


On the Sidelines: Labor Force Participation of Prime Age Men

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Joseph S. Falzone¹

Abstract

For more than a century, labor force participation rates of men have been falling, representing one of the most significant trends in the labor market. The concomitant rise in non-participation of prime age men has been attributed to both cyclical and structural factors. Over the past two decades, participation rates of prime age men have fallen by almost 5%, representing both a problem and a paradox. The author describes changes in men's labor force participation, focusing on human capital and demographic variables, and then estimates non-participation of prime age men over selected years. A model of labor/leisure choice and estimation of non-participation over selected years is presented using a probit model.

Keywords

labor force participation, labor market, human capital, gender, labor/leisure choice

Introduction

Labor force participation rates in the United States for men have been falling for more than a century. Along with the concomitant rise in labor force participation rates of women, the withdrawal of men from the labor force represents a significant trend in the labor market. The rise in non-participation rates for men during the 20th century has been commonly attributed to a truncation at each end of the age distribution, that is, to young men's delay in entering the labor force associated with greater years of schooling and to older men's earlier exit from the labor force attributed to a combination of more broadly applied benefits associated with Social Security and with the wealth effect brought about by higher income.¹ Beginning in the late 1940s, data from the U.S. Department of Labor, Bureau of Labor Statistics (BLS) reveal that men's labor force participation rate peaked at an average annual rate of 86.6% in 1948, falling to 70 % in 2012 (Figure 1). For prime age men, that is, those between the ages of 25 and 54, labor force participation peaked in 1958 at an average annual rate of 97.6 %, declining over the ensuing 54 years to 88.4 % in 2012 (Figure 2). This trend occurred concurrently as women's labor force participation rose from approximately 35 % in 1948 to a peak of almost 77% in 1999.

The decline in labor force participation of prime age men has been attributed in part to cyclical fluctuations causing workers to exit the labor force during periods of high and prolonged unemployment.² Declining labor force participation rates among prime age men has also been attributed to long-run structural factors, including the effects of an aging Baby Boom generation where a larger segment of men move

into the 50-year age cohort. There are other changes as well occurring within this cohort, reflecting a greater tendency for men to exit the labor force at an age earlier than did their fathers.³ These trends indicate that the average propensity for men to participate in the labor force has fallen. Another structural change has been attributed to a greater generosity on the part of Social Security Disability Insurance (SSDI) relative to declining or static earnings, especially for low-wage workers (Aaronson, Fallick, Figura, Pingle, & Wascher, 2006).⁴ Indeed, declining real wages for low-skilled workers has the effect of decreasing their opportunity cost of leisure.

Bowen and Finegan (1969) provide one of the first comprehensive empirical studies of labor force participation of prime age men, estimating their labor force participation and citing significant explanatory variables in their analysis. Using a linear probability model and U.S. Census Population data for four distinct age groups, they regress labor force participation on years of schooling, ethnicity, marital status, non-wage income, and age. Their findings demonstrate a strong positive relationship between labor force participation and schooling, especially among older men. They also find the effects of race (White) and of marital status (married) tend to increase the probability of participation, while greater exogenous income is associated with lower participation

¹Peirce College, Philadelphia, PA, USA

Corresponding Author:

Joseph S. Falzone, Peirce College, 1420 Pine Street, Philadelphia, PA 19102, USA.

Email: beloquinta@comcast.net



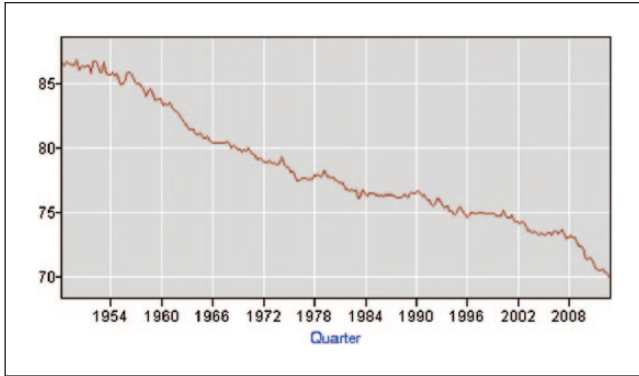


Figure 1. Labor force participation rates: Men 16 years and older, 1948-2012.

Note: U.S. Department of Labor, Bureau of Labor Statistics.

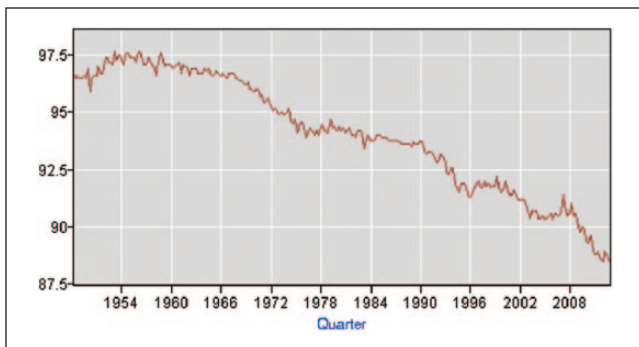


Figure 2. Labor force participation rates: Prime age men 25 to 54 years, 1948-2012.

Note: U.S. Department of Labor, Bureau of Labor Statistics.

rates. The authors show the participation decision forms an inverted “U” rising to the age of 25, remaining constant until a man enters his mid-50s and declining rapidly thereafter.

Pencavel (1986), in his survey of men’s labor supply throughout the 20th century, looks at the decline in the proportion of his lifetime a man spends in the labor force. The author attributes the truncation of men’s labor force participation to increased years of schooling, to the propensity to retire earlier, and to structural changes including social security and disability benefits. The author makes an important distinction between hours worked and labor force participation, noting that the participation decision is multi-dimensional, a function not only of wages and hours worked, which represent a subset of determinants of labor supply, but of work effort, of the range of activities on the job, as well as contract duration.

Aaronson et al. (2006) focus on long-run structural as well as cyclical factors that have contributed to the decline in the labor force participation rate and its effect on labor supply. The authors decompose structural factors as a function of both changes in a cohort’s “population share” and of changes within each cohort, such as the tendency for men to

leave the labor force earlier than their fathers. The authors conclude that cyclical fluctuations played a major role in falling labor force participation rates beginning with the 2001 recession, but long-run structural trends present a more serious challenge to labor force growth.

Fallick and Pingle (2006) present an empirical model of labor force participation that incorporates both demographic changes as well as historical changes; that is, their model decomposes changes in labor force participation rates into the effects of changing demographic distributions of the population and to the effects of changing trends in labor force participation within each age group. Their contribution to the literature focuses on shifts both within the age distribution of the population as well as shifts within each age cohort. They find that between 2002 and 2006, the decline in labor force participation rates can be attributed to the redistribution of Baby Boomers from age cohorts with high participation rates to age cohorts with relatively lower participation rates.

Aliprantis and Zenker (2011) consider educational attainment and labor market outcomes examined at the level of neighborhoods. A significant finding is the trend from 1970 to the late 1990s of increasing labor force participation among men as they moved from neighborhoods with the lowest high school graduation rates to neighborhoods with the highest high school graduation rates. By 2000, they find no increase in average labor force participation rates for men as high school graduation rates increase. The authors’ findings suggest that labor force participation rates among men have fallen at all levels of educational attainment.

The objectives of this article are twofold. I first describe changes in prime age men’s labor force participation focusing on human capital and demographic variables. I then estimate the labor force participation of prime age men over selected years. The “Model” section presents a model of labor/leisure choice and estimation techniques. The “Data” section describes the data set used in the analysis, and the “Results” section presents the results of probit coefficient estimates for prime age men. The “Summary and Conclusion (and Refinements)” section provides a summary and some (tentative) conclusions.

Model

Given an individual is endowed with 24 hr per day, assume that he may engage in two mutually exclusive activities, labor or leisure. “Labor” is defined here as working in the market for a wage, while “leisure” is defined as any non-market activity. The individual will choose that combination of activities (labor vs. leisure), which maximizes his utility function for some bundle of commodities, given hours worked, personal characteristics, and individual tastes for leisure. Hours of labor are, of course, constrained by physical endurance. Nonetheless, the “standard workyear” consists of about 2,000 hr or 40 hr per week (Killingsworth, 1983, p. 42). We may find, however, a corner solution, of 24

hr of leisure per day. The decision not to participate in the labor market may be viewed as a function of the opportunity cost of leisure; that is, the individual will work only if the utility of an hour of labor, a function of the wage rate, exceeds the utility of an additional hour of leisure. Thus, the decision to participate can be modeled as

$$\begin{aligned} W_i^m - W_{iH=0}^r > 0 &\Rightarrow \text{NLFP} = 0, \\ W_i^m - W_{iH=0}^r \leq 0 &\Rightarrow \text{NLFP} = 1, \end{aligned} \quad (1)$$

where W_i^m is the market wage for individual i , or the value of time of working in the market at the margin. $W_{iH=0}^r$ is the marginal value of time for non-participant i or his reservation wage, the wage below which the individual will choose not to participate in the labor market. Non-Labor Force Participation (NLFP) can be modeled as a binary choice variable equal to 1 if the individual chooses not to participate in the labor market and equal to 0 otherwise.

The decision not to participate can be expressed using a probit model. Assume that the difference between individual's market and reservation wage is a linear function of both observable characteristics and an unobservable random disturbance term. The model may be estimated by

$$I_i^* = W_i^m - W_{iH=0}^r = \beta_0 + \beta_1' \mathbf{X}_{m,i} + \beta_2' \mathbf{X}_{r,i} + \varepsilon_i, \quad (2)$$

where $\mathbf{X}_{m,i}$ is a vector of observable characteristics that are a function of the individual's market wage. The variable "years of education" is included in $\mathbf{X}_{m,i}$ because investment in human capital represents a highly significant factor in the determination of the market wage. Years of education not only increase the expected market wage but also represent a foundation for jobs with higher social status; thus, we may view additional years of education as signifying both the individual's natural aptitude as well as his taste for market labor over leisure (or household production). Age is included in $\mathbf{X}_{m,i}$ as a proxy for labor market experience and is hypothesized to be inversely related to the decision not to participate for prime age men. Age squared is included to capture the effect of diminishing returns associated with labor market experience. A man's health represents another important determinant of the decision to participate in the labor market as poor health both increases his reservation wage and decreases his marginal productivity, thereby reducing his market wage. Overall labor market conditions affect the individual's decision to participate; a contraction of the labor market due to a cyclical downturn will adversely affect labor market participation through its effects on both lowering the market wage and on lengthening job search time, increasing the probability that a discouraged worker will withdraw from the labor market. For this reason, the average unemployment rate within the individual's state of residence during each sample year is included to capture the role of the business cycle on local labor market conditions.

The vector $\mathbf{X}_{r,i}$ determines the individual's marginal value of time outside of the labor market. This includes a marital status dummy variable = 1 as the responsibilities of marriage increase the opportunity cost of leisure. A dummy variable = 1 if his wife is employed and another variable for her wage rate are included in $\mathbf{X}_{r,i}$ as the decision to participate in the labor market is made within the context of family income for married men. Working wives provide a source of income that may become primary rather than supplementary and result in a subsequent role reversal with the attendant responsibilities of household production now assumed by the husband. This may be more common in tight labor markets where the industrial composition of jobs for men is more susceptible to cyclical downturns than for women who are more likely to be employed in the service sector and less subject to the business cycle.⁵ Nonetheless, during the years 1990, 2001, and 2009, husbands earned on average 54%, 46%, and 41% more than their wives, respectively. I hypothesize that wife's earnings and her husband's participation are inversely related.⁶ A random error term ε_i is assumed to be normally distributed with mean = 0 and variance = 1. The parameter coefficients in Equation 2 are estimated using a maximum likelihood probit model.

Data

Data are extracted from the *Panel Study of Income Dynamics* (PSID). Ongoing since 1968, PSID is a longitudinal survey of a representative sample of individuals and their families in the United States. The sample here is taken from Waves XXIII, XXXII, and XXXVI of PSID corresponding to recession years 1990, 2001, and 2009.⁷ The sample consists of more than 23,450 men between the ages of 25 and 54 years (inclusive) during the sampling year.⁸ (Table 1) "Labor force participation" is defined as working, seeking employment, or temporarily laid off. Non-participation or "out of the labor force" is defined as permanently disabled, keeping house, or student. Within the sample, non-participation averaged 5.77%, rising from 4.5% in 1990 to 5.3% in 2001 to 7.5% in 2009.

Turning first to observable characteristics that determine market wage (the opportunity cost of leisure), average age (a proxy for labor market experience) increased from 37.05 years in 1990 to 39.43 years in 2009, an increase of almost 2.4 years or more than 6.4%. Similarly, we witness a rise in the average years of education over the period from 12.22 years in 1990 to 13.27 years in 2009, an increase of more than 8.5%. Health status (excellent, very good, or good) dropped to 73% in 2001 from 85% in 1990 rising to 87% in 2009. Average state unemployment rates fell from 5.63% in 1990 to 3.9% in 2001, rising to 5.8% in 2009.

Real wages for men fell during the 19-year period from US\$21.99 in 1990 to US\$18.65 in 2009. I hypothesize that variables affecting the marginal value of time will determine decision of prime age men to withdraw from the labor

Table 1. Sample Means: Men 25 to 54 Years of Age for Years 1990, 2001, and 2009 (SD).

| Variable | 1990 | 2001 | 2009 |
|------------------------|----------------------------|----------------------------|----------------------------|
| HdYrEarning | US\$25,803 (US\$23,497) | US\$47,863 (US\$50,622) | US\$59,972 (US\$55,821) |
| WfEarnings | US\$11,783 (US\$7,404) | US\$25,875 (US\$32,208) | US\$35,357 (US\$34,607) |
| HdHrRate | US\$13.96 (US\$10.76) | US\$17.57 (US\$39.35) | US\$18.65 (US\$12.63) |
| RealWage(2009) | US\$21.99 (US\$17.27) | US\$21.28 (US\$24.85) | US\$18.65 (US\$12.63) |
| Out LF% | 0.0451 (0.208) | 0.0532 (0.2243) | 0.0747 (0.263) |
| AgeHd | 37.05 (7.57) | 40.11 (8.45) | 39.43 (9.06) |
| AgeWf | 35.56 (7.48) | 38.60 (8.68) | 38.38 (9.45) |
| Race %Bk | 0.2197 (0.414) | 0.251 (0.434) | 0.289 (0.453) |
| %Married | 0.9328 (0.2504) | 0.742 (0.438) | 0.682 (0.466) |
| HdYrsEd | 12.22 (3.43) | 13.26 (2.60) | 13.27 (2.37) |
| WfYrsEd | 12.23 (3.04) | 13.43 (2.54) | 13.70 (2.47) |
| WfWg | US\$7.54 (US\$4.602) | US\$17.54 (US\$30.06) | US\$16.32 (US\$15.02) |
| RealWage (2009) | US\$12.38 (US\$7.32) | US\$21.25 (US\$17.92) | US\$16.32 (US\$15.02) |
| HlthStaHd ^a | 2.26 (1.08) | 1.85 (1.26) | 2.30 (0.99) |
| Good Health | 0.850 (0.3568) | 0.727 (0.4451) | 0.867 (0.3390) |
| StateUnpRt | 0.0563 (0.0923) | 0.0390 (0.845) | 0.0581 (1.15) |
| Number | 15,448 | 3,913 | 4,094 |

^aPercentages represent health status as "excellent," "very good," or "good," with designation ranging from 1 (excellent health) to 5 (poor health).

market. These variables include his age (a proxy for labor market experience) with non-participation varying inversely with age. Marital status is likely to affect a man's labor force participation as well. The percentage of married men fell 25% from 93% in 1990 to 68% in 2009.

The effect of marriage on a man's labor force participation can be ambiguous; that is, marriage with its associated family responsibilities will increase a married man's propensity for money income. Nonetheless, given a married man's decision to participate is made within the context of family income now augmented by his wife, he may opt to engage in household production rather than working in the market. For this reason, wife's wage is included with her husband's non-participation decision and is expected to vary inversely with her wage. Wives' real wages rose from US\$12.38 in 1990 to US\$21.25 in 2001, falling to US\$16.32 in 2009. Health status

Table 2. Maximum Likelihood Probit Estimates: Prime Age Men, 1990, 2001, and 2009.

| Variable | 1990 coefficient | 2001 | 2009 |
|----------|-------------------------------------|--------------------------------------|--------------------------------------|
| Constant | -2.8747*** (0.000) | 9.0759 E-01 (0.330) | 7.534 E-01 (0.326) |
| AgeHd | -1.414 E-02 (0.615) | -1.333 E-01*** (0.003) | -1.691 E-01*** (0.000) |
| AgeHdSq | -5.662 E-04 ^a (0.212) | -1.090 E-02 ^a (0.000) | -1.8276 E-02 ^a (0.000) |
| HdYrsEd | 4.319 E-04 (0.212) | 2.0418 E-03*** (0.000) | 2.1944 E-03*** (0.000) |
| | 1.64 E-05 ^a | 1.67 E-04 ^a | 2.372 E-04 ^a |
| HdYrsEd | -2.0273 E-02*** (0.002) | -4.4493 E-02*** (0.002) | -2.591 E-02* (0.069) |
| HdHlth | -7.866 E-04 ^a (0.000) | -3.3749 E-03 ^a (0.000) | -2.801 E-03 ^a (0.000) |
| MarStat | 5.947 E-01*** (0.000) | 1.2467 E-01*** (0.000) | 4.0818 E-01*** (0.000) |
| | 2.2010 E-02 ^a | 1.0196 E-02 ^a | 4.412 E-02 ^a |
| DumWfWk | -4.9291 E-01*** (0.000) | -5.4279 E-01*** (0.000) | -1.6427*** E-01 (0.044) |
| | -3.0823 E-02 ^a | -5.723 E-02 ^a | -1.865 E-02 ^a |
| WfWg | -4.4503 E-02 (0.449) | -2.1544 E-01** (0.023) | -2.7158 E-01*** (0.001) |
| | 1.6687 E-03 ^a | -1.832 E-02 ^a | -3.019 E-02 ^a |
| WfHrWg | -2.209 E-04*** (0.006) | 2.43 E-06* (0.066) | 4.2104** (0.042) |
| StUnpRt | -9.38 E-06 ^a (0.965) | 1.99 E-07 ^a (0.882) | 4.542 E-04 ^a (0.073) |
| | 1.0483 E-03 (0.965) | 6.8127 E-03 (0.882) | 5.1549 E-02* (0.073) |
| RaceBk | 6.09 E-05 ^a (0.000) | 5.571 E-04 ^a (0.007) | 5.573 E-03 ^a (0.541) |
| | 1.8117 E-01*** (0.000) | 2.2242 E-01*** (0.007) | 4.4563 E-02 (0.541) |
| Number | 7.7472 E-03 ^a 14,358 | 2.008 E-02 ^a 3,431 | 4.894 E-03 3,641 |

Note. Binary dependent variable: Out of Labor Force = 1, 0 otherwise. $P > |z|$ in parentheses.

^aMarginal effects are the change in the probability of non-participation being limited for a one-unit change in the corresponding independent variable computed at the mean of the independent variables.

*Significant at 10% or less. **Significant at 5% or less. ***Significant at 1% or less.

will likely affect labor force participation with good health increasing the probability that a man participates in the labor market. Respondents reporting at least "good" health fell more than 12% between 1990 and 2001, rising to 87% in 2009. A dummy variable denoting race, Black, which averaged around 25% over the 3 sample years, is included to control for effects associated with labor market discrimination.

Results

Probit coefficient estimates and marginal effects for men of ages 25 through 54 years are presented in (Table 2). Turning first to the vector of observable characteristics which determine the market wage and the opportunity cost of leisure, the estimated coefficient for age is of the expected sign (negative) for all sample years and significant for sample years 2001 and 2009. As a proxy for labor market experience, it was hypothesized that coefficient estimates for age would be negative because men with greater labor market experience

would command higher wages; thus, older men would be less likely to withdraw from the labor market. For year 2001, an additional year results in a 1% decrease in non-participation and an almost 2% decrease in 2009. Likewise, the variable age squared (capturing diminishing returns to experience) is positive as hypothesized and significant for sample years 2001 and 2009.

Human capital investment remains the most significant predictor of an individual's decision to participate in the labor market viewed both as an investment in future income streams as well as increasing current market earnings, thereby increasing the opportunity cost of leisure. Not surprisingly, prime age men with the greatest investment in human capital are less likely to withdraw from the labor market. Coefficient estimates on years of education (HdYrsEd) are of the expected sign (negative) and significant for all sample years. Given a greater than 8.5% increase in average years of education between 1990 and 2009, human capital investment should offset prime age men's falling labor market participation during the past two decades. Nonetheless, the marginal effects of an additional year of education are less than 1% in all sample years.

Conventional wisdom assumes that the rise in married women's labor forces participation rates over the past 20 years with its associated effect on increasing family income is responsible, in part, for the increase in the rate of non-participation by prime age men. The results reported here indicate otherwise. Coefficient estimates on the marital status are negative and significant for all sample years, indicating that the effects of marriage on prime age men thwart rather than exacerbate their withdrawal from the labor market. Indeed, marriage remains among the strongest predictors that prime age men will remain in the labor force reducing the probability of their non-participation by 3.1%, 5.7%, and 2% for the years 1990, 2001, and 2009, respectively. Yet coefficient estimates for wife's hourly earnings (WfHrWg) for the years 2001 and 2009 are positive and significant indicating that for married men, a wife's increased earnings increase the probability he withdraws from the labor force.⁹ The rise in working wives' earnings, which may now be primary rather than supplementary, may lead to a withdrawal of married men from the labor force.

As hypothesized, health status (poor health) is likely to increase the probability of non-participation and is another significant predictor of non-participation for prime age men. Disability benefits may provide a large part of income for prime age men out of the labor force and along with the increased generosity of benefits may play a significant role in their non-participation. (Parsons, 1980, p. 117) Estimated coefficients on health status are positive and significant for all sample years indicating that poor health is a major contributor to the non-participation with marginal effects of 2%, 1%, and 4.4% for the years 1990, 2001, and 2009, respectively. Along with years of education and marital status, health status exerts the greatest effect on the probability of non-participation by prime age men.

Summary and Conclusion (and Refinements)

Labor force participation rates for men in the United States have been falling for more than a century. Accompanied by the concomitant rise in the labor force participation rates of women, this trend represents one of the most significant trends in the labor market. The rise in non-participation rates for men during the 20th century has most often been attributed to the delay of their entry into the labor force and to their earlier exit from the labor force than prior generations. Nonetheless, we witness increasing rates of non-participation of prime age men with an almost 5% decline in labor force participation rates between 1990 and 2012. The recent rise in non-participation of prime age men has been attributed to both cyclical and structural factors. Business cycle fluctuations over the past two decades have been accompanied by rising rates of non-participation of prime age men who have exited the labor force during periods of prolonged high unemployment. This represents both a problem and a paradox. With participation rates reaching their peak for men in their late 20s, prime age men represent the largest portion of the labor force contributing the greater portion of earned income. Their withdrawal from the labor force has implications for labor force growth and productivity as well as a significant impact on economic growth. It also represents a paradox. Given rising average years of education and better health among prime age men, theory predicts these factors would lead to greater not less labor force participation.

Probit estimates indicate that the most significant determinants of non-participation for prime age men are years of education, health, and marital status with greater years of education decreasing the probability of non-participation and (poor) health increasing the probability of non-participation. Contrary to conventional wisdom, the effect of marriage is to decrease rather than increase the probability of non-participation, while the effects of a working wife likewise reduce the probability of non-participation of her husband for the years 2001 and 2009. Interpreting the effects of marriage on labor force participation for men is less straightforward than for women, for whom marriage tends to decrease labor force participation.¹⁰ A man's decision to marry may be viewed as both a proxy for a taste for money income and a taste for work within the market. The responsibilities associated with marriage increase the cost of leisure while increasing the financial requisites of a reliable income stream for a married man. As a proxy for market work, married men are more likely to be committed to a stable (and staid) lifestyle than single men whose tastes may favor fewer constraints and fewer responsibilities. These tastes, which include employment and a stable income, also translate into marriage eligibility from the perspective of future wives in that men with tastes for money income, stability, and market work are better candidates for marriage.

The results presented here are preliminary and indicate possible direction for future research and refinement to provide a more complete and robust model of prime age men's

withdrawal from the labor force. Specifically the role of health status in the participation decision needs to be investigated in greater depth. For men with poor health, certification of disability with income from social security benefits can have a significant and positive influence on the decision of a prime age men to withdraw from the labor force.¹¹ This may be a significant incentive if there is evidence of greater liberalization in recognizing disabilities over the past two decades. A more complete picture of non-participation would also help in understanding prime age men's labor force participation decision; that is, their estimated earnings and the industry mix and/or occupation may reveal lower earnings and occupations requiring low levels of skill and education. Finally, the incorporation of exogenous income into the model might provide a significant predictor of the probability to withdraw from the labor market.

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Notes

1. Pencavel (1986) notes too that the decline in men's labor force participation during the 20th century has also been accompanied by fewer hours worked per day as well as more paid holidays and vacation time.
2. Fallick et al. find fluctuations in the business cycle have a more pronounced effect on younger rather than on older workers, with men between the ages of 35 and 59 years showing the least sensitivity to cyclical trends.
3. A paradox is that we find falling labor force participation rates for all age cohorts except for men in the oldest age cohort, 55 years of age and older, where labor force participation is on the rise.
4. Aaronson finds an increase in the proportion of the labor pool receiving Social Security Disability Insurance (SSDI).
5. Wall (2009) examines the distribution of unemployment between men and women which posits the brunt of unemployment with men because they are mainly employed in industries most susceptible to cyclical downturns, manufacturing, and construction. The author notes that between the fourth quarter of 2007 and first quarter of 2009, men bore 78% of job losses.
6. The effect of wife's earning on husband's participation decision is admittedly less pronounced than the effect of husband's earnings on his wife's labor force participation. This can be attributed to cultural mores and men's taste for labor over leisure. Nonetheless, I hypothesize that at very high family income levels, on the margin, a man is less likely to participate in the labor market as his wife's income rises.
7. The most recent data available at the time of writing were for 2009, a recession year. The years 2001 and 1990 were likewise the most recent recession years.
8. Only "prime age" men are included here because under the age of 25, the labor force attachment for men is more tenuous due to incomplete human capital investment and tentative career plans. (Almost 400 years ago, Shakespeare wrote, "I would there were no age between sixteen and three-and twenty; for there is nothing between but getting wenches with child, wronging the ancientry, stealing, fighting, drinking." *The Winter's Tale, Act III, Scene 3*) Retirement decisions begin to play a role in labor force participation decisions after the age of 54. Finally, prime age workers may be less affected by business cycle fluctuations due to their relatively greater attachment to the labor market.
9. For 1990, the coefficient on wife's hourly wage is negative and significant.
10. A discussion of married women's labor force participation goes beyond the scope of this article. Nonetheless, given contemporary (and changing) cultural norms, the responsibilities associated with marriage including child care (especially for children below the age of 5) and household production tend to decrease labor force participation for married women.
11. Parsons (1982) argues the decision to withdraw from the labor force is largely determined by economic incentives. The author finds poor health as the most important factor in a prime age man's decision to withdraw from the labor force. He models the decision to withdraw from the labor force as a wager in which income forfeited through non-participation can be rewarded by acceptance into a program of social security benefits.

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Author Biography

Joseph S. Falzone is professor of economics at Peirce College in Philadelphia, Pennsylvania, U.S.A. His areas of research include the labor market, economic demographics, and self-employment.