8-2017

Has Social Security Been Effective?

Matthew V. Danwin
danwinmv01@mail.buffalostate.edu

Advisor
Dr. Frederick Floss
First Reader
Dr. Frederick Floss
Second Reader
Dr. Theodore Byrley
Third Reader
Dr. Bruce Fisher

Has Social Security Been Effective?

By

Matthew Danwin

Buffalo State College

State University of New York

Department of Economics and Finance

Submitted in Partial Fulfillment

of the Requirements

for the Degree of

Master of Arts

May 2017

Approved by:

Frederick Floss, Ph.D.

Chairperson of Department of Economics and Finance

Advisor

Kevin Miller, Ed.D.

Interim Dean of Graduate School

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Introduction

There are three divisions of Social Security: Old-Age, Survivors Insurance, and Disability Insurance.[1] Social Security was created in 1935, while the Disability Insurance was added in 1956. Social Security was never intended to be the sole form of income during retirement; it was designed to supplement other forms of savings. The poverty rate for Americans over 65 has decreased from 35 percent in 1959 to 10 percent in 2013. Of the 10 percent in 2013, the majority were females. Four adjustments to the Social Security Program that are often discuss include the tax rate, the income cap, the cost-of-living adjustment, and the age of eligibility. Increasing the tax rate and income cap would increase the revenue of the program. Decreasing the cost-of-living adjustment and increasing the age of edibility would decrease the expenses.

The contributions and benefits are a function of an individual's earnings. There are two major steps in determining an individual's benefits. First is AIME, which is the career average earnings for that individual over their highest 35 years. The second step is the primary insurance amount that diminishes the return of the benefits. In 2017, 90 percent of the first $826 is replaced. Over $826 and below $4,980 it replaced 32 percent. Anything over $4,980, only 15 percent is replaced. This allows the lower earning individuals to replace most of their income while the higher earning individuals replace a smaller portion in steps. This is similar to the theory of tax brackets. Other than those two steps, benefits are also determined based on early or delayed retirement as well as cost-of-living adjustment. Another cause of the diminishing trust fund is the increased life expectancy of Americans. This increase means that individuals are

[1] "Social Security's Future." U.S Government Accountability Office. October 2015. Accessed July 10, 2016. http://www.gao.gov/assets/680/673385.pdf.

receiving benefits for a longer period. As a counter measure, the Social Security Administration has increased the full retirement age. In 1935, when the plan for first created, the full retirement age was 65, but it gradually has been increased to 67 for individuals who were born in 1960 of later.[2]

The current payroll tax dedicated to Social Security is 6.2 percent by the individual and 6.2 percent by the company. Of the 12.4 percent, 1.8 percent is allocated to the Disability Insurance Fund while the remaining 10.6 percent is allocated to the Old Age and Survivor Insurance. The payroll tax only pertains to employee's salaries. It does not include capital gains, dividends, or income from other investments. The payroll tax is capped at $118,500 as of 2015. This cap is in place because it matches the cap of benefits received. It has been determined to be unfair to tax above the level that benefits are paid. Below is a breakdown of the tax contribution rate for 2015:

Payroll Tax Contribution Rates for 2015			
	OASI	DI	OASDI
Payroll Tax Contribution Rate fo Employees	5.3%	0.9%	6.2%
Payroll Tax Contribution Rate fo Employers	5.3%	0.9%	6.2%
Payroll Tax Contribution Rate for self-employed	10.6%	1.8%	12.4%

Source: 2016 Annual Report of the Board of Trustees

For years, a reserve has been building up due to the taxes from payroll being greater than the benefits being paid out. This reserve by law has been invested in government securities, which is low risk, low returns. Individuals who believe the U.S. should privatize Social Security

[2] "Social Security's Future." U.S Government Accountability Office. October 2015. Accessed July 10, 2016. http://www.gao.gov/assets/680/673385.pdf.

are searching for a higher return. The issue is that higher returns yield higher risk, which goes against the purpose of Social Security. Individuals should be investing private retirement accounts that is supplemented by Social Securities. Within these private accounts, individuals can choose their own level of risk.

Review of Literature

Is Social Security Really in Trouble?

There are various opinions regarding the future of the United States Social Security Program. It is a common belief that the program will fail and not exist for millennials, which is false. The payout may not be as much as promised, but as long as there is a revenue for Social Security, there will be some portion of benefits paid. According to the Board of Trustees Report estimates, the trust fund will be depleted by 2034; and will pay about 79 percent of scheduled benefits at that time.[3] This estimate is assuming no reforms to the current structure. The Social Security Board of Trustees recommends two immediate reforms that will allow full payment of scheduled benefits for the next 75 years, reduce benefits 13 percent or increase the payroll tax by 1 percent by the individual and 1 percent by the employer.[4] The alternative of not increasing the

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[3] "The 2016 Annual Report of the Board of Trustees" June 22, 2016. Accessed October 7, 2016. https://www.ssa.gov/OACT/TR/2016/tr2016.pdf.

[4] Goss, Stephen C. "The Future Financial Status of The Social Security Program." Social Security Bulletin 70, no. 3 (2010): 111-25. Accessed June 28, 2016. https://www.ssa.gov/policy/docs/ssb/v70n3/v70n3p111.html.

payroll tax would mean less than 80 percent of fully scheduled benefits would be paid out for the next 75 years.

History of Social Security

In 1934, Franklin D. Roosevelt assembled the Committee on Economic Security to create a Social Security program. At the time, Social Security was not a new idea. Social Security was common in Europe, which provided studies to analyze. As previously mentioned in 1935 the Social Security Act was passed. Up until 1950, the benefits paid to each individual were constant annually. In 1950, an amendment was created to increase benefits for existing beneficiaries.[5] This was the start of the cost-of-living allowance, which after 1970 became an annual adjustment.

The U.S. Social Security system was designed to be a pay-as-you-go system. A pay-as you-go system means that revenues received will determine the expenses paid. Although, it is not a true pay-as-you-go system because over the years it has had surpluses and deficits. Surpluses increase the Trust Fund, while deficits decrease the Trust Fund. In 2008 republican presidential candidate, John McCain stated, "Americans have got to understand that we are paying present-day retirees with the taxes paid by young workers in America today. And that's a disgrace. It's an absolute disgrace, and it's got to be fixed."[6] McCain has to understand that this is how the system designed from the start in 1935. The working class subsidize the retired individuals, as they will

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[5] "Social Security History." Social Security Administration. Accessed June 19, 2016. https://www.ssa.gov/history/briefhistory3.html.

[6] Rohter, Larry. "The Candidates Speak Off the Cuff, and Trouble Quickly Follows." New York Times, July 11, 2008. Accessed July 21, 2016. http://www.nytimes.com/2008/07/11/us/politics/11checkpoint.html?_r=0.

be subsidized when they are retired. Theoretically, his argument only makes sense if, the working class was taxed but never received benefits. Republicans make statements like this in an attempt to privatize Social Security. This paper will later explain how privatizing Social Security is not beneficial for millennials nor the United States as a whole. The disappearance of defined-benefit pension plans is often overlooked. This affects many employees and their retirement savings, which increases the need for Social Security. Philips and Muralidhar explain, "During the past three decades, one company after another has closed its defined-benefit pension plan and replaced it with a defined-contribution plan."[7] There are a couple of reasons for this. First, young employees do not value pensions as much as they should. Second, the life expectancy has increased, which increases the cost of the pensions. Third, the decline of expected returns increases the risk of pensions for a company. Young employees would rather receive a higher salary and voluntarily contribute to their personal retirement account. The problem is that many young employees do not appreciate the importance of contributing while they are young, which causes these individuals to become more reliant on Social Security, combining this issue with decreased Social Security benefits causes a major issue.

The Social Security Trust Fund has been receiving revenue since 1937. Every year the Social Security Administration uses the revenue to pay expenses and the difference, given there is a surplus, is added to the trust fund. "Since 1937, there have been 11 years in which benefits paid out exceeded income and so the assets of the Trust Funds had to be spent to make up the difference. This cashing-in of the Trust Fund bonds amounted to about $26 billion in those 11

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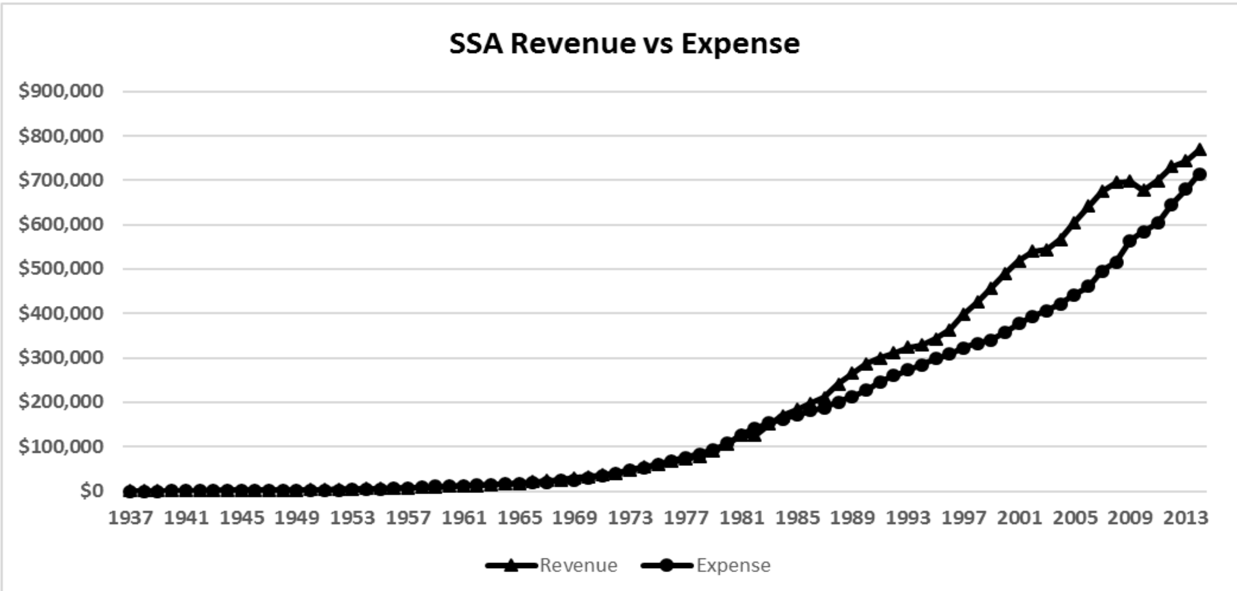
[7] Phillips, Thomas K., and Muralidhar Arun. "Saving Social Security: A Better Approach." Financial Analyst Journal 64, no. 6 (2008): 62-73. Accessed June 23, 2016. http://www.jstor.org/stable/40390233.

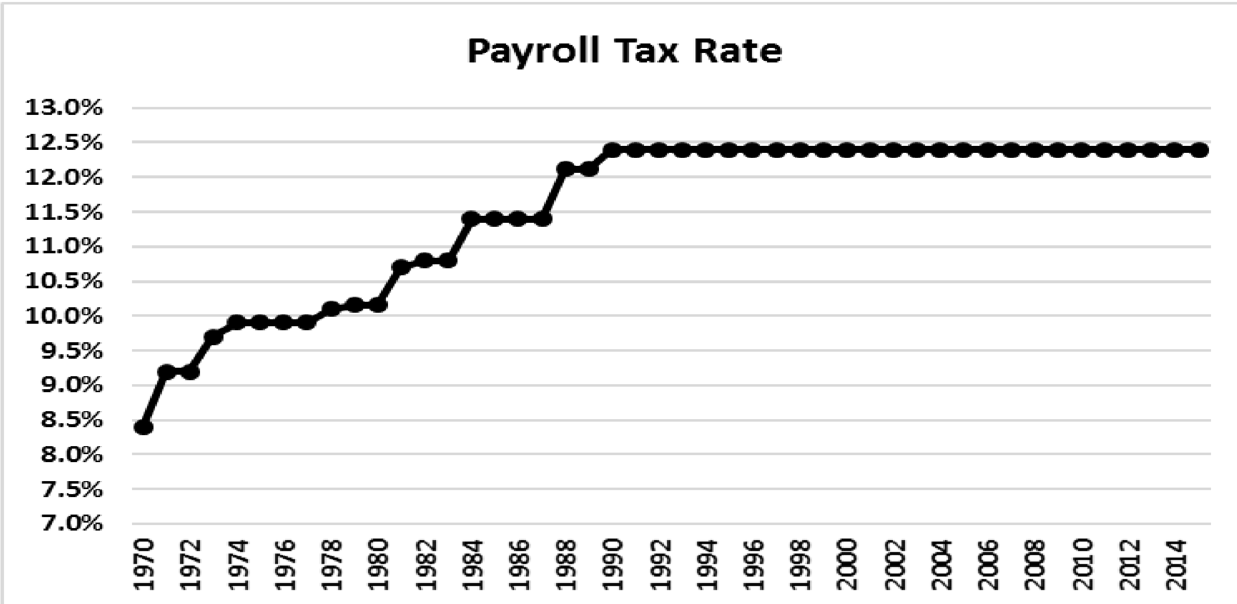
years."[8] Below is a graph that shows the revenues and expenses of the Social Security Administration since 1937:



Source: Social Security Annual Statistical Supplement

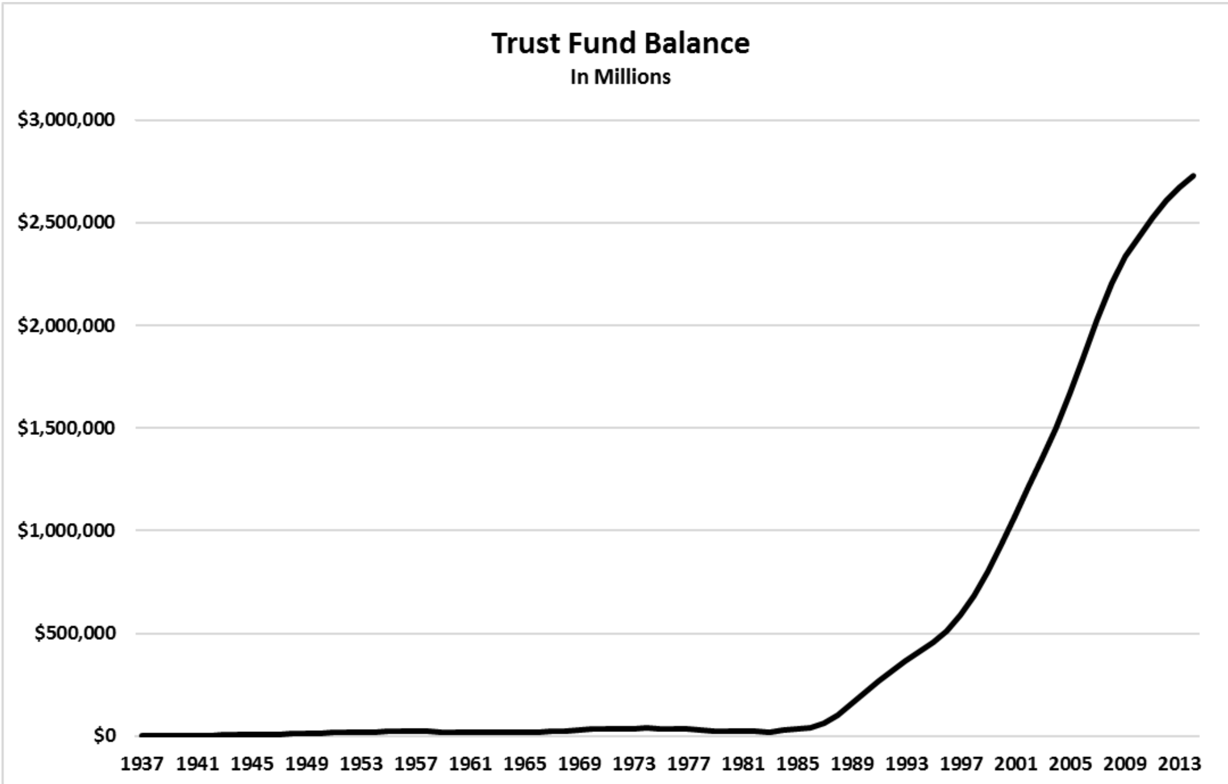
The above graph shows the difference between revenues and expenses become much greater after the 1985. This was due to the 1983 Amendments implemented by Ronald Regan. One of the major changes was the increase in the payroll tax shared by both the employees and the employers. The graph below shows the change in the payroll tax since 1970.

[8] "Trust Fund Operations." Social Security Administration. Accessed August 31, 2016. https://www.ssa.gov/history/tftable.html.



Source: Social Security Annual Statistical Supplement

The payroll tax was one of many changes from the 1983 amendment. It also delayed the cost-of-living adjustment and modified the calculation by basing it on the lower of the consumer price index or the wage increase percentage. A tax of one-half of the benefits received was also implemented if the individuals income exceded $25,000. Ulitmately, the objective of the 1983 Amendment was to increase the trust fund again. The graph below shows the Social Security Trust Fund Balance since its orgination in 1937.



Source: Social Security Annual Statistical Supplement

Future of Social Security

There are various opinions regarding the timeframe in which the Social Security trust fund will be depleted, and which reforms should be used, but Yoana Koleva states "there is no debate that the need for Social Security reform has long been established."[9] The earlier the

[9] Koleva, Yoana. "The Outlook for Social Security Reform: Proposals and Implications." Journal of Financial Service Professionals, May 2012, 26-31. Accessed July 21, 2016. http://proxy.buffalostate.edu:2078/contentserver.asp?t=p&p=an&k=75058634&s=r&d=bth&ebscocontent=dgjymnle80seqk84yovqolcmr06ep7nssku4s7gwxwxs&contentcustomer=dgjympgut1g3rrrruepfgeyx43rx2e0a

reforms are implemented the longer the Trust Fund will be sustainable. She explains that the two most popular options are full privatization and a balanced package. The balance package would be a mixture of partial privatization, reduced benefits, and increased taxes.

In *Structural Reform of Social Security* by Martin Feldstein, he explains how the United States could benefit from a "mixed system." A mixed system would combine the current system with investment-based personal retirement accounts. He explains that many countries have already adopted this concept such as Australia, Chile, China, Britain, and Sweden.[10]

Feldstein explains that in 2005 Social Security replaced about 40 percent of the final year earnings for individuals with median earning all their life. According the Social Security Administration website this replacement percentage is still accurate, even though most financial advisors recommend individuals should have 70 percent of pre-retirement earnings, which would allow individuals to maintain their standard of living.[11] This difference is concerning and is an obvious problem with the current system. Feldstein states that another issue is that the surplus from the current program goes into a trust fund that is a loan the United States government through the form of government bonds. He explains that although it receives interest, it would have a greater return in the private market. Now that the benefits paid are greater than the taxes collected, given no change, it is inevitable that the trust fund will eventually be depleted. When the trust fund is depleted the 40 percent of income replacement will decrease, and the gap to maintain a comfortable living will increase.

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[10] Feldstein, Martin. "Structural Reform of Social Security." Journal of Economic Perspectives 19, no. 2 (2005): 33-55. Accessed July 19, 2016. http://scholar.harvard.edu/files/feldstein/files/streformofss.pdf.

[11] "Prepare for Your Financial Needs." Social Security Administration. Accessed July 21, 2016. https://www.ssa.gov/planners/retire/r&m6.html.

Feldstein mentions there are many possible reforms that one way or another either increases taxes or decreases benefits. His objective is to create a plan that can pay out the same or greater benefits while maintaining the same tax rate. He plans to achieve this through a mixed system, which would mean the government would place 1.5 percent of tax revenue into personal retirement accounts. Individuals would be able to transfer voluntarily, an additional 1.5 percent out of pocket to make up for the decreased benefits of the pay-as-you-go portion. The issue with this is that Feldstein's goal was not to increase taxes now he is saying to keep the same benefits individuals will have to transfer voluntarily, 1.5 percent out of pocket. Alternatively, the government could just increase the tax rate to everyone by 1.5 percent.

In 2006, Thomas Hungerford wrote *A Better Way to Invest the Social Security Trust Fund*, which suggested that the United States should invest in mortgage-back securities (MBS). His thinking was that these MBSs would provide the trust fund with a higher rate of return than treasury bonds. Hungerford explains that others recommend that the trust fund should be invested in corporate stocks but he mentions the higher risks involved in those investments.[12] He states, "mortgage-backed securities are fairly safe investments."[13] This article is interesting considering that less than two years after it was written the United States had a mortgage crisis and fell into a recession. If the trust fund were used to invest in these instruments, it would have lost a lot of money, speeding up the depletion of the trust fund. This is the exact reason why policymakers are skeptical of investing the trust fund to receive higher returns. No matter how safe the investment seems to be there are always risks. The fact is that the United States Treasury Bonds are the safest investment for the trust fund.

[12] Hungerford, Thomas. "A Better Way to Invest the Social Security Trust Fund." Challenge 49, no. 3 (May/June 2006): 90-104. Accessed July 25, 2016. https://www.jstor.org/stable/40722383.
[13] Hungerford, 99.

Reforms of Other Countries

Chile's Social Security program was privatized in May of 1981. Employees were required to contribute 10 percent of their earnings to an individual account. They were also required to pay a 3 percent fee for management of these accounts. Current workers were able to move their savings from the old plan into these new private accounts. They were promised that if the saved 10 percent of their income each year, then during retirement their pension would payout 70 percent of their salaries.[14]

Privatization in Chile worked at first, due to the increasing average price-earnings ratio throughout the 1980s and 1990s. These increases yielded higher expected returns, which helped offset the high management cost. The price-earnings ratio decreased in the beginning of the 2000s, but has since leveled off. This causes a decrease in returns, which cannot cover the high management costs.[15] Chile also found that this new plan had high transition cost. This new plan was not voluntary, so it still required government employees to manage the money from each employee into private accounts. In addition, the government was still responsible to pay pensions for military personnel. Leiva states, "Turning workers' savings over to speculative, transnationalized financial conglomerates is not a viable route for developing effective systems of social protection in today's global economy."[16]

Germany was the first country to adopt a social security type program in 1889 under Otto von Bismarck. Explains, "It was not until 1957 that the benefits from the pension scheme were

[14] Fernando Leiva, "Chile's Privatized Social Security System: Behind the Free-Market Hype," April 16, 2001, accessed June 23, 2016, https://fleiva.files.wordpress.com/2009/10/leiva-socialsecurity.pdf.
[15] Philips, Thomas K., and Arun Muralidhar. 69
[16] Fernando Leiva, "Chile's Privatized Social Security System: Behind the Free-Market Hype," April 16, 2001, accessed June 23, 2016, https://fleiva.files.wordpress.com/2009/10/leiva-socialsecurity.pdf.

indexed to the growth rate of labor income, and it took another twelve years until the pension scheme became a purely pay-as-you-go social security system."[17] Similar to the United States, Germany has reformed their program several times since its creation. In 1972, they increased benefits allowing male individuals to retire early, if they were at least 63 years old and have been working for at least 35 years. Since then, the benefits have been scaled back to secure the program's future.

Comparing the Social Security programs of Chile and the United States may not be fair considering the differences in wages, savings, and advancements. A better comparison would be the Social Security program of the United Kingdom. The first form of Social Security in the United Kingdom was created in 1908. It became partially privatized in 1959. The greatest change was made in the 1986 Social Security Act, which gave employees the options to opt out of the traditional plan and invest into personal retirement accounts. Those individuals who did not opt out of the program, now received 20 percent of their income based on their 20 best years. This was reduced from 25 percent that was given prior to the 1986 Social Security Act. This reform helped influence certain employees to opt out of the "old" plan.[18]

Privatization in the United Kingdom also struggled, mostly due to poor government regulation and high management fees. At first, individuals were promised high returns, but there was a large gap between that and the realized benefits. The lack of guidelines set by the

[17] Borgmann, Christoph. "Volatility of Social Security Wealth: Political Risks of Benefit-Rule Changes in Germany." Public Finance Analysis 63, no. 1 (March 2007): 83-106. Accessed June 23, 2016. http://www.jstor.org/stable/40913140.
[18] Williamson, John B. "Privatization of Social Security in the United Kingdom Warning or Exemplar?" Journal of Aging Studies 16, no. 4 (March 2002): 415-30. Accessed July 25, 2016. http://proxy.buffalostate.edu:2183/s0890406502000749/1-s2.0-s0890406502000749-main.pdf?_tid=3edb698e-54ca-11e6-b658-00000aab0f6c&acdnat=1469714009_ba11b319fca9ee0cc6e6b8c6c9d43d51.

government allowed salespeople to take advantage of uniformed individuals. These salespeople sold financial products that were less favorable to employees but would maximize their commissions. These individuals eventually sued costing insurance companies about 12 billion pounds.[19]

Although the United Kingdom has had its struggles, thus far its Social Security program has succeeded. It is important to remember privatizing social security has been an evolving process since 1957. This was not something that became effective overnight. First, the United Kingdom started partial privatization and then gave individuals the option to transfer their funds into private accounts.

Privatization

Introduction to Privatization

As previously explained other countries have already privatized their social security programs. Many Americans believe that privatization of the United States Social Security Programs is the proper reform. The main reason for this is the belief that their return on investment will be greater if social security is privatized. Privatizing social security is often debated due to the many advantages and disadvantages.

Privatizing Social Security means that instead of individuals paying into Social Security they invest into individual private retirement accounts. The idea would be that every individual

[19] Philips, Thomas K., and Arun Muralidhar. 69

who has paid into Social Security had accrued a balance. They would receive this balance to invest in the private market in an attempt to yield a greater return on their investment. As previously stated this debate has been created due to high returns in the stock market from the late 1980s through the early 2000s. Individuals envision receiving higher returns on their investment through private investing throughout their working lifetime.

Friedman states, “The strong performance of the U.S. stock market in recent years has affected the Social Security debate in several ways.”[20] Social Security is not intended to be a retirement account. It is a plan that working individuals pay into to protect the economy, including themselves in the future. Social Security is not just a retirement program, it is also for those who are disabled. If Social Security is privatized who will pay for those who cannot work due to a disability?

Friedman explains that Social Security invests its own assets. In 1999, Social Security could invest “$700 billion today, growing to $1.5 trillion by 2015”. This investment would be in U.S. Treasury securities, which has a guaranteed return. This does not require any structural changes to the program and benefits the U.S. Treasury. As previously stated, recent high returns in the stock market, ignoring the recession, are the argument individuals make for privatizing Social Security. In regards to Risk Management, we know the high returns also means high risks.

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[20] Aaron, Henry J., Shoven B. John, and Friedman M. Benjamin. "Should the United States Privatize Social Security." June 1999. Accessed May 14, 2016. http://proxy.buffalostate.edu:2052/lib/buffalostate/reader.action?docid=10015373.

Volatility

The biggest risk of privatizing Social Security is volatility. *Risk Management and Financial Institutions,* Hull defines volatility as "the standard deviation of the return provided by the variable per unit of time when the return is expressed using continuous compounding."[21] Volatility often has a negative connotation due to its lack of predictability, but an individual could benefit from it. Generally, the more volatile an investment is the more risk associated with the investment, which also means a potentially higher return. Many risk managers, use the variance rate, which is simply the daily volatility squared.

The volatility of the stock market has been examined thoroughly since the great recession. In *Stock Volatility during the Recent Financial Crisis* by G. William Schwert he explains "On September 29, 2008, the DJIA (Dow Jones Industrial Average) fell from 11,143 to 10,365, over 777 points. This was the largest one-day drop in the market stock prices since the Dow Jones began computing index numbers in 1885."[22] He does mention that even though this may be the greatest drop in points, it was not in percentage. The greatest percentage drop since 1985 was actually October 19th, 1987 when the DJIA dropped 22.16 percent. Volatility is difficult to predict, therefore it would be bad of the Social Security Program.

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[21] Hull, John C. Risk Management and Financial Institutions. Hoboken: Prentice Hall, 2012.
[22] Schwert, G. William. "Stock Volatility during the Recent Financial Crisis." European Financial Management 17, no. 5 (2011): 789-805. Accessed March 21, 2016. http://www.nber.org/papers/w16976.

Risk

Let me also point out that financial advisors, investment companies, and "Wall Street" will benefit from privatizing Social Security. As we previously explained with hedge funds, other advisors and investment companies charge fees to manage individual portfolios. Removing all retirement accounts from Social Security and adding it to the private sector will allow these companies to make much more commissions. The average person notices that their retirement account increases every year but they do not understand the fees that are accrued over many years. These fees directly lower the expected return on investments, given that individuals receive a positive return.

Systematic risk is risk that affects everyone. For investors systematic risk can be difficult to hedge against. An example would be if the stock market crashes. If someone has a retirement account, a drastic event like this will have a huge effect on his or her savings. Systematic risk goes beyond just the stock market, look at the housing market in 2007. If an individual takes their money from Social Security and invests it in real estate, they could have lost a lot of money. During this period, real estate was not liquid either. This event did not just affect the lower class.

Related to the crash of the housing market in 2007, there were financial instruments created called Collateralized Debt Obligations. There were groups of mortgages pooled together that allowed investors to profit from the high interest rates. Many investment firms realized these high returns, and invested their client's money into these securities. An average person could have these securities in their portfolio and would have never known, or if they did, they were sold on the high returns. As time pasted and these securities became more and more risky they somehow kept the same rating. By the third quarter of 2007, these were worth nothing and investors lost a lot. This event was not even noticed by our country's major banks and financial institutions, who lost big. This event is an example of how chasing a high return on a relatively safe investment, the United States housing market, has exposure to risk. The Social Security Program should not be exposed to these risks.

Current Reform Ideas

Keeping Our Social Security Promises Act

Senator Bernie Sanders sponsors the Keeping Our Social Security Promises Act. This act would implement a payroll tax on earned income over $250,000. The payroll tax rate that would be applied would match the current tax rate of 12.4 percent. Half of this would be paid by the employee and half by the employer. Below is an example of the breakdown:

> For someone making $1 million a year, the 12.4% payroll tax (which is split equally between employer and employee) would apply for the first $113,700 just like under current law.
>
> Income from $113,700 to $250,000 would not be taxed.
>
> Income from $250,001 to $1 million would be subject to the payroll tax.
>
> This millionaire would pay $46,500 more per year into Social Security; and the millionaire's employer would pay $46,500 more into Social Security.[23]

[23] "Fact Sheet on the Keeping Our Social Security Promises Act" Accessed July 21, 2016. http://www.sanders.senate.gov/imo/media/doc/030613-SSFactSheet.pdf.

In 2013, Stephen C. Goss provided his analysis the "Keeping Our Social Security Promises Act". He estimates that implanting this act would delay the depletion of the trust fund for an additional 28 years.[24]

Goss also explains, "By 2086, 88 percent of benefits scheduled under the proposal would be payable compared to 73 percent of scheduled benefits under present law."[25] It is important to note that the individuals paying these increased taxes would not receive increased benefits. Senator Sanders is a democrat, who generally believe in increasing taxes to help fund certain programs. This program clearly benefits the lower and middle classes, while negatively affecting the upper class.

The Social Security Expansion Act

The Social Security Expansion Act is another reform that was proposed by Senator Sanders. He originally introduced this Act in March 2015. Stephen C. Goss also provided an analysis for this five-provision proposal. The first provision is to increase the first PIA (primary insurance amount) bend point, ultimately increasing by 15 percent. Second, use the consumer price index for the elderly to calculate the cost-of-living adjustment. Third, increase the special minimum PIA for workers that die or become newly eligible for retirement. Fourth, apply payroll tax on earnings above $250,000, previously explained in the "Keeping Our Social Security

[24] "Keeping Our Social Security Promises Act." Stephen C. Goss to Senator Sanders. March 19, 2013. Accessed August 2, 2016. https://www.ssa.gov/oact/solvency/BSanders_20130319.pdf.
[25] "Keeping Our Social Security Promises Act." Stephen C. Goss to Senator Sanders. March 19, 2013. Accessed August 2, 2016. https://www.ssa.gov/oact/solvency/BSanders_20130319.pdf.

Promises Act". Fifth, apply a separate 6.2 percent tax on investment income, part of the Affordable Care Act.[26]

Analyzing the first provision of increasing the first PIA bend point Goss found that this would increase the deficit by .37 percent of taxable payroll currently and by .71 percent by 2089. Ultimately, this provision is increasing benefits to the lower income individuals. This would increase the first PIA bend point of the current law by 1 percent in 2021 and 2 percent in 2022. This increase would continue until it reaches 15 percent. These changes would only affect newly eligible beneficiaries at the time of the increases.

These provisions under the Social Security Expansion Act would delay the depletion of the trust fund for 40 years. Goss explains "under the proposal, 88 percent of scheduled benefits are projected to be payable in 2074 after depletion of the combined trust fund reserves, with this percentage declining to 87 percent for 2089."[27] Although it is difficult to accurately project that far into the future, this reform would restore some balance to the trust fund for the near future.

Retirement in the United States

Introduction to Retirement

In the United States, the three most common income sources for retired individuals are Social Security, defined-benefits pensions, and defined-contribution plans. John G. Kilgour

[26] "Social Security Expansion Act." Stephen C. Goss to Senator Sanders. February 4, 2016. Accessed August 2, 2016. https://www.ssa.gov/oact/solvency/BSanders_20160204.pdf.
[27] "Social Security Expansion Act." Stephen C. Goss to Senator Sanders. February 4, 2016. Accessed August 2, 2016. https://www.ssa.gov/oact/solvency/BSanders_20160204.pdf.

stated, "Social Security was never intended to provide a comfortable retirement for everyone. Rather, it is one leg in the proverbial three-legged stool of Social Security, private or public sector DB pensions and other retirement savings and accumulated assets."[28] It could be argued that this "three-legged stool" is sturdy due to each leg being controlled by different parties. The government controls the Social Security leg, the employer controls the defined-benefit leg, and the individual controls the defined-contribution leg. Although individuals cannot directly control if they will receive a defined-benefit pension, they can ensure they have the other two legs. Social Security is the one leg that is theoretically not optional, which protect individuals who may not have planned for retirement.

During World War II employers used pension programs to entice employees, due to the high demand for labor. After the War, the supply of labor increased dramatically but the National Labor Relations Act of 1935 and the Taft-Hartley Act amendments of 1947 allowed workers to join unions. Unions gave employees the advantage to demand higher wages and benefits. One of the benefits they demanded were defined-benefit pensions. The number of defined-benefit pensions increased from the 1950s through the mid-1980s.[29] According to the United States Department of Labor, the number of defined-benefit plans were 175,143 with 40 million participants in 1983. In 2014, this number of defined-benefit plans decreased to 44,869 with only 37.7 million participants. Below is a graph that shows the number of defined-benefit pensions in the United States from 1975-2014:

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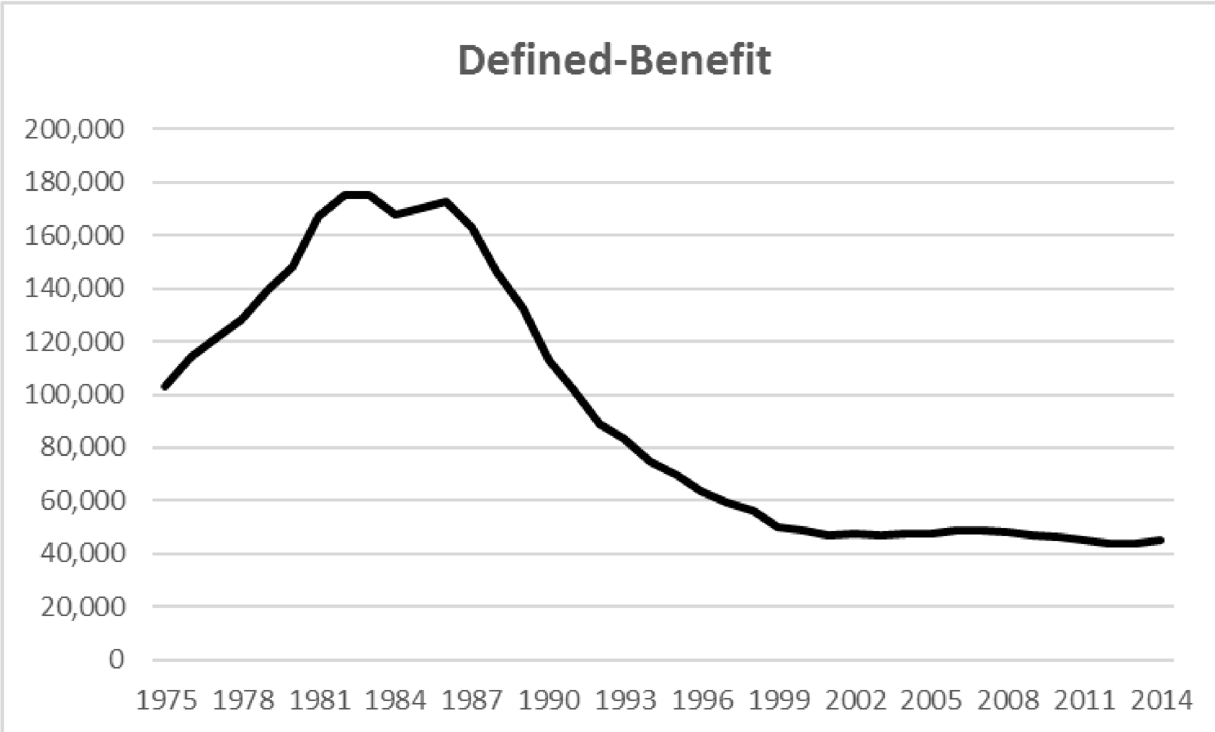
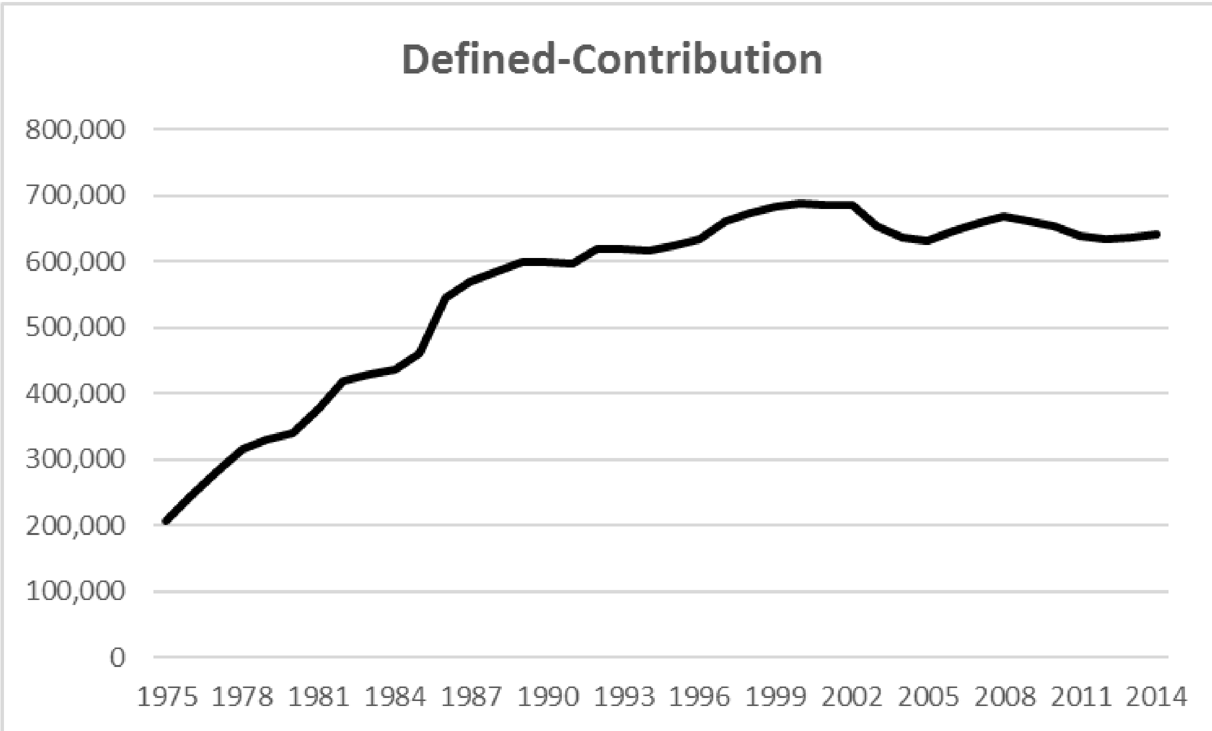
[28] Kilgour, J. G. "Why Are Retirement Benefits in the United States So Complicated? An Overview of How We Got Here." Compensation & Benefits Review, 2013, 34-39. doi:10.1177/0886368713485035

[29] Kilgour, J. G. "Why Are Retirement Benefits in the United States So Complicated? An Overview of How We Got Here." Compensation & Benefits Review, 2013, 34-39. doi:10.1177/0886368713485035



Source: Private Pension Plan Bulletin Historical Tables and Graphs 1975-2014

The Revenue Act of 1978 added Section 401(k) to the Internal Revenue Code. It focused on discrimination against lower compensated employees. Defined-Contribution plans have increased from 207,748 with 11.5 million participants in 1975 to 640,334 with 94.7 million participants in 2014. Below is a graph that shows the number of defined-benefit pensions in the United States from 1975-2014:



Source: Private Pension Plan Bulletin Historical Tables and Graphs 1975-2014

Defined-Contribution plans were originally designed to supplement the defined-benefit pensions, but Kilgour states, "they have, however, to a large degree, replaced private sector DB plans and now often represent the employer's primary or only retirement income vehicle."[30] Advantages of the defined-contribution plans are if an individual switches a company, they have to transfer their savings, with no risk to company, while contribution amounts are at the employee's discretion. The disadvantages are that the risk is now on the employee and the employer contribution is usually less than the defined-benefit plans. Below is a chart that shows

30 Kilgour, J. G. "Why Are Retirement Benefits in the United States So Complicated? An Overview of How We Got Here." Compensation & Benefits Review, 2013, 34-39. doi:10.1177/0886368713485035

the percentage of total plans that are defined-benefit and the percentage that are defined-contributions:

Year	% of Defined Benefits	% of Defined Contributions
1975	33%	67%
1985	27%	73%
1995	10%	90%
2005	7%	93%
2014	7%	93%

Source: Private Pension Plan Bulletin Historical Tables and Graphs 1975-2014

Defined-contribution plans are also known as individual retirement accounts. The two main types of retirement accounts are traditional or Roth accounts. The differences between these accounts include tax implications as well as maximum annual contributions. An individual who contributes to their traditional retirement account can use those contributions as a tax deduction for that year. Earnings and interest on investments are taxed when withdrawn at retirement. A Roth individual retirement account allows individuals to contribute "after-taxed" income, but earnings are not taxed at retirement. In 2017, the maximum an individual can contribute to a traditional individual retirement account is $18,000 and $24,000 if older than age 50. The maximum that can be contributed to a Roth is only $5,500 and $6,500 if over age 50.[31]

[31] Schauer, Paul C. "The Fallacy of the Roth." Academy of Accounting and Finance Studies Journal 17, no. 3 (2013): 57-70. Accessed April 20, 2017. https://web.b.ebscohost.com/ehost/detail/detail?vid=0&sid=e6850323-6f8a-434f-90bf-6b357501e601%40sessionmgr101&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=92564684&db=buh.

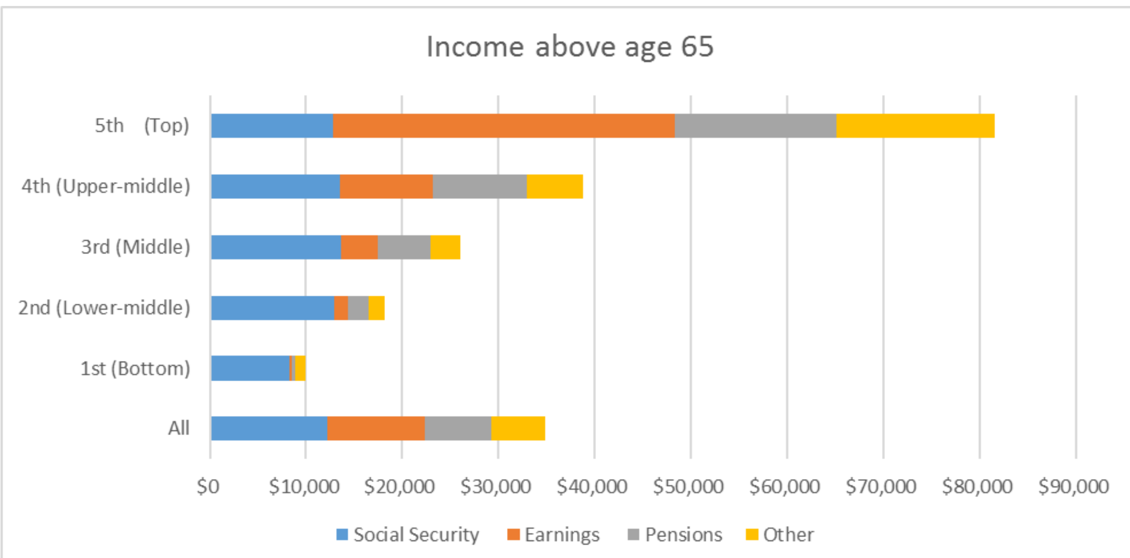
Theoretically, individuals should take advantage of both options. Due to current expenses, this is not realistic for most people. It is often argued which option is better. One distinct advantage of a traditional account is that maximum an individual can contribute annually is much greater. Due to the current year tax advantages, an individual would be able to contribute more to a traditional individual retirement account. This amount in the future would be taxed, which would decrease the value of the savings. An individual would be able to invest less in a Roth in the current year. This would lead to less savings at retirement but taxes will not decrease its value. Future income tax rates will effect this decision, but at this time are unknown. If the future income tax rates increase, the Roth becomes the better choice.

United States Retirement Income Analysis

When analyzing the importance of Social Security in the United States it is important to remember two things. First, Social Security is designed to supplement an individual's retirement accounts. Second, it is designed to assist in preventing poverty as individuals become too old to work. It was not created to make the rich richer. Our assumption is that wealthy individuals would survive without Social Security. For these reasons, the focus of the analysis should be on individuals with low income and low savings.

According to the Economic Policy Institute, 82 percent of individuals above the age of 65 are claiming Social Security. This compares to only 12 percent that receive income from public pensions and 22 percent from private pensions. In addition, 22 percent of the population above the age of 65 are still receive earnings.[32] There are certainly individuals who are not working because they receive Social Security, but there are also individuals who are not able to work and rely on Social Security income to survive.

Monique Morrissey in the Economic Policy Institute shows that in 2014, among individuals above the age of 65, Social Security makes up 35 percent of income. The bottom quintile has an average income of $9,956, which 83 percent or $8,229 is from Social Security. The chart below shows the income breakdown of individuals above the age of 65:



Source: Economic Policy Institute

This graph clearly shows individuals in the bottom two quintiles rely heavily on income from Social Security. Even individuals in the middle quintile receive more than half of their income from Social Security.

[32] Morrissey, Monique. "The State of American Retirement: How 401(k)s Have Failed ..." Economic Policy Institute. March 3, 2016. Accessed April 20, 2017. http://www.epi.org/publication/retirement-in-america/#chart1.

The Economic Policy Institute also shows that the inequality of retirement savings is greater than the inequality of income distribution. In 2013 studying families from ages 32-61, the top quintile is responsible for 63 percent of income from the entire population. That same group is owns 74 percent of retirement account savings. The lower two quintiles combined are responsible for 7 percent of income, but own only 1 percent of the retirement account savings. This difference is caused by the lack of disposable income among low-income families. Certain families are simply not able to save for retirement because they need all their income to survive now.[33]

As previously discussed, Social Security protects individuals against volatility in the economy. Individuals who rely heavily on private pensions face the risk of drastic decreases in the value of their portfolio. The recent recession caused by the housing market crash decreased the value of wealth for many families in the United States. An analysis by the Economic Policy Institute has the median net worth of all families between ages 32-61 in 2007 as over $156,000 (2013 dollars). In 2013, the net worth of the same age group was under $79,000. For families of individuals nearing retirement between the ages of 56-61, their net worth in 2007 was over $322,000 (2013 dollars). In 2013, the same age group only had a net worth of $164,000. This drastic decrease could certainly delay an individual's expected retirement.[34]

Social Security is not susceptible to these same risks. The stability that Social Security provides is important. These families could use Social Security as a bridge until the market recovers. For example, if an individual plans to retire at age 65, but at age 62 the market falls,

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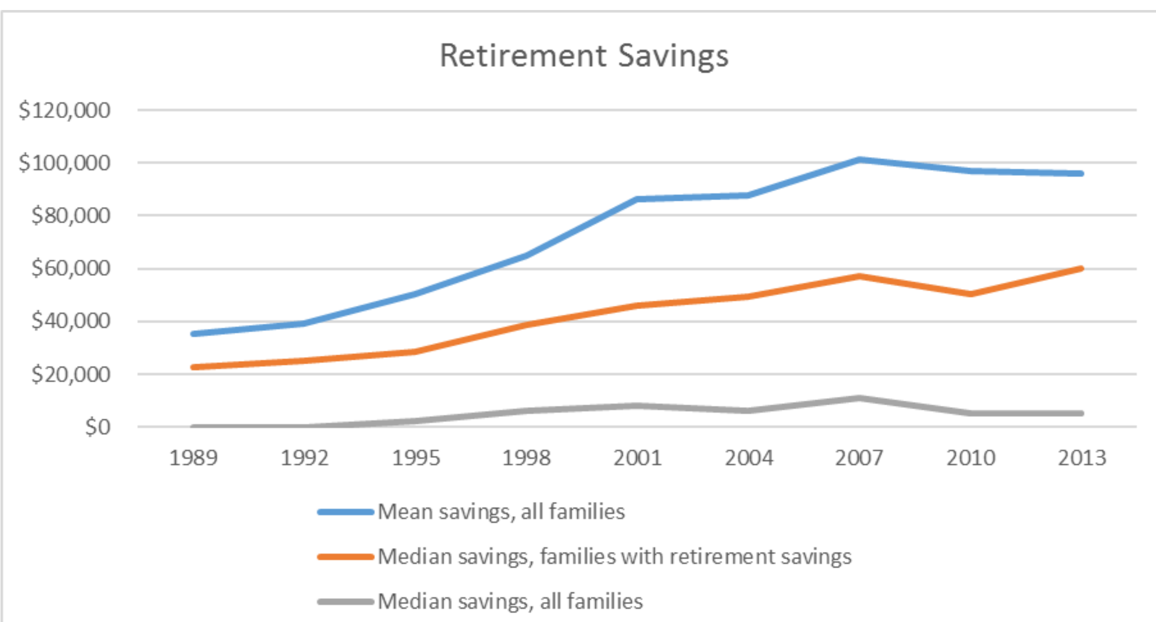
[33] Morrissey, Monique. "The State of American Retirement: How 401(k)s Have Failed ..." Economic Policy Institute. March 3, 2016. Accessed April 20, 2017. http://www.epi.org/publication/retirement-in-america/#chart1.
[34] Morrissey, Monique. "The State of American Retirement: How 401(k)s Have Failed ..." Economic Policy Institute. March 3, 2016. Accessed April 20, 2017. http://www.epi.org/publication/retirement-in-america/#chart1.

and their portfolio loses 20 percent of its value. This person could still retire at 65 surviving mostly on income from Social Security. After a couple years, the market improves and this individual's portfolio has improved back to its expected value. If this individual did not have Social Security to mitigate this risk they would have had two choices. The first option is delay retirement until the market improves. The second option is to withdraw from their retirement account while the value is low, meaning when the market improves they will not reap the full benefit.

The mean is often used to analyze data. The mean is simply the average of the population. It is also important to analyze the median, especially as to how it is related to the mean. Below is a graph that shows the mean retirement savings of families ages 32-61 from 1989-2013 (in 2013 dollars):



Source: Economic Policy Institute

Notice that the mean saving of all families is much greater than the median savings of all families. Actually, the mean is greater than the median savings of families with some form of retirement savings. This proves that the mean savings is skewed. Families with large retirement savings are skewing the mean, when in reality the majority of the entire population have less than $5000 in retirement savings. There are families that have enough savings for income during retirement. The majority of families do not have enough savings, which again demonstrates the importance of Social Security.

Who Social Security Protects Most

As previously stated, Social Security is not meant to make the rich richer. Social Security protects low-income individuals or families. Using demographic analysis, we could determine which groups are most likely to be "low-income". Three specific demographic groups will be the focus of this analysis. The first are single individuals, specifically single women. In 2013, families between the ages of 32-61 that are married or living with a partner had a median retirement savings of $78,000. Single men had a median retirement savings of $34,000. Single women in the same age group had a median savings of only $30,000. This is 12 percent less than single men and 62 percent less than families. One reason that explains this is again, the lack of disposable income. Single individuals have to pay their expenses on solely their income. Married couples have the benefit of two incomes to pay their expenses, leaving greater disposable income to allocate for retirement.[35]

The next group that Social Security protects are uneducated families. In 2013, families between the ages of 32-61 with no high school diploma had a median retirement savings of less than $15,000. Families with a high school diploma had a median retirement savings of $30,000. That is 104% greater just for having a high school diploma. Families with some college has a median savings of over $46,000. Families with college degrees had a median retirement savings of $95,000. That is 217 percent greater than families with a high school diploma and a staggering 546 percent greater than families with no high school diploma. There could be many reasons for these statistics including college graduates typically earn higher wages. These uneducated families with little retirement savings rely on Social Security for retirement income. [36]

The last group that Social Security protects is least obvious, are individuals older than 80 years of age. Individuals save for retirement. How long is retirement? Theoretically, if an individual lives long enough they will eventually run out of savings. Once an individual retires, they have limited sources of income. These sources include Social Security, pensions, and asset income. According to the Economic Policy Institute in 2014, for individuals between ages 65-69, Social Security made up 26 percent of that populations income. For individuals between ages 70-79, Social Security made up 39 percent of income. For individuals above the age of 80, Social Security made up 47% of income. Another reason for this is the decline of earnings for working as individuals age. For many individuals, working past the age of 80 is not possible. Social

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[35] Morrissey, Monique. "The State of American Retirement: How 401(k)s Have Failed ..." Economic Policy Institute. March 3, 2016. Accessed April 20, 2017. http://www.epi.org/publication/retirement-in-america/#chart1.

[36] Morrissey, Monique. "The State of American Retirement: How 401(k)s Have Failed ..." Economic Policy Institute. March 3, 2016. Accessed April 20, 2017. http://www.epi.org/publication/retirement-in-america/#chart1.

Security protects these individuals because it is paid out as long as they live and typically increases to mitigate the effect of inflation.[37]

Has Social Security Been Effective?

Social Security was created in 1935, and it has remained a constant topic for political debate. Some believe the trust fund is running out and Social Security will end. Some believe we should privatize Social Security for individuals to get better returns. Some believe we should adjust the current plan to stabilize the diminishing trust fund. Has Social Security been effective?

In order to determine the effectiveness of Social Security we analyze the poverty rates of individuals since 1960. Remember the reasoning for implementing Social Security was to prevent poverty for elderly individuals who are no longer capable of working. We need to analyze the poverty rates for families with individuals over the age of 60 compared to the poverty rates of those under 60.

We requested demographic poverty data from IPUMS USA. This data was imported into SAS. We used SAS to mine the data into specific age groupings and poverty levels. We created three different poverty groups POV1, POV2, POV3. POV1 was assigned to the families below the poverty line. POV2 represents the families just above the poverty line. We used SAS procedures such as PROC MEANS and PROC FREQ to create the necessary tables to complete the analysis.

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[37] Morrissey, Monique. "The State of American Retirement: How 401(k)s Have Failed ..." Economic Policy Institute. March 3, 2016. Accessed April 20, 2017. http://www.epi.org/publication/retirement-in-america/#chart1.

First, we used data obtained from IPUMS USA to analyze poverty rates of families above age 60 since 1960. Below is a chart that shows the percentage of families above the age of 60 in the entire population compared to the families above the age of 60 below the poverty line (POV1):

60 and Over		
Year	All	POV1
1960	15%	5%
1970	16%	4%
1980	17%	3%
1990	18%	3%
2000	18%	2%
2005	18%	2%
2010	20%	2%
2013	21%	3%
2014	22%	3%
2015	22%	3%

Source: IPUMS USA

The above chart shows families with individuals above the age of 60 have become a larger percentage of the population. In 1960, this group made up only 15 percent of the population. By 2015, this group grew to 22 percent of the population. Even though this group grew in relation to the entire population the percentage of this group below the poverty line decreased.

There could be many reasons that explain why a greater percentage of the population are now over the age of 60, including better healthcare, which leads to people living longer, furthermore the baby boomers are having less children than their parents did. If Social Security were not effective, we would also expect an increase in the families above the age of 60 below the poverty rate. The percentage of the population in poverty actually decreased.

How is poverty measured? The official poverty measure was created in the early 1960s. It is a ratio of the family's pre-taxed income divided by the family's threshold. The threshold is a calculation of three times the basic food diet in 1963 in the current year's prices.[38] This calculation is then multiplied by the family size. For example in 2015, a family size of four had a threshold of $24,257, if the mother made $11,000 and the father made $12,000. The total pre-taxed income for the family is $23,000. The ratio is then:

$$\$23{,}000/\$24{,}257 = .948$$

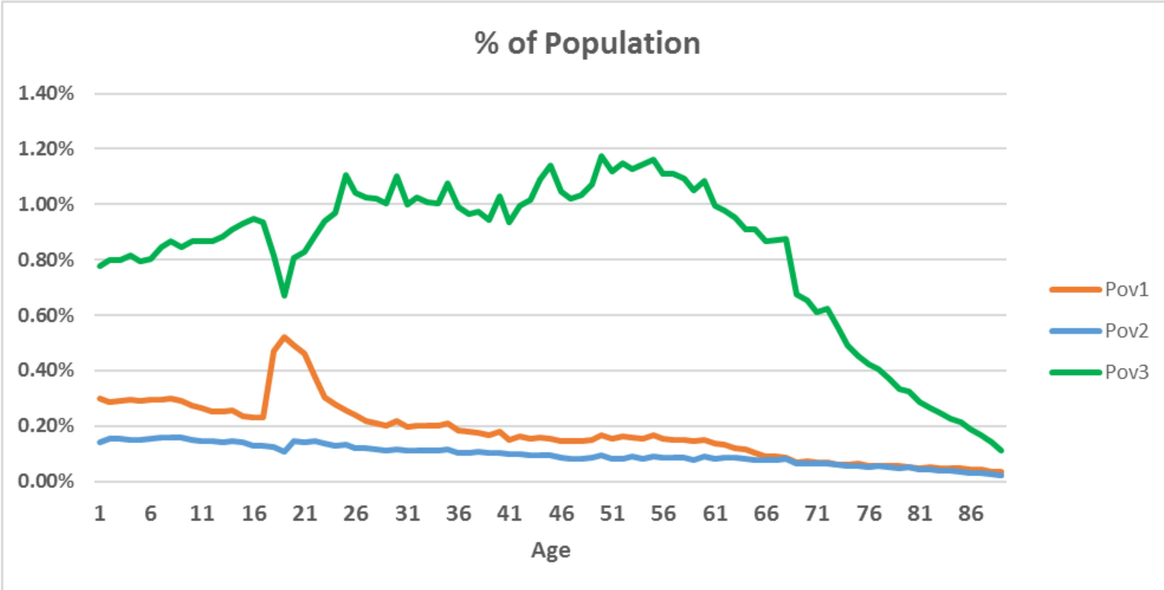
Since this is less than one, this family is considered to be in poverty. The greater the income the greater this ratio becomes. Let us say another family of four has a pre-taxed income of $45,000, the ration is then:

$$\$45{,}000/\$24{,}257 = 1.855$$

For this analysis, we considered three groups, POV1 families with a poverty ratio less than 1, POV2 between 1 and 1.5, and POV3 above 1.5

In 2015, over 16 percent of the population were under the poverty line, less than 9 percent of the population were in POV2, and almost 75 percent of the population was in POV3. Below is a graph that shows the breakdown of these poverty groups by age for 2015:

[38] "How the Census Bureau Measures Poverty." How the Census Bureau Measures. Accessed April 24, 2017. https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html.

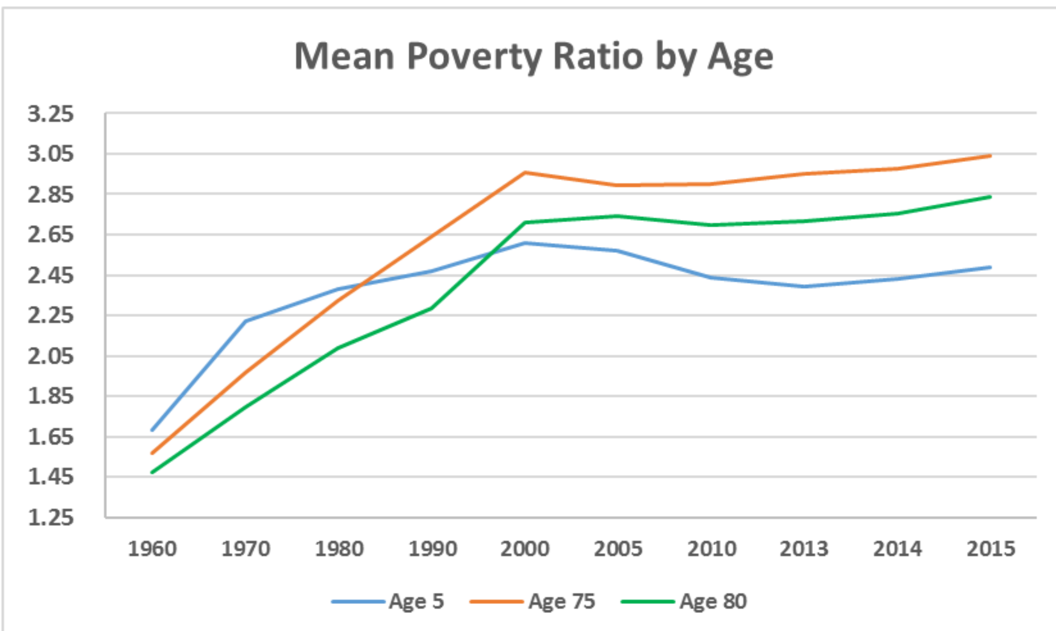


Source: IPUMS USA

The above graph shows the majority of the population in POV3. This percentage decrease drastically when the population passes the age of 60. One reason for this is the increase in mortality rates as individuals' age. The second reason is that individuals typically retire after the age of 60. As explained previously, Social Security was not meant to make the rich richer; it was created to protect elderly families from poverty.

Notice that the percentages for POV1 are noticeably greater than POV2 until the population reaches retirement age. The percentage of POV1for the population is 62 percent less at age 75 than at age 55. The percentage of POV3 is 61 percent less, but POV2 is only 39 percent less for those same ages. This shows that Social Security is protecting families from poverty as the population ages.

In the next analysis, we examine the mean poverty ratio by three ages from 1960-2015. The ages chosen are 5, 75, and 80. Age 75 was chosen for this analysis to show families of individuals who have been in retirement for approximately 10 years. Age 80 was chosen to provide another sample of families with individuals who have been in retirement even longer. Age 5 was chosen as a comparison because it represents families with young children. This age was used in an attempt to reduce outliers. Most of these families have an income and have normal expenses. Choosing an age like 21 would be misleading because most of the people in that age group have not started their careers and do not have "normal" expenses, such as a mortgage. Choosing an age like 55 would also be misleading because many of these people are at the peak of their earning potential. Below is a graph that shows the mean ratio for these three ages from 1960 to 2015:



Source: IPUMS USA

The above graph shows that from 1960-1980; Age 5 had the highest mean poverty ratio. Age 75 surpassed Age 5 in the early 1980s, but Age 80 did not surpass Age 5 until the mid-1990s. Since 2000, the mean poverty ratios have been relatively stable. In 2015, Age 75 had the highest mean at 3.04, followed by Age 80 at 2.84, and Age 5 at 2.49.

Since 1960, Age 5 had a compound annual growth rate of .7%, compared to Age 75 and Age 80 who both had a compound annual growth rate of 1.2%. The compound annual growth rate is useful because it accounts for the number of years between values calculated. This allows us to compare the growth rates between two different periods. From 1960-1980 the compound annual growth rate of Age 5 was 1.8%, Age 75 was 2.0%, Age 80 was 1.8%. This shows that the growth of three groups were high and relative to each other. From 1980-2000 the compound annual growth rate of Age 5 was .5%, Age 75 was 1.2%, Age 80 was 1.3%. This specific period is where elderly families mean poverty ratios grew the most compared to the Age 5 families.

Conclusion

Social Security effects almost every American. Employees pay a tax annually expecting guaranteed monthly income at retirement. Employers have to pay an equal amount of tax as each of their employees. Since being implemented in 1935, there have been many changes made to Social Security. There have also been changes to the individual retirement accounts with employers moving from defined-benefits pensions to defined-contribution plans.

When analyzing the mean and median balances of defined-contribution plans it is obvious that supplemental retirement income is necessary. There are definitely families who have a large retirement savings and could survive without supplemental income. The majority of families do not have enough savings. The income gap in the United States between the top quintile and the bottom quintile is staggering, but the retirement savings gap is even greater.

Analyzing the poverty rates since 1960, there was clear improvement among the elderly. Social Security was created to keep the elderly out of poverty when they are no longer able to work. Considering the poverty rates among the elderly have decreased in the United States, while maintaining a relatively the low retirement savings, it is obvious Social Security has been effective.

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