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Comment   Jason Furman

John Geanakoplos and Stephen P. Zeldes make an important analytic contribution to our understanding of the difference between defined benefit and defined contribution systems. But Geanakoplos and Zeldes' goal is not simply to make an analytic contribution but to forge a potential compromise between Republican supporters of individual accounts and Democratic opponents of them. As such, it is important to judge this chapter on whether it should—or would—form the basis of a future compromise.

The Analytic Contribution

Geanakoplos and Zeldes' principal analytic contribution is to develop a general framework that makes it possible to express a defined benefit system in defined contribution terms. They develop a new set of securities, a mandatory savings rule, and a system of matching contributions that make it possible to use individual accounts to reproduce Social Security retirement benefits, including risk-sharing across generations and redistribution based on lifetime income. (The authors do not reproduce survivors or auxiliary benefits.)

Specifically, each year a person would be required to use 10.6 percent of his income (the amount that currently funds Old-Age and Survivors Insurance) to purchase a new type of security called a *personal annuitized average wage* security or PAAW. A PAAW initially pays the economy-wide wage in the year of retirement and then pays the same amount indexed for inflation every year until the death of the original recipient. This security matches two features of Social Security that are generally absent in defined contribution plans: a security whose payoff is linked to productivity and a real annuity.

Geanakoplos and Zeldes reproduce Social Security's lifetime redistribution by specifying a matching rule that can be positive or negative and would specify the number of PAAWs a person can buy per \$1 of mandatory saving. The Geanokplos-Zeldes matching rule exploits the fact that the lifetime Social Security benefit formula can be rewritten as a the sum of a series of nonnegative functions of income received to date:

$$f(w_1, w_2, w_3, \ldots, w_T) = \sum_{t=1}^{T} g(w_1, \ldots, w_T) \text{ where } g(\cdot) \geq 0$$

As a result, specifying the appropriate matching rule is simply coming up with a function g that specifies the amount of PAAWs a worker receives as a function of their income earned to date. And the particular function is based on the additional retirement benefits a worker would get if he never worked again.[1] Specifically, worker i gets awarded PAAWs at time t that correspond to the three primary insurance amount (PIA) formula factors in the Social Security system, 0.90, 0.32, and 0.15. The amount of PAAWs you get thus shifts as your earnings to date, averaged over thirty-five years, move you through these three factors:

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1. Editors' note: There are a variety of possible choices of the function g, each of which represent a different method for accruing benefits. Geanakoplos and Zeldes examine two: one that they call the "fastest" method and another that they call the "straight-line" method. Only the first of these methods was included in the original conference version of this paper, so Furman's comment focuses on this one. This fastest accrual method computes the benefits a worker would receive under the current system based on earnings to date, assuming that he never worked again. The incremental PAAWs awarded each year are chosen to replicate the incremental accrued benefits in that year.

$$\text{Get } 0.9 * \frac{1}{35}\left(\frac{w_{i,t}}{\overline{w}_t}\right) \text{ until Bend 1}$$

$$\text{Get } 0.32 * \frac{1}{35}\left(\frac{w_{i,t}}{\overline{w}_t}\right) \text{ until Bend 2}$$

$$\text{Get } 0.15 * \frac{1}{35}\left(\frac{w_{i,t}}{\overline{w}_t}\right) \text{ until maximum}$$

Get 0 thereafter

Having recast Social Security retirement benefits in terms of securities (which match the intergenerational risk sharing) and a matching rule (which matches the intragenerational redistribution), makes several helpful substantive points and provides the basis for moving forward analytically.

First, it shows that the essential difference between a defined benefit and a defined contribution plan is not the intergenerational risk-sharing, the intergenerational redistribution, or the intragenerational redistribution. You can have as much or as little of these features as you want either type of plan. This is the first step toward focusing the debate about accounts on some of the other genuine distinctions, many of them discussed in the following.

Second, recasting the existing Social Security system in terms of financial securities is a first step toward using alternative methods to analyze Social Security's current situation. For example, the Social Security Administration's Office of the Chief Actuary calculates the "maximum transition cost," which is the value of Social Security benefits incurred for work to date net of the balance in the trust fund. The actuaries estimated that this totaled $13.5 trillion as of the beginning of 2004. Geanakoplos and Zeldes provide an alternative framework for estimating the maximum transition cost by valuing the financial securities that are equivalent to the benefit promise. In their chapter, they just do this in the risk neutral case, which is equivalent to the actuaries' procedure. But in forthcoming work, they plan to extend these results to the case with risk aversion.

Finally, the Geanakoplos-Zeldes framework can flexibly be extended to examine other issues, like how to achieve robust solvency that ensures not just that Social Security is in long-run balance but also that it can stay in long-run when subjected to various shocks. The Geanakoplos-Zeldes chapter offers one version of a plan that would adjust the matching formula to ensure that the value of PAAWs that were distributed in any given year was equal to the payroll taxes collected in that year. Hopefully in future work Geanakoplos-Zeldes will be able to use some of the analytic machinery they develop to perform a welfare analysis of this approach as compared to alternative ways of achieving robust solvency.

Should Geanakoplos-Zeldes Be Adopted?

Helping us understand Social Security reform better is not the same as providing the basis for an actual Social Security plan. And in this regard, I am more skeptical. Geanakoplos-Zeldes appears to lose many of the potential benefits of accounts and in some cases even turn the virtues of accounts into vices.

The Geanakoplos-Zeldes plan has two distinct parts. The first part is a structure for the accounts. The second part is a mechanism for restoring balance. In effect, these two parts are separable—the account structure is compatible with alternative methods of achieving solvency, and their solvency proposal could be implemented without accounts or with more traditional accounts. The accounts proposal is more novel, and thus it is what I concentrate my comments on.

Accounts have several claimed advantages. Without passing judgment on whether these advantages are real or quantitatively important, how does the Geanakoplos-Zeldes plan do on them?

Reduced Labor-Leisure Distortions

One potential benefit of accounts is that by tying benefits more closely to contributions, they reduce labor-leisure distortions (the flip side of reduced redistribution). The Geanakoplos-Zeldes accounts, by design, reproduce all of the redistribution associated with the current system and, thus, all the distortions as well.

Diversification for Constrained Households

A second potential benefit of accounts is that they can help achieve diversification for households that are equity constrained due to liquidity constraints or the inability to use future Social Security benefits as collateral. The core Geanakoplos-Zeldes proposal to securitize Social Security benefits through PAAWs does nothing to change this situation because these benefits mimic traditional Social Security. The proposal to require people to sell 10 percent of their PAAWs to purchase traditional securities would achieve this goal, although this part of the plan is logically unrelated to the broader structure.

Improved Political Economy of Prefunding

Another potential benefit of accounts is that contributions would count as a reduction in the unified deficit, making it more likely that non-Social Security fiscal policies will not offset any prefunding in Social Security. The Geanakoplos-Zeldes plan might share this benefit with other accounts plans, although the extent could be minimized because the optics and budgetary accounting treatment of individual-specific securities like PAAWs might differ from more conventional securities. Moreover, the Geanakoplos-Zeldes plan, by design, does not actually have any prefunding.

Greater Transparency

Another potential benefit of accounts is that they can have greater transparency in terms of the link between contributions and benefits and the underlying financial status of the system. The Geanakoplos-Zeldes plan would have the advantage of providing a market estimate of the maximum transition cost, a number that is currently calculated by the actuaries. However, estimating conventional solvency criteria would still require projections about the evolution of matching rates and would not be reflected in a market price.

This gain for system transparency comes at a large cost in terms of reduced transparency for individual beneficiaries. There are serious optical issues and apparent cliffs in the formula. Some of these optical problems should not be held against the plan because they are simply making features of the current system more transparent, for example, the fact that the typical sixty-three-year-old will get zero PAAWs for his payroll contribution reflects the fact that a typical sixty-three-year-old today does not incur any additional benefits from his work.

More serious, however, is that the Geanakoplos-Zeldes plan introduces cliffs and sends misleading signals about marginal tax rates in a manner that does not correspond to today's Social Security system.[2] It might be hard to explain why a worker in the first year of a $500,000-a-year job will get a better matching rate than a worker in the thirtieth year of a $50,000-a-year job. There is some risk that labor-leisure decisions would be distorted by the signals the system sent. For example, an average earner at age thirty-two would get 100 PAAWs for each $1 contributed to the account (renormalizing the units). The following year, however, he would move into the new bracket and get only thirty-nine PAAWs for each $1 contributed to the account. This would appear to be a large increase in the marginal tax rate. In fact, it is just an artifact of the benefit calculation. The marginal rate on earnings at age thirty-two and age thirty-three—assuming the person plans to continue working until age sixty-five—are essentially the same. The problem arises because the apparent marginal rate in the Geanakoplos-Zeldes rule is correct only for someone who plans to never work again after that year, which, for the vast majority of workers, is the wrong thought experiment.

Figure 3C.1 generalizes this point. It shows the true marginal tax rates for a scaled medium earner who will work until age sixty-four. These are 10.6 percent initially (because the early years of work will be dropped from the benefit calculation) and then gradually fall, become negative, and then rise back up to 10.6 percent in the years before retirement. In contrast, the perceived marginal rates in the Geanakoplos-Zeldes plan (or the true marginal rates for someone deciding whether to continue working) follow a

2. Editors' note: This comment applies only to the "fastest accrual method," which was the method presented in the original conference version of the paper.
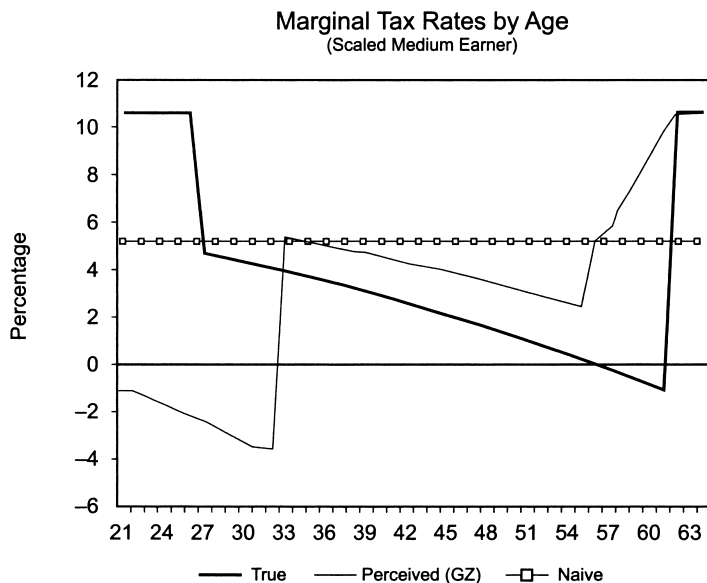
Marginal Tax Rates by Age
(Scaled Medium Earner)

Fig. 3C.1   Marginal tax rates by age (scaled medium earner)

very different pattern. In fact, a naive person who considers the 5.3 percent employee share of the tax as their marginal rate will, in a mean-squared deviation sense, be closer to correct than someone who follows the matching rates under this proposal.[3]

Enhanced Ownership

The principal benefit of shifting from our current system to this form of accounts is, according to Geanakoplos and Zeldes, that it would replace Social Security's uncertain promise with a system with "irrevocable ownership of market priced assets." Set aside the question of whether this is a desirable goal—arguably with significant long-run fiscal challenges and uncertainty, you might not want policymakers to preserve the flexibility to adjust on a variety of other margins. Set aside also the observation that this goal could be achieved in other ways, for example, by enacting a constitutional amendment guaranteeing workers a legal property right in their accrued benefits.

The bigger question about this proposal, and virtually all accounts proposals, is would it achieve the stated goal of strengthening the ownership of benefits and reducing political risk? The answer is no—at least not any bet-

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3. Editors' note: In the final version of their paper, Geanakoplos and Zeldes introduced the straight-line accrual method in order to address the problem that Jason Furman raised in his original critique above.

ter than the current system. Policymakers could directly "cut" benefits by imposing a tax on account withdrawals, perhaps rationalized as a recapture of the tax benefits associated with the accounts. While it is hard to imagine that it would be politically feasible to impose this retroactively on current retirees, it is equally hard to imagine a politically feasible benefit cut on current retirees. More politically feasible would be to impose a tax on account accumulations, effectively equivalent to phasing in a benefit reduction in the current system. Finally, policymakers could change the matching rule—in the extreme case letting a thirty-five-year-old worker keep all of his PAAWs but not granting him or her any new ones. This would be tantamount to a benefit cut of more than 50 percent. The political economy of these measures does not seem to differ materially from the political economy of cutting entitlements under the existing system: as indeed you would expect if people, or at least interest groups like the American Association of Retired Persons (AARP), are remotely rational.

Even if accounts succeeded in establishing a firmer property right with less political risk than current benefits, this effect would simply be undone elsewhere in the system. For example, if there was a large unforeseen shock, then the inability to alter Social Security benefits would result in larger adjustments in Medicare benefits. As long as any part of the fiscal system is discretionary, then it is impossible to lock in any pattern of inter- or intragenerational redistribution simply by removing discretion from one part of the system—the remainder of the system will just pick up the residual changes.

Downsides of Accounts

Finally, Geanakoplos and Zeldes avoid many of the downsides of accounts. But their specific proposal suffers rather acutely from very large administrative costs relative to the size of accounts. The marketable portion of their accounts is less than 1 percent of payroll, generally considered well below the minimally acceptable level. Moreover, the complicated individual-specific securities they create would themselves require substantially higher transactions cost than more traditional securities as owners of the

Table 3C.1   **Alternative views on Social Security**

Democrats	Republicans
Prefer more redistribution within lifetime (i.e., higher taxes and replacement rates)	Prefer less redistribution within lifetime (i.e., lower taxes and replacement rates)
Prefer more progressivity on the tax side (e.g., raise the taxable maximum)	Prefer more progressivity on the benefit side (e.g., means testing or progressive price indexing)
Hate anything called "accounts"	Love anything called "accounts"

bundles would need a mechanism to track the retirement and death of each of the many thousands of people named on the specific PAAWs.

Would Geanakoplos-Zeldes Form the Basis of a Future Compromise?

Finally, I end with a purely positive question: would I predict that Geanakoplos-Zeldes ultimately forms the basis of a future compromise. In a well-run world, the answer to this question would follow directly from the normative questions asked in the preceding. In the actual world, the answer is probably uncorrelated, but coincidentally also happens to be no.

The three most important differences between Democrats and Republicans are listed in table 3C.1, albeit in somewhat exaggerated and stylized form.

The Geanakoplos-Zeldes plan would be most feasible in a world populated by stupid Republicans and smart Democrats. The stupid Republicans would be so excited about something called "accounts" that they would miss the fact that this plan does very little to achieve most of the goals Republicans set for accounts. The smart Democrats would look past the optics of the accounts to discover that the system preserves intergenerational risk-sharing, a large forced savings component, and inflation-adjusted annuities—plus restores balance by paying for the entire long-run shortfall in Social Security through general revenues, ensuring both current benefit levels and a relatively progressive financing system. Without commenting on the two preconditions individually, I will just note I think it is unlikely that both of them hold simultaneously.

Future Work

Although not likely to be on the agenda in the near future, the Geanakoplos-Zeldes plan is an exciting analytic contribution. I look forward to future research building on their framework. In particular, the most intriguing suggestion in their chapter is a way to achieve robust solvency by matching the benefits incurred by workers in any given year with the payroll taxes paid by those workers in that year. It would be interesting to simulate this proposal and understand how it could be translated back into the language of the defined benefit system as a step toward evaluating whether it should indeed be the basis of a Social Security reform.