

The new retirement reality: “lower for longer” interest rates and the implications for retirement portfolios

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Highlights

- The Great Lockdown has been the largest economic downturn since the Great Depression, provoking a sharp decline in long-term interest rates. We believe that low yields are the new paradigm for long-term investors, rather than a cyclical bump in the road. The current crisis has simply sped up the ongoing shift towards a “lower for longer” yield environment.
- The low-rate paradigm is especially challenging for retirement savers who need to make hard choices between taking enough investment risk to achieve their retirement income goal versus the risk of a sharp drawdown in asset valuations during retirement.
- A laddered portfolio of nominal government and inflation-linked bonds is a useful benchmark for retirement portfolio planning. This “Minimum Risk Portfolio” (MRP) is a theoretical portfolio that provides inflation-adjusted cash flows in retirement, allowing investors to smooth lifetime spending.
- Designing portfolios relative to MRP enables investors to shift their focus from asset-only performance (i.e., returns relative to benchmarks) to returns relative to growth in their future retirement income needs (i.e., “surplus risk”).
- However, funding the MRP requires high savings rates and does not hedge key risks, such as outliving your retirement nest egg due to longer life expectancies and unexpected spending needs.
- Today’s “lower for longer” rate environment suggests the need to shift the focus of retirement planning. We believe that investors would benefit from a well-balanced asset allocation taking appropriate investment risk relative to the MRP. Outcome-oriented investment strategies with downside protection can also play a role.

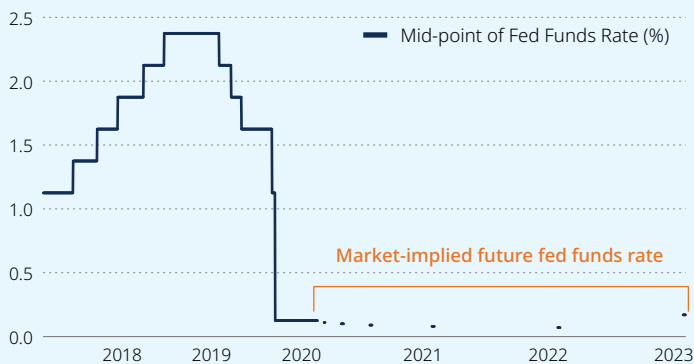
“Lower for longer” interest rates

In 2020, real yields on 10-year US Treasuries settled below zero for the first time since the Federal Reserve tapered Quantitative Easing in 2013.¹ The sharp decline in real yields this year reflects the dramatic impact of COVID-19 on the US and global economy, which led the Fed and other major central banks to slash policy interest rates to about zero.² With a commitment to keep interest rates at the lower bound of 0-0.25%, the Fed has signalled to investors that it will maintain an aggressively expansionary policy stance until inflation and economic activity recover.³ Based on swap markets, investors expect that the Fed’s policy interest rate will stay around zero until well after 2023 (Figure 1). The combination of low nominal rates anchored by the Fed and gradually rising expected inflation imply that low real yields could persist until well after the economy recovers. While low risk-free rates are supporting the economic recovery, “lower for longer” yields will be a headwind for long-term savers.

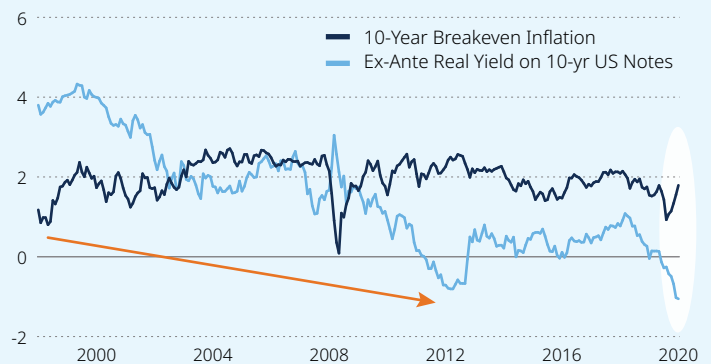
A potential legacy of the pandemic could be longer downward pressure on interest rates in this cycle relative to the usual 'textbook' end-of-cycle pattern. Recent research has found that pandemics have historically been followed by a prolonged decline in real interest rates lasting many years (Figure 2, left). Fortunately, post-war recessions tend to be shorter in length compared to past centuries given more active fiscal and monetary policies to support economic recoveries. Policy interventions in 2020 have been critical to prevent an even greater contraction in economic activity with higher unemployment and business bankruptcies. Despite aggressive policy support, we believe the current pandemic will leave lasting scars in this economic cycle as observed in past historical experiences.

Figure 1. | Real bond yields expected to stay negative in the short-term

Markets expect unchanged policy rates...



...Even with inflation expectations inching up

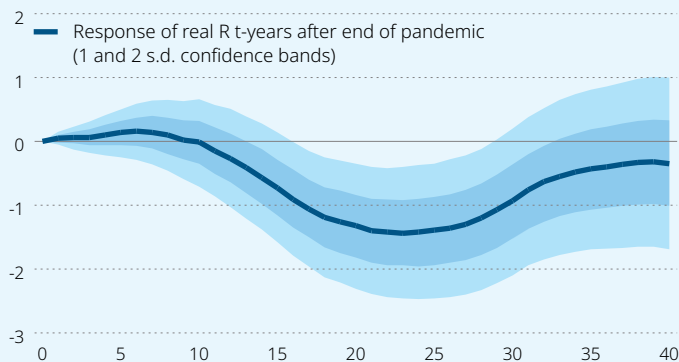


Notes: Market data are provided via Bloomberg as of August 31, 2020. The market-implied Fed Funds Rate (FFR) is derived from Overnight Index Swaps. The red arrow emphasizes the long-term downward trend in the real "risk-free" yield, while the oval to the right points out the recent drop due to climbing inflation expectations.

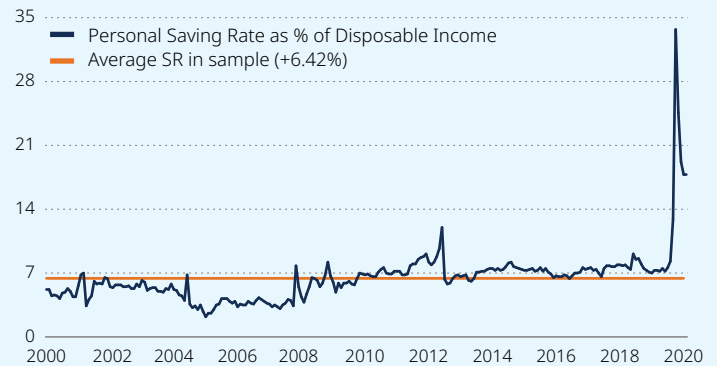
Real and nominal interest rates are likely to remain low in this cycle because of two mechanisms: (1) high unemployment, and (2) high precautionary savings. Double-digit unemployment rates will maintain dis-inflationary pressures, keeping downward pressure on nominal risk-free interest rates. A prolonged labour market recovery would also keep downward pressure on real yields. High personal savings rates have also been important in supporting low rates. High savings correspond to slower demand growth, adding to dis-inflationary pressures. The personal savings rate increased sharply at the onset of the pandemic (Figure 2, right), partly because of physical distancing that limited spending on specific goods and services (i.e., restaurants, travel, etc). As these restrictions ease and economies continue re-opening, consumer spending should recover, and high savings rates should fall. However, we still expect precautionary savings to remain above pre-crisis levels as seen previously in the aftermath of the 2008 GFC given the highly uncertain outlook.

Figure 2. | The pandemic-related recession could result in more downward yield pressures

Low real rates typically follow pandemics historically



Savings rate will likely remain high in the next few years



Notes: Data for the chart in the left panel is from Jorda, Singh & Taylor (2020): <https://www.frbsf.org/economic-research/files/wp2020-09.pdf>. Personal saving rate as a percent of disposable income is a monthly series from the BEA via Bloomberg as of August 13, 2020. Last observation is for June 2020.

Long-term economic forces are weighing on interest rates

In addition to cyclical economic forces, we also expect economic and social trends to keep downward pressure on long-term bond yields. While the central bank’s policy rate can influence real yields over the business cycle, long-term real rates are mainly driven by fundamental economic factors, such as growth, productivity and savings. As elaborated below, we believe that lower long-term growth compared to previous decades will continue weighing on yields in the future. In this way, the current crisis has simply sped up the ongoing shift towards a “lower for longer” rate environment.

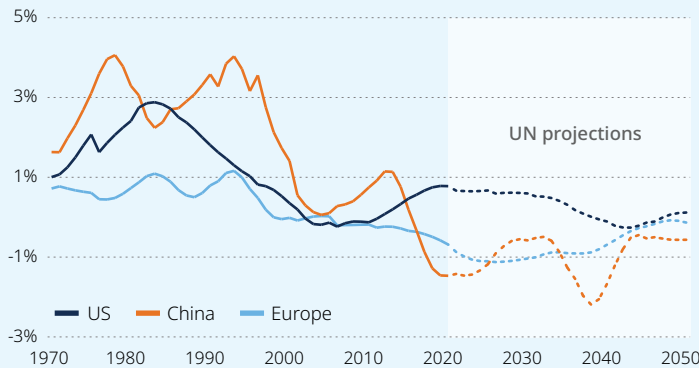
Why should we anticipate lower average long-term growth? Consider the fundamental drivers of long-term economic growth:

$$\text{Average Real GDP growth} = \text{Productivity growth} + \text{Workforce growth} + \text{Capital growth}$$

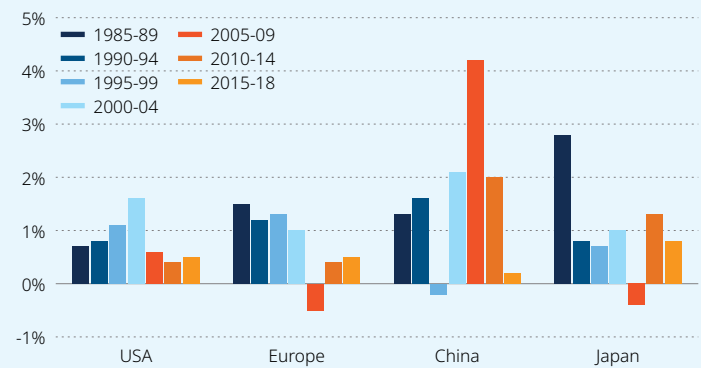
The average growth of a country’s workforce and productivity are the main drivers of long-term real GDP growth. Figure 3 (left) plots UN forecasts of prime-age population growth in the three largest economies. In the US, the growth rate is expected to trend steadily towards zero. In Europe and China, population growth will actually decline! In terms of average US productivity, it has declined in each decade during the post-war period.⁴ Innovations in technology, energy and genetics could lead to upside surprises in future productivity while trade protectionism, de-globalization, reshoring of global supply chains and high debt could continue pushing average productivity lower. Rising income and wealth inequality are also accompanied by populist policies that can weight on long-term productivity. Inequality also tends to increase the national savings rate given the higher marginal savings rates of high-income households.

Figure 3. | Downward trend in factors driving long-term economic growth

Prime-age population will grow slowly or decrease in major capital markets



Future productivity growth is uncertain, but will likely disappoint



Notes: Population series are from the UN Population Dynamics Dataset. Prime-age population are defined as women and men between 25 and 49 years of age. The displayed point estimates for future US, China and Europe prime-age population growth are the mid-point of UN's probabilistic projections. For population, "Europe" represents the aggregate growth for all European countries. Productivity data is from the OECD. Total Factor Productivity (TFP) is defined as the growth of output for a fixed stock of labour and capital. Each bar represents the average annual TFP growth for the period. China productivity is not measured for 2018; the right-most bar represents the average TFP growth for 2015-2017.

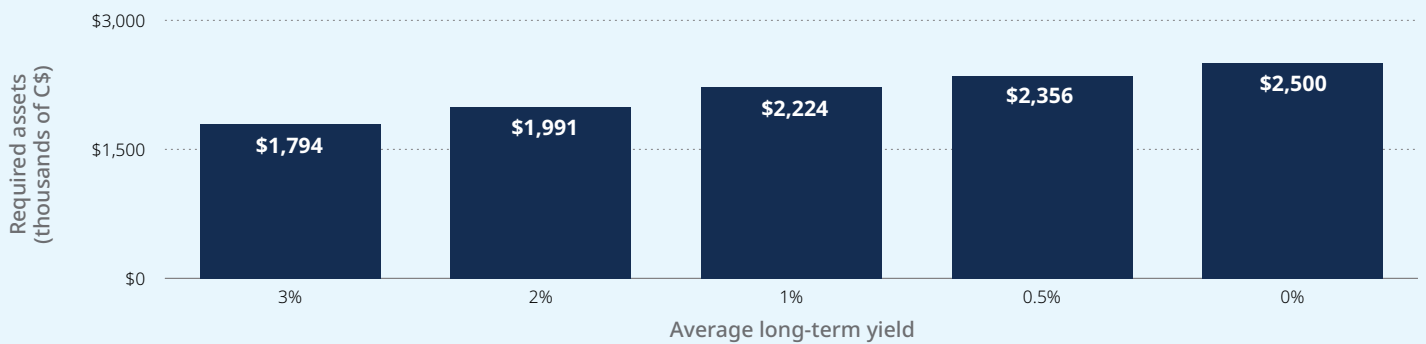
Lower long-term economic growth would keep downward pressure on real interest rates and other asset yields. As population aging accelerates, economists expect slower workforce growth combined with slower productivity growth to reduce desired capital investments. In addition, population aging has accelerated pre-retirement savings and asset accumulation. The combination of higher desired savings and lower desired investment has reduced the risk-free real interest rate, the market price that clears the savings-investment market. Declining real yields can also be self-perpetuating. Lower expected returns and "lower for longer" rates incentivize investors to save more to achieve their retirement income goal. In this context, we expect continuing downward pressure on equilibrium long-term interest rates.

Implications of "lower for longer" yields for long-term asset allocation

From a macro perspective, long-term savers aim to accumulate enough assets during their working years to smooth consumption in retirement. By accumulating assets in their working years and decumulating assets to finance retirement income, long-term savers can avoid an abrupt shift in their standard of living after retirement. Required assets at retirement depend on how much pre-retirement income the saver wants to replace, the horizon for providing payments and the average long-term return on the saver's retirement nest egg.

The long-term risk-free interest rate is an important driver of the savings required to smooth consumption in retirement. A lower risk-free rate implies that long-term savers require more assets to fund a target level of retirement income as accumulated savings compound at a slower growth rate. Risk-free funding of retirement income needs is like saving for an annuity that converts an upfront amount of principal into a series of payments over time with equivalent present value⁵. A lower discount rate implies that future payments have a higher present value, which requires more upfront assets to fund. An intuitive way to see the impact of lower long-term rates on required assets is to compare the cost of funding fixed annual cash flow during retirement. Figure 4 compares the funding cost at age 65 for a saver who needs enough assets to finance annual payments of \$100,000 for 25 years at different long-term average yields for a saver who needs enough assets at age 65 to fund \$100,000 annually for 25 years. The saver needs to accumulate assets of about \$1.8 million when the long-term rate is 3% and about \$2.2 million with long-term bond yields at 1%. If rates decline further to zero, required assets at retirement increase to \$2.5 million.

Figure 4. | Required assets for risk-free funding of a retirement income stream
(theoretical cost of providing \$100,000 for 25 years given specified yield)



Notes: Calculation of required assets is based on 25 years of withdrawing \$100,000 at the specified long-term interest rate. The annual payment is not inflation-adjusted so the real value of \$100,000 declines over time in this stylized example. At the end of 25 years, the assets decline to zero.

Pension-style investing provides useful insights for long-term asset allocation. The individual's lifecycle savings model resembles the Asset-Liability Management (ALM) framework guiding many institutional pension funds. Pension plans accumulate assets from member contributions to fund future pension liabilities. Consistent with this ALM way of thinking, liability-driven asset allocation typically begins with a "Minimum Risk Portfolio" (MRP) consisting of nominal government bonds, inflation-linked bonds and possibly a modest equity allocation to hedge longevity and other long-term risks. The MRP aligns the economic risk factors driving investment returns on the asset side with the factors driving liability growth. Think of the previous example where liabilities consisted of the future stream of \$100,000/year payments. Falling interest rates made those payments more expensive to fund. If you owned a portfolio of bonds, falling interest rates made that portfolio more valuable. Properly designed, a pension plan's ALM framework can make them indifferent to interest rate fluctuations, at a cost of fully funding their future liabilities today.

In the same way, in a Minimum Risk Portfolio, asset returns are expected to track with liability growth, reducing the "surplus risk" of assets relative to liabilities. As the objective is to ensure that future liabilities are fully funded, maximizing investment returns relative to a passive index is less important than ensuring that the absolute return maintains a surplus of assets versus future liabilities.

For individual savers, long-term asset allocation can be similarly designed relative to the MRP as a risk-free benchmark for assessing investment risk relative to funding retirement income. From a retirement perspective, the risk-free portfolio provides a series of inflation-adjusted payments that hedges retirement spending needs. The MRP for individuals that is consistent with this risk-free portfolio typically consists of a laddered portfolio of long-term nominal government bonds and Real Return Bonds that match annual cash flows with projected real income needs during retirement.⁶

"Lower for longer" bond yields create an asset allocation dilemma for long-term savers. As illustrated in Figure 4, low yields imply that greater upfront principal is required to match the present value of future retirement income payments. However, the required assets at retirement imply prohibitively high savings rates for many working people. The high cost of funding the MRP leads many investors into higher risk portfolios to increase long-term expected returns. While higher expected returns reduce required savings at retirement, higher risk portfolios also have a greater "risk of ruin" should valuations drop sharply after retirement. This could leave retirees with insufficient assets to fund their spending needs. Smoothing lifetime consumption requires balancing the aggressiveness of your long-term asset allocation against the risk of a drawdown in asset valuations. In this way, investment risk is equivalent to future consumption risk because riskier asset mixes compared to the MRP do not perfectly hedge future spending needs.

The main objective for the long-term saver is to ensure that the total investment return on the asset side matches growth in the future retirement income needs (i.e., reducing surplus risk). A key question is how much additional investment risk should individual savers take relative to the MRP? Several factors influence this decision:

- Outside sources of retirement income and assets, such as government income, CPP, workplace-provided pensions and downsizing to unlock home equity
- Ability to adjust retirement spending in the event of asset shortfalls
- Need to build a buffer to cover unexpected retirement spending needs
- Risk of outliving your assets as medical advances and healthier lifestyles extend life expectancy

Shifting the focus of retirement thinking

Facing the headwinds of “lower for longer” yields, investors may need to shift the focus of their retirement portfolio thinking. Whether they understand the linkages or not, lower interest rates have made saving for retirement more expensive, and hence the planning much more challenging. Key takeaways include the following:

- 1** Saving enough assets to implement the MRP is too expensive for most investors given “lower for longer” interest rates. In addition, the MRP may not take enough risk to cover increased longevity and unexpected expenses in retirement. Prudent equity exposure will likely remain necessary for many long-term savers in addition to significant fixed income duration exposure.
- 2** However, retirement savers still need to manage surplus risk, or the volatility of investment returns relative to retirement income needs, to avoid the “risk of ruin” in retirement.
- 3** Smart portfolio construction can help reduce surplus risk and the tail risk of large stock market downturns. Alternative investment strategies with absolute return objectives and low correlation to traditional stock market returns as well as outcome-oriented asset allocation strategies with downside protection using options could play a useful role.

¹ Real yields in this context are based on Treasury Inflation Protection Securities (TIPS).

² See our August Commentary “Yields, Liquidity and Asset Prices” for details.

³ “We are not even thinking about raising rates”, Fed Chair Jay Powell reiterated on July 29th.

⁴ “Is US economic growth over? Faltering innovations the six headwinds” Robert Gordon, September 12, 2012. <https://voxeu.org/article/us-economic-growth-over>

⁵ The example in Figure 4 is analogous to calculating the required upfront principal to purchase an annuity. However, purchasing an actual annuity investment may not be appropriate for long-term savers who want to retain control over their assets or seek a higher expected return by investing in risk assets like stocks and corporate credit.

⁶ A useful reference is “The Only Spending Rule Article You Will Ever Need”, B. Waring and L. Siegel, Financial Analysts Journal, Vol. 71, No. 1, 2015 CFA Institute.

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