The Role of Stock-Flow Reasoning in Understanding the Social Security Trust Fund

Hal Hershfield, Suzanne Shu, Stephen Spiller

Focal Area #5: Improving Communication and Outreach

Trust Fund Projections: Would alternative data visualizations of fundamental dimensions of trust fund finances (date of reserve depletion, percentage of scheduled benefits payable, sensitivity to assumptions) help improve understanding/comprehension by policymakers, media, and the public?

The Social Security trust fund represents the accumulated surplus that remains from income paid into the system after benefits have been paid out. Current projections are that the trust fund will be depleted by 2035 (2020 OASDI Trustees Report). Media headlines often emphasize the balance running to 0 (e.g., CNBC 2020: "…it may run out cash really soon"; ABC News 2019: "Social Security is running out of money…"). Non-experts are likely to see such headlines and arrive at the erroneous conclusion that Social Security benefits will dry up as a result. We argue that this faulty reasoning may result from what researchers have termed a "stock-flow" reasoning error. Here, "stocks" refer to the cumulative amount of some resource whereas "flows" refer to the change in that resource over some defined period of time. Converting between such stocks and flows, however, can prove to be a difficult task, as even highly educated and trained people have great difficulty doing so (e.g., Cronin, Gonzalez, & Sterman 2009). Our own prior work has found that presentation of stocks versus flows can lead to diametrically opposed evaluations and forecasts (Goldstein, Hershfield, & Benartzi 2016; Spiller, Reinholtz, & Maglio 2020). These dual representations of the trust fund are illustrated in SSA communications (https://www.ssa.gov/policy/social-security-long-term-financial-outlook.html), in which some depictions show the balance of the trust fund (i.e., the stock) and some show the change in inflows and outflows over time (i.e., the flows).

A rich research literature finds that reasoning errors arising from stock vs. flow presentations are stubbornly persistent, suggesting education is unlikely to be an effective scalable solution. Instead, we propose that alternative presentations, such as deemphasizing the trust fund and instead emphasizing the projection of paid balances may help to lead to more accurate judgments and inferences based on communications. More specifically, we propose experimentally varying the presentation format and observing how key metrics respond. Key presentation formats include presentation as stocks (trust fund balance over time) vs. flows (payments into the system vs. payments out of the system) vs. relative out-flow as a proportion of in-flow. Key metrics include expected relative benefits available at respondents' claiming age and forecasts of when the trust fund balance will reach 0. We expect that relative out-flow presentation may lead to better-calibrated benefit expectations, which are important for beneficiaries, while stock presentation may lead to better-calibrated forecasts of when the trust fund will reach 0, an important milestone for policy makers. This reinforces the importance of targeting the right metric that most directly translates into the benefits that concern key stakeholders.