Investing in Our Future: A Transition to Sustainable Retirement Security

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Executive Summary

Due to demographic changes, the fundamental structure of the Social Security system is unsustainable. If no action is taken in the next ten years, benefits will be drastically reduced for current retirees. The majority of the working population does not believe that the system will provide them benefits at all.

Reforms that allow an individual's Social Security contributions to be invested in the private market result in larger benefits for beneficiaries under the same contribution levels. However, transitioning from the current system to individualized accounts poses a very serious challenge: How can society keep its promises to older generations while allowing the younger generations to build their savings?

Our solution begins in 2030 with several measures to increase the Social Security trust fund in advance of initiating individualized accounts in 2036. Social Security contributions are divided between supporting retirees and saving in individualized accounts. In the 2040s, the last Americans will enroll into traditional Social Security, and the first Americans will retire under the new system. Multiple options for a reinsurance program to ensure minimum benefits for all retirees are explored. By 2056, workers direct all of their contributions to their individualized accounts, and retirees under the legacy system are maintained by the trust fund balance.

This transition will liberate the youngest Americans from a dead-end system that has never met the retirement savings needs of the American populace.
Background

Social Security, a pivotal element of America's social safety net, faces a critical juncture. Established in 1935 to provide security for retirees, disabled persons, and survivors, this program has played a central role in supporting millions of Americans. However, the evolving demographic and economic landscape poses severe threats to its sustainability. The system is on a trajectory towards insolvency by 2035, primarily due to an aging population that is living longer while birth rates decline, drastically increasing the number of beneficiaries relative to contributing workers.

Despite the necessity of reforms, past efforts to update the system under administrations such as those of Presidents George W. Bush and Barack Obama have not succeeded. Bush's initiative to privatize Social Security aimed to allow individuals to manage their contributions for potentially higher returns but faltered amid concerns over the risks to beneficiaries' security and the overall program stability. Similarly, Obama's proposal to adjust cost-of-living increases through "chained CPI" met with strong bipartisan resistance, illustrating the difficulty of implementing changes that might adversely affect the most vulnerable populations.

These challenges underscore the urgency for innovative solutions. The current demographic trends predict future shortfalls that Social Security is ill-equipped to handle without substantial reforms. With Americans having fewer children and living longer, the population is aging rapidly. These demographic changes are leading to an increasing dependency ratio, where the number of Social Security beneficiaries grows relative to the number of contributing workers. Our proposal seeks to introduce practical and sustainable solutions that will not only preserve but enhance the program's viability. By drawing on lessons from past legislative attempts, both successful and unsuccessful, we aim to craft a comprehensive plan that responds adeptly to the pressing fiscal and demographic realities.

The goal of our proposal is clear: to proactively tackle the looming fiscal challenges facing Social Security in a way that is equitable and sustainable. This effort is about more than safeguarding a financial program; it is about reaffirming and strengthening a longstanding social contract with American workers and their families. We are committed to ensuring that Social Security remains a reliable pillar of retirement security for current and future generations, adapting innovatively to the realities of a changing America.
Solution

Solution Summary

Our proposal offers a balanced solution to address the fiscal challenges facing Social Security while ensuring a more sustainable and equitable retirement system for all Americans. It combines the best elements of individual responsibility and collective security, offering a politically viable path forward that addresses the concerns of various age groups and political constituencies. Specific changes that we propose include the following:

- **Individualized Accounts:** We recommend introducing individualized retirement accounts for all workers starting in 2036. During a transition period between 2036 and 2056, approximately 25% of Social Security contributions will go toward maintaining the pay-as-you-go (PAYG) system, and 75% will be invested through individualized accounts.

- **Changes to Revenue:** We suggest increasing the current Social Security tax rates to 7.2% for above cap earners starting in 2030 and removing the payroll cap.

- **Changes to Expenses:** To address the fiscal challenges facing Social Security, we recommend implementing a 10% reduction in benefits starting from 2030. The impact on retirees could be defrayed by altering the tax treatment of Social Security benefits.

- **Transition Approach:** We recommend allowing individuals who will be 70 by 2043 to continue on in the legacy PAYG system. We explore a variety of reinsurance options to maintain a minimum benefit level for the first retirees who retire with individualized accounts that were not built over their entire careers.
By introducing individualized retirement accounts alongside a scaled-back version of the traditional Social Security program, we provide workers with the opportunity to benefit from market growth and maintain control over their retirement savings. The changes to revenue and expenses ensure a more sustainable system. Future generations stand to gain significantly from this new approach, as they will have the opportunity to build larger retirement nest eggs through their individual accounts, which have the potential for higher returns compared to the current system. The gradual transition approach, with accommodations for older workers and retirees, ensures a smooth and manageable shift to the modernized retirement system.

These changes are explained in detail in subsequent sections of this paper.

**Model Methodology**

**Macro Model**

The macro model integrates significant policy changes, such as the sunset period beginning in 2036 and the introduction of individual accounts. These adjustments shape various scenarios within the model, reflecting the dynamic nature of Social Security planning and outcomes. The introduction of individual accounts in 2036 signifies a substantial policy shift. Moreover, a grandfathering provision permits individuals aged 62 and above to transition into the legacy PAYG system until 2043. Post-2043, new entrants into the old Social Security system cease, leading to a decline in the pool of beneficiaries. These policy modifications play a crucial role in simulating different scenarios within the model, providing insights into the future of Social Security.
The model calculates contributions from both below-cap and above-cap earners. Below-cap contributors, constituting 92% of total contributors, contribute by multiplying their earnings (up to the $169,000 payroll cap) by the 6.2% social security tax rate. Above-cap earners, with assumed earnings of $500,000, contribute at a higher tax rate of 7.2%. From 2036 to 2043, the transition period, 75% of all contributions are allocated to individual accounts, with the remaining 25% retained in the old Social Security fund. After 2056, 100% of their contributions go to their individualized accounts. These calculations are crucial for revenue forecasting within the system. Our model does not require indefinite 25% contributions to the trust fund by high-income earners or cap the total amount that can be accrued in a given individualized account (i.e. 100% contributions to the trust fund after a particular balance has been reached), however both are politically viable options to increase revenue into the general trust fund post-2056.

Payouts to beneficiaries are computed by multiplying the number of retirees by the adjusted payout amount, after a 10% benefit cut. Factors such as death rate acceleration or retirement age changes are accounted for in demographic forecasts, ensuring accurate projections of beneficiary numbers and associated financial obligations. Similar to the current PAYG system, in the event of death, individualized accounts would only provide benefits to qualified surviving spouses and would not be transferable to other heirs.

The social security trust fund balance would be updated annually based on the previous year’s balance, contributions received, payouts made, and a growth rate of 3%. This can be formulated as: Trust Fund Balance at Year t+1=(Trust Fund Balance at Year t + Contributions − Payouts) × (1+growth rate).

The introduction of individual accounts in 2036 signifies a paradigm shift in retirement savings options. This component tracks contributions, withdrawals, and investment returns, providing valuable insights into the evolving landscape of Social Security and its impact on individual retirement planning.

In modeling the outcomes of our Social Security system, several key parameters play critical roles, each with its set of detailed assumptions.

For the macroeconomic factors, GDP growth rates and per capita values are paramount in adjusting earnings estimates, contributions, and overall economic conditions within our model.
These factors serve as indicators of broader economic trends, profoundly influencing the financial landscape of Social Security.

Demographic factors, including the working-age population and retirees, are tracked, accounting for death rates and other demographic shifts. These inputs offer crucial insights into the demographic composition of Social Security beneficiaries and contributors, guiding policy decisions and scenario analyses effectively. The model also calculates the total number of contributors based on labor force participation rates, adjusting for unemployment levels. Understanding workforce dynamics is essential for comprehending revenue generation within the Social Security system and its sustainability over time.

**Representative Agent Model**

The representative agent model is constructed using STATA to project the present value of total savings at retirement (age 70) for individuals of different ages and income levels, starting from the year 2036. The model uses current estimates of the 25th, 50th, 75th, and 90th percentiles of individual incomes in the US, projecting to the year 2036 with an assumed average inflation rate of 2.5%. The growth rates for the target date accounts vary by age range: 7.25% for ages 22-49 over 28 years, 6% for ages 50-59 over 10 years, and 4% for ages 60-69 over 10 years, resulting in a weighted average growth rate of 6.31%. The model applies these growth rates to the future income estimates to calculate the projected savings at retirement under various economic scenarios. Heat maps are used to display these projections for different growth rates (6.25%, 6%, 5.75%, 5.5%, 5.25%, and 5%), illustrating how savings vary across income levels and growth rates. For instance, a 22-year-old in the 25th percentile is projected to have $376,234 in savings at a 6.25% growth rate, which decreases to $271,408 at a 5% growth rate. This methodology highlights the importance of maintaining strong economic growth and effective investment strategies to secure financial stability in retirement, providing policymakers and researchers with insights to formulate strategies that ensure the financial well-being of future retirees.

As to the result, the heat maps provided in the model show the projected savings at retirement for different income levels and age groups under various growth rate scenarios. For example,
under a 6.25% growth rate, a 22-year-old in the 25th percentile (Q1) is projected to have savings of $376,234 by age 70, while someone in the 90th percentile at the same age is projected to have $1,953,532. As the growth rate decreases, the projected savings also decrease. At a 6% growth rate, the same 22-year-old in the 25th percentile is projected to have $351,811, and in the 90th percentile, $1,826,720. Further, at a 5.75% growth rate, the projections for the 25th percentile drop to $329,264, and for the 90th percentile to $1,709,648. At a 5.5% growth rate, the projections are $308,440 and $1,601,521 respectively. At a 5.25% growth rate, the savings are projected to be $289,197 for the 25th percentile and $1,501,608 for the 90th percentile. Finally, at a 5% growth rate, the projections are the lowest, with $271,408 for the 25th percentile and $1,409,239 for the 90th percentile.

These projections underscore the importance of maintaining a robust growth rate for individualized accounts, as higher growth rates significantly enhance the future value of retirement savings. The heat maps vividly illustrate how different income levels and growth rates impact long-term savings, highlighting the need for effective investment strategies and supportive economic policies to ensure financial stability for retirees. This model demonstrates the sensitivity of retirement savings to growth rates, emphasizing the critical role of economic conditions in securing a financially stable retirement.
Results

Demographics Trends and Patterns

Figure 1 illustrates a clear aging trend in the US population. The share and absolute number of the population aged 70+ are increasing over time. This is evident from the growing size of the green area in both charts.

The 0-14 age group is either shrinking or remaining relatively constant in both absolute numbers and as a percentage of the total population. This indicates a lower birth rate or a smaller proportion of young individuals within the population.

The 15-69 age group initially occupies the largest portion of both charts, suggesting that this is the predominant age group. Over time, there's a slow decline, particularly noticeable in the percentage chart on the right.

In conclusion, the projected evolution of US population demographics over the next 80 years make a PAYG system unsustainable -- there won't be enough working people to support retirees. It is also worth noting that these charts present a more optimistic outlook by expanding the working age population from 15-65 to 15-69.
Impact on Trust Fund

Figure 2 illustrates the impact of different proposed Social Security (SS) cuts on the trust fund balance over time, measured in trillions of dollars, from 2025 to 2100. The three scenarios depicted are a 5% cut, a 10% cut (our proposal), and a 15% cut.

Initially, all three scenarios show an increase in the trust fund balance, peaking around 2037. This reflects short-term savings generated by the cuts. However, differences become apparent in the mid-term (2038-2055). The 5% cut scenario shows a sharp decline, turning negative around 2043 and reaching its lowest point around 2055, indicating that this cut is insufficient to maintain the trust fund's solvency without additional borrowing. In contrast, the 10% cut scenario also shows a decline but manages to avoid dipping into negative territory. The balance stabilizes around 2045, suggesting that this cut level can maintain solvency through the mid-term without
exhausting the trust fund. The 15% cut scenario, while initially following a similar decline, stabilizes sooner and begins to recover more quickly than the 10% cut, ensuring a more robust trust fund balance but potentially imposing greater hardship on beneficiaries.

Politically, the 5% cut is easier to implement due to the smaller impact on beneficiaries but requires government borrowing to cover shortfalls for about a decade, necessitating Congress to allow Social Security to run at a deficit. The 10% cut strikes a balance between maintaining trust fund solvency and being more politically acceptable compared to the 15% cut, avoiding the need for borrowing and additional legislative actions. The 15% cut, while ensuring the strongest financial position for the trust fund, is less politically viable and imposes significant financial burdens on seniors.

Currently, Social Security benefits are taxed as ordinary income. If the tax treatment of Social Security benefits was altered, the purchasing power for retirees could remain the same, despite the 10% nominal reduction. Since this action would effectively reduce general revenue to the federal government, it effectively moves a portion of the Social Security budgetary deficit to the core federal government deficit without requiring Congress to allow Social Security to make payments in excess of dedicated Social Security resources.

In conclusion, the proposed 10% cut represents a balanced approach that maintains the trust fund’s solvency over the long term without the need for altering Social Security’s status as a revenue-constrained entitlement program, making it a viable transition away from the PAYG system. The 5% cut, while politically easier, would require borrowing and additional Congressional action, potentially increasing national debt. The 15% cut, though ensuring long-term financial health of the trust fund, may face significant political and social resistance due to its substantial impact on seniors. The impact of a 10% cut to benefits for retirees could be defrayed by altering the tax treatment of Social Security income.
Figure 3 shows that, between 2025 and 2030, total payouts slightly exceed contributions, but the Social Security (SS) trust fund balance increases marginally due to earned interest. After 2028, the balance starts to decline. In 2030, policy changes are introduced to the PAYG system to facilitate the transition to individualized accounts: the payroll cap is lifted, the retirement age is increased to 70, SS benefits are cut by 10%, and the SS tax rate increases by 1% for high-income earners (those earning more than $169,000 annually). This period coincides with the trust fund balance increasing to approximately $12 trillion, and contributions exceeding payouts from 2030 to 2036. Starting in 2036, individualized accounts are implemented, resulting in a sharp drop in the trust fund balance. Between 2036 and 2056, 75% of former SS taxes are redirected to individualized accounts, while 25% continues to support the legacy SS trust fund, aiding the transition. By around 2050, total contributions begin to surpass payouts as the number of retirees dependent on the legacy SS fund decreases, leading to a gradual increase in the trust fund balance. However, beginning in 2056, the working-age population retains 100% of what were previously SS taxes in their individualized accounts, causing a sharp decline in the trust fund's growth rate. Figure 3 illustrates these trends, with the left chart showing the trust fund balance peaking and then declining sharply post-2036 before stabilizing, and the right chart depicting contributions consistently surpassing payouts post-2030, leading to a positive net balance that supports the trust fund's recovery and eventual stabilization.
By 2076, the remaining balance of the legacy SS trust fund, which stabilizes due to earned interest and positive contributions, is invested as an insurance fund for the new individualized account system. This reinsurance system is outside of the scope of this analysis, but could possibly be started as soon as 2056 due to the growing trust fund balance. For further study, Congress could authorize a stopgap program for Americans during the transition period, to ensure that the individualized accounts for the first wave of individuals retiring under the new system (e.g. 2044-2056) have a balance sufficient to provide an annual benefit similar the the benefit under the PAYG system. It may also be possible to introduce a reinsurance system immediately in 2044 by reducing the contribution levels to individualized accounts below 75% for the youngest generations, who are most likely to accrue considerable retirement savings by the end of their careers under the new system even with lower contribution rates.

Figure 4
Figure 4 shows the projected evolution of the Social Security (SS) trust fund under different levels of support from the working-age population. The proposal suggests that the working-age population retain 75% of what was previously paid as SS security taxes in their individualized accounts during the 20-year transition period from 2036 to 2056. This approach is designed to transition away from the pay-as-you-go (PAYG) system without the trust fund balance running out of money.

The graph presents three scenarios: retention rates of 70%, 75% (our proposal), and 80%.

Under the 75% retention rate proposal, the trust fund balance initially rises and peaks around 2037 before declining. However, it stabilizes without dipping into negative territory, indicating that the proposed retention rate is sufficient to maintain the trust fund's solvency throughout the transition period and beyond. This allows for a smooth transition away from the PAYG system without exhausting the trust fund.

When compared with other retention rates, the 70% retention rate scenario also achieves the objective of maintaining the trust fund balance above zero. However, it places a heavier financial burden on the working-age population, potentially impacting their future economic well-being. The trust fund balance in this scenario shows a higher peak and a more substantial recovery post-2056 compared to the 75% scenario, indicating greater immediate savings but at a higher social cost.

The 80% retention rate scenario results in the trust fund balance running out of money, as shown by the sharp decline into negative territory around 2043, with no recovery back above zero. This indicates that retaining 80% of the SS taxes in individualized accounts is unsustainable, as the trust fund cannot support the legacy PAYG system without running a deficit. Unlike the other scenarios, this would require the government to seek additional borrowing or other measures to sustain the SS system, posing a significant financial challenge.

In conclusion, the 75% retention rate proposal represents a balanced approach, allowing the transition away from the PAYG system without depleting the SS trust fund. It avoids the undue burden on the working-age population seen in the 70% retention scenario while ensuring the trust fund remains solvent, unlike the 80% retention scenario. This makes the 75% proposal a
viable and sustainable option for reforming the SS system, ensuring financial stability and minimizing social impact.

![Changes Start Year](image)

Figure 5 illustrates the impact of implementing proposed changes to the Social Security (SS) system at different start years—2025, 2030 (your proposal), and 2035—on the SS trust fund balance over time, measured in trillions of dollars, from 2025 to 2100. To support the transition away from the pay-as-you-go (PAYG) system, the proposed changes starting in 2030 include lifting the payroll cap, increasing SS taxes by 1% for high-income earners (those earning above $169,000), lifting the retirement age to 70, and cutting SS benefits by 10%.

Implementing these changes in 2025 results in an initial rise in the trust fund balance, peaking around 2031. The balance then decreases but stabilizes and begins to rise again post-2045, maintaining a positive trajectory throughout the period. This scenario ensures that the trust fund does not run out of money and steadily grows over time, demonstrating strong long-term
solvency. The early implementation provides ample time for the trust fund to adjust and recover, ensuring financial stability and reducing the risk of insolvency.

The proposed 2030 start year sees the trust fund balance rise and peak slightly later, around 2037. The balance then declines but stabilizes without falling into negative territory. After 2050, the trust fund balance shows a gradual recovery, maintaining solvency over the long term. This scenario strikes a balance between timely intervention and political feasibility, ensuring the trust fund remains solvent without imposing immediate drastic changes.

Delaying the implementation to 2035 results in the most dramatic decline in the trust fund balance. The balance dips into negative territory around 2043 and continues to decrease, showing no signs of recovery. This scenario illustrates that delaying the proposed changes leads to insolvency, as the trust fund runs out of money and cannot sustain the SS system without additional funding or borrowing. This delay risks financial instability and increases the burden on future generations.

In conclusion, the timing of implementing changes to the SS system is crucial. Starting the changes in 2025 would ensure the strongest financial health for the trust fund, maintaining a positive balance throughout the period. The 2030 proposal balances timely intervention with political feasibility, keeping the trust fund solvent. However, delaying the changes until 2035 results in insolvency, with the trust fund balance turning negative and failing to recover. This underscores the need for prompt action to ensure the long-term sustainability of the SS system, avoiding the risks associated with delayed implementation.
Figure 6 highlights the critical role of labor force participation rates in maintaining the solvency of the Social Security (SS) trust fund. The graph depicts three scenarios: a 60% labor force participation rate, a 65% rate (the base model), a 70% rate, and their impact on the trust fund balance over time, measured in trillions of dollars, from 2025 to 2100.

Under the base model with a 65% labor force participation rate, the trust fund balance initially rises, peaking around 2037. It then declines but stabilizes and begins to recover post-2045, maintaining a positive trajectory and ensuring long-term solvency. This scenario demonstrates the fund's ability to remain solvent with a moderate participation rate.

However, a drop in the labor force participation rate to 60% leads to a significantly different outcome. The trust fund balance peaks similarly around 2037 but then sharply declines, turning negative around 2043. It continues to decrease, showing no signs of recovery, indicating that a 60% participation rate is insufficient to sustain the trust fund, resulting in insolvency. This scenario underscores the vulnerability of the SS system to lower participation rates, which would require additional measures or borrowing to avoid financial collapse.
Conversely, increasing the labor force participation rate to 70% results in a more favorable outcome. The trust fund balance rises and peaks around 2037, similar to the other scenarios, but the decline is less severe. The balance stabilizes sooner and begins to recover more robustly post-2045, maintaining a positive and upward trajectory throughout the period. This higher participation rate enhances the fund's solvency, providing a more secure financial outlook.

**Analysis Limitations**

In spite of the valuable insights that our study brings out concerning the likely outcomes of our model, it is also imperative to take note of limitations. These limitations are linked to a need to simplify the model for this paper and due in part to the unpredictable nature of long run data.

1. **Future economic conditions**: The assumptions about GDP growth rates and per capita values are based on the 60-year annual average. This may not reflect future economic conditions.

2. **Market risks**: Individualized target date accounts are invested in capital markets. Even though our proposal intends to moderate the risk through time, unprecedented market volatility and economic downturns might have a negative impact on account balances.

3. **Income distributions**: The macromodel assumes a constant percentage of above-cap earners of 8%. However, changes in income inequality levels could result in a higher or lower percentage in the future.

4. **Longevity**: The model assumes all individuals grandfathered into the legacy PAYG system will die within 30 years. Although plausible, changes in life expectancy may result in retirees living for much longer.

5. **Demography**: The heart of our model, which relies on the United Nations's demographic projections, might not reflect unforeseen demographic changes, such as variations in migration movements or changes in fertility rates. In addition, the model uses the United Nations' "medium fertility" variant projections. However, there are also low and high migration/zero fertility variant projections that imply different fertility rates and can affect the result.
6. **Political action:** The model assumes that Congress will take action on SS reform by 2030. This is a rather optimistic assumption.

### Political Viability

The most popular political position is that the system, tax rate and benefits should all stay about the same. The most popular political position is a mathematically-impossible fantasy, and as we get closer to the insolvency crisis the political conversation about options will begin to reflect the required trade-offs. Privatization has had major support in the recent past, including during the most recent era that the idea was seriously politically considered: Multiple polls in the late 90s showed that 53-66% Americans supported investing their Social Security contributions in the market.¹

Why would our specific solution is viable and superior to alternatives:

- For the sunsetting PAYG population, minor reductions in benefits could be entirely offset by reduced taxation on benefits.

- The majority of non-retirees—including the majority of Gen Z and Millenials—do not expect to receive any benefits at all because of the unsustainability of the PAYG system.² Our solution would give confidence to all generations that contributors will receive benefits.

- In fact, our proposal will result in a benefit increase over the pay as you go system for the majority of living voters without increasing taxes for the majority of Americans.

- Tax increases are unpopular, but we only increase taxes on high-income earners. This is a small and unpopular demographic; the public supports increasing taxes on this demographic to maintain Social Security benefits.³

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- By redirecting excess contributions of those who have saved large amounts in their individualized accounts, we ensure a minimum benefit for all ages. Our proposal retains the social safety net aspect of Social Security and offers multiple options for when and how such a reinsurance program could be introduced.

- While investing in the market has risk, a target-date-style investment approach balances risk over time to protect the elderly from sudden swings.

Social Security reform has long been known as the “third rail” of American politics, but that status will necessarily change in coming years. The insolvency crisis of 2035 will necessitate action because of the automatic cuts to benefits, flipping the political incentive of passivity on its head. The American public will have their faith in the flimsy “guarantee” of the pay-as-you-go system shaken deeply when it becomes clear that maintaining the status quo is not one of the options. As the public absorbs the reality that pay-as-you-go is only guaranteed to encounter habitual generational crises, this will increase the desirability of dependable, sustainable individualized accounts back to 1990-2000 levels.
Appendix

Link to model files: https://app.box.com/s/zhpn8xh1cd8bhg0bc4fy6code8mdp0ut

Contents:
- Macro model
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- Underlying data for all charts