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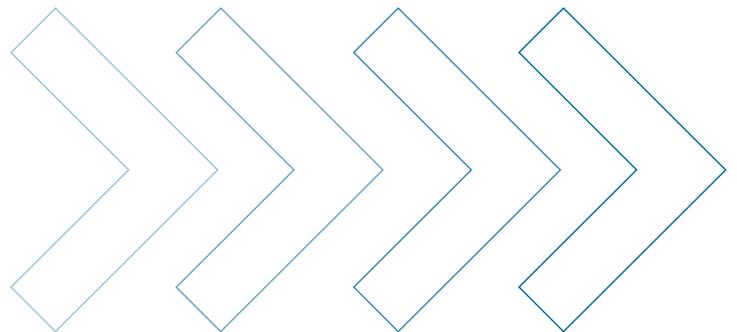
In The Public Interest

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475 N. Martingale Road, Suite 600
Schaumburg, Ill 60173-2226
Phone: 847.706.3500 Fax: 847.706.3599
www.soa.org

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Michael L. Stephens, ASA

Newsletter Editors

Jeffery M. Rykhus, FSA, MAAA
jrykhus@gmail.com

Bruce Schobel, FSA, MAAA
bdschobel@aol.com

Program Committee Coordinators

Christopher Merkel, FSA, MAAA
2019 Health Meeting Representative

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Douglas Fiddler, ASA, EA, FCA, MAAA
Webcast/Podcast Coordinator

SOA Staff

Joe Wurzburger, FSA, MAAA, Staff Partner
jwurzburger@soa.org

Ladelia Berger, Section Specialist
lberger@soa.org

Julia Anderson Bauer, Publications Manager
jandersonbauer@soa.org

Sam Phillips, Staff Editor
sphillips@soa.org

Julissa Sweeney, Senior Graphic Designer
jsweeney@soa.org

EDITORIAL CORRECTION

On page 5 of the July issue of *In The Public Interest*, the figure titles for Figures 1 and 2 were reversed. Figure 1 should have been titled "Age Distribution of California Teachers" instead of "Accrued Service Years Among California Teachers" and vice versa for Figure 2. The editorial staff of *In The Public Interest* apologizes for the errors and any confusion they caused.

Chairperson's Corner

By Piotr Krekora

“Social Insurance and Public Finance.” I was thinking about the name of our section many times during the two years I have been with the section council. I must confess that I had moments, several months ago, when I feared that by the end of my term on the council the “social insurance” part would be forgotten and we would be consumed by topics related to “public finance.” In particular, issues related to public sector retirement programs. I was having those thoughts because of a relative disproportion in the number of topics sparking spirited debates both within our profession and among the broader public that were related to public sector pensions as compared to federal social insurance programs.

Issues such as the level of risk taken by programs sponsored by governmental employers, governance or benefit adequacy seemed to have been attracting more attention than uncertainties surrounding the future of programs like Medicare, Medicaid or Social Security. Our section activities reflected that disproportion. We sponsored webcasts and wrote articles presenting multiple viewpoints on challenges facing public sector retirement plans. But what is as important to me, my fellow council members did not let the “social insurance” part disappear from our minds. We recruited prominent speakers to talk about Social Security, great authors to write about Medicaid and the Affordable Care Act, and let's not forget about our very own Bruce Schobel who continued contributing articles to our newsletter on various aspects of Social Security.

The coming year shapes up to be no different, courtesy of the Actuarial Standards Board (ASB) who undertook an effort to revise Actuarial Standard of Practice (ASOP) No. 4—“Measuring Pension Obligations and Determining Pension Plan Costs or Contributions.” Many of us practicing in the retirement area took some time earlier this summer to study the recently issued exposure draft for ASOP No. 4. One addition to the standard included in that document has been triggering particularly heated discussions. I am referring to a proposed requirement that actuarial funding valuations “disclose an obligation measure to reflect the cost of effectively defeasing the investment risk of the plan.” The proposed revision refers to that measure as the investment risk defeasement measure (called by some community members as IRDM). We certainly appreciate the importance of improvements to our professional standards, but

we already know that this is a divisive topic, and we know that the debate will continue regardless of the direction taken by the Actuarial Standards Board. Given the concentration of talent and expertise among our council members and friends, I am looking forward to our contribution to a conversation on those proposed revisions, but at the same time I trust that our public finance activities will not be limited to just that topic.

We are fortunate to have a current employee of the Social Security Administration joining our council this term.

I am also looking forward to our efforts to provide our section members, as well as actuaries who have not yet joined our section, with information and food for thought on social insurance programs. We are fortunate to have a current employee of the Social Security Administration joining our council this term. I am counting on his expertise to keep a steady supply of content on Social Security-related topics.

Furthermore, we want to hear from actuaries (and non-actuaries) with knowledge of social insurance programs outside of the United States to help us improve our understanding of how our federal programs compare with global initiatives. In particular we are counting on our section members based outside of the United States. We would like to provide an opportunity for exchange of information and sharing of experiences with the intention of, as Steve Bryson, one of my predecessors aptly put it, “improving the financial health of our public security systems, and, in the pursuit of that goal, somehow making this planet a better place in which to live.”

As such, I am inviting all actuaries and friends to share your knowledge with the profession. Submit an article, propose a webcast, or volunteer to speak at the one of the SOA's meetings.

Finally, please consider joining us in our efforts in leading this section. You can start any time by becoming a Friend of the Council and, if you like it, run for the council next summer. If this sounds like something you would like to do, please do not hesitate to contact me, any of the council members, or the SOA staff. ■



Piotr Krekora, ASA, EA, FCA, MAAA, Ph.D., is a consulting actuary with the Fort Lauderdale, Fla., office of Gabriel, Roeder, Smith and Company. He can be reached at Piotr.Krekora@GRSConsulting.com.

Lower Premiums in 2019 ACA Markets: What's the Actuarial Explanation?

By Greg Fann

For the first time, average premiums on the individual Affordable Care Act (ACA) marketplaces are decreasing in 2019. It's no surprise that this was a surprise to many who follow the dynamics of this market. The conventional wisdom is that President Trump has been less than supportive of the ACA, and that his actions would largely harm the market and further aggravate already-increasing premiums. But 2019 premiums are down 2 percent¹ on average in the federal exchange markets? What's the explanation here?

The retrospective media groupthink has been that insurers overshot rates in 2018 due to a vague notion of "market uncertainty" and that such uncertainty was ultimately not as bad as predicted. It logically follows that there is not really any good news to report, and that 2019 rate reductions are simply a classic rating correction from 2018. There have also been several news reports purporting that issuers have recently become smarter and better understand how the market works, enabling them to now be profitable.

You may have picked up on my skepticism. I wouldn't easily digest that large investment firms who lose billions of dollars in one year and regain it in the next have suddenly become smarter investors. I would look for favorable changes in the market that may have caused the fortunate shift. I don't think it's too much to ask that we evaluate insurance markets the same way.² As for "general uncertainty," I prefer a little more precision. What were issuers uncertain about that might have impacted their rates? In this article, I explore the recent changes in the ACA marketplace and what issuers may have missed in developing premium rates in 2018. A proper understanding of these dynamics may foster better rate predictability and avoid surprises and the need for speculative explanations in the future.

BACKGROUND

Enacted by Congress in 2010, the ACA brought numerous changes to health care markets, the most notable being

the transformation of the individual health market from a lower-risk, medically underwritten, market to a higher-risk guaranteed-issue market without pre-existing condition exclusions or health status as an allowable rating factor. To provide enrollment incentives, federal subsidies of varying amounts were made available to some enrollees to offset the high cost of premiums and cost sharing. Due to these targeted subsidies, the size of the individual market has grown significantly for some segments of the eligible population. With initially high ACA rates and high premium increases each year, issuers have struggled to enroll and renew other segments of the market, particularly those ineligible for premium subsidies. As the market is extremely price sensitive, a mechanical understanding of the premium and subsidy dynamics provides the right frame of reference to appreciate enrollment dynamics, and consequently premium rates and profitability results.

INCENTIVES AND DISINCENTIVES

Unlike other government entitlements programs, ACA markets provide eligible enrollees with a more diverse mix of incentives. In Medicare and Medicaid markets, the level of government support in funding the health care costs or provision for premium payments is generally high enough to incent enrollment across a broad population. This is not the case in ACA markets.

Unlike Medicare and Medicaid, the ACA modified a current market rather than creating a new one. The intent was to alter the rules in the current individual market and provide federal assistance to targeted groups. This assistance was limited, largely for political considerations to maintain a proclamation of deficit neutrality in order to achieve the necessary votes in Congress.

As the ACA put upward pressure on rates, this new funding became critical. Fortunate for some and unfortunate for others, federal assistance does not align with price changes due to the ACA. This created strong but unbalanced incentives. This has resulted in a skewed enrollment distribution in the market. The detailed mechanics of the ACA are discussed in an article³ in the September 2016 edition of this newsletter. Building from an illustrative example in that article, we consider hypothetical pre-ACA rates that will be used as a basis for incentive comparisons. The rates in Figure 0 reflect premiums for a relatively healthy group of people at two different ages; also note that the premium difference between ages is 5:1 rather than the ACA-mandated 3:1 range. These rates may be described as "actuarially-based," or "fair" and "equitable" as defined in Actuarial Standards of Practice 12.⁴ As they are not constrained by ACA regulations, the premium rates generally reflect the expected costs. ACA Metal levels (Bronze, Silver, Gold) are used to correspond to actuarial value in ACA markets. 'A' and 'B' are representative of two different companies.

Figure 0
Pre-ACA Monthly Premium

Age	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
24	180	210	240	200	233	267
64	900	1050	1200	1000	1167	1333

Figure 1
Gross Monthly Premium (ACA 2014)

Age	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
24	270	315	360	300	350	400
64	810	945	1080	900	1050	1200

Figure 2
Subsidy Calculation (ACA 2014)

Age	Income	Maximum Subsidy Calculation	Maximum Contribution	Premium Subsidy
24	48,000	7.50%	300	50
64	48,000	7.50%	300	750

Figure 3
Net Monthly Premium (ACA 2014)

Age	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
24	220	265	310	250	300	350
64	60	195	330	150	300	450

Figures 1-3 are directly from the previous article (with the addition of Gold plan options for additional clarity) and illustrate the incentives in the ACA framework. Specifically, the market is more attractive to older adults who are eligible for premium subsidies. The implications of the subsidy structure are discussed at length in the previous article. “ACA 2014” is used as a title to later distinguish initial premium dynamics with changes effective in 2018.

Figure 1 illustrates the gross monthly premiums for two sample companies, A and B, offering plans in the three lowest-value tiers to sample individuals. Bronze is the lowest tier; Silver is the second-lowest tier; Gold is the third-lowest tier.

Figure 2 illustrates the subsidy calculation for a particular income level and age. This is determined by calculating the maximum monthly contribution that an enrollee pays for the benchmark plan (the second-lowest-cost silver tier plan, or ‘B Silver’). Assuming the maximum contribution percentage of 7.50 percent for an individual with an income of \$48,000 (reasonable approximation but not representative of any year),

the maximum monthly contribution for that individual is \$300 [$\$48,000 \times 7.50\% / 12$]. The calculated subsidy is the gross monthly premium of the benchmark plan minus the \$300 maximum contribution from the enrollee.

Figure 3 illustrates the net monthly premiums that enrollees pay for each plan in the market after subtracting the subsidy from the gross monthly premiums.

CSR BACKGROUND AND IMPACT

In 2017, President Trump inherited a new health care marketplace that was less than half the size as originally projected despite being promoted on an unprecedented scale, comprised of a highly skewed older and sicker population, and gradually declining in terms of both consumers and insurers.

The new administration has its first opportunity to put its fingerprints on the annual ACA regulation for 2019, as the previous administration accelerated the 2018 timing to extend President Obama’s influence as long as possible. Nonetheless,

Figure 4
Gross Monthly Premium (ACA 2018)

Age	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
24	270	378	360	300	420	400
64	810	1134	1080	900	1260	1200

Figure 5
Subsidy Calculation (ACA 2018)

Age	Income	Maximum Subsidy Calculation	Maximum Contribution	Premium Subsidy
24	48,000	7.50%	300	120
64	48,000	7.50%	300	960

Figure 6
Net Monthly Premium (ACA 2018)

Age	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
24	150	258	240	180	300	280
64	0	174	120	0	300	240

President Trump acted in other arenas and had significant influence in 2018.

In addition to inheriting a challenging health insurance marketplace, the new president also inherited several related lawsuits. One dealt with the reimbursement of cost-sharing reduction (CSR) payments to issuers in the individual market. In addition to premium subsidies, CSR payments are a federal funding element used to subsidize health care costs of low income individuals. CSRs reduce cost-sharing (i.e., deductibles, coinsurance, copayments, out-of-pocket limits) for individuals with incomes up to 250 percent of the Federal Poverty Level (FPL). CSR payments are viewed by many stakeholders as a critical component of the ACA. If the payments are not funded by the government, insurers are still obligated to provide additional benefits to eligible enrollees and will consequently need to raise premiums to offset the lack of funding.

In 2014, the House of Representatives sued the Obama administration on Constitutional grounds, claiming that the administration funded CSR payments which were never appropriated by Congress. In 2016, the federal district court for the District of Columbia ruled that the payments were unconstitutional. The decision was stayed, which allowed the payments to continue while the White House appealed the decision. President Trump continued allowing the payments until late 2017, which he stopped per a recommendation from the Department

of Justice. The timing was very tight, but it allowed issuers to reflect the defunding in 2018 premium rates. Most states allowed issuers to properly reflect the CSR defunding impact in 2018; other states have allowed this reflection in 2019.

The impact of this change provided a boost to the market as the mathematical implications of the defunding causes premium subsidies to increase more than premiums, reducing the net premiums that subsidized enrollees have to pay, benefiting the market and resulting in more attractive options for prospective enrollees.⁵ Continuing with our example, Figures 4–6 mirror Figures 1–3 but reflect 20 percent higher Silver premiums to offset the CSR defunding. The title “ACA 2018” is used to signify the new market dynamics.

In Figure 4, note that the higher benefit Gold plans are priced lower than the Silver plans; this has occurred in many markets.

As the premium subsidy is triggered from the second-lowest Silver plan, the calculated subsidy in Figure 5 is higher than Figure 2.

As the premium subsidy is higher, the net premiums in Figure 6 are generally lower than Figure 3. The exception is the second-lowest Silver benchmark plan which remains the same as an enrollee’s required contribution for the benchmark plans is preserved. It should be noted that Bronze plans are free in this scenario and Gold plans net prices are lower than Silver plans.

Figure 7
CSR Impact

Age	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
24	-70	-7	-70	-70	0	-70
64	-60	-21	-210	-150	0	-210

Figure 8
Age 24 Summary

Age 24	Unsubsidized Enrollee						Subsidized Enrollee					
	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
Pre-ACA	180	210	240	200	233	267	180	210	240	200	233	267
ACA 2014	270	315	360	300	350	400	220	265	310	250	300	350
ACA 2018	270	378	360	300	420	400	150	258	240	180	300	280

Figure 9
Age 64 Summary

Age 64	Unsubsidized Enrollee						Subsidized Enrollee					
	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
Pre-ACA	900	1050	1200	1000	1167	1333	900	1050	1200	1000	1167	1333
ACA 2014	810	945	1080	900	1050	1200	60	195	330	150	300	450
ACA 2018	810	1134	1080	900	1260	1200	0	174	120	0	300	240

Figure 10
Age Ratios

	Unsubsidized Enrollee						Subsidized Enrollee					
	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
Pre-ACA	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
ACA 2014	3.00	3.00	3.00	3.00	3.00	3.00	0.27	0.74	1.06	0.60	1.00	1.29
ACA 2018	3.00	3.00	3.00	3.00	3.00	3.00	0.00	0.67	0.50	0.00	1.00	0.86

Moving to an analysis phase, Figure 7 illustrates the CSR impact on net premium rates. The CSR-induced premium reduction for Age 64 is logically three times as much as Age 24 except where the reduction is capped at a zero-dollar net premium.

Figures 8 and 9 compare the premiums for unsubsidized and subsidized enrollees Age 24 and Age 64 for all three market environments. The rate relationships shown here are helpful in understanding the enrollment dynamics changes in 2014 and 2018.

Figure 10 demonstrates the relationship of the varying age ratios for subsidized ACA enrollees. The ACA compressed the age ratio to 3:1; it varied pre-ACA, 5:1 has been suggested as an ACA alternative. For subsidized enrollees, the ratio is 1:1 for the benchmark plan and older enrollees actually pay less than younger enrollees for lower value plans (and higher value plans in 2018).

Using a color-coded scheme to represent market attractiveness, the color blue represents lower rates from a previous market

Figure 11
Market Attractiveness of ACA 2014 Market relative to Pre-ACA Market

	Unsubsidized Enrollee						Subsidized Enrollee					
	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
Age 24												
Age 64												

Figure 12
Market Attractiveness of ACA 2018 Market relative to Pre-ACA Market

	Unsubsidized Enrollee						Subsidized Enrollee					
	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
Age 24												
Age 64												

Figure 13
Market Attractiveness of ACA 2018 Market relative to 2014 ACA 2014 Market

	Unsubsidized Enrollee						Subsidized Enrollee					
	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold	A Bronze	A Silver	A Gold	B Bronze	B Silver	B Gold
Age 24												
Age 64												

environment, grey indicates higher rates, and light blue indicates no change.

Figure 11 indicates that the ACA was attractive for Age 64 individuals and unattractive at Age 24. Closer examination of Figures 8 and 9 illustrate that the ACA intuitively benefitted subsidized individuals more.

Figure 12 indicates that Bronze plans in the revised ACA market are attractive (relative to pre-ACA market) for Age 24 individuals. This is due to the CSR-induced additional premium subsidies. It also illustrates unsubsidized Silver premiums are unattractive at all ages, hence the recent migration away from Silver plans. Migration is also occurring for subsidized enrollees (except those who desire CSR benefit) as Bronze and Gold plans are priced more attractively than Silver plans.

Figure 13 isolates the CSR impact and compares the revised ACA market to the original ACA market. For unsubsidized enrollees, Silver premiums have increased and enrollees are

advised to migrate from Silver plans. While not included in this illustration, off-exchange Silver plans may not have the CSR-induced premium load; in that case, there would be no change from 2014. For unsubsidized enrollees, premiums are favorable in all scenarios except the benchmark plan. The lower cost Silver plan is negligibly favorable; while not shown, a higher cost Silver plan would be negligibly unfavorable.

In summary, President Trump's CSR defunding has changed the net premium dynamics for subsidized enrollees. The market is now more attractive and the proportion of enrollees who are subsidized will continue to grow. While ACA premiums rates have favored older enrollees, the new premium subsidy dynamics has made the market more attractive for younger individuals eligible for premium subsidies. The profitability of issuers in 2018 and the rate decreases in 2019 might indicate that the risk mix has shifted more than issuers anticipated. Premium rates in 2020 will be fully based on 2018 experience; let's not be surprised if rate increases remain low.



THE LARGER MARKET IN 2019

2019 marks the beginning of the repeal of the individual mandate penalty and easier access to alternative products. This has raised concerns from ACA proponents of a bifurcated market segmented by health status. In reality, the market is largely bifurcated by income without attractive options for individuals ineligible for premium subsidies. While alternative options won't directly help the ACA market, they may provide insurance to consumers who would otherwise be uninsured. These alternative option plans could provide some satisfaction to consumers without an ACA solution, and could calm the "ACA repeal" waters by lessening the number of people without reasonable insurance options.

2018 profitability is at record levels⁶, and more issuers are returning to the ACA markets in 2019. Under the CSR-induced subsidy structure, about 80 percent of enrollees can access a Bronze plan for less than \$75, some of whom have free options. In the 35 continuous federal exchange states, the number of issuers is up 19 percent in 2019 after a 30 percent reduction in 2017 and a 20 percent reduction in 2018.⁷ In the previous article, I had highlighted the non-financial pressures, stating "health plan participation in this high profile market is more

involved than an isolated business decision based on a financial forecast. There have been external pressures for health plans to participate in the ACA marketplace since program inception."⁸ With the exception of a single issuer remaining in a state, those pressures are mostly gone. Issuers entering the marketplace now believe there is a real profit opportunity and potential for long-term sustainability.

There are also promising opportunities on the horizon with updated guidance⁹ on Section 1332 waivers. Within limits, states can waive some of the ACA's provisions and develop innovative solutions.¹⁰ The previous guidance was constrained and not many states have tapped into the real benefits here. The federal government is spending more than \$13K¹¹ per incremental enrollee in the ACA market (compared to 2013); a more strategic allocation of subsidy dollars could go a long way toward creating more vibrant marketplaces. Waivers must consider the expected impact versus the market absent the law. That includes changes that are not yet evident in data (e.g., CSR changes, individual mandate, etc.). On balance, these changes will require a more thoughtful approach but should open up new opportunities for states seeking additional improvements in their ACA markets.

CONCLUSION

ACA market rates dropped for the first time in 2019. This is a reflection of issuers expecting lower costs in the market than they have in the past. Some of this is due to an expected more favorable risk mix; some of it may also be due to new or returning issuers who have a lower cost structure.

The individual market is extremely price sensitive. When unexpected changes in enrollment or prices occur, it is helpful to understand what dynamics may have precipitated a market change. In 2018, it was the defunding of CSR payments. The illustrative examples in this article demonstrate how the marketplace is now friendlier to subsidized enrollees via higher premium subsidies, and notably now more attractive to young adults eligible for subsidies. The magnitude of the CSR-induced market change may have been the largest uncertainty in the 2018 premium rates.

The calculations in this article reflect actual market mechanics, but many of the inputs are illustrative and not indicative of premiums in a particular market. Realistic market-specific inputs may be substituted and will likely show similar results. The record profitability in 2018 and lower rates in 2019 don't suggest that issuers' market intelligence has changed; they don't suggest that issuers erroneously believed the market would get worse; they suggest that the market is actually better. At least that's one actuary's explanation, with some numbers to go along with it. ■



Greg Fann, FSA, FCA, MAAA, is a senior consulting actuary with Axene Health Partners LLC (AHP) in Temecula, Calif. He is also the treasurer for the Social Insurance and Public Finance Section Council. He can be reached at greg.fann@axenehp.com.

ENDNOTES

- 1 <https://aspe.hhs.gov/system/files/pdf/260041/2019LandscapeBrief.pdf>
- 2 I'm expecting to receive hate mail about the underwriting cycle.
- 3 <https://www.soa.org/Library/Newsletters/In-Public-Interest/2016/september/ipi-2016-iss13.pdf>
- 4 Rates are "fair" or "equitable" if "Rates reflect material differences in expected cost for risk characteristics." http://actuarialstandardsboard.org/wp-content/uploads/2014/07/asop012_101.pdf
- 5 http://axenehp.com/wp-content/uploads/2017/08/ahp_inspire_20170809.pdf
- 6 <https://www.kff.org/health-reform/issue-brief/individual-insurance-market-performance-in-mid-2018/>
- 7 <https://aspe.hhs.gov/system/files/pdf/260041/2019LandscapeBrief.pdf>
- 8 <https://www.soa.org/Library/Newsletters/Health-Watch-Newsletter/2014/may/hsn-2014-iss-75-fann.aspx>
- 9 <https://s3.amazonaws.com/public-inspection.federalregister.gov/2018-23182.pdf>
- 10 <https://www.soa.org/Library/Newsletters/Health-Watch-Newsletter/2016/may/hsn-2016-iss-80-fann.aspx>
- 11 <https://aspe.hhs.gov/system/files/pdf/260041/2019LandscapeBrief.pdf>



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In Memory of Dr. Jeremy Gold

By Evan Inglis & Mitchell Serota



Dr. Jeremy Gold

Dr. Jeremy Gold, former vice president of the SOA, passed away peacefully in his sleep on July 6, 2018 at age 75. His deep knowledge of finance, wit and outspoken style made him arguably the most influential actuary in our time. The last decades of his career were dedicated almost exclusively to providing better actuarial information to the public, especially with regard to government sponsored pension plans.

Jeremy had a profound impact on the pension actuarial profession and was one of the first actuaries to work on Wall Street. Jeremy would relay the story that when he started at Morgan Stanley, he was told that he had a solid understanding of liabilities, but needed to learn more about assets. Jeremy's eventual realization was that, in fact, he knew very little about liabilities until he came to understand assets and investment principles better.

These experiences led him to the epiphany that traditional actuarial methods conflicted with basic principles of finance and economics. In order to fully understand the economic theory the profession had not adopted, Jeremy left his career at

Morgan Stanley to enroll at the Wharton School of Business at the University of Pennsylvania. He received his Ph.D. in Pension Finance in 2000.

Filled with knowledge not yet widely available to the pension actuarial community, Jeremy began to suggest that pension actuaries modify their practice to conform with accepted economic theory. Not surprisingly, he soon became a controversial figure to those actuaries reluctant to adapt. To those in the public pension world who favored the status quo, he became a target of derision. Those who disagreed with him painted him as an enemy of defined benefit plans, which was inaccurate. In fact, he had two parents who were teachers that benefited from pension plans, and Jeremy was fighting to sustain pension plans through better design, funding and investment practice.

However, practitioners on both sides of the "Great Debate," as it became known, respected his energy, intellect, debating skills and desire to advance actuarial practice. His thorough grasp of Financial Economics enabled him to effectively propose and defend his point of view, which he did in a continual stream of articles, speeches, papers and interviews. Many actuaries became smarter about the work they did through reading his ideas and personal interactions with him. In personal discussions, Jeremy would call on his seemingly limitless reservoir of knowledge about finance, investments and markets to make his points.

Jeremy was a public figure but produced many in-depth research pieces built on his strong academic credentials. He presented a modern corporate finance view of pension costs and risks in his 2003 seminal paper, "Reinventing Pension Actuarial Science," co-authored with Larry Bader. But well before earning his doctorate, he wrote one of the earliest papers on what is now called "liability-driven investing" (LDI) with Richard Bookstaber ["In Search of the Liability Asset," *Financial Analysts Journal*, 1988, <https://www.cfapubs.org/doi/abs/10.2469/faj.v71.n1.3>].

He was quoted often in the national press, especially with regard to pension plans sponsored by state and local governments where proper liability measurement has been a contentious issue. He testified for Congress, the FASB, the GASB and for the ERISA Advisory Council.

Jeremy was born in Brooklyn and accepted to MIT at the age of 16. He was distracted by, among other things, trying to perfect his skill at pool, and left MIT after three years. He eventually obtained a bachelor's degree from Pace University. He worked at both life insurance and pension consulting firms, landing at Buck Consultants until the mid-1980s when he moved on to work at Morgan Stanley. He worked at Morgan Stanley for four years before leaving to earn his Ph.D. and then create his own practice.

Jeremy Gold left a legacy of change in our profession by challenging accepted norms and continually learning, experimenting and teaching.

Jeremy was a regular speaker at actuarial conferences and he served as a Society of Actuaries Board member (2006–2009) and vice president (2011–2013). He twice won the SOA's Redington Prize for best investment research paper by an actuary—once for “Reinventing Pension Actuarial Science,” and again for “The Intersection of Pensions and Enterprise Risk Management” in 2008. He cofounded and chaired the Financial Economics Task Force (later renamed the Pension Finance Task Force) and was vice chair of the American Academy of Actuaries Pension Practice Council.

The problems confronting public pension plans engaged him, starting in the early 2000s, for the remainder of his life. He was able to see his influence upon the practice when the Actuarial Standards Board decided, in principle, to include a market value of liabilities in every pension funding valuation report. His quest to advance actuarial practice continued until he ran out of energy due to illness.

In 2016, Jeremy was diagnosed with MDS—a rare form of cancer—and accepted his fate of impending death somewhat matter-of-factly. In 2017, when he informed friends and professional colleagues about his fate, he joked that “I’m either still in denial or I went straight to acceptance.” His sense of humor helped people discuss his situation with him without feeling awkward.

Late in 2017, his energy already depleted by his illness, Jeremy brought together more than a hundred family members, friends and professional colleagues for a “toast/roast” in New York. He observed that all these people would normally gather at his funeral, but he would not be able to hear what they had to say, and he did not want to wait. His lifelong gang of friends “the LESBAR (Lower East Side Boys Annual Reunion)” joined family members, academics and actuaries. As people shared stories, and poked good-natured fun, the attendees celebrated his full personal and professional life. Indeed, the speeches revealed that he lived his life in many dimensions: from family to life-long friends to actuarial colleagues, academic colleagues and investment colleagues. Listening to representatives from each dimension revealed that no one knew Jeremy in his entirety. He was truly complex and the challenge of knowing him was to keep up with him.

Jeremy Gold left a legacy of change in our profession by challenging accepted norms and continually learning, experimenting and teaching. He will be missed, but his accomplishments and influence will live on in the practice of the many actuaries who benefited from knowing him and by those who read his brilliant works. His passing was honored with obituaries in both *The Wall Street Journal* and the *New York Times*. ■



Evan Inglis, FSA, EA, CFA, worked closely with Jeremy Gold as part of the Pension Finance Task Force and during their terms on the Board of Directors for the SOA. Evan counted Jeremy as a teacher, mentor and friend.



Mitchell Serota, FSA, MAAA, EA, Ph.D., has had the honor of knowing Jeremy Gold since 1983 when they were on an SOA panel together in Vancouver. For the next 35 years, Mitch listened intently during their lengthy conversations because Jeremy gave him no other option.

Mandatory Social Security Coverage of State and Local Government Employees

By Bruce D. Schobel

In 2019, nearly all employees of private-sector corporations in the United States, as well as U.S. nationals working for U.S. employers or certain foreign subsidiaries of U.S. employers, are **mandatorily** covered by the U.S. Social Security program. Almost none of these employees (or their employers) has any choice in the matter. The law requires that they participate in Social Security and pay the mandatory payroll taxes. (Eligible retirees are not required to apply for benefits, but nearly all do eventually!) Mandatory Social Security coverage is also imposed on nearly all self-employed individuals who file U.S. income-tax returns and have net earnings from self-employment exceeding a *de minimis* amount. Federal Government employees hired since Jan. 1, 1984, and a small number of very high-level employees (e.g., members of Congress and Federal judges) hired before that date are mandatorily covered, as well.

Employees of state and local governments are different and follow their own special rules. Because of constitutional concerns regarding the Federal Government's ability to tax states (as employers, in the case of Social Security coverage), employees of state and local governments can be covered by Social Security in only two ways under present law:

1. Mandatorily for employees working in positions that are **not** covered by an employer-sponsored retirement plan deemed to be "comparable" to Social Security, or
2. voluntarily, for employees working in positions that are covered by a "comparable" employer-sponsored retirement plan.

In the first situation, mandatory coverage of state and local government employees not covered by a retirement plan comparable to Social Security was enacted into law by section 11332 of the Omnibus Budget Reconciliation Act of 1990 (Public Law 101-508), with an effective date of July 2, 1991. The relevant subsection of the Internal Revenue Code is 3121(b)(7)(F).



Notwithstanding constitutional limitations on the Federal Government taxing states (an interpretation that flows from the 10th Amendment), the mandatory imposition of Social Security taxes under these circumstances, affecting 2.4 million individuals at the time of enactment, has never been tested in the Supreme Court. Closely related cases suggest strongly that it would be approved, based on the principle that the interests of the affected employees in having some reasonable retirement benefit should be given more weight than the interests of the states employing them. Note that mandatory Social Security coverage of **all** state and local government employees is proposed rather frequently in Congress and elsewhere and would undoubtedly be challenged and debated on these same grounds. Mandatory Medicare coverage of newly hired state and local government employees took effect on April 1, 1986. It's hard to believe that Medicare coverage of these employees would be constitutional but Social Security coverage would not be.

The clearest situation under the law involves employees of state and local governments in positions that are not covered by **any** employer-sponsored retirement plan. These employees are obviously subject to mandatory Social Security coverage (and have been since July 2, 1991), because a nonexistent retirement plan cannot be comparable in any sense to Social Security. Employees in positions not covered by any retirement plan are

called absolute coverage groups. Social Security taxes must be withheld from their wages and salaries (up to the maximum taxable amount each year) and matched by their governmental employers.

When an employer-sponsored retirement plan does exist, the plan must be tested to determine whether it is comparable to Social Security. Plans are deemed to be comparable if they pass one of two tests, which are explained in IRS Publication 963 (<http://www.irs.gov/pub/irs-pdf/p963.pdf>). One test, the simpler one by far, is used to assess defined-contribution plans; the other applies to defined-benefit plans.

Defined-contribution plans satisfy the comparability test under IRS Regulation 31.3121(b)(7)-2(e)(2)(iii) if they provide for an allocation to each employee's account of an amount equal to or exceeding 7.5 percent of the employee's compensation during any time period under consideration. Contributions from both the employer and the employee are combined for purposes of meeting the 7.5-percent threshold. Plans with only employee contributions may satisfy the minimum contribution requirement, provided that the employee contributions are at least 7.5 percent of compensation. The 7.5-percent contribution cannot include any investment earnings on the account.

The retirement plan's definition of "compensation" that is used to determine whether the contribution is sufficient to satisfy the Social Security comparability test must include at least the employee's base pay, provided that the definition of "base pay" is reasonable. The plan may disregard for purposes of defining compensation overtime pay, bonuses, amounts received due to death or separation from service, amounts received under a bona fide vacation, compensatory time or sick pay plan, and severance pay.

Interestingly, the comparability test's requirement that contributions equal or exceed 7.5 percent of compensation is applied to each employee individually, one pay period at a time. Thus, a group of state and local government employees covered by a defined-contribution plan may include some employees who are always mandatorily covered by Social Security, some who are mandatorily covered by Social Security at certain times but not at other times, and some who are never mandatorily covered by

Social Security. Of course, employees who are not mandatorily covered by Social Security may be covered under a voluntary-coverage agreement.

When an employer-sponsored retirement plan does exist, the plan must be tested to determine whether it is comparable to Social Security.

Defined-benefit plans **generally** meet the requirement of providing a benefit comparable to Social Security if the benefit under the retirement plan is at least 1.5 percent of average compensation during an employee's last three years of employment, multiplied by the employee's number of years of service. Formulas in Revenue Procedure 91-40 and the IRS regulation referenced above explain in grueling detail how to satisfy this requirement. Those calculations are beyond the scope of this brief article.

As noted above, governmental employees who are not covered by an employer-sponsored retirement plan or who are covered by a plan that does not meet either of the Social Security comparability tests are mandatorily covered by Social Security. However, if such employees become covered at some point by an employer-sponsored retirement plan that is comparable to Social Security, then mandatory coverage ceases. Depending on the governmental employer involved, they may then become covered under a voluntary-coverage agreement or remain non-covered by Social Security.

The next article in this series will discuss voluntary-coverage agreements under section 218 of the Social Security Act. ■



Bruce D. Schobel, FSA, MAAA, is located in Winter Garden, Fla. He can be reached at bdschobel@aol.com.

How is the Mortality Gap Affecting Social Security Progressivity?

By Matthew S. Rutledge

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Over the last half-century, average life expectancy at age 65 in the United States has increased by six years for men and four years for women.¹ But these gains have been unequal across the population. While those with greater earnings and education have enjoyed substantially longer life spans, those with lower socioeconomic status (SES) have seen relatively small improvements in their late-life mortality.

The unequal increase in life expectancy works against the progressive benefit design of Social Security. The program is set up to award more generous benefits—relative to pre-retirement earnings—to lower earners. But, due to the gap in life expectancy by SES, lower earners receive their benefits for relatively fewer years than their longer-lived counterparts.

This brief reviews research by the Social Security Administration's Retirement Research Consortium and others that investigates this widening gap and examines its consequences. The discussion proceeds as follows. The first section quantifies the growing gap in life expectancy by SES. The second section reviews evidence on why the gap has widened. The third section discusses how the gap affects lifetime Social Security benefits and the progressivity of the system. The final section concludes that, over time, the increasing mortality gap has significantly reduced Social Security's progressivity.

THE GROWING MORTALITY GAP

Numerous studies have shown that higher-SES people live longer than lower-SES people and that this gap has increased

in the last few decades, regardless of the measure of SES used.² For example, Waldron (2007) compares life expectancy at age 65 of men classified by long-term earnings. She finds that men with above-median earnings born in 1912 had a life expectancy that was 0.7 years longer than men with below-median earnings. By the 1941 cohort, that difference had increased to 5.3 years. Bound et al. (2015) define SES by education. They show that the differences, by SES, in expected years of life from ages 25 to 85 have grown across the board—for both men and women, as well as for whites and blacks—even after accounting for the increase in educational attainment seen in each group (see Figure 1).³

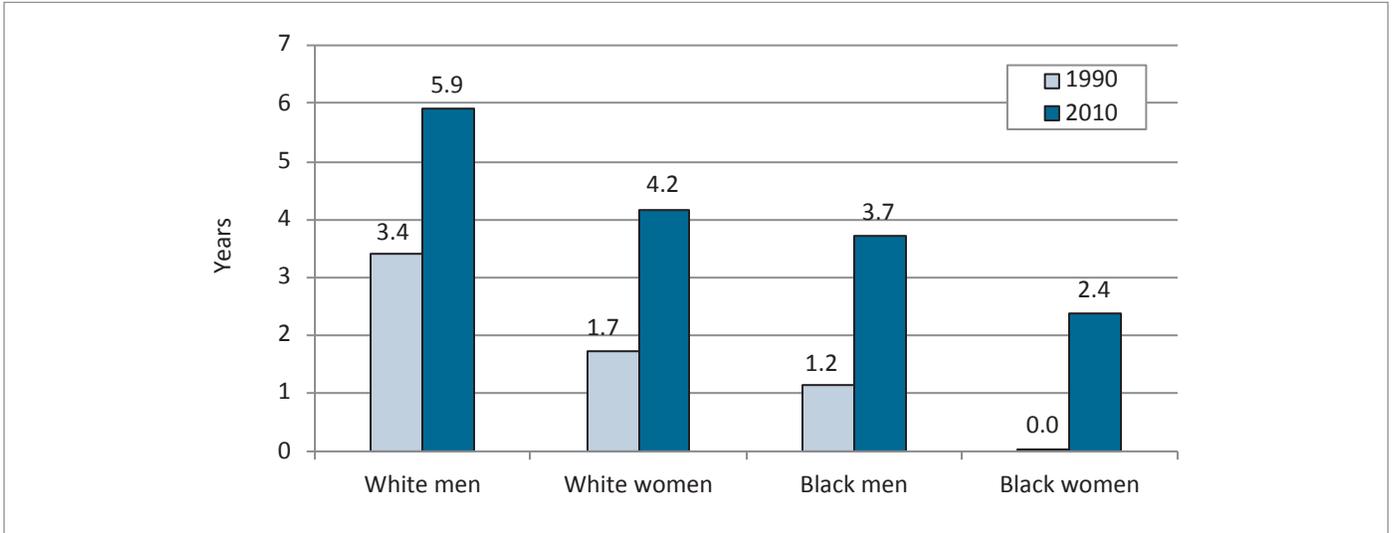
WHY HAS THE GAP GROWN?

Most research finds that the widening gap in life expectancy by SES is driven by improved health outcomes for higher-SES people. Bosworth, Burtless, and Zhang (2015) find a significant decline in the risk of dying from cancer or heart conditions among higher-income individuals. Other research documents that higher-SES individuals have seen greater reductions in smoking and, therefore, fewer deaths from lung cancer or chronic obstructive pulmonary disease (COPD).⁴

Deaths from cancers, cardiovascular conditions, and lung disease only account for about one-half of the differential improvement for higher-SES people. The rest occurred in other causes of death that are harder to pin down, and controlling for behavioral differences does not seem to matter (with the important exception of smoking). It remains unclear whether these improved health outcomes are because higher-SES individuals enjoy better medical care, more improved health behaviors, or stronger underlying health status throughout their lives.

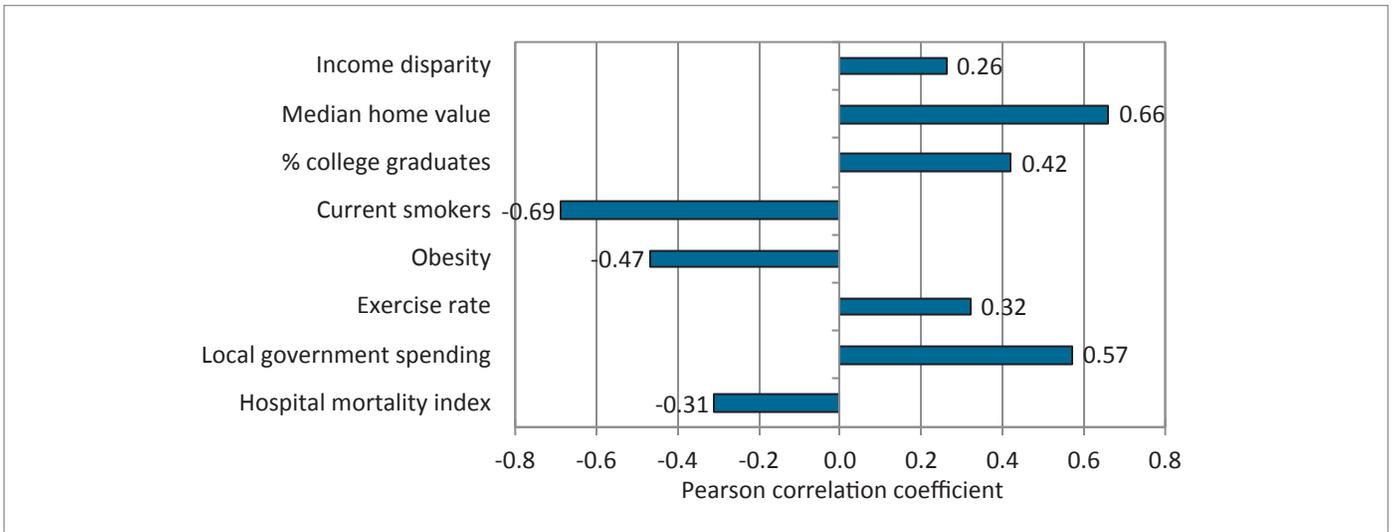
Chetty et al. (2016) shed some light on this question by examining U.S. metropolitan areas where lower-SES people do relatively well. Perhaps surprisingly, the results indicate that lower-SES individuals live longer in areas with greater income disparities and higher housing costs, as well as places with a high share of college graduates (see Figure 2). These results suggest that having more high-SES people around may exert a positive influence on those with lower SES. That positive influence could operate through behavioral norms, as lower-SES individuals live longer in areas where everyone's health behaviors are better (e.g., lower smoking rates, lower obesity, and higher exercise rates). It could also operate through a more robust tax base, enabling higher government expenditures on public health, the environment, and access to high-quality health care.

Figure 1
Differences by Education in Expected Years of Life from Ages 25 to 85, 1990 and 2010



Source: Bound, et al. (2015). Note: The differences shown are between the least-educated quartile and the other quartiles combined. "White" refers to non-Hispanic white women and white men.

Figure 2
Selected Correlations Between Local Area Characteristics and Life Expectancy of Bottom Income Quartile, 2001–2014



Source: Chetty, et al. (2016). Note: All results shown are statistically significant.

HOW HAS THE GAP AFFECTED SOCIAL SECURITY'S PROGRESSIVITY?

The increasing mortality gap means that higher-SES individuals are receiving their Social Security benefits for a longer period of time than their lower-SES counterparts.

Differential mortality is, of course, only one factor in evaluating the progressivity of the Social Security system. Another factor reducing the system's progressivity is the fact that the payroll tax that funds Social Security is capped—it is not imposed on earnings over \$128,400 in 2018—which means that workers with very high earnings pay a lower average tax rate. On the other hand, the benefit formula is set to allow lower earners to replace a higher share of their average lifetime earnings.

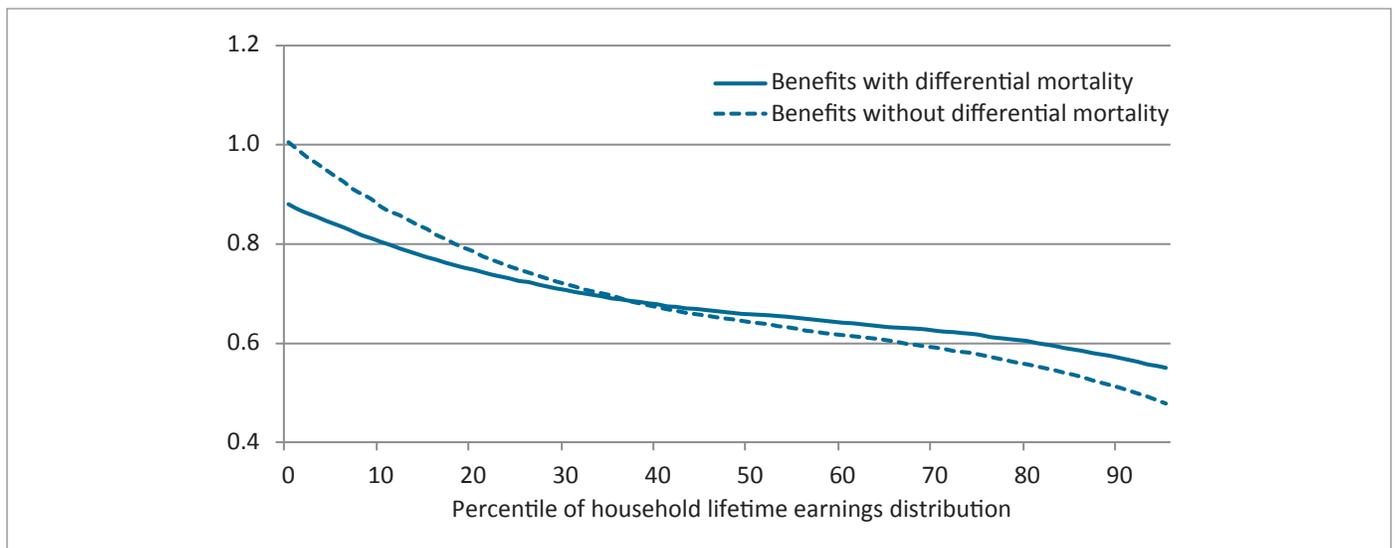
At the individual level, most studies find that, on net, the Social Security retirement program is modestly progressive. At the household level though, Gustman and Steinmeier (2001) find that the Social Security retirement program is regressive on net, because spousal benefits disproportionately benefit higher-income people. However, when Social Security's disability

insurance program is included, it improves the picture for those with lower SES, making the combined system progressive even at the household level.⁵

A 2006 analysis by the Congressional Budget Office demonstrates the effect of differential mortality on the system's net progressivity (see Figure 3).⁶ The metric used here is the ratio of the lifetime retirement benefits that individuals receive to the lifetime payroll taxes that they pay. The solid line represents scheduled benefits under current law in the actual Social Security retirement system, which incorporate the effects of differential mortality. This line is downward-sloping: because of the system's modest progressivity, the benefit-to-tax ratio is somewhat higher for workers with lower career earnings, and declines as career earnings increase.

The dashed line represents a thought experiment: what if every 65-year-old had the same remaining life expectancy? In that scenario, the downward slope of the line becomes steeper, signifying an increase in progressivity. Lower earners would now live longer, and therefore collect their progressive benefits for

Figure 3
Lifetime Social Security Retired-Worker Benefit-to-Tax Ratios for 1960s Birth Cohort, With and Without Differential Mortality



Source: Adapted from Meyerson and Sabelhaus (2006). Note: The analysis assumes that benefits are paid as scheduled under current law.

Social Security has been providing relatively less to lower-SES individuals over time.

longer. Higher earners would now live for less time, thereby reducing their lifetime benefits.

To quantify the impact of differential mortality on Social Security’s progressivity, Bosworth and Burke (2014) compare benefits against a benchmark of career earnings.⁷ The first document that the distribution of benefits in any given year is much more equal than the distribution of career earnings, reflecting the progressive benefit formula. Their analysis of lifetime benefits, though, shows that differential mortality offsets about half of the overall system’s progressivity. The offset is greater for men than women, because men have a greater disparity in life expectancy by SES at older ages.

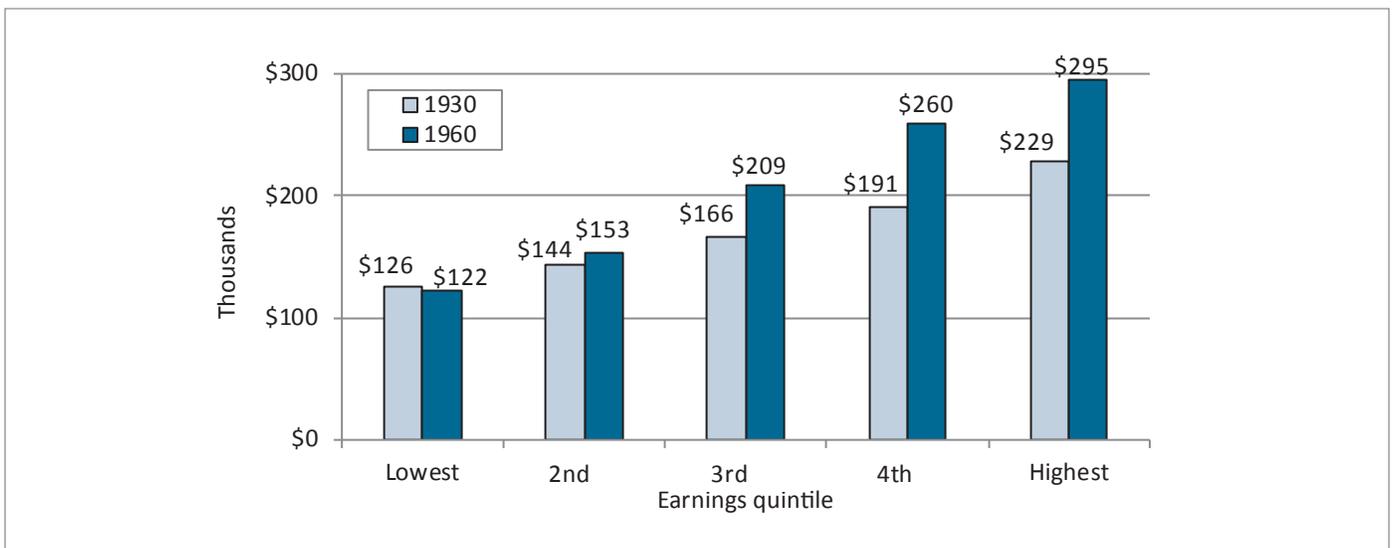
As the mortality gap has grown, therefore, Social Security has been providing relatively less to lower-SES individuals over time. In simulations comparing the 1930 and 1960 birth cohorts, a 2017 National Academy of Sciences report finds that the present value of Social Security retirement benefits increased from \$229,000 to \$295,000 for men in the highest income quintile (see Figure 4). For men in lower quintiles, who rely more on Social Security to finance their retirement consumption, lifetime benefits actually fell (for the lowest quintile) or increased only modestly (for the second-lowest quintile).⁸

CONCLUSION

In recent decades, the mortality gap between higher and lower-SES individuals has widened substantially. Some part of the greater life expectancy improvement among higher-SES individuals is due more to effective medical care, better health behaviors, and stronger underlying health throughout their lives, but much remains unexplained.

As a result of the growing gap, Social Security has become less progressive. Estimates suggest that the impact has been

Figure 4
Lifetime Social Security Benefits for 1930 and 1960 Birth Cohorts by Earnings Quintile, Thousands of 2009 Dollars

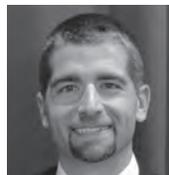


Source: Auerbach, et al. (2017).

substantial: lifetime benefits have greatly increased for higher-SES individuals, while falling or remaining stagnant for lower earners.

This outcome has raised concerns among some policy experts. But research has shown that lower-SES people enjoy greater life expectancy in places with better environments, more positive health behavioral norms, and greater government commitment to services such as public health. Improving these factors—and

thereby improving mortality among the lower-SES people who rely on Social Security the most—could potentially help restore some of the program’s progressivity. ■



Matthew S. Rutledge is an associate professor of the practice at Boston College’s Morrissey College of Arts and Sciences and a research fellow at the Center for Retirement Research (CRR) at Boston College. He can be reached at rutledma@bc.edu.

ENDNOTES

- 1 U.S. Social Security Administration (2017).
- 2 The results of studies that use multiple measures of SES—such as long-term earnings and education—are generally consistent across definitions (e.g., Bosworth and Zhang 2015).
- 3 See also Sanzenbacher and Ramos-Mercado (2016); Sanzenbacher et al. (2015); and Cristia (2009).
- 4 Cutler et al. (2011) and Meara, Richards, and Cutler (2008).
- 5 For studies at the household level that include disability insurance, see Steuerle, Carasso, and Cohen (2004a); Harris and Sabelhaus (2005); Bosworth and Burke (2014); and Bosworth and Zhang (2015).
- 6 Meyerson and Sabelhaus (2006). See also Auerbach et al. (2017).
- 7 The Bosworth and Burke (2014) analysis includes SSDI.
- 8 Other studies that have looked at differential mortality include Steuerle, Carasso, and Cohen (2004b); Brown, Coronado, and Fullerton (2009); and Goda, Shoven, and Slavov (2011).

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Social Security Changes for 2019

By Bruce D. Schobel

Every October, the U.S. Social Security Administration (SSA) announces certain changes in program amounts that occur **automatically**—that is, without any new legislation being necessary. The most widely publicized of these changes is the annual cost-of-living adjustment (COLA) affecting monthly Social Security benefits. Other automatic changes are important to people of working age as well as to beneficiaries. On Oct. 11, 2018, the government announced the Social Security COLA effective for December 2018 and the other increases effective for 2019.

BENEFIT INCREASE

Since 1984, Social Security's COLAs have been based on the third-quarter-to-third-quarter increase, if any, in the average Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The CPI-W, which is computed by the U.S. Labor Department's Bureau of Labor Statistics, rose 2.8 percent (rounded to the nearest 0.1 percent) year-to-year from the third quarter of 2017 through the third quarter of 2018. Accordingly, all Social Security benefits, in current-payment status or not, rose by the same percentage, effective December 2018. The December 2018 COLA is the largest since the 3.6-percent increase effective for December 2011. As usual, December benefits were actually paid in the following January; all monthly Social Security benefits are paid in arrears, after the month is over.

WAGE-INDEXED PARAMETERS

A long list of updated Social Security program parameters, some of which are rather obscure, is ordinarily announced simultaneously with the COLA each year. Unlike the COLA, changes in these parameters are based on changes in the national average wage, which the Social Security Administration computes from all W-2 forms filed each year by employers. Interestingly, workers who are self-employed, but not **also** employed by someone else, are excluded entirely from the average-wage computation. Workers who are both self-employed and employed during the year have only their earnings from employment included in the calculation of the national average wage, leading to some minor distortion in the resulting percentage change. The national

average wage rose from \$48,642.15 for 2016 to \$50,321.89 for 2017. The 2017 value used in SSA's automatic-adjustment calculations is the most recent national average wage figure available; at the time of the October announcement, 2018 wasn't over yet, and W-2 forms for 2018 will not be available until several months into 2019, after employers submit them to SSA.

One very important change that affects high-income workers is the increase in the maximum amount of earnings subject to Social Security payroll taxes.

MAXIMUM TAXABLE AMOUNT AND TAX RATES

One very important change that affects high-income workers (employees and the self-employed) is the increase in the maximum amount of earnings subject to Social Security payroll taxes (FICA and SECA) during the year and creditable for benefit-computation purposes. This program parameter can rise (it cannot fall) in any year following the effective date of a COLA. In a few recent years when no COLA was effective, due to the CPI-W declining, the maximum taxable amount did not rise in the following year. Because a COLA was effective for December 2018, the maximum taxable amount rose from \$128,400 for 2018 to \$132,900 for 2019, based on the change in the national average wage.

Social Security tax rates are not automatically adjusted but are set by law. The FICA tax rate, payable by employees and employers, each, has been 6.2 percent since 1990. The self-employed pay both halves of this tax and get to deduct, for income-tax purposes, the half representing the employer share. Employees cannot deduct Social Security taxes from their taxable incomes, but employers can.

RETIREMENT EARNINGS TEST

Another wage-indexed Social Security program parameter is the exempt amount under the retirement earnings test for beneficiaries who have not yet reached their normal retirement age, or NRA. (Social Security's NRA was 65 for workers born before 1938 and is rising gradually under present law to 67 for workers born after 1959.) The annual exempt amount for beneficiaries who will not reach their NRA during the current calendar year rose from \$17,040 for 2018 to \$17,640 for 2019. For beneficiaries who reached their NRA in 2018, the exempt amount was \$45,360 for earnings in the months before reaching NRA. That exempt amount rose to \$46,920 for 2019. Since January 2000,

workers who have reached their Social Security NRA can earn unlimited amounts without causing any reduction in their Social Security benefits, starting with the month in which they reach that age. In fact, additional covered earnings can cause monthly benefits to rise due to annual benefit recomputations, effective each January.

COVERAGE CREDITS

Interestingly, certain wage-indexed program amounts are permitted by law to increase (or even decrease) with or without a COLA occurring. The amount of earnings needed to receive one coverage credit was \$1,320 in 2018 and rose to \$1,360 in 2019. Workers who earn at least \$5,440 in Social Security-covered employment (or self-employment) during 2019 will receive the maximum four coverage credits for the year. Workers need 40 coverage credits to be eligible for retired-worker benefits at age 62 or older. (These coverage credits used to be known as “quarters of coverage”; since 1978, they have been granted based on **annual** earnings, making the old name inappropriate.)

BENEFIT FORMULAS

The so-called “bend-points” of the formulas used to compute primary insurance amounts (PIAs) and maximum family benefits (MFBs) are also wage-indexed and can move up or down with or without a COLA occurring. The two PIA bend-points for workers first becoming eligible for benefits in 2019 (that is, born in 1957 in the case of retired-worker benefits) are \$926 and \$5,583. The three MFB bend-points for 2019 eligibilities are \$1,184, \$1,708 and \$2,228.

The complete list of wage-indexed program parameters for 2019 and corresponding values for previous years are available at www.ssa.gov/oact. ■



Bruce D. Schobel, FSA, MAAA, is located in Winter Garden, Fla. He can be reached at bdschobel@aol.com.



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