.039276	0.013712	0.034989	0.013641	0.022835	0.013391
SPLEDCD	0.308954	0.073537	0.529161	0.05643	0.407004	0.059574	0.366171	0.058993	0.328888	0.058073
SPLEDGW	0.091608	0.03184	0.191329	0.024291	0.162644	0.025548	0.14349	0.025781	0.156024	0.025471
PTIME	-0.317924	0.021039	-0.299469	0.014925	-0.385905	0.016555	-0.395236	0.0176	-0.349217	0.017587
HVY	0.141369	0.029833	0.167103	0.023034	0.105518	0.02287	0.102153	0.021644	0.069209	0.021865
TNF	-0.022333	0.031751	-0.022033	0.02433	-0.076351	0.02446	-0.109432	0.02335	-0.13924	0.023339
SVS	-0.127292	0.032054	-0.075354	0.024614	-0.174725	0.024794	-0.168108	0.023528	-0.179432	0.023606
OLDER	-0.04001	0.024808	0.007304	0.026438	0.172195	0.021044	0.221379	0.018789	0.190427	0.019134
WKDOLD	0.216593	0.024158	-0.005397	0.003688	0.008037	0.00479				
WKDYNG			0.135204	0.181065	-0.005823	0.055105				
INTOLD					-0.489197	0.234346				
INTYNG					-0.363975	0.131928				
LAMBDAST			0.00942	0.008093	0.065587	0.021797	0.18608	0.021799	0.149148	0.017172

LAGADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2198	Rsquare	0.2632	Rsquare	0.2633	Rsquare	0.2761	Rsquare	0.2496
	MSE	53.10052	MSE	37.98962	MSE	29.41791	MSE	29.55288	MSE	27.73277
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	1.405077	0.128556	1.702635	0.05363	1.33438	0.04622	1.36825	0.04176	1.656259	0.041623
LAST5	0.014593	0.003732	0.016282	0.001915	0.00982	0.001296	0.008059	0.001306	0.003579	0.001291
LASTSQ	-0.000489	0.000124	-0.000468	6.154E-05	-0.00022	4.208E-05	-0.000183	4.306E-05	-0.000111	4.212E-05
SPLED	0.061488	0.009643	0.058524	0.004047	0.06607	0.003217	0.05761	0.003145	0.060195	0.00307
SPLEDHS	-0.03305	0.080778	0.052949	0.034228	-0.00479	0.026941	0.02308	0.026455	-0.016295	0.024762
SPLEDSC	0.030899	0.031202	0.026421	0.014708	0.0063	0.011376	0.020123	0.010958	0.00963	0.010256
SPLEDCD	0.236706	0.135288	0.44151	0.061241	0.341	0.047961	0.33328	0.046769	0.334551	0.044225
SPLEDGW	0.10578	0.059663	0.193769	0.026841	0.14439	0.021143	0.153873	0.020714	0.157243	0.019703
PTIME	-0.360642	0.040908	-0.381989	0.017323	-0.31534	0.013264	-0.353933	0.012428	-0.362433	0.011976
HVY	0.025905	0.049975	0.089379	0.022429	0.06462	0.017985	0.045173	0.017528	-0.009855	0.0165
TNF	-0.152174	0.053008	-0.123996	0.0241	-0.14168	0.019264	-0.160145	0.018751	-0.157112	0.017125
SVS	-0.19386	0.052951	-0.148926	0.024155	-0.16129	0.01929	-0.163566	0.018733	-0.216485	0.017964
OLDER	0.236031	0.046775	0.176898	0.020992	0.20696	0.016601	0.214504	0.016301	0.18956	0.015592
WKDOLD			-0.008441	0.003622	-0.00525	0.004579	-0.005381	0.003252	-0.008015	0.005083
WKDYNG			0.002866	0.038483	0.03887	0.046289	-0.026614	0.024643	0.006513	0.033933
INTOLD			0.118386	0.178796	0.11391	0.226805	0.199899	0.162537	0.238892	0.253189
INTYNG			-0.356129	0.074069	-0.47512	0.10605	-0.349472	0.061836	-0.396641	0.087875
LAMBDAST										

Males **SCVADJBA**

	1984		1985		1986		1987		1988	
	Rsquare	0.2551	Rsquare	0.298	Rsquare	0.3072	Rsquare	0.3072	Rsquare	0.2966
	MSE	39.44675	MSE	313.88103	MSE	34.14181	MSE	33.48722	MSE	33.29555
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.450805	0.074941	0.46524	0.058626	0.527641	0.061692	0.43903	0.059024	0.56821	0.058853
PSLNWK	0.273696	0.01446	0.300601	0.009065	0.282477	0.010525	0.279938	0.010415	0.283901	0.010461
SPLED	0.059939	0.004724	0.051534	0.003621	0.055531	0.003716	0.059832	0.003743	0.055228	0.003722
SPLEDHS	0.011555	0.040108	0.06143	0.030838	0.052305	0.031724	0.038792	0.031158	0.017751	0.031043
SPLEDSC	0.014331	0.017372	0.045816	0.013114	0.050212	0.013328	0.022294	0.013162	0.0328	0.012941
SPLEDCD	0.326053	0.07371	0.539521	0.056433	0.449506	0.057912	0.395115	0.056898	0.396184	0.056165
SPLEDGW	0.086613	0.031938	0.175094	0.024344	0.159061	0.024803	0.127147	0.024862	0.168156	0.024601
PTIME	-0.33217	0.020946	-0.292639	0.014983	-0.343635	0.016156	-0.350862	0.017023	-0.308263	0.017037
HVY	0.158685	0.029865	0.165346	0.023059	0.135904	0.022235	0.12799	0.020885	0.101263	0.021152
TNF	-0.006889	0.031834	-0.023011	0.02436	-0.029567	0.023817	-0.05923	0.022588	-0.088069	0.022627
SVS	-0.117091	0.032157	-0.074604	0.024644	-0.12874	0.024158	-0.126443	0.022742	-0.135055	0.022863
OLDER	-0.079111	0.021826	-0.089149	0.018508	-0.063807	0.018835	-0.041717	0.018921	-0.098467	0.019483
WKDOLD	0.112469	0.027824	-0.007787	0.003496	0.005008	0.004366				
WKDYNG			0.074845	0.176341	-0.073255	0.053619				
INTOLD					-0.452437	0.220076				
INTYNG					0.142761	0.129798				
LAMBDABA		0.082181	0.024318	0.118476	0.023114	0.197466	0.021152	0.179803	0.021508	

SCVADJBA	1989		1990		1991		1992		1993	
Males	Rsquare	.2551	Rsquare	0.306	Rsquare	0.2689	Rsquare	0.3239	Rsquare	0.3055
	MSE	51.87107	MSE	36.8672	MSE	29.30565	MSE	28.55842	MSE	26.68011
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.667763	0.140937	0.704543	0.064597	1.13614	0.047636	0.630086	0.047753	0.729866	0.046067
PSLNWK	0.233473	0.025375	0.274461	0.01075	0.08107	0.006726	0.296644	0.008747	0.28388	0.008103
SPLED	0.060489	0.009436	0.055571	0.003942	0.065	0.00321	0.055578	0.003047	0.054105	0.002962
SPLEDHS	-0.018805	0.078854	0.016809	0.033242	-0.01422	0.026843	-0.02896	0.025609	-0.064737	0.023854
SPLEDSC	0.044068	0.030509	0.016034	0.014279	0.00609	0.011332	0.00923	0.010594	-0.000781	0.009871
SPLEDCD	0.328522	0.132498	0.434564	0.059415	0.34684	0.047751	0.340624	0.045188	0.346084	0.042533
SPLEDGW	0.108354	0.058278	0.172391	0.026049	0.14525	0.021047	0.14383	0.020014	0.136839	0.018948
PTIME	-0.331486	0.039854	-0.318051	0.017	-0.30812	0.013195	-0.31467	0.012049	-0.30325	0.011579
HVY	0.039402	0.048842	0.104934	0.021788	0.06701	0.017911	0.063817	0.016949	0.010773	0.015879
TNF	-0.116079	0.051927	-0.084178	0.02345	-0.13787	0.01919	-0.119049	0.018166	-0.115346	0.016512
SVS	-0.173392	0.051748	-0.112137	0.023486	-0.15516	0.019216	-0.129619	0.018136	-0.168459	0.017329
OLDER	-0.047428	0.047981	-0.097586	0.020767	0.17007	0.014863	-0.078103	0.016497	-0.0736	0.015388
WKDOLD			-0.00324	0.003537	-0.00116	0.004545	-0.00386	0.003148	-0.001951	0.004858
WKDYNG			0.032052	0.037361	0.02743	0.046122	-0.033037	0.023813	-0.020697	0.032653
INTOLD			-0.133103	0.174049	-0.06403	0.225521	-0.061076	0.157402	-0.121725	0.24255
INTYNG			-0.045278	0.072947	-0.36804	0.106188	0.011475	0.060616	0.019757	0.085268
LAMBDABA	0.203401	0.043465	0.12626	0.024883	0.15791	0.017635	0.194076	0.017154	0.214565	0.016273

Males **SCVADJST**

	1984		1985		1986		1987		1988	
	Rsquare	0.2608	Rsquare	0.2973	Rsquare	0.309	Rsquare	0.3094	Rsquare	0.295
	MSE	39.29553	MSE	314.03254	MSE	34.09649	MSE	33.4326	MSE	33.33447
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.389792	0.072903	0.58072	0.055757	0.452948	0.062112	0.381391	0.059659	0.672922	0.054961
PSLNWK	0.251079	0.014736	0.298762	0.009701	0.293636	0.010749	0.284651	0.010431	0.274798	0.010425
SPLED	0.056818	0.004721	0.053476	0.00358	0.055313	0.003692	0.059932	0.003729	0.056281	0.00372
SPLEDHS	0.015196	0.03995	0.064895	0.030921	0.055219	0.031687	0.040576	0.031108	0.02303	0.031075
SPLEDSC	0.014469	0.017305	0.047361	0.013142	0.050737	0.01331	0.023016	0.013141	0.034361	0.012955
SPLEDCD	0.31305	0.07345	0.543427	0.056478	0.447957	0.057828	0.390161	0.056809	0.398162	0.05623
SPLEDGW	0.080131	0.031829	0.175733	0.024367	0.156121	0.024773	0.121126	0.024835	0.163686	0.024638
PTIME	-0.316169	0.020943	-0.299232	0.014912	-0.337364	0.016174	-0.346249	0.017013	-0.313243	0.017028
HVY	0.145597	0.029807	0.167022	0.023069	0.132239	0.022207	0.12422	0.020857	0.1007	0.021179
TNF	-0.015226	0.031733	-0.022218	0.024371	-0.030225	0.02378	-0.060858	0.02255	-0.088228	0.022654
SVS	-0.119279	0.032035	-0.073951	0.024658	-0.12912	0.024119	-0.12683	0.022705	-0.134829	0.022891
OLDER	-0.071611	0.021417	-0.108951	0.017459	-0.067002	0.01853	-0.050008	0.018607	-0.122624	0.019014
WKDOLD	0.196279	0.024411	-0.010375	0.003437	0.00522	0.00435				
WKDYNG			0.161026	0.175211	-0.079007	0.053555				
INTOLD					-0.451305	0.219651				
INTYNG					0.119026	0.129495				
LAMBDAST			-0.008521	0.007861	0.146519	0.020534	0.219332	0.020285	0.107694	0.015513

SCVADJST	1989		1990		1991		1992		1993	
Males	Rsquare	.2517	Rsquare	0.3041	Rsquare	0.2679	Rsquare	0.3229	Rsquare	0.2999
	MSE	51.98966	MSE	36.91854	MSE	29.32562	MSE	28.58012	MSE	26.78643
	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard	Coeff.	Standard
Variable	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
INTERCEP	0.674135	0.145646	0.893093	0.059655	1.12882	0.050052	0.732263	0.044761	0.870302	0.046074
PSLNWK	0.248552	0.02578	0.26635	0.010689	0.09057	0.006866	0.286164	0.008747	0.279653	0.008136
SPLED	0.062505	0.009431	0.057445	0.003932	0.06603	0.003206	0.056823	0.00304	0.056937	0.002966
SPLEDHS	-0.00382	0.079134	0.018672	0.033296	-0.01237	0.026861	-0.026628	0.025631	-0.060268	0.02395
SPLEDSC	0.047418	0.030592	0.016574	0.014299	0.00561	0.01134	0.009606	0.010602	0.000771	0.009909
SPLEDCD	0.32851	0.132813	0.43944	0.059508	0.34059	0.047808	0.338609	0.045226	0.352069	0.042712
SPLEDGW	0.107196	0.05841	0.173247	0.026096	0.14014	0.021082	0.141595	0.020034	0.139266	0.019035
PTIME	-0.331896	0.040157	-0.331179	0.016968	-0.30901	0.013229	-0.317829	0.01204	-0.311437	0.011662
HVY	0.043852	0.048931	0.109914	0.021812	0.06587	0.017929	0.064739	0.016961	0.012895	0.015948
TNF	-0.110804	0.05202	-0.0804	0.023493	-0.13853	0.019205	-0.116639	0.018182	-0.115565	0.016584
SVS	-0.177097	0.051868	-0.110777	0.023531	-0.15813	0.019231	-0.127253	0.018152	-0.171067	0.0174
OLDER	-0.094654	0.046372	-0.126734	0.020663	0.14978	0.014348	-0.099918	0.016168	-0.101901	0.015356
WKDOLD			-0.005777	0.003516	-0.00175	0.004547	-0.005821	0.003135	-0.005463	0.004874
WKDYNG			0.031805	0.037414	0.02609	0.046155	-0.030918	0.023832	-0.019664	0.032783
INTOLD			-0.059977	0.173724	-0.01691	0.225458	0.033098	0.157167	0.003943	0.243412
INTYNG			-0.059708	0.07308	-0.36475	0.106277	-0.018863	0.06065	0.007871	0.085609
LAMBDAST	0.14922	0.040407	-0.004786	0.017891	0.13644	0.017521	0.122101	0.011878	0.101829	0.015514