# The Effects of the Covid-19 Pandemic on the Fiscal Health of Social Security's Retirement Fund

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**Abstract:** In this research, I explore the effects the Covid-19 pandemic had on the fiscal health of Social Security's retirement fund. When welfare programs were originally designed, they were meant for a limited number of people who lived for very little time after their retirement. Recently, welfare programs have been expanding to encapsulate tens of millions of recipients, many of whom receive pensions for 20+ years. These increasing costs, coupled with decreasing income due to inflation, are causing immense fiscal pressure on the Social Security Administration. However, COVID-19 had an immense impact on the fiscal flows of the Administration, as it cut lots of revenue through the recession, though it cut costs through the number of deaths as well. To quantify the financial impact of COVID-19, I compiled three figures. First, I display the savings over time from COVID-19 deaths from 2020-2038 (figure 1) to exemplify the longevity of the impact COVID-19 had on the Administration. Next, I examine the age group's contribution to the Administration's overall savings (figure 2), which gives insight into why a certain demographic affected savings more than another. Finally, I look at a comparison between a pre-covid trustee report from 2019 and a post-covid trustee report from 2022 (figure 3), and I discuss the difference in projected benefits from 2023-2028. By comparing these two reports, I cover any past limitations with Figure 1, as well as showcase the decrease in revenue due to the pandemic. I found that the COVID-19 pandemic served to hurt the Social Security Administration more than it helped them since the costs from the pandemic outweighed the savings from the increased number of deaths.

Keywords: Social Security, beneficiaries, Covid-19, fiscal health/pressure

## Introduction

In recent times, governments have been under extreme fiscal pressure due to the rapid growth in the number of retirees. With this swift expansion, the Social Security Administration's trust fund is depleting swiftly, meaning it will be unable to cover all of its recipients. (Konnish, 1). Therefore, governments are attempting to reform certain areas of Social Security to alleviate some of the pressure, leading to lots of political opposition. (Lough, 1). On the other hand, the COVID-19 pandemic disproportionately affected the mortality of social security recipients, which plausibly reduced pressure for the Social Security Administration to reform.

It is possible that the pandemic reduced the likelihood of another political riot related to Social Security reform, such as the events taking place in France. Prime Minister Emmanuel Macron pushed a bill through parliament to reform their pension system. The central element of the reform is increasing the retirement age from 62 to 64, which means that citizens cannot receive Social Security pensions until they are 64. As a result, hundreds of thousands of upset French workers rioted across France. Despite all of the backlash, Macron decided to continue with the law and it will go into effect in September 2023. (Lough, 1). These events that took place in France show the potential of violent outbreaks as a result of Social Security reforms. However, the pandemic may have alleviated some pressure from the Social Security Administration, which could give policymakers more time to create legislation around Social Security.

Through this series of events, we see the significance of fiscal pressure on societies. The mere increase of the age by two years incited riots all across France, proving the integral role Social Security has on civilizations. The importance of financial security to them is evident, as it's a safety net that can provide an extra source of income in case of an economic downturn or a lack of funds in retirement. However, the emerging pressure on the trust fund serves as a threat to the fiscal health of Social Security; without it, a nation's economic security could be at risk and many people could fall below the poverty line. Income inequality, homelessness, and social unrest could increase greatly as well.

Covid-19 had a significant impact, and whether its effects were positive or negative is up for debate. It could have completely reshaped the future of the Administration, prolonged its existence, or had no impact at all. The answer to this question can frame the future of many elders in America, as well as this nation as a whole.

In this paper, I look at one component of the Social Security Administration's (SSA) fiscal health: the retirement fund.  Other financial concerns of the SSA, while no doubt useful to consider, are beyond the scope of this paper. With that in mind, I use publicly available data from the CDC, Social Security Administration, and the Census Bureau about projected monthly earnings, years of lives lost, and number of deaths by age group, to determine the net effect of the pandemic on the SSA. In sum, I find that Covid-19 led to savings of around $120B. However, comparing trustee reports from 2019 and 2022, it is clear that there is an increase in projected benefits by about $304B just from 2023-2028. I believe that the Covid-19 pandemic harmed the Social Security Administration, as it reduced the income from tax revenue.

In the following sections, I discuss existing literature and connect it to the pandemic's effect on Social Security. Then I talk through the history of the Administration, as well as how it works. Following that, I document my main results

## Literature Review

Gopi Shah Goda and Andrew Biggs document that the SSA has faced a perilous fiscal situation for decades. About 40 years ago, severe inflation worried the Administration. Taxes on wages fund social security. To keep up with inflation of benefit costs, wages needed to rise by the same proportion in the same period. However, wage rates didn't even match inflation rates, so Social Security faced a large solvency problem. (SSA, 1). As a result, there was a chance they could not pay all scheduled benefits in 1983. They were able to amend short-term solvency and push the depletion of the trust fund back to the mid-2030s. Now, the trustees estimate the depletion to take place in 2034, when the Administration won't be able to pay all of the scheduled benefits. Instead, they are only guaranteed to pay around 80%. The depletion is largely due to longer life expectancies and decreased fertility rates; these demographic shifts lead to high annual deficits and higher costs per beneficiary. However, the pandemic may serve as a means of lightening the pressure on the Administration, as well as pushing the depletion year back again due to its effects on the elderly population. (Goda, 1)

The pandemic had substantial effects on older generations. According to a study performed by Pierro Poletti, Covid mortality risk increases with age. Among individuals 70 and above, there was a much higher death ratio of 10.5% compared to the 0.43% rate observed from the younger patients. The contrast in ratios highlights a greater susceptibility to mortality among elders than the youth. As a result of the disparity, 907,000 elders passed away due to the pandemic, which was about 80% of the death toll. This literature proves the disproportionate deaths of COVID-19, which largely influences the fiscal health of the Social Security Administration. It's noteworthy that 56% of beneficiaries are retired workers aged 62 and above, precisely the age group with the most Covid-19 deaths. (Poletti, 1)

Further research shows the effect of the pandemic on elderly employment. With the onset of Covid-19, employment among older workers dropped much more compared to predictions before the pandemic. Employment for 51-60 year olds was 8.3% lower than predicted, while 62-70 year olds was 10.7% lower. The cause of the drop in employment is due to increases in unemployment, as well as exiting the labor force. Instead of an increase in Social Security claims as a result of the mass retirement, the application for benefits remained unchanged. I relate to this literature by examining the effects of Social Security payouts as a result of the increase in retirement, as well as the deaths. (Goda, 1)

## The Evolution of Social Security

Not only did the pandemic disproportionately impact the elderly, but the Great Depression also hit them severely. State legislatures attempted to mitigate the effects of the downturn by implementing pension plans, though many were failures due to underfunding and negligence.

Officials and citizens tried to enforce plans to increase economic security, mostly federal pensions, but the officials were vehemently opposed to such an idea until Franklin Roosevelt entered office. He took inspiration from Europe's economic security plans and later created the Committee on Economic Security. The committee created the Social Security Act, passed in 1935. (SSA, 1)

Initially, the Social Security Act was rather bare and didn't include any coverage for healthcare or disabilities; it only counted for old-age assistance. It worked by citizens contributing to a payroll tax, which was stored in a trust fund. The Social Security trust funds store money for costs that are not in use, like benefits or administrative costs. They are invested in treasury bonds guaranteed by the government. The money from the trust fund was distributed in lump sums to those who applied when they turned 65. It took about 3 years for the Administration to use monthly pensions instead. The pensions they received were based on a proportion of income, tracked by a Social Security number. (SSA, 1)

The following 20 years of Social Security were very eventful, with many significant amendments. The 1939 amendments made the Administration more inclusive: they gave pensions to people dependent on the elderly, such as spouses and children, and survivor benefits paid to the family of a prematurely deceased elder. However, the new increased recipients required a lot more money, and the pensions weren't meeting the financial needs of the beneficiaries. The government introduced the cost of living adjustment (COLA) to address this, increasing pension values. (SSA, 1)

Over time, the program expanded to facilitate many different needs of its recipients, such as disability insurance and Medicare. Additionally, the Administration accounted for many more people since the Administration lowered the retirement age from 65 to 62. Social Security was becoming very expensive due to its number of beneficiaries, and the state governments were not able to handle all of the payments; therefore, the federal government assumed the adult categories (elderly over 65, and disabled elder) by creating the Social Security Income program and assigned responsibility to SSA. (SSA, 1)

Today, the Social Security Administration has become essential to the lives of many, with about one in seven people receiving pensions, and 90% of jobs covering Social Security. However, people live much longer now than in the 1930s, so the Administration has to give out much more money. Additionally, their massive expansion became a source of fiscal pressure. They started encapsulating many demographics, boosting the number of recipients beyond what they can reasonably handle. Furthermore, there were many pension increases with the addition of COLA, furthering the pressure on the trust funds. As a result, Social Security has been faced with solvency issues for decades now, as they have far more recipients that cost much more than 80 years ago. (SSA, 1)

**Social Security Operations**

During working years, all employees, employers, and self-employed individuals contribute to a Social Security payroll tax, stored into one of two trust funds: the Old Age and Survivors fund and the Disability Insurance fund. When a worker stops receiving money through their

labor, the worker is eligible for monthly benefits until death, distributed at a discount rate of 3% a year. These recipients are split into three categories: retirement benefits, survivor benefits, and disability benefits. (SSA, 1)

A worker is eligible for retirement benefits by working somewhere covered by Social Security. To qualify for benefits, one must work for at least 10 years. (SSA, 1). When a worker meets these requirements and is above 62, they can receive benefits, which are based on their highest paying 35 years of work. However, recipients at 62 receive benefits at a reduced rate. These benefits are known as early since pensions are collected before the current normal retirement age of 67. 36 months before the normal retirement age, benefits are reduced by 5/9 of one percent; every month that exceeds 36 is further reduced to 5/12 of one percent. At 67, the recipient will receive their benefits in full. (SSA, 1). Additionally, retirement benefits are extended to wives or dependent husbands 62 or above, children under age 18 or older children who became disabled before 18, and a wife of any child eligible for benefits. (SSA, 1). Because the retirement fund is concentrated toward the elderly, COVID-19 affected the old-age trust fund much more as the deaths were disproportionate toward them.

Survivor and disability benefits are issued to certain family members of a prematurely deceased recipient: surviving widow or dependent widower over 62, children under 18 or disabled before 18, a mother of a disabled child, and dependent parents over 62. A lump-sum death payment is issued as well. Furthermore, Disability benefits are monthly pensions for those who are permanently disabled and to the same dependents as retirement benefits. Many elders passed away during COVID-19, so the amount of survivor benefits was quite high; though the amount of disability benefits was not as high. However, both of these are outside the scope of this paper. (SSA, 1)

## Adding Up the Effects of the Pandemic

In the following section, I discuss the data and detail the calculations that I use to get my results, as well as the underlying assumptions.

### Methodology

First, I gathered my data through publicly available sources. I used the CDC's website on the total death count for all COVID-19 deaths in the U.S. (CDC, 1). Additionally, I found the years lost per age due to COVID-19 as well as annual projections for 2020-2044 through the Social Security Administration. (SSA, 1). Finally, the Census Bureau provided me with the population per age.

I split up the age cohorts based on the CDC's website, though I cut it off at 62 since no benefits are given out before then. To get the most accurate estimate of years the entire cohort had left to live, I took the weighted average of population per group, and multiplied their percentage by their years left to live. The summation of their weighted years left brought me to the entire cohort's years left to live.

Table 1: Age group's years remaining

| Age groups | Years remaining |
|---|---|
| 62-64 | 18.64 |
| 65-74 | 14.15 |
| 75-84 | 8.41 |
| 85+ | 2.11 |

After that, I took the annual projections for retirement benefits from 2020-2038 from Social Security's website and discounted them at a real interest rate of 1% to present value. This accounts for 2% expected inflation. To find the amount Social Security owed per person, I summed all of these discounted values for every age cohort based on their years lost. Multiplying the amount owed per person by the number of deaths for every age cohort gave me the amount saved in that age group. Following that, I simply added up each value to arrive at the total amount saved: $117,667,904,648

**Assumptions**

However, I made some assumptions to get to this number. I assumed that every one of these adults was going to Social Security, and they were all going to collect at the early retirement age of 62. Additionally, I figured that everyone would receive the same amount of pensions based on average annual projections, in reality, everyone would receive pensions based on their most successful 35 years of work. Also, I assumed that all of them would have died on their presumed death year by the years lost from Social Security, and none of them died early. I made assumptions about the solvency of Social Security: I believed it would be stable through 2020-2044, without complete depletion of the trust fund.

**Figure 1**

This graph describes savings over time for Social Security, starting in 2020 and ending in 2038. The summation of all the years equals $117,667,904,648, which is the amount the Administration saved due to elderly mortality. Figure 1 exemplifies the evolution of savings, specifically how COVID-19 affects the Administration in the long run.

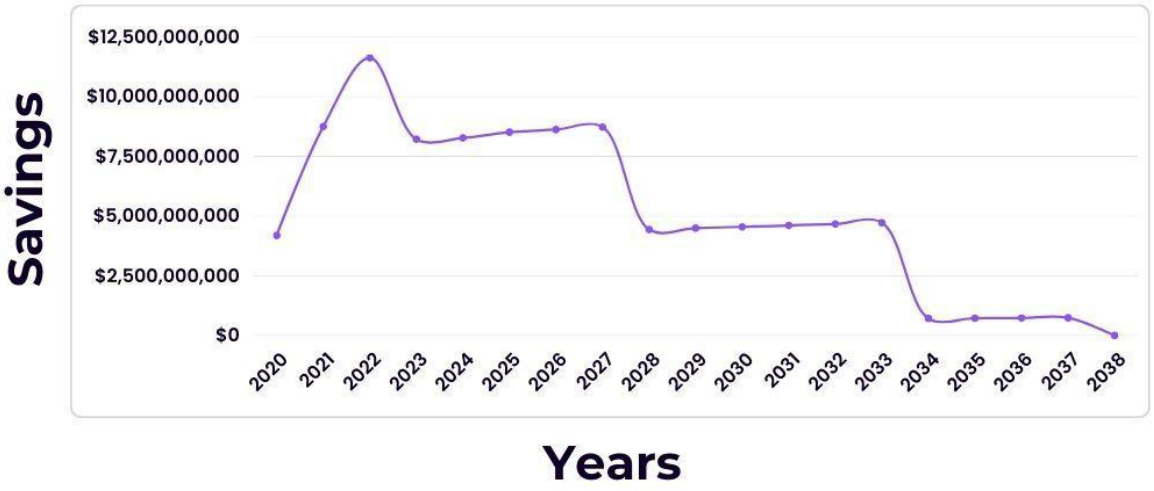


Fig 1: Graph of the Social Security Administration's savings over time. Data was compiled from the Social Security Administration, Central for Disease Control, and the Census Bureau. Deaths were sorted into 4 age groups, and a weighted average of years remaining was found for each cohort. Each year that the individual would have been collecting pensions was added up until the individual supposedly died. That number was multiplied by the number of deaths, which was the amount saved per cohort

There were many limitations in making Figure 1. It does not account for both of the trust funds, but rather just the retirement fund since that's what was affected by the disproportionate deaths caused by the pandemic. Additionally, there is no account for the deaths of those who contributed to the payroll tax, which would have altered the benefit to the people as well as the income for the Administration. The deaths could've been leveled out from the increase in the labor force participation rate as well. Furthermore, the 85+ cohort includes many who are 100+, who are much more likely to die sooner than someone who's 85.

According to the graph, the savings from COVID-19 are expected to decrease over time, as the Social Security Administration owes less money to people. Also, by discounting to present value, the value of money mechanically decreases over time. There is a sharp increase in savings from 2020-2022 due to the large rise in mortality among the elderly; then, the number of deaths slows down in 2023. Additionally, there's a spike downward in 2022, primarily because individuals aged 85+ only have two years remaining to live, so the Administration doesn't owe

them any money past 2022 in expectation. From 2023-2028, the savings slowly increased since there was an increase in wages, though they fell sharply again as those aged 75-84 are projected to pass away, and they made up most of the beneficiaries. Savings are relatively stagnant until 2034, when 65-74-year-olds expect to pass away, again reducing a large chunk of the amount Social Security must payout. From 2034 onwards, the Administration is only saving from the remaining 62-64-year-olds who retired early and then passed away in 2038, leaving the Administration with 0 savings left from COVID-19.

Each of the age groups contributed a sum of the savings to the administration, though when they reached their projected death year, the government no longer owed them any money. When these death years took place, savings dropped heavily, though the contributions were unequal. For example, 75-84-year-olds contributed much more than 85+ year-olds since they weren't expected to live as long.

**Figure 2**

Next, I break down the contributions to savings from each group. I aim to describe how the difference in demographics impacted the contributions, which allows examination into exactly why a certain age group affected savings more than another.

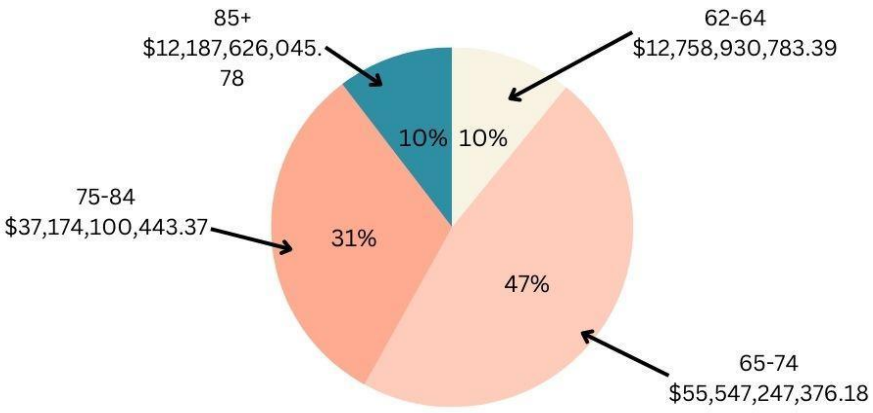


Fig 2: The demographics that received Social Security pensions. The percentage of savings per age cohort to Social Security's savings was found by adding up each year of savings per individual then multiplying it by the number of deaths to find how much was in each cohort, and then finding that number's percentage to overall savings.

The Social Security Administration's savings are closely tied to the age of recipients; the older they get, the less money the government owes them. 65-74-year-olds contributed about half of the savings as the government owed them a lot of money, about $217,366 per person at 255,547 deaths. Additionally, they had about 14 years left to live, so the Administration would've owed them money for another 14 years. Their large contribution is likely due to their cost per person combined with their high mortality rate for 14 years. 65-74-year-olds were followed behind those aged 75-84, who didn't cost as much as the 65-74-year-olds at $124,793 per person, but they had a higher mortality rate at 297,885 deaths. Though, they weren't expected to live much longer, only 8 more years. Finally, 85+ year olds and 62-64 year olds were comparable in their contributions since those aged 85+ had 309,017 deaths, but only had two years left to live, so their cost was very low. 62-64 year-olds cost the most since they were expected to live for 18 more years, but had the least deaths with 45,071.

All three factors of cost per person, number of deaths, and years remaining until death were important to contributing to the savings, though a noticeable trend is an inverse relationship between deaths and cost, as one would expect a cohort with a large number of deaths to cost the most. However, contributions mostly depended on the relationship between years left to live and the number of deaths. 62-64-year-olds lived for a long time, though there were very few deaths, and vice versa for 85+; however, 75-84 and 65-74-year-olds had a balance between the number of deaths and time left to live, so they contributed much more.

**Figure 3**

Since Figure 1 didn't capture all the costs and income of the retirement fund over COVID-19, I compiled a figure that depicts the difference in pre-Covid projected benefits from 2019 and post-Covid 2022 projected benefits, from 2023-2028. These numbers cover all the costs and income for Social Security that I didn't account for and shows the impact that all the death during Covid-19 on the administration.

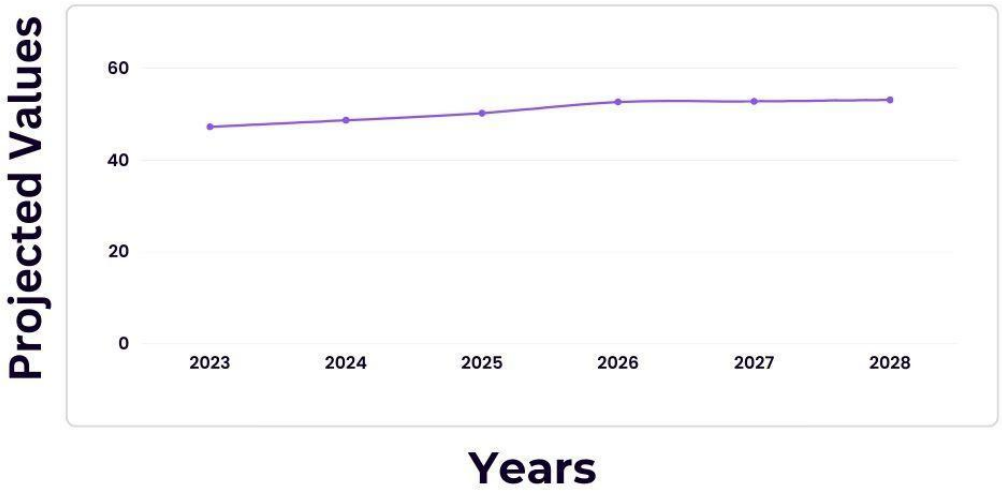


Fig 3: The difference in projected pension payments in billions from 2019 and 2022. Data was compiled from the Social Security Administration for projected pension payments from 2023-2028 during the years 2022 and 2019. These values were subtracted to see the overall change in projected payments for 2019-2022.

The average difference in projected benefits between 2019 and 2022 is about $50.76 billion, which slightly increases from 2023-2026, though is relatively stagnant afterward. Summing all the years gets the total difference, which is about $304 billion. Though, figure 3 displays an increased cost to the Administration, while Figure 1 shows an increase in savings. Additionally, the amount saved from 2023-2028 in Figure 1 is $46,781,097,612, so the impact deaths had on the fiscal health of Social Security was rather minuscule compared to the cost caused by the pandemic.

My numbers and Social Security's numbers are much different since I only accounted for death's impact on the Administration, while their numbers include all factors about the retirement fund. However, it's interesting that the pandemic cost the Administration much more than it saved it, which is due to the loss in payroll tax revenue from the recession at the beginning of 2020. The deep recession outweighed any savings about mortality among the elderly, since employment, interest rates, and economic growth fell steeply. (Press, 1). Additionally, the Administration is faced with the same problem now from the 1980s, we are faced with rising inflation, but wages are not matching. As a result, the income to the Administration is simply not worth as much. (Konnish, 1).

## Conclusion

With these findings, the pandemic's impact on Social Security's future seems to be more grim than expected. It's intuitive to believe that the deaths from all of the elderly would've been beneficial to the fiscal health of the Administration, though the pandemic caused an increase in projected benefits by $304 billion, with the already increasing fiscal pressure due to increased retirement among the baby boomer generation. The mortality from COVID didn't have enough of an impact to dwindle the effects of the loss in revenue from the recession, so the pandemic seemed to harm the Administration more than it helped it.

My contribution to COVID-19's effect on Social Security is displaying the effect deaths had on the administration. Savings from the pandemic were around $117 billion, which would have culminated across 18 years. The contribution to savings was concentrated among those aged 65-74 since they had a high mortality rate, and cost the most, while 85+ and 62-64-year-olds contributed the least due to their imbalance in cost and deaths.

It's clear that the impacts pandemics have on social welfare are bigger than the deaths of the elderly, many more aspects must be accounted for, such as increased benefits due to the pandemic, decrease in income, increased retirement, etc. We can use COVID-19 as an example to be much more prepared in the wake of another pandemic.

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