

WHY DO MORE OLDER MEN WORK IN SOME STATES?

By ALICIA H. MUNNELL, MAURICIO SOTO, AND NATALIA A. ZHIVAN*

Introduction

With increasing pressure on the nation's retirement systems, questions about how long people stay in the labor force and why they decide to retire are of great importance. The big unknown going forward is whether the contraction of the retirement income system will cause workers to continue working at older ages. The literature to date suggests that the availability of benefits has a larger impact than the level of benefits on people's decision to retire. Indeed, 55 percent of men and 59 percent of women who claimed Social Security benefits in 2005 were 62 — the earliest age of eligibility.¹ If availability of benefits is the main driver of retirement, future workers will be relatively insensitive to the coming decline in replacement rates from Social Security and employer-sponsored pension plans. On the other hand, if the level of benefits has a significant impact, future declines could trigger increased work.

One avenue of investigation not previously explored is the variation in labor force activity of older workers across different states. In South Dakota, nearly 90 percent of men aged 55-64 are in the labor force compared to only 40 percent in West Virginia. The question is the extent to which this variation can be explained by differences in replacement rates — benefits relative to pre-retirement income — across states.

This *brief* is the first part of a two-part study exploring the relationship between retirement benefits and labor force participation rates across states. The analysis reported below uses aggregate data from the Census. The second part will rely on individual data from the *Health and Retirement Study*. The results reported here suggest that variation in retirement income does explain some of the interstate variation in labor force activity, even after controlling for differences in the health of the economy, the nature of employment, and the characteristics of the workforce.

* Alicia H. Munnell is the Peter F. Drucker Professor of Management Sciences in Boston College's Carroll School of Management and Director of the Center for Retirement Research at Boston College (CRR). Mauricio Soto is a research economist at the CRR. Natalia A. Zhivan is a graduate research assistant at the CRR.

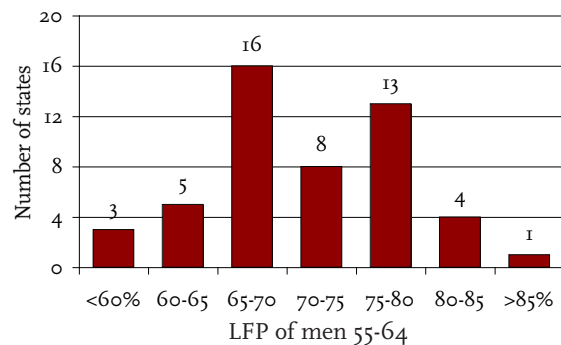
Differences across States

The labor force participation rates of older men and the extent to which retirement income replaces earnings vary noticeably across states.

Labor Force Participation Rates

Figure 1 shows the distribution of labor force participation rates of men age 55-64 across states in 2007. Typically, about 70 percent of these men are in the labor force. But the variation is substantial. Three states (West Virginia, Kentucky, and Alabama) have participation rates below 60 percent, while South Dakota has a participation rate above 85 percent.²

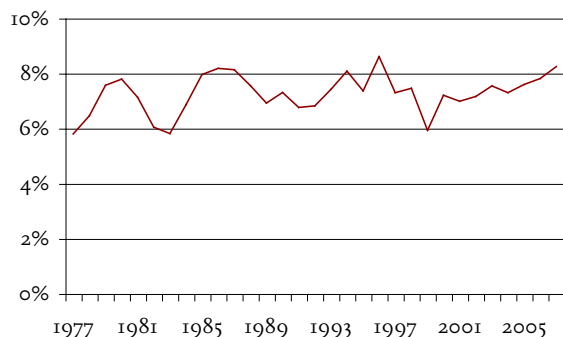
FIGURE 1. DISTRIBUTION BY STATE OF LABOR FORCE PARTICIPATION RATES OF MEN AGE 55-64, 2007



Source: Authors' calculations from the U.S. Census Bureau, Current Population Survey (CPS), 2007.

The data are presented for 2007 — the most recent year for which Census data are available. But as shown in Figure 2, this type of variation has been the

FIGURE 2. STANDARD DEVIATION IN STATE LABOR FORCE PARTICIPATION RATES OF MEN AGE 55-64, 1977-2007



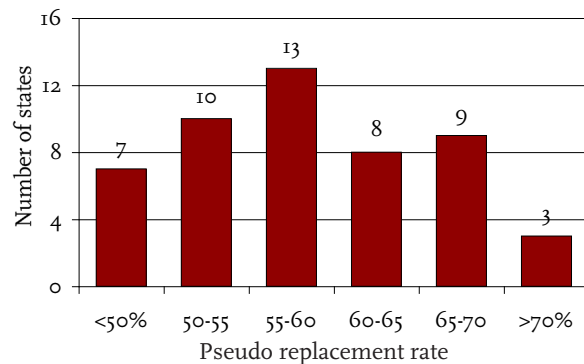
Source: Authors' calculations from the 2007 CPS.

norm over the past thirty years, with a standard deviation around the average rate of participation of about 7 percentage points.

“Replacement Rates”

Our hypothesis is that variations in retirement income security among states play an important role in explaining the variation in labor force participation rates. The traditional measure of retirement security is the replacement rate — the ratio of income in retirement to income just prior to retiring. Given that this analysis uses state — not individual — data, it is necessary to construct a pseudo replacement rate. The measure reported in Figure 3 is the ratio of income for *retired* households age 65-74 to the income of *working* households age 55-64.³ Again, the variation is substantial.

FIGURE 3. DISTRIBUTION BY STATE OF PSEUDO REPLACEMENT RATES, 2007

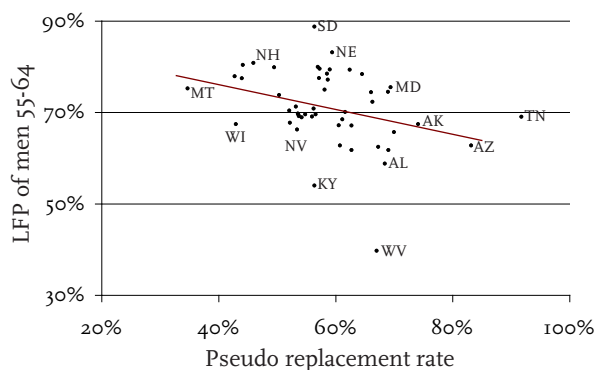


Source: Authors' calculations from the 2007 CPS.

Relationship Between Labor Force Participation and Replacement Rates

Figure 4 on the next page plots the relationship between labor force participation rates and replacement rates for the fifty states. The line is the result of a regression that measures the correlation between the two variables. As expected, it slopes downward — the lower the replacement rate, the greater the labor force participation rate.

FIGURE 4. PSEUDO REPLACEMENT RATE AND LABOR FORCE PARTICIPATION RATE OF MEN AGE 55-64, BY STATE, 2007



Source: Authors' calculations from the 2007 CPS.

Other Factors that Could Affect Labor Force Outcomes

Of course, factors other than replacement rates could affect labor market outcomes for older men. For example, high replacement rates could simply reflect that people in some states have low incomes and are benefiting from the progressivity in the Social Security benefit formula. Their low incomes could be the result of difficult economic conditions, and the reason

they are not working is that the economy is horrible and they cannot find a job. Thus, the weak economy is causing both the high replacement rate and the low labor force participation rate. The only way to ensure that the variation in replacement rates is directly related to the variation in labor force activity of older men is to control for labor market conditions, the nature of employment, and employee characteristics. The following discussion explains how factors in each of these categories could affect the labor force participation rates of older men.

Labor Market Conditions

The strength of the labor market varies across regions. (See Box for breakdown of states by region.) In the Midwest, the labor force participation rate of all individuals aged 16-44 is nearly 80 percent, while the Northeast has participation rates below 73 percent. The measure of labor force participation is purposely broad. The rationale is that while the labor force participation rate of prime-age males is fairly steady across the country, only a strong labor market can absorb a lot of women and young people. The hypothesis is that a tight labor market — measured by high labor force participation rates of younger workers — generally translates into better job opportunities for older workers. Indeed, the relationship does appear to be positive, as shown in Figure 5 on the next page.

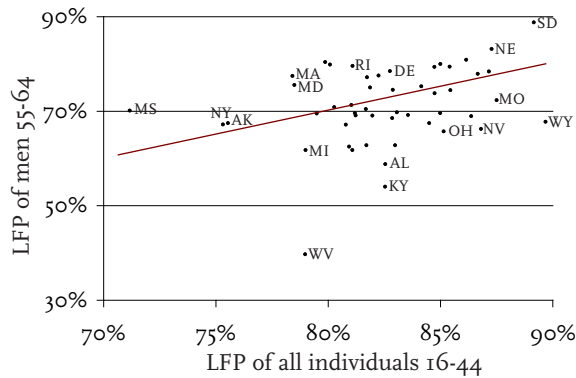
Definition of Geographical Areas, 2007

Region	States	Percent of population
Northeast	Connecticut, Maine, Massachusetts, New Hampshire, Vermont, Rhode Island, New Jersey, New York, and Pennsylvania	18.7
Midwest	Illinois, Indiana, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota	21.9
South Atlantic	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia	18.9
South	Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma, and Texas	17.1
West	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, Alaska, California, Hawaii, Oregon, and Washington	23.3

Note: The Census Bureau presents the data for regions and divisions. This *brief* has broken the “South” region into two parts — the South and the South Atlantic division — in order to keep roughly the same level of population across areas.

Source: Authors' calculations from the 2007 CPS.

FIGURE 5. LABOR FORCE PARTICIPATION RATES FOR MEN AGE 55-64 AND ALL INDIVIDUALS AGE 16-44, BY REGION, 2007



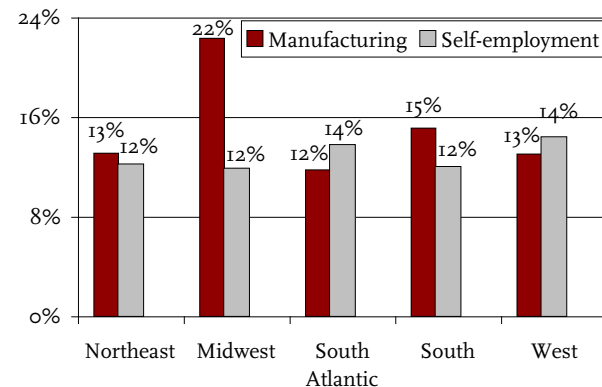
Source: Authors' calculations from the 2007 CPS.

Nature of Employment

Different states offer different employment opportunities for older workers. In the Midwest — which includes traditionally industrial states such as Michigan and Ohio — more than 20 percent of the employed men are in the manufacturing sector (see Figure 6). In other regions, manufacturing is much less important.

The importance of manufacturing in the state economy would be expected to affect labor force participation of older men. But the sign of this relationship is uncertain on theoretical grounds. On the one hand, manufacturing jobs are typically associated with traditional pensions and physically demanding work, both of which create incentives for early retirement. Thus, states with a high manufacturing

FIGURE 6. PERCENT OF THE MALE WORKFORCE IN MANUFACTURING AND SELF-EMPLOYMENT, BY REGION, 2007



Source: Authors' calculations from the 2007 CPS.

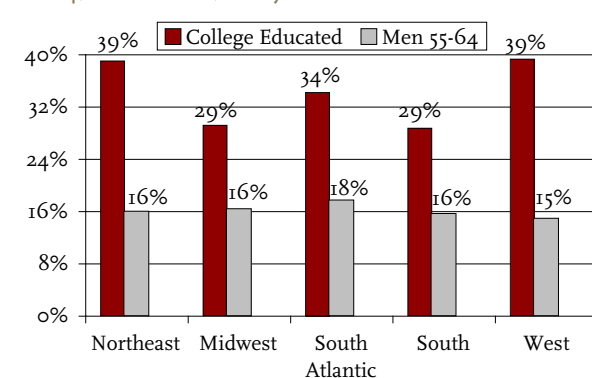
concentration might be more likely to have low labor force participation rates among workers approaching retirement — a *negative* relationship. On the other hand, manufacturing jobs tend to be good jobs, particularly for low-skilled workers. These jobs tend to pay well and offer some degree of security (e.g. through union protection). So, low-skilled workers with manufacturing jobs may find it both more desirable and more feasible to work longer than those who are trying to piece together a living in the lower-paying, non-unionized service sector. In this case, states with a high manufacturing concentration might be more likely to have high labor force participation rates among workers approaching retirement — a *positive* relationship. In fact, other studies generally have found a positive association between manufacturing and labor force participation.⁴

Figure 6 also shows some variation, although less marked, in the share of the labor force that is self-employed across regions, with the South Atlantic and the West having the largest share — about 14 percent. Many workers nearing retirement would prefer flexible hours/partial retirement, which is not an option in most workplaces. Being one's own boss or working in a small business are possible solutions to these concerns. The hypothesis is that states with a higher share of self-employed individuals are more likely to have high labor force participation of workers approaching retirement.

Employee Characteristics

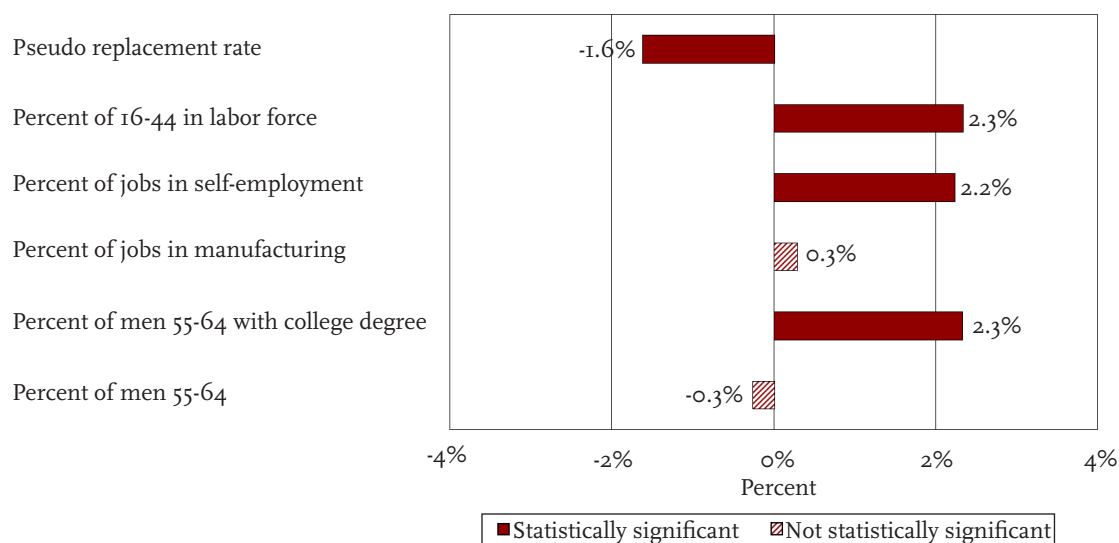
The characteristics of employees vary across regions as well (see Figure 7). The Northeast and the West

FIGURE 7. PERCENT OF MEN AGE 55-64 WITH A COLLEGE DEGREE AND MEN 55-64 AS PERCENT OF MEN 16-64, BY REGION, 2007



Source: Authors' calculations from the 2007 CPS.

FIGURE 8. FACTORS THAT AFFECT THE LABOR FORCE PARTICIPATION OF MEN AGE 55-64, 1977-2007



Source: Authors' calculations using the 1977-2007 CPS.

have the most educated population, with nearly 40 percent of men 55-64 having a college degree. The South and the Midwest have the least, with less than 30 percent of the men 55-64 having graduated from college. College graduates tend to retire later due to delayed entry into the labor force and a less physically demanding work environment.⁵ Thus, the hypothesis is that states with a higher share of college graduates are more likely to have higher labor force participation rates for older men.

Previous research finds that the age distribution of the population has an impact on the wage structure and, thereby, on employment.⁶ The notion is that employers prefer to have a certain mix of old and young workers, since individuals with different labor market experience are imperfect substitutes in the production process. As a result, in states with a large share of their population age 55-64, older workers would be expected to face lower wages. Lower wages can have two opposing effects on labor force participation of older individuals. Individuals might prefer to work less, since low wages reduce the price of leisure — a substitution effect. Alternatively, the low wages might push individuals to work more to compensate for lost income — an income effect.

Empirical Results

To clarify the relationship between labor force participation and replacement rates, we estimate an

equation that includes the control variables for labor market conditions, the nature of employment, and employee characteristics described above, over the period 1977-2007. The results are shown in Figure 8.⁷ The coefficients represent the change in labor force participation rates of men 55-64 in response to a one-standard-deviation change in each of the explanatory variables (see the Appendix for additional estimates and more details).

The results suggest an economically meaningful relationship between replacement rates and labor force participation of older individuals — a one standard deviation increase in replacement rates (about 11 percentage points) reduces labor force participation by about 1.6 percent.⁸ A strong labor market for younger workers, a large percent self-employed, and a highly educated workforce are all positively related to a high labor force participation rate of older workers. The percent of jobs in manufacturing and the percent of men age 55-64 in the working-age population are not statistically significant, perhaps reflecting the dual effects that these variables might have on labor force participation of older men.

The most important message from this equation is that the replacement rate continues to have a statistically significant negative effect on labor market activity of older workers even after controlling for the state of the economy and the characteristics of employers and employees.

Conclusion

The analysis presented in this *brief* suggests a relationship between replacement rates and labor force participation of older workers. While previous studies have found a small statistically significant effect between the level of benefits and the retirement decision, these new findings suggest that replacement rates have an economically meaningful impact on the work activity of older men.⁹ Thus, while the availability of benefits will continue to be an important determinant of retirement, these results imply that older workers may be willing to work longer in response to the coming decline in replacement rates — as Social Security contracts and small 401(k) balances produce meager streams of retirement income.

The results also suggest that regional market conditions are important determinants of the labor force participation of older men. The state of the economy and the characteristics of employers and employees also affect the labor supply decisions of older workers.

Endnotes

1 See Social Security Administration (2006).

2 Differences in labor force participation of women across metropolitan areas have been documented by Odland and Ellis (1998). The variability in labor force participation of men is consistent with the notion of large and persistent differences in employment growth rates across states (see Blanchard and Katz (1992)).

3 The pseudo replacement rate is calculated for households headed by men and excludes single women. In 2007, the average pseudo replacement rate is 59 percent — i.e., the income of retired households age 65-74 is about 59 percent of the income of working households age 55-64.

4 See Edmiston (2006) and Feasel and Rodini (2002). An alternative explanation of the positive association between manufacturing and labor force participation of older workers is that it might be just a spurious relationship: from the late '70s to the early '90s, manufacturing and labor force participation of older men declined at the same time. The correlation between the national level of manufacturing and labor force participation of older men is positive and significantly different from zero for the period 1977-2007. The pooled regression reported in this *brief* — which includes controls for year-specific effects — should eliminate most of this problem.

5 More generally, education is positively associated with labor force participation (see Krueger and Lindahl, 2001).

6 See Triest and Sapozhnikov (2007).

7 For simplicity, the results shown correspond to an ordinary least squares (OLS) regression using pooled data with year dummies on the 50 states for the period 1977-2007. We evaluated an alternative specification to take advantage of the panel nature of the data, using fixed state-specific effects and year dummies. The results from the alternative specification are similar in magnitude and significance to the results reported in Figure 8. For more details, see the Appendix.

8 This coefficient may be biased because the replacement rate variable is not exogenous. If labor force participation is low because low-income workers are leaving the labor force, benefits (the numerator of the replacement rate) will be lower and median wages of those remaining in the labor force (the denominator of the replacement rate) will be higher. A lower numerator and higher denominator imply a lower replacement rate. Thus, low participation and low replacement rates would be positively related, biasing the coefficient in a positive direction. And labor force participation would be determining the replacement rate rather than the replacement rate determining labor force participation as implied by the equation. Another problem emerges if low labor force participation is related to low state-level earnings. In these states, retirement income (the numerator of the replacement rate) will be relatively high because of the progressive nature of the Social Security benefit formula and median wages (the denominator of the replacement rate) will be low. A higher numerator and lower denominator imply a higher replacement rate. Thus, low participation and high replacement rates would be negatively related, but again the direction of causation is just the opposite of that implied by the regression. This problem biases the coefficient in a negative direction. On balance, the net impact of the two endogeneity problems could be offsetting.

9 For more details, see Diamond and Gruber (1997) and Samwick (1998).

References

- Blanchard, Olivier Jean and Lawrence F. Katz. 1992. "Regional Evolutions." *Brookings Papers on Economic Activity* 1(1992-1):1-76. Washington, DC: The Brookings Institution.
- Diamond, Peter and Jonathan Gruber. 1997. "Social Security and Retirement in the U.S." Working Paper 6097. Cambridge, MA: National Bureau of Economic Research.
- Edmiston, Kelly D. 2006. "Workers' Compensation and State Employment Growth." *Journal of Regional Science* 46(1): 121-145.
- Feasel, Edward M. and Mark L. Rodini. 2002. "Understanding Unemployment across California Counties." *Economic Inquiry* 40(1): 12-30.
- Krueger, Alan B. and Mikael Lindahl. 2001. "Education for Growth: Why and for Whom?" *Journal of Economic Literature* 39(4): 1101-1136.
- Odland, John and Mark Ellis. 1998. "Variations in the Labour Force Experience of Women across Large Metropolitan Areas in the United States." *Regional Studies* 32(4): 333-347.
- Samwick, Andrew A. 1998. "New Evidence on Pensions, Social Security, and the Timing of Retirement." *Journal of Public Economics* 70(2): 207-236.
- Social Security Administration. 2006. *Annual Statistical Supplement to the Social Security Bulletin, 2005*. Publication No. 13-11700. Washington, DC: U.S. Government Printing Office.
- Triest, Robert K. and Margarita Sapozhnikov. 2007. "Population Aging, Labor Demand, and the Structure of Wages." Working Paper 2007-14. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- U.S. Census Bureau. *Current Population Survey, 1977-2007*. Washington, DC.

APPENDIX

Data and Methodology for the Regression Analysis

The regression analysis uses data from the 1977-2007 *Current Population Survey* (CPS) to create state-level variables for labor market conditions, the nature of employment, and employee characteristics. The following variables were included in the equation.

- The labor force participation rate of men 55-64 is the ratio of the number of men age 55-64 who report being in the labor force to the number of men age 55-64 in the population.
- The pseudo replacement rate is the ratio of the median income for *retired* households age 65-74 to the median income of *working* households age 55-64. The pseudo replacement rate is calculated for households headed by men and excludes single women.
- Men and women are included in the calculation of the percent of individuals 16-44 that are in the labor force. This calculation is the ratio of individuals age 16-44 that report being in the labor force to all individuals age 16-44.
- The percent of men in self-employment jobs is the ratio of all men age 16-64 who report being self-employed during the last week — as opposed to employed by the government, a private company, or a non-profit organization — to the total number of men age 16-64 who were employed during the week prior to the interview.
- The percent of manufacturing jobs is the ratio of employed men who report working for the manufacturing industry to total state employment.
- The percent of men age 55-64 with a college degree is the ratio of men age 55-64 who report having a college degree to the total number of men age 55-64 in the population.
- The percent of men age 55-64 is the ratio of men age 55-64 to the total population of men age 16-64.

The results of the ordinary least squares (OLS) analysis of these factors are presented in Table A1. The analysis is done on pooled, state-level data — 50 observations per year over 25 years, for a total of 1,250 observations. The regression year dummies control for year-specific effects. The coefficients are generally significant and have the expected signs. The exceptions are the coefficients for manufacturing and the percent of men 55-64, which are not statistically

TABLE A1. FACTORS THAT AFFECT THE LABOR FORCE PARTICIPATION OF MEN AGE 55-64, POOLED REGRESSION, 1977-2007

Variables	Coefficient	T-statistic	Mean	SD
Pseudo replacement rate	-0.14	-9.43	0.59	0.12
Percent of individuals 16-44 in labor force	0.66	12.65	0.86	0.03
Percent of jobs in self-employment	0.52	11.30	0.13	0.04
Percent of jobs in manufacturing	0.03	1.35	0.19	0.09
Percent of men 55-64 with college degree	0.25	9.63	0.22	0.09
Percent of men 55-64	-0.13	-1.44	0.14	0.02
Constant	0.17	3.62		
Year dummies			Yes	
State dummies			No	
R-squared			0.35	
Number of observations			1,550	

Source: Authors' calculations using the 1977-2007 CPS.

different from zero. The magnitudes illustrated in Figure 8 of this *brief* are obtained by multiplying the coefficient by the standard deviation. For example, the effect of a one-standard-deviation change in pseudo replacement rates (-0.016) is calculated as the coefficient (-0.14) times the standard deviation of this variable (0.12).

An extension of the reported equation can control for both state-specific effects and year dummies (see Table A2). This specification is a strong test of robustness for the specification because it includes state-level dummies — which account for time-invariant geographical differences. Under this specification, the signs and magnitudes of the coefficients are comparable to the original specification — the exception is the percent of men 55-64, which becomes positive but still insignificant. The coefficients for pseudo replacement rate, the percent of individuals 16-44 that are in the labor force, and the percent of self-employed workers remain significant. The coefficients are of smaller magnitude, most likely because the pooled regression estimates included effects from unobservable state characteristics.

TABLE A2. FACTORS THAT AFFECT THE LABOR FORCE PARTICIPATION OF MEN AGE 55-64, POOLED REGRESSION, 1977-2007

Variables	Coefficient	T-statistic
Pseudo replacement rate	-0.08	-5.67
Percent of individuals 16-44 in labor force	0.17	2.67
Percent of jobs in self-employment	0.22	3.17
Percent of jobs in manufacturing	0.14	3.24
Percent of men 55-64 with college degree	0.16	5.63
Percent of men 55-64	0.04	0.41
Constant	0.54	9.54
Year dummies		Yes
State dummies		Yes
R-squared		0.26
Number of observations		1,550

Source: Authors' calculations using the 1977-2007 CPS.

CENTER FOR
RETIREMENT
RESEARCH
AT BOSTON COLLEGE

About the Center

The Center for Retirement Research at Boston College was established in 1998 through a grant from the Social Security Administration. The Center's mission is to produce first-class research and forge a strong link between the academic community and decision makers in the public and private sectors around an issue of critical importance to the nation's future.

To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

Affiliated Institutions

American Enterprise Institute
The Brookings Institution
Massachusetts Institute of Technology
Syracuse University
Urban Institute

Contact Information

Center for Retirement Research
Boston College
Hovey House
140 Commonwealth Avenue
Chestnut Hill, MA 02467-3808
Phone: (617) 552-1762
Fax: (617) 552-0191
E-mail: crr@bc.edu
Website: <http://www.bc.edu/crr>

© 2008, by Trustees of Boston College, Center for Retirement Research. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that the authors are identified and full credit, including copyright notice, is given to Trustees of Boston College, Center for Retirement Research.

The research reported herein was supported by a grant from The Atlantic Philanthropies and by a grant from the U.S. Social Security Administration (SSA) funded as part of the Retirement Research Consortium. The findings and conclusions expressed are solely those of the authors and do not represent the views of The Atlantic Philanthropies, SSA, any agency of the Federal Government, or the Center for Retirement Research at Boston College.