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THE IMPACT OF THE PANDEMIC ON THE PROSPECTS FOR RETIREMENT AND ANNUITY MARKETS

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INTRODUCTION

The COVID-19 pandemic has had a devastating impact on the United States and the rest of the world. As of late April 2021, the United States was mourning the loss of close to 600,000 lives, with a large but still untallied number of long-haulers: people who are expected to suffer the disease's side effects for years to come, if not for the rest of their lives. The pandemic has also led to an economic crisis that in some ways parallels the Great Recession of 2008.

This essay addresses the economic and financial effects of the pandemic, and more specifically its impact on retirement security. As the essay will explore, the pandemic has had a major impact on the markets for retirement income products, and in particular on the market for annuities, especially the market for single premium lifetime annuities. To set the stage for the discussion of the impact of the pandemic on retirement security, the essay begins with a section on the macroeconomic and financial effects of the pandemic and policy responses. The essay then examines the pandemic's impact on retirement income, before turning to a discussion of the pandemic's impact on the market for annuities and other lifetime income instruments. The essay ends with recommendations for public policy and suggestions for future research. Because of the importance of overall economic and financial policy for the prospects for lifetime income, this concluding section addresses broad economic and financial policy issues, as well as issues more germane to retirement security and lifetime income.

I. MACROECONOMIC AND FINANCIAL EFFECTS OF THE PANDEMIC AND POLICY RESPONSES

As the gravity of the COVID-19 pandemic became apparent in early 2020, many state governments imposed lockdowns or stay-at-home orders of varying degrees of severity and length. This led almost immediately to a drastic decline in the nation's gross domestic product (GDP), and to an unprecedented increase in unemployment. Real GDP contracted by 9 percent in the second quarter of 2020 before starting its recovery in the second half of the year: the seasonally adjusted unemployment rate increased from 3.6 percent in December 2019 to 14.8 percent in April 2020 (Federal Reserve Bank of St. Louis [FRED] 2021a). Seasonally adjusted weekly unemployment claims skyrocketed from a monthly average of about 200,000 in January 2020 to more than 4 million in April 2020 (US Department of Labor 2021). The rates of unemployment and monthly unemployment claims have since declined as the overall level of economic activity has begun to recover; nevertheless, they remained far above their norms all the way through 2020 before beginning a more durable recovery in the first quarter of 2021.

A basic feature of the macroeconomic crisis of 2020 was that, unlike the Great Recession of 2008 or the Great Depression of the 1930s, this crisis was not precipitated by a collapse in aggregate demand but was rather the result of a deliberate decision to constrain supply. As a result, stimulative demand policies to restore the level of aggregate output to its pre-pandemic level would have been pointless and counterproductive. That said, the decline

in supply did depress demand beyond the obvious decline caused by the nonavailability of goods and services normally produced by sectors of the economy affected by the lockdowns. The decline in employment was concentrated in the service economy—entertainment, dining, tourism, local travel, and so on—where both the average age of the workforce and the average salary are lower than the national average. The households depending on work in these sectors tend, more than other American households, to live paycheck to paycheck, making their loss in income even more serious for them. But the need to live paycheck to paycheck and to conserve any emergency savings meant that these households had to cut back on expenditures on goods and services from sectors that had not been directly affected by the lockdowns.

The relief packages passed by Congress in the spring of 2020, of which by far the largest was the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), had two purposes. The first was to alleviate the misery caused by increased unemployment, and the second was to compensate for the decline in demand by households with newly unemployed members, as well as an apparent decline in demand by households with more-secure incomes. One of the curious effects of the pandemic was a remarkably large increase in the rate of personal saving (i.e., saving as a percent of disposable income) in the second quarter, when the rate rose from 10 percent to 26 percent. The rate declined to 13 percent in the fourth quarter but remained extremely high by historical standards (Federal Reserve Bank of St. Louis [FRED] 2021b).[1]

The increase in household saving results from both the massive impact on personal income produced by expansionary fiscal policy as well as the tendency for the majority of American households whose income was not affected by the lockdowns or any induced decline in aggregate demand to reduce their expenditures on the goods and services produced by the affected sectors.[2] There was undoubtedly some delay between the receipt of stimulus paychecks and other relief and the personal expenditure these transfer payments financed. Moreover, Americans with secure incomes might have continued having a drink at the end of the day, but they were not having that drink in a bar, they were not dining at restaurants, and so they were not using a ride-share to get to those bars and restaurants. Another influence was the inhibiting effect on demand of the concern that in-person shopping would increase the risk of contracting the virus. The substantial boom in online shopping was not enough to offset these depressing influences on personal expenditure. The switch to working at home also reduced demand for the goods and services related to commuting, including household gasoline consumption. Increased precautionary saving by households may also have been an influence on that elevated saving rate.

In addition to the hugely stimulative effect of fiscal policy, the Federal Reserve acted both to support that policy and to prevent a collapse in financial markets by broadening the kinds of collateral that financial institutions could use to support their lending (Cheng et al. 2021). The Federal Reserve was facilitating the expansionary stance of fiscal policy by buying a substantial part of the debt that the federal government was issuing to cover its increased deficit, or effectively monetizing the debt. At the same time, the increase in saving noted above created an increased demand for financial assets, including Treasury securities. The Federal Reserve's generous support for financial markets and the increase in personal saving has helped pushed interest rates to unprecedentedly low levels.

II. THE PANDEMIC'S IMPACT ON RETIREMENT INCOME

There are two primary channels through which the pandemic has exercised its economic and financial effects: its impact on current employment and employment prospects, and its impact on asset values.[3] It is through these channels that the pandemic will affect the prospects for retirement income.

Asset values, both real and financial, have risen, probably because of the impact of ultra-low interest rates on real estate values (possibly excepting parts of the commercial real estate market), and the stock and bond markets.[4] Stock market prices in particular have been remarkably buoyant after recouping their initial losses; this develop-

1. Chetty, Friedman, and Stepner (2021) find that many high-income households amassed significant extra savings in 2020.
2. A recent study estimated that slightly more than one in three members of the labor force could work from home (Dingel and Neiman 2020). Frontline workers and workers in food preparation and other essential areas also continued to work, even if they had to report to work outside the home. The disparate impact of the pandemic on employment has increased income inequality, as well as racial and ethnic income disparities.
3. Mackenzie (2020) addresses both the longstanding basic risks confronting older Americans—longevity risk, investment and employment risk, health-care-cost risk, long-term-care cost risk, and political risk—and the additional impact of the pandemic on these risks.
4. The commercial real estate market will be depressed to the extent that the currently increased role of telework becomes a more permanent feature of the landscape. Similarly, remote learning at universities and colleges might reduce the demand for additional physical space by these institutions.

ment was probably fueled in part by the investment of the increase in saving by higher-income households.

Deaths resulting from the pandemic have not yet risen to the level that would have a significant effect on the size of the labor force, because the loss of life has been overwhelmingly concentrated among older and retired Americans.[5] Nonetheless, the pandemic has had a devastating impact on the labor market. An online survey of full- or part-time workers conducted in October 2020 found that one in two members of the sample had been laid off or furloughed, had suffered a pay cut, or had taken early retirement because of the pandemic (Transamerica Center for Retirement Studies 2020).

Before the discussion turns to the pandemic's economic and financial impact on retired households and older working households preparing for retirement, a few words are in order on its impact on younger households. Given the pandemic's disproportionate impact on the employment of younger workers, and their greater reliance on labor income, the incomes of younger households have been hit harder than those of older households. What is less clear is the impact on the income of these households over the remainder of their lives. This will undoubtedly depend on the speed of the recovery in overall economic activity, which remains uncertain. But it will also depend on the impact of the spells of unemployment on subsequent employability. Under the best circumstances the pandemic's impact on the remaining lifetime income of younger households may be comparatively modest. But there is considerable uncertainty as to the impact on employability. Studies of several countries have found that young people who enter the labor market during a recession suffer a long-term decline in their earnings, a phenomenon that has come to be known as scarring.[6]

It is similarly difficult to gauge the impact on retirement saving of younger households. Recent surveys generally find that many workers with 401(k) or other retirement saving plans have withdrawn funds, in part because the CARES Act temporarily eliminated the penalty for doing so. However, younger households typically have not accumulated much in the way of savings to encroach on. It is too soon to tell, but it is possible that the pandemic will have made those households, both young and old, that have enough income to put some aside more aware of the dangers of living from paycheck to paycheck, which would have a salutary impact on saving.

Older households—specifically, those whose heads are aged 55 to 64 years—continue to rely heavily on income from employment. Although the rate of unemployment among these households is lower than the national average, it is also the case that even in normal times the loss of a job typically leads to a long spell of unemployment, and sometimes to a premature exit from the labor force. If the worker finds another job, it often comes with lower pay and fewer benefits. Many older households are struggling with a high debt burden, and job loss can have particularly painful consequences for them. Moreover, even older households with secure jobs may find themselves having to support their unemployed children, or to service the debt they have incurred to finance their children's education. Middle age is the time when households should be building up their retirement nest egg, and a long spell of unemployment or a permanent exit from the labor force can have serious consequences for the retirement security of older workers.

Households with unemployed members close to retirement have some options that are not available to younger households. If a household member is close to age 62, when Social Security retirement benefits first become available, he might be able to bridge to that age by drawing down funds from his retirement saving plan, if he has one—only about one in two households has such a plan—and has enough money in it to finance bridge withdrawals.[7] Someone who has already reached the age of eligibility may opt to claim earlier than she had previously intended. That said, electing to claim Social Security benefits at age 62 (or any age up to age 70, when the benefit reaches its maximum) means giving up on the increase of almost 8 percent per year that deferral makes possible over and above the annual inflation adjustment.

For the minority of households with significant stock holdings or other savings, encroaching on that wealth is also a possibility, although the temptation to do so is probably best resisted. Opting for a more conservative portfolio allocation might also make sense. A home-own

5. Deaths due to the pandemic among Americans aged 64 years or less as of late April 2021 amounted to about 110,000, which is less than 0.1 percent of the national labor force (Centers for Disease Control and Prevention [CDC] 2021).
6. See Andrews et al. (2020) for a study of the Australian labor market experience.
7. Munnell, Wettstein, and Hou (2021) analyze this option.

ing household with a significant equity interest in that home could also consider a reverse mortgage. These instruments, similar to annuities, have never been popular, but in principle they are an efficient way of unlocking the equity in a principal residence.

III. THE PANDEMIC'S IMPACT ON THE MARKET FOR ANNUITIES AND OTHER LIFETIME INCOME INSTRUMENTS

Annuities come in many different forms, and the label "annuity" is applied to a variety of products that can differ in important respects. One basic distinction is between fixed income and variable annuities. Another is the distinction between annuities whose periodic payments are contingent on the life of the annuitant and other products where this is not the case, which typically includes variable annuities.

Sales of fixed income annuities dropped by 24 percent in the first half of 2020 compared with the first half of 2019, before leveling off in the second half of the year, a development that probably reflected the general concurrent decline in interest rates and heightened overall economic and financial uncertainty. Variable annuity sales were, by contrast, little changed (Secure Retirement Institute 2021).

The market for life annuities—single payment immediate annuities that either begin paying income immediately or after a period of deferral—has been severely affected by the pandemic. Sales, modest even before 2020, dropped by no less than 40 percent from $5.5 billion in the first half of 2019 to $3.3 billion in the first half of 2020, and they have yet to recover (Secure Retirement Institute 2021). This drop is likely to have been affected by the pandemic's impact on mortality, whether perceived or objectively calibrated. A recent study finds that, for the general population, life expectancy at birth and at age 65 were reduced in 2020 by 1.13 years and 0.87 years, respectively. Black and Latino populations have been hit especially hard (Andrastay and Goldman 2021). This impact need not last if the deaths caused by the pandemic start to drop swiftly. If, for example, the pandemic is a thing of the past by the end of 2022, then life expectancies ought to have recovered to their pre-pandemic levels.[8] However, people's perception of their chances of a premature death—a perception economists call mortality salience—may remain higher than it was before COVID-19 was even heard of.[9]

The impact of the pandemic on mortality salience may well be more important than its measurable impact on life expectancy. After all, life annuities promise payment for life, and a heightened sense of the risk of death might simply make many potential annuity buyers wonder what the point of obtaining an annuity is, particularly if the heightened uncertainty of the last year has made them more cautious about reducing the share of liquid assets in their portfolios.

An economic analysis of the impact of the pandemic's effect on life expectancy leads to a more nuanced view, as the following comparatively simple illustrative example demonstrates: Consider a 70-year-old woman who before the pandemic has a 1 percent chance of dying at age 72, a 49 percent chance of dying at age 83, a 33.3 percent chance of dying at 88, and a 16.6 percent chance of dying at 93, which is her assumed maximum lifespan (see table 1). Her mean life expectancy is 86.2 years, and the standard deviation (a measure of the uncertainty of life expectancy), assuming a sample population of 120,000 potential annuitants per insurance company, is 3.98.[10]

We will contrast this pre-pandemic scenario with a pandemic scenario that results in an increase in the chance of not living past age 72 to 15 percent, reducing the chances of reaching 83 to 35 percent, but leaving the other probabilities unchanged (see table 1). Life expectancy is reduced to 84.7 years, and the standard deviation increases to 6.35.[11] This pandemic scenario is in turn contrasted with an alternative scenario that reduces mean life expectancy by the same amount as the pandemic scenario does, but does so by lowering the ages associated with the pre-pandemic probabilities by 1.5 years rather than by concentrating the increase in mortality earlier in life.[12]

8. The calculated life expectancies in Andrastay and Goldman (2021) effectively assume that the mortality rates specific to each age year observed or projected by the Institute for Health Metrics and Evaluation continue to apply to persons born in 2020 or of age 65 in that year.
9. Perhaps the most famous literary example of a developing awareness of mortality salience is found in Tolstoy's celebrated short story The Death of Ivan Ilyich. The protagonist is struck down by a fearsomely painful disease. As he realizes that he will not survive and reflects on a life that he has come to realize has been largely meaningless, he is terrified.
10. The text's exposition is a considerably simplified version of the argument presented in Milevsky (2020a). The mathematics underlying that paper is set out in Milevsky (2020b).
11. Given the assumed probability distribution, increases in the sample size have little impact on the standard deviation once the sample size rises into double digits.
12. See table 1 for the impact on the years survived at each level of probability. The decline in life expectancy portrayed in the alternative scenario might result from a more gradual drop in life expectancy due to a general increase in ill health, and what have come to be known as deaths of despair.

TABLE 1: *Illustrative Example of Impact of Pandemic on Mean Expected Age at Death and Standard Deviation for a 70-Year-Old Woman*

	Pre-pandemic Scenario	Pandemic Scenario	Alternative Scenario
Age At Death	72.0	72.0	70.5
Probability	1.0%	15.0%	1.0%
Age At Death	83	83	81.5
Probability	49.0%	35.0%	49.0%
Age At Death	88	88.0	86.5
Probability	33.3%	33.3%	33.3%
Age At Death	93	93.0	91.5
Probability	16.7%	16.7%	16.7%
Sample Mean	86.2	84.7	84.7
Standard Deviation	3.98	6.35	3.98
Sample Size	**120,000**		

Comparing first the pandemic and pre-pandemic scenarios, and assuming initially that the cost to a potential annuitant of a given lifetime income stream is unchanged, the annuitant would be paying the same premium even though her chances of a premature death have increased. Her chances of a long life have remained the same, however. If annuity providers are risk-neutral, in the jargon of economists, they are not affected by the increase in the variance around the mean; if their costs (the annuity's load factor) are otherwise unaffected, annuity providers can offer the same income stream at a lower premium. The potential annuitant must then weigh the possibility of a premature death against the benefit of a lower premium. If her dislike of running out of money at an advanced age is great enough, she might find the lower premium attractive.

Comparing the alternative scenario with the pandemic scenario, the variance of the former scenario is reduced to 3.98 (the same as the pre-pandemic scenario), which reflects the lower maximum age the annuitant can reach. The pandemic's scenario, with its higher variance around the mean, would make the purchase of an annuity more attractive to a risk-averse annuitant—one who particularly dislikes the idea of running out of money in old age—than it would be in the alternative scenario. In other words, it is the increased variance of the pandemic scenario that matters, and not the drop in life expectancy.

Lower interest rates would have the opposite effect on premiums under any scenario but would not make life annuities in principle less attractive compared to other interest-bearing financial products. All in all, however, a financial climate overshadowed by the pandemic would not be congenial for annuity providers, in particular for providers selling life annuities.

IV. RECOMMENDATIONS FOR PUBLIC POLICY AND SUGGESTIONS FOR FUTURE RESEARCH

The sooner the pandemic is brought under control, the better it will be for everyone, including retirement savers. Measures to control the pandemic's spread continue to constrain employment in the sectors that were initially so strongly affected by the early lockdowns. Success in controlling the pandemic, in addition to boosting employment in these sectors, will increase the share of students benefiting from in-person learning, allowing their parents to return to the labor force and enhancing the students' future earnings prospects. A vigorous recovery in employment and incomes will help turn people's thoughts away from simply getting by from day to day to the systematic planning that retirement readiness requires. A strong recovery will also generate a sustained increase in saving and hence in saving for retirement.

It is beyond the scope of this essay to discuss in detail the measures needed to quell the pandemic, but they must include a vigorous and well-organized campaign of vaccine production and distribution, better communication about the benefits of vaccination, and ongoing and consistently communicated reminders of the need for masking and social distancing.

The devastating impact of the pandemic on nursing home populations has abated with the rollout of the vaccination program, but stricter regulation of both nursing homes and assisted living facilities is paramount.[13] The sanctions applied to nursing homes that violate basic health guidelines such as sanitation and infection control must be strengthened and firmly applied.

We may be sure that COVID-19 is not the last pandemic the world will confront.

The pandemic has, as so many commentators have noted, laid bare the inequities of the nation's health-care system and its inadequate coverage of Americans of color. These inequities are evident even in the rollout of vaccinations (see Goodnough and Hoffman 2021). If the country is not ready for Medicare for All, it might be ready for a publicly provided backstop to private plans. Better health for all of us is a moral issue, but it will also boost economic productivity and saving, particularly by lower-income households.

There is general agreement that a large package of fiscal stimulus is desirable, because of the still large gap between the economy's potential aggregate supply and the current level of aggregate demand, and the need for that package to boost the incomes of the unemployed. There is, however, disagreement over how large the package should be, as demonstrated by the analysis in Summers (2021). A strong recovery may require that some of the measures in the package ultimately adopted be scaled back, and a delicate balancing act may be required between the goal of supporting demand and that of avoiding overheating the economy and causing excessive inflation.[14] In addition, the current system of unemployment insurance, run by 51 separate jurisdictions (the 50 states and the District of Columbia) needs serious reconsideration and reform.

A key issue is how reversible the impact of the pandemic on the overall economy, and notably on personal saving, will be. A strong recovery may entail a version of the boom in consumption that took place at the end of World War II, when forced saving came to an end and a huge backlog of demand for durable consumer goods was unleashed. However, some of the increase in personal saving that has taken place may not be entirely reversed if it has simply become a habit. This has implications for fiscal policy because more saving increases the scope for supportive fiscal policy. More saving in general would increase saving for retirement, and so would increase demand for lifetime income products. It is hard to be definite about the implications of the changed economic environment for either economic policy or the market for lifetime income products. We can say, though, that a nimble response by both the federal government and lifetime income institutions is probably called for.

It is likely that the level of nominal interest rates will rise, assuming a reasonably strong recovery, because the Federal Reserve's monetary policy will become less accommodating, particularly if inflation increases. Whether real interest rates will rise is less certain. If savers and

13. A recent report from the Government Accountability Office (GAO) found that violations of the rules applying to infection control were common (GAO 2020).
14. Siegel (2021) argues that the recent rapid increase in the money supply entailed by the Federal Reserve's accommodative monetary policy will fuel inflation. The Committee for a Responsible Federal Budget (2021) has also recently expressed its concern over the size of the proposed $1.9 trillion stimulus package.

potential consumers of lifetime income products pay more attention to nominal than to real interest rates, the market for these products will get a boost.

As noted in Mackenzie (2020), the pandemic's impact on the wages and salaries that pay for Social Security's payroll taxes has likely pulled forward the date when the Social Security Trust Fund will be exhausted. The combination of payroll tax increases and/or benefit reductions needed to eliminate the Trust Fund's imbalance might not be legislated in the next four years, but Congress cannot kick the can down the road indefinitely. Whether households will take the prospect of a less generous Social Security system into account in their retirement planning is another uncertainty. Given the political power of the advocacy organizations for older Americans, it is likely that current retirees and those nearing retirement will be held harmless, leaving the burden of adjustment to be borne by younger households, and even by future workers who have not yet entered the labor force.

The coverage of the second tier of retirement saving—employer-provided and tax-favored plans like 401(k)s—remains far too low, even if the pandemic ends up having no permanent effect on that tier. Only about half the labor force is covered. Considering the circumstances, the major scope for improved coverage is the creation of new state-sponsored retirement plans for private sector workers. One example of these plans is CalSavers, California's retirement plan for persons working for employers with five or more employees who do not offer a retirement plan of their own. Another possibility is a state plan with a tontine or pooled pension element in it (Fullmer and Forman 2020). It is also important to promote the annuitization of distributions from employer-provided plans by the kind of measures included in the Setting Every Community for Retirement Enhancement Act (SECURE Act) of 2019.

Some suggestions for future research that this essay may inspire include the following: One key issue is the impact of the pandemic on mortality salience, especially what that impact has been and whether any impact will be long-lasting. The issue has obvious implications for the annuity market. Another important issue that bears exploration is whether the increase in saving observed in the past year will be reversed as conditions return to normal. More saving in general is likely to result in more demand for lifetime income products.

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