

# POLICYNOTE

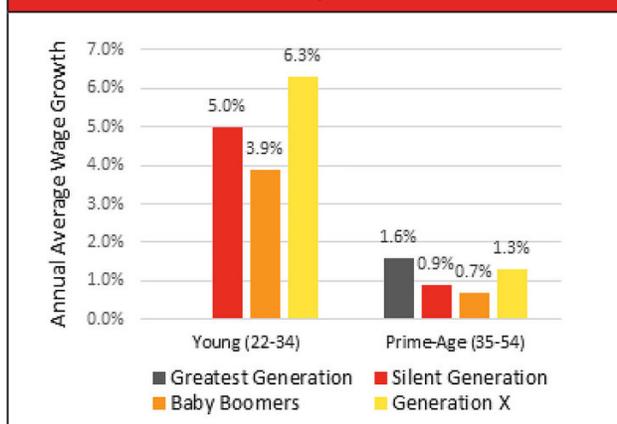
## LARGER BIRTH COHORT LOWERS WAGES

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### ELEVATOR PITCH

Inadequate retirement savings will force millions of older Americans to seek work at older ages. Many who delay retirement will find work, but no study has looked at the effect on wages. This policy brief found being a member of a super-sized birth cohort has depressed Boomers' wages throughout their careers. Labor market crowding caused by Boomers delaying retirement will continue to reduce their wages in old age relative to what would have happened had their share of the labor force declined at the same rate as prior generations. The reduction in wages resulting from the increase in older workers provides a cautionary note to those advocating delayed retirement as a solution to the retirement savings crisis.

**FIGURE 1: ANNUAL EARNINGS GROWTH BY GENERATION AND AGE, HS-EDUCATED MALES**



Source: Authors' calculations using data from the Annual Social and Economic Supplement of the Current Population Survey (CPS ASEC), 1964-2015. Note: Annual average growth in real median earnings of full-time high-school educated males. We lack data for Greatest Generation, ages 22-34.

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### KEY FINDINGS

- Boomers' (born 1948 to 1964) real wages adjusted for inflation grew less than other generations. Boomers' wages grew an average of 3.9% a year when they were young and 0.7% when they were prime-aged, compared to 5.0% and 0.9% for the Silent Generation (born 1925 to 1947) and 6.3% and 1.3% for Generation X (born 1965 to 1982).
- Boomers are staying in the labor force longer than prior generations. Boomers' share of the labor force has declined 27 percentage points in the three decades after the cohort reached their highest share of the labor force, whereas the Silent Generation's share declined 31 percentage points in the three decades after their peak, and the Greatest Generation's share declined by 46 percentage points.
- If Boomers' share of the labor force declined at the same rate as that of the Silent Generation, high school-educated Boomers would have earned \$800 more in 2015, Boomers with some college-level education would have earned \$1,500 more, and Boomers with a college degree would have earned \$1,700 more.

## LABOR SUPPLY AS A WAGE-DECREASING MECHANISM

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This policy brief tests the prediction of economic theory that an increase in labor supply slows wage growth. We found that being a member of an outsize birth cohort reduced wage growth, adding a supersized cohort to the list of reasons why real wages stagnate, including trade penetration and the decline of labor unions.<sup>1</sup>

## BOOMERS' WAGES GREW LESS THAN OTHER GENERATIONS THROUGHOUT THEIR CAREERS

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Boomers experienced slow wage growth when they were young (ages 22 to 34) and prime age (ages 35 to 54). When Boomers were young, their average real wages grew by 3.9 percent a year, which is lower than the rate experienced by smaller generations. Average wages grew 5 percent for the Silent Generation and 6.3 percent for Generation X. Moreover, when Boomers were prime-aged, their wages grew only 0.7 percent a year, lower than any generation in the last 70 years. The Greatest Generation (born 1900 to 1924) experienced 1.6 percent a year wage growth and Generation X's real earnings grew 1.3 percent a year in prime age (Figure 1).

## BOOMERS ARE WORKING LONGER THAN PREVIOUS GENERATIONS

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A generation's share of the labor force typically declines as members age and retire. But the number of older workers 55 and over is expected to grow by 7.2 million between 2014 and 2024 as the outsize Boomer generation stays in the labor market longer than prior generations.<sup>2</sup> Boomers' peak share of the labor force was 55 percent in 1984. In the thirty-one years between 1984 and 2015, their share of the labor force decreased 27 percentage points. In contrast, the Silent Generation's share declined by 37 percentage points in the 31 years after their peak of 43 percent in 1964 (Figure 2).

## BOOMERS' EARNINGS WOULD BE HIGHER IF MORE RETIRED

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This study finds that for all levels of education, a larger birth-year cohort is associated with lower

average earnings. The wage-reducing effect of larger cohort size persists even late in a worker's career. A one percent increase in a cohort's share of the labor force decreases real hourly earnings by 0.5 percent among prime-age high school-educated workers, 0.7 percent for those with some college-level education and 0.6 percent for college graduates.

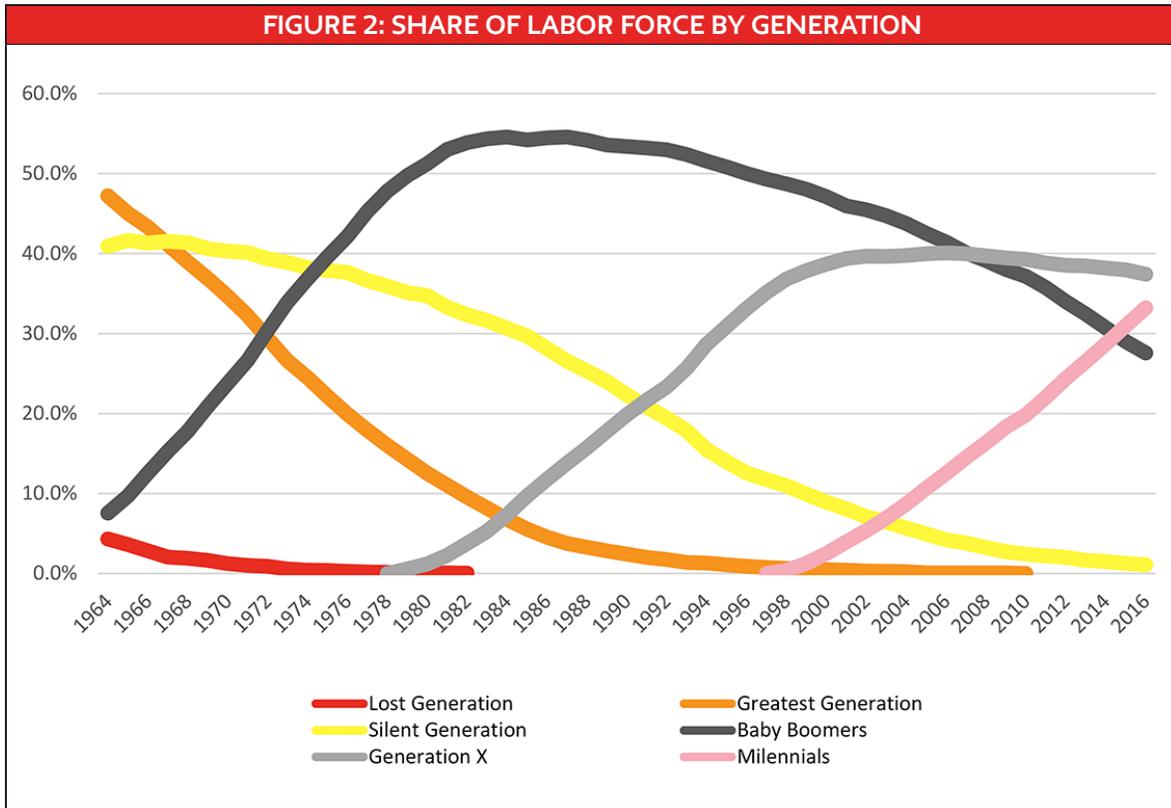
While the relative size of the Boomer generation is lowering their real wages, higher labor force participation in old age is adding downward pressure on Boomers' wages at older ages. This policy brief calculates how much higher Boomers' wages would have been if their share of the labor force had declined at the same rate as prior generations. As an example, we calculate hypothetical 2015 real wages for people born in 1954, who are in the middle of the Boomer generation.

The 1954 birth cohort's share in the labor force peaked in 1984 at 3.8 percent and declined to 2.3 percent by 2015, only a 39 percent drop, compared to the 1934 birth cohort whose share declined by 67 percent in the 31 years after its peak. Had the 1954 cohort's share in the labor force declined at the same rate as the 1934 birth cohort's share, male full-time workers born in 1954 with a high school education would have earned \$800 more than they did in 2015 (\$49,600 instead of \$48,800), those with some college experience would have earned \$1,500 more (\$78,400 instead of \$76,900), and college-educated Boomers would have earned \$1,700 more (\$97,900 instead of \$96,200).<sup>3</sup>

## POLICY RECOMMENDATIONS

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Policies to encourage work at older ages may increase the number of older workers, which increases competition for jobs and suppresses wages for all workers. Providing older workers safe, effective vehicles to save for retirement mitigates the wage-lowering effects associated with increased labor supply in old age. Guaranteed Retirement Accounts (GRAs) would provide all workers a retirement savings account, providing all workers a reliable and secure path to retirement.



Source: Authors' calculations using data from the Annual Social and Economic Supplement of the Current Population Survey (CPS ASEC), 1964 to 2015.

**FIGURE 3: EFFECTS OF BIRTH-YEAR COHORT'S SHARE IN FULL-TIME LABOR FORCE ON MEDIAN REAL HOURLY WAGES**

	High School		Some College		College	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Cohort Size, 0-3 Years of Experience	-.044*	(.019)	-.065*	(.011)	-.057*	(.006)
Cohort Size, 3-6 Years of Experience	-.046*	(.020)	-.060*	(.011)	-.053*	(.007)
Cohort Size, 6-9 Years of Experience	-.045*	(.019)	-.063*	(.011)	-.051*	(.007)
Cohort Size, 9-15 Years of Experience	-.048*	(.019)	-.068*	(.011)	-.054*	(.007)
Cohort Size, 15+ Years of Experience	-.054*	(.020)	-.070*	(.012)	-.057*	(.008)
<b>Experience Spline</b>						
Experience Spline, 0-3 Years of Experience	.098*	(.006)	.145*	(.005)	.131*	(.005)
Experience Spline, 3-6 Years of Experience	.061*	(.005)	.063*	(.004)	.065*	(.006)
Experience Spline, 6-9 Years of Experience	.042*	(.003)	.043*	(.003)	.055*	(.007)
Experience Spline, 9-15 Years of Experience	.032*	(.002)	.037*	(.002)	.036*	(.002)
Experience Spline, 15+ Years of Experience	.009*	(.001)	.011*	(.001)	.013*	(.001)
<b>Time Spline</b>						
Time Spline, 1964-1969	.003	(.003)	.003	(.004)	.014*	(.006)
Time Spline, 1970-1974	-.002	(.004)	-.009*	(.005)	-.013*	(.006)
Time Spline, 1975-1979	-.023*	(.005)	-.037*	(.007)	-.046*	(.008)
Time Spline, 1980-1984	-.013*	(.005)	-.009	(.005)	-.011*	(.006)
Time Spline, 1985-1989	-.001*	(.003)	-.013*	(.003)	-.005*	(.004)
Time Spline, 1990-1994	-.029*	(.003)	-.031*	(.004)	-.023*	(.004)
Time Spline, 1995-1999	-.020*	(.008)	-.025*	(.009)	-.024*	(.008)
Time Spline, 2000-2004	.036	(.023)	.037	(.025)	.043	(.026)
Time Spline, 2005-2009	.063*	(.021)	.066*	(.023)	.072*	(.023)
Time Spline, 2010-2015	-.026*	(.008)	-.035*	(.008)	-.031*	(.008)
<b>Year of Birth</b>						
Year of Birth, Male	-.009*	(.001)	.013*	(.001)	.014*	(.001)
Year of Birth, Female	-.011*	(.001)	.014*	(.001)	.015*	(.001)
<b>Gender</b>						
Female	-.375*	(.033)	-.293*	(.034)	-.325*	(.037)
<b>Constant</b>						
Constant	1.415*		1.133*		1.303*	
n	4346		4346		4344	
r-squared	0.915		0.894		0.889	

\*p < .05

Source: Reproduced from Papadopoulos, Patria & Triest (in press), Figure 1

Notes: Estimation results from instrumental variables regressions.

# APPENDIX

## Methodology for Figures

Figure 1: A generation's share of the labor force in a given year is calculated by dividing the number of workers from that generation by the total labor force in that year.

Figure 2: Wage growth figures presented are annually-compounded growth rates. The starting earnings come from the first year on record in which the median age of the generation is in the age grouping. The ending earnings come from the last year in which the median age of the generation is in the age grouping.

Figure 3: This study estimates three instrumental variable regressions assessing the impact of the size of a worker's birth-year cohort on their wages in their early, middle and late careers. This policy brief provides separate estimates of cohort size effects on earnings for workers with high school education, those with some college, and those with at least a 4-year college degree. This study assumes that a worker's decision to seek additional education is unaffected by demographically-induced changes in relative wages. This study uses relative cohort size for all education groups as an instrument for relative cohort size within education groups.

Observations are defined by groups of workers with the same education, age (22 to 62) and survey year (1964 to 2015). The dependent variable is the natural log of median real hourly wage of full-time, full year workers (at least 35 hours a week and 45 weeks a year). The independent variables are cohort size (as measured by the size of full-time birth-year cohort divided by the entire full-time

labor force in that survey year), years of potential labor market experience split into five splines, year splines (meant to capture changes in economy-wide productivity), gender, and birth year interacted with male and female dummy variables. See methodology and appendix of Papadopoulos, Patria & Triest (in press) for calculation of potential labor market experience.<sup>4</sup>

## Notes and Bibliography

1. Mishel, L. (2015). Causes of wage stagnation. Retrieved from <http://www.epi.org>.
2. Ghilarducci, Teresa, Papadopoulos, Michael, and Radpour, Siavash. 2017. "Relative Wages in Aging America: The Baby Boomer Effect" Schwartz Center for Economic Policy Analysis and Department of Economics, The New School for Social Research, Working Paper Series 2017-5.
3. Median hourly earnings for males with some college education born in 1954 were \$38.45 in 2015. This policy brief's counterfactual situation is that the 1954 cohort's share in the labor force decreases by an additional 28 percent. The model in Figure 3 estimates that a 1-percent decline in labor force share is associated with an 0.070 percent increase in real wages of college educated workers.  $28 * 0.070\% * \$38.45$  is approximately \$0.75 a hour, or \$1,507 over the course of a 2,000 hour work year.
4. Papadopoulos, M., Patria, M., & Triest, R. (2017). Population aging, labor demand, and the structure of wages. The Geneva Papers on Risk and Insurance – Issues and Practice, 42(3).

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