PIMCO

Asset Allocation Implications of Household Diversity

AUTHORS

Erin Browne
Managing Director
Portfolio Manager

Sean Klein
Executive Vice President
Client Solutions and Analytics

Steve Sapra
Consultant - Client Solutions and Analytics

Alan Taylor
Senior Advisor

EXECUTIVE SUMMARY

- Household assets have grown from around 600% of income in 1950 to 900% today.
- Real wealth levels have increased much more for older households than for their younger counterparts.
- Average effects mask considerable variation in the composition of balance sheets across households.
- Differences in income and wealth levels across households have meaningful implications for asset allocation.
- However, given the prevalence of traditional target-date funds in 401(k) plans, the ability to incorporate cross-sectional differences in household demographics has historically been limited.

1. INTRODUCTION

There is substantial variation in the demographic and economic characteristics of American households. Of course, this is no secret and is immediately apparent even without inspecting official survey data. What is less obvious, however, is how differences across households affect the types of portfolios they might hold. Indeed, some factors can have a potentially significant impact on the desirability of different asset allocations as households age.

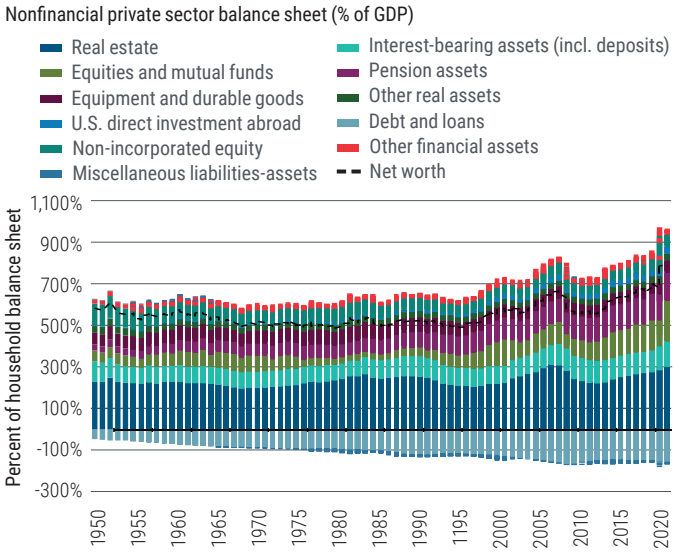
In this paper, we quantify key differences across U.S. households for the dimensions that matter most for portfolio choice, using data from the Federal Reserve's Survey of Consumer Finances (SCF).

The data show significant differences across households. But for the vast majority of families in the middle of the demographic distribution, a few easily observed dimensions – such as income and assets – have measurable and important asset allocation implications. Yet, at present, this information appears not to be systematically reflected in household portfolios. This suggests there is scope for improvement.

U.S. HOUSEHOLD WEALTH OVER TIME

We start by looking at how the general financial characteristics of U.S. households have changed over time. Figure 1 uses the Federal Reserve's financial accounts to show the evolution of the U.S. household balance sheet since 1950.

Figure 1: Decomposition of household balance sheets



Source: Federal Reserve, Financial Accounts of the United States for Households and Nonprofit Organizations as of 2Q 2021

The balance sheet of the average household has changed significantly in the past decades and is now at its largest size relative to income since at least the 1950s.

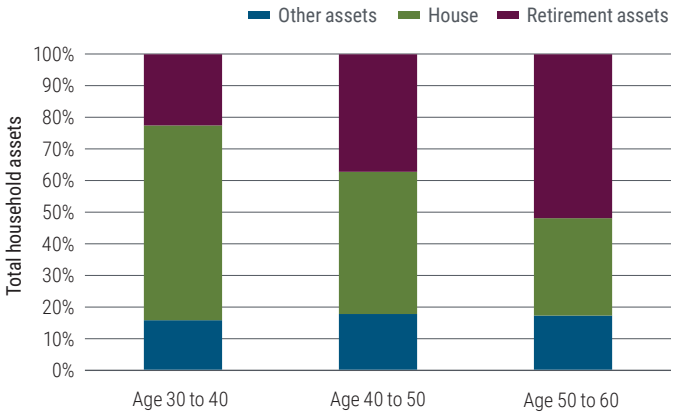
Until the 1980s, household assets were about 600% of income, and liabilities in the form of loans grew slowly to about 50% of income. Since then, a supersecular decline in real interest rates has been associated with higher values for most assets in the economy, both real and financial. Under these forces, assets have grown today to about 900% of income (a 1.5x rise relative to pre-1980s levels). This massive growth in the size of household balance sheets implies that households have remained willing to buy and hold these assets, and not consume their capital gains. This likely has helped to sustain high asset prices and, as a result, low real rates. Liabilities have similarly shown significant growth over time, peaking in 2008 at almost 150% of income (a 3x rise) before pulling back to about 100% today.

Within asset classes, the value of durable goods and small business equity wealth relative to income have fallen (from roughly 200% to 100%) while equities and mutual funds, pensions and real estate have grown relative to income (from less than 300% to more than 600%). Pensions, equities, and mutual funds – which provide the main categories of asset allocation choices for most households – have grown from roughly 100% in the early 1950s to 300% today (a 3x rise). This is certainly a favorable outcome, given increased longevity in retirement and the increased reliance of U.S. households on personal savings – often in the form of a defined contribution (DC) plan like a 401(k) or an individual retirement account (IRA) – versus past generations, which were more able to rely on a stream of defined benefit (DB) pension income in retirement.

Outside of the wealthiest groups, which often own significant private businesses and financial assets such as equities and fixed income outside of their retirement accounts, it is mainly real estate and retirement wealth (as well as cash and deposits) that make up the majority of household assets.

In the U.S., home equity and retirement accounts are the mainstay of wealth accumulation by the middle class. Indeed, all other financial assets[1] represented less than one-fifth of total assets across all ages for households in the 50th–90th percentile of total assets by age as of 2019, as shown in Figure 2.

Figure 2: Asset allocation for middle class households



Source: PIMCO and the Federal Reserve's Survey of Consumer Finances as of 2019. Middle class is the 50th-90th percentile of total assets.

LONG-TERM SECULAR TRENDS IN HOUSEHOLD BALANCE SHEETS

We now dig deeper into some of the long-run trends, using data from the Fed's triennial Survey of Consumer Finances. Based on these data, we identify three broad trends, each of which has important implications for household risk and retirement preparedness.

1 Including stocks, bonds, mutual funds, exchange-traded funds and even checking and savings accounts

As shown in Figure 3a, the first big shift is a rising amount of wealth, particularly within older age groups. This is mainly among Americans of above-median net worth, as those below that threshold have accumulated almost no assets. Older households now hold almost 200% more real assets than in 1992, but younger households have only 60% more. On one level, a transitory driver of this phenomenon was the progress of the baby boom cohort through its high accumulation years from 1990 to 2020. But a more structural and lasting change is the rise in life expectancy. Even after the baby boom generation ages and drops out of the data, the U.S. and other advanced economies will have permanently higher numbers of high wealth households in the over-50 age groups. Individuals over 50 tend to hold and retain substantial wealth rather than fully dissipating it. This "savings glut of the old" has led to an upward trajectory of wealth-to-income ratios and corresponding downward pressure on real rates of return. This trend is expected to continue for the foreseeable future.[2]

The second big shift is leverage, which allowed households to simultaneously expand both the asset and the liability sides of their balance sheets (see Figure 3b). The young are more leveraged, with debt-to-asset ratios rising from a third of assets in 1992 to almost half today, and even older households have "levered up," from 10% to 20%. The trend has been led by increasingly lower rates on mortgage debt. However, in recent years, certain other types of debt have grown as well, notably student loan debt among younger adult households. Though household mortgage debt levels peaked in 2008, they have fallen only slightly since.

2 See Joseph Kopecky and Alan M. Taylor, "The Savings Glut of the Old: Population Aging, the Risk Premium, and the Murder-Suicide of the Rentier," NBER Working Paper 29944, April 2022; Adrien Auclert, Hannes Malmberg, Frederic Martenet and Matthew Rognlie, "Demographics, Wealth, and Global Imbalances in the Twenty-First Century," NBER Working Paper 29161, August 2021; and Gertjan Vlieghe, "Running Out of Room: Revisiting the 3D Perspective on Low Interest Rates," a speech given at the London School of Economics 26 July 2021.

FIGURE 3: THREE MAJOR DEMOGRAPHIC TRENDS

Figure 3a: The older generation has saved more

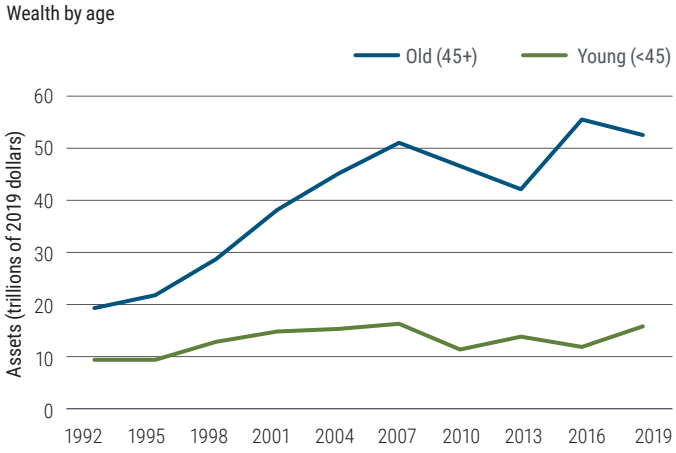


Figure 3b: The older generation has borrowed less

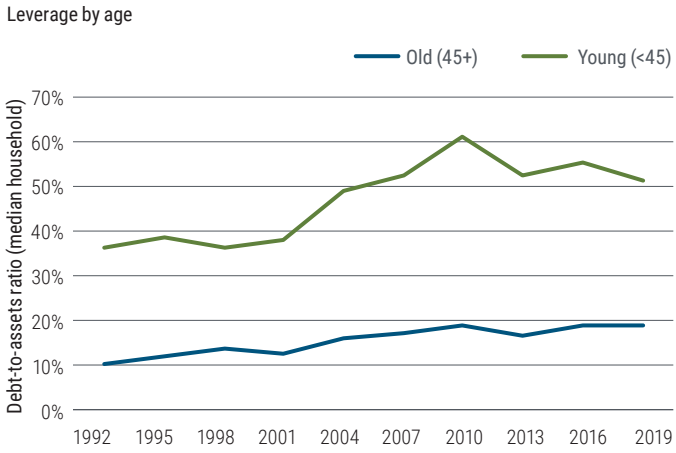
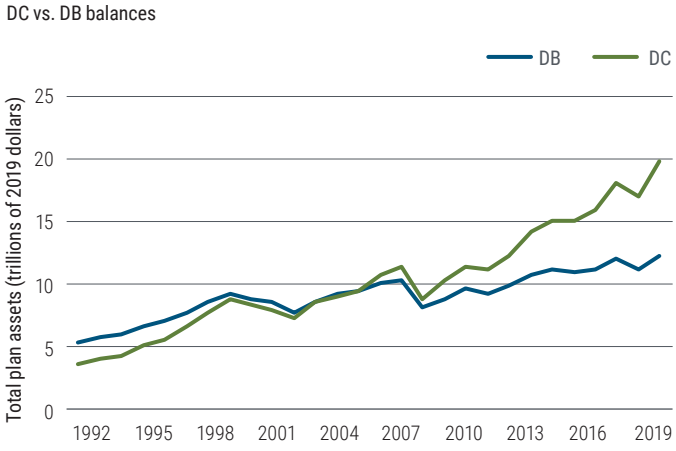


Figure 3c: DC assets have surpassed DB assets



Sources: PIMCO calculations and the Survey of Consumer Finances and the Investment Company Institute

The third big shift is the decline in the role of traditional private pensions relative to self-managed plans (see Figure 3c). There was a massive increase in the size of DC and IRA plans, where real total plan assets rose from $3 trillion to $20 trillion (about 7x) between 1990 and 2020, while at the same time assets in DB plans grew from $5 trillion to only $12 trillion (about 2.5x). Assets in DB plans still loom large in the public sector, but in the private sector DB assets are in decline as older workers enter retirement and begin collecting benefits and employers freeze their DB plans. If they have retirement benefits, today almost all younger private sector employees have DC plans. A side effect of this transition has been a significant shift in risks: DC plan risk is the household's individual problem, but DB plan risk held by the employer and pooled. In contrast, portfolio allocations in most DC accounts tend to hold substantial equity risk, in contrast to the fixed income characteristics of DB plan payouts.[3]

2. HETEROGENEITY IN HOUSEHOLD-LEVEL DATA

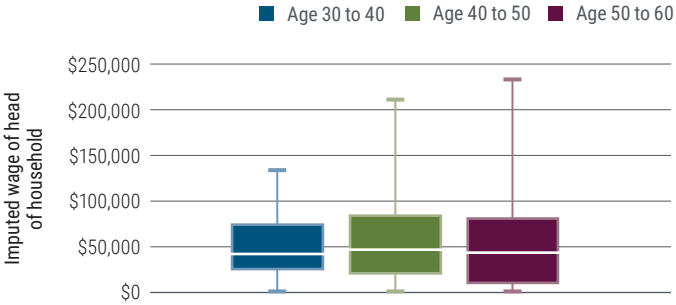
The aggregate data in Figures 1 and 2, while useful in illustrating general trends in household balance sheets, obscure enormous variation among households. Each of the major financial trends affects different households to varying degrees. Some saved more, some less. Some leveraged more, some less. Some shifted from DB to DC more or less. In this section, we further investigate the high degree of household diversity across the U.S. working-age population.

Our analysis covers the general working-age population – those over 30 and under 60 years old. Those younger than 30 are new to the workforce and have few retirement assets built up, while those older than 60 are entering retirement and drawing down their assets; the 30–59 age group is our focus because they are in the critical phase in which wealth-building and portfolio choice are acutely important. We break down DB and DC components of retirement wealth.[4] In total, we have 3,077 observations in the 2019 survey, which when weighted correspond to 67.2 million households, or about half of all U.S. households.

The most obvious source of difference among households is wage income. In Figure 4, we plot the distribution of wages for the head of household by age group in 2019. The boxes in the figure depict the interquartile range (IQR, 25th–75th percentiles), while the whiskers show the 5th–95th percentiles and the white lines show the medians.

We can see the standard life-cycle profiles of increasing wages with age, with median wages of $44,160 and $47,390 for the 30–39 and 40–49 cohorts, respectively. However, median income levels peak at ages 40–49 and decline thereafter as households approach retirement age. Still, this is not the case for the highest-income households, with both the 75th and 95th percentile income levels increasing monotonically with age. Thus, while most wages display a hump-shaped pattern by age in the working years, for those at the highest percentiles of the wage distribution, wage income continues to increase even into their 60s.

Figure 4: Income dispersion by age



Source: PIMCO and the Survey of Consumer Finances as of 2019.
The white lines indicate median values, whiskers represent the 5th–95th percentiles, and the shaded boxes show wages for the 25th–75th percentiles.

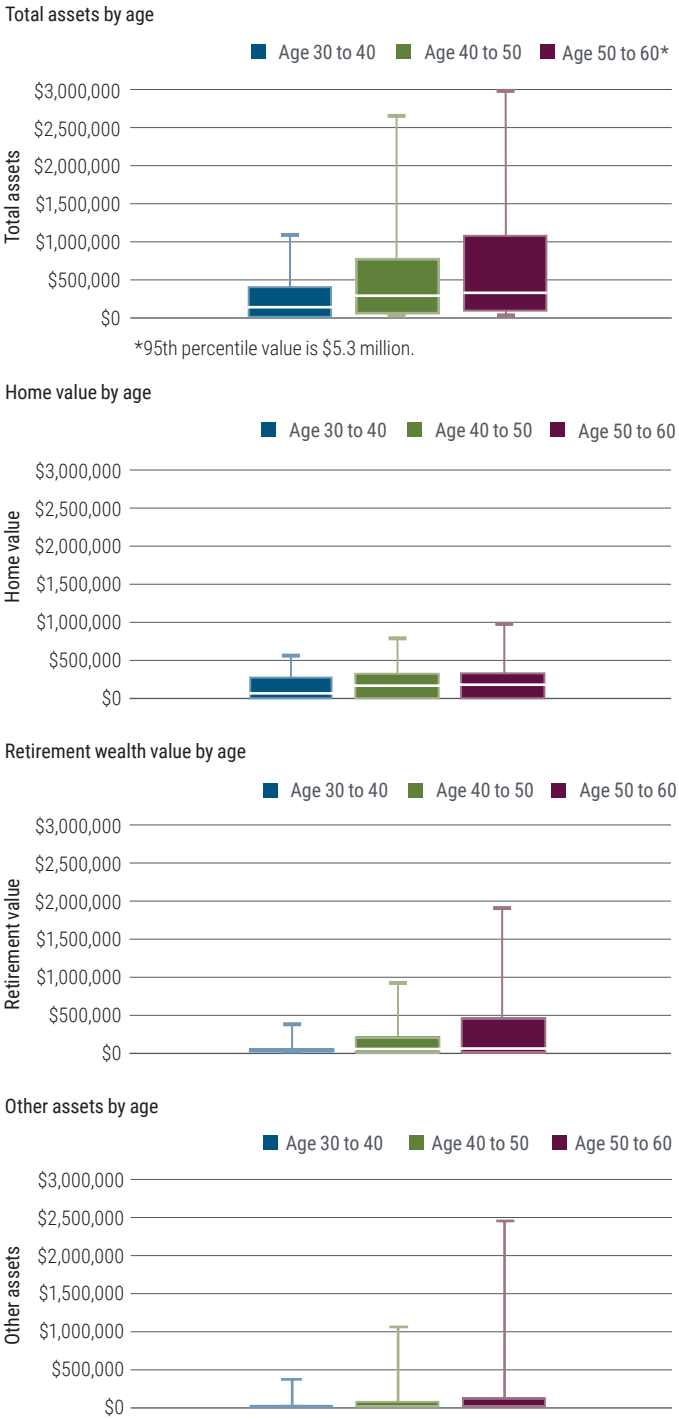
In Figure 5, we show similar exhibits by age for several key balance sheet characteristics: total household assets; the value of the primary residence; the value of retirement assets and the value of nonhousing, nonretirement assets.[5]

3 See Zvi Bodie, Alan J. Marcus and Robert C. Merton, "Defined Benefit Versus Defined Contribution Pension Plans: What Are the Real Trade-offs?" in *Pensions in the U.S. Economy*, eds. Zvi Bodie, John B. Shoven and David A. Wise, Chicago: University of Chicago Press, 2008; and Alicia Munnell, "The Shift from DB to DC," in *The Oxford Handbook of Pensions and Retirement Income*, eds. Gordon L. Clark, Alicia H. Munnell and J. Michael Orszag, Oxford: Oxford University Press, 2006.

4 See John Sabelhaus and Alice Henriques Volz, "Are Disappearing Employer Pensions Contributing to Rising Wealth Inequality?" FEDS Notes, Board of Governors of the Federal Reserve System, February 1, 2019, https://doi.org/10.17016/2380-7172.2308. However, in these DB and DC data we needed to do further cleaning to make them fully consistent with the known evolution of aggregate totals of DB and DC wealth in the Fed's data (Z1 financial accounts), which we accomplished by rescaling DB and DC balances in each survey year at the respondent level so that the yearly aggregate matches the dollar total in the Z1 data set, after we convert all SCF amounts into the same current dollar units. Here, the Z1 data differed only markedly for the DC amounts, which had both a lower level and a smaller trend from 1989 to 2019.

5 To keep the samples the same across all exhibits, we do not restrict on asset ownership. That is, households that do not own a home or have a DC account are included in these distributions as a zero value.

Figure 5: Demographic diversity by age



Source: PIMCO and the Survey of Consumer Finances as of 2019
The white lines (in the top three panels) indicate median values, whiskers represent the 5th to 95th percentiles, and the shaded boxes show wages for the 25th–75th percentiles. Median values are not shown on the bottom two panels due to scaling.

Several patterns are immediately apparent. First, there is even more dispersion in households' total assets than in wages.[6] And unlike the distribution of wages, total assets do not follow a hump-shaped pattern by age, even in the center of the distribution, and are instead accumulated throughout one's entire working life. However, as wealth increases, assets are not added uniformly across the balance sheet. Though homeownership rates increase with age, we see, for example, little change in the distribution of home values with age, and nowhere near the same magnitude of dispersion in home values that we see in total assets.

Instead, most of the dispersion is due to differences in the size of retirement balances – which makes sense, as these tend to accumulate gradually with age. Balances in retirement accounts rise sharply to a median value of roughly $250,000 in the highest age group. Furthermore, the retirement asset distribution skews heavily to the right: Top quartile households enjoy nine times the median balance, and the top 5th percentile has nearly $2 million in retirement accounts by age 60. Finally, as we saw in Figure 2, nonretirement assets represent a relatively small fraction of total assets for most households, though here again the right tail is very long.[7]

Using the standard tools of portfolio theory, one would expect these kinds of dramatic differences in wages and retirement balances across households to correspond to large differences in the composition and dynamics of their asset allocations. But this high degree of demographic diversity across U.S. households has not, in general, translated into diversity in asset allocation profiles. Target date funds, for example, which are usually the default investments in 401(k) accounts, allocate individuals to a particular asset based solely on their age, typically using "representative" values for all of the other relevant dimensions. Hence, such investments are not generally optimized against the wide degree of demographic diversity we see in the data.

6 The coefficient of variation is 4.8 and 2.0 for assets and income, respectively, for the 40–50 cohort, and 3.9 and 3.0 respectively, for the 50–60 cohort.

7 While there are large nonretirement, nonhousing balances in the U.S., it's not until the top 5%, and especially the top 1%, of the distribution that these assets represent more than 20%–25% of the household balance sheet.

3. HETEROGENEITY AND ASSET ALLOCATION

As shown in the previous section, there are considerable differences across the U.S. working-age population's wage income and assets. After age 50, the interquartile range of retirement assets is between zero and $460,000, while the range for nonhousing nonretirement assets is between $1,600 and $128,000, and between $8,600 and $81,500 for wage income. Beyond the 75th percentile, both wage income and nonretirement assets increase sharply (i.e., these distributions are skewed), although this is less the case for retirement plans like 401(k) and IRA accounts, where contributions are capped by law. At the 95th percentile, for example, wage income and nonretirement assets for 50- to 60-year-old households are a substantial $236,000 and $2,473,000, respectively.

While the role of age in the optimal glide path typically derives from the diminishing present value of a worker's labor income with time, the shape of an investor's optimal glide path is also driven by several additional factors. For example, households with higher levels of labor income, all else equal, are generally also those with higher asset balances, as savings are converted into wealth via the intersection of wealth accumulation and asset returns. This, in conjunction with the nature of the Social Security benefit formula, implies that Social Security will represent a smaller fraction of richer households' overall wealth and future consumption than it will for lower-income households.

With this in mind, it is largely inevitable that lower-wealth households will rely heavily on Social Security as a source of retirement income, whereas wealthier households will lean more toward their retirement savings as a means of producing income in the golden years. Specifically, higher-wealth households will generally want to hold fewer equities and more bonds to compensate for their likely having a dearth of bond-like Social Security benefit payments measured as a fraction of their overall retirement income.[8] Furthermore, given the fixed-payment nature of DB pensions, DB wealth introduces similar asset allocation implications as Social Security.

Thus, demographic differences across households should in principle have implications for the critical decision of portfolio asset allocation.[9] However, as shown in Figure 5, most households accumulate assets in their retirement accounts, a significant fraction of which are made up of traditional target-date funds which tend to gradually de-risk from an equity-heavy allocation for those early in their careers to something more akin to a balanced fund near retirement. Thus, in practice, age (or time) is typically the sole demographic dimension that operates to personalize asset allocation over one's lifetime.[10]

The significant financial diversity of the working population implies that the asset allocation of this population should be similarly diverse.[11] Figure 6 compares optimal glide paths for a hypothetical high wage/high savings person and a low wage/low savings person.[12] Initially, both investors have similarly equity-heavy asset allocations. However, between ages 30 and 35, the high wage worker's increased savings balance begins to reduce their optimal equity allocation fairly significantly. By age 50, the high wage worker optimally holds around 30 percentage points less equity exposure than the low wage worker. The low wage worker, on the other hand, holds much higher equity allocations through time, as their relatively low level of accumulated savings implies that Social Security composes a much larger fraction of their overall wealth than it does for the high wage worker. As such, barring other considerations, the low wage worker should optimally allocate more to equities for longer than the high wage worker.

8 See Zvi Bodie, Robert C. Merton and William Samuelson, "Labor Supply Flexibility and Portfolio Choice in a Life Cycle Model," *Journal of Economic Dynamics and Control*, July–October 1992; James M. Poterba,"Retirement Security in an Aging Population," *American Economic Review*, May 2014; Poterba, Venti and Wise 2013.

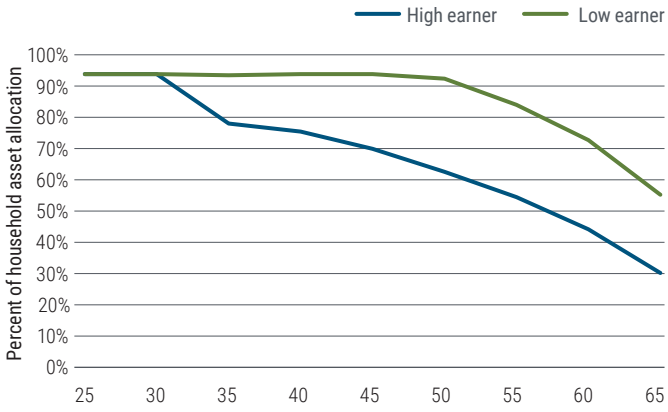
9 To say nothing of nonfinancial heterogeneity. See James M. Poterba, "Saver Heterogeneity and the Challenge of Assessing Retirement Saving Adequacy," *National Tax Journal*, June 2015.

10 Current estimates are that 87% of 401(k) plans offer target-date funds, 60% of participants hold some target-date assets, and 31% of all DC assets are invested in target-date funds (ICI Research Perspective, Investment Company Institute, 2022).

11 For details on our methodology for glide path construction, see "The PIMCO Glide Path Construction Process," https://www.pimco.com/en-us/insights/viewpoints/research/the-pimco-glide-path-construction-process.

12 The high earner is assumed to start with a salary of $125,000 at age 25 and end with a salary of $400,000 at age 65. They are assumed to contribute approximately 15% of their salary to their 401(k) account, subject to maximum contribution limits. The low earner is assumed to earn $25,000 at age 25 and $45,000 by age 65, with a 6.25% overall contribution rate throughout.

Figure 6: Optimal equity allocation: Higher earner versus low earner



Source: PIMCO as of 2022. **For illustrative purposes only.**

There are large theoretical gains from customizing glide path allocations. Of course, there is a practical limit to the amount of information that could be deployed to customize allocations for different segments of the population. This leads naturally to the question: Which segments of the population are good candidates for customization when we have only incomplete information?

Those below the median level of net worth have very little investible wealth (inside or outside of any retirement plan), so there is little scope for asset allocation to make a difference.[13] Above this level, however, median balances increase rapidly with both age and net worth. Further, for all households except those in the top decile of assets, wages represent the vast majority of income and nonretirement, nonhousing assets tend to be relatively small. Thus, any incremental customization based on wages and 401(k) asset levels alone is more likely to improve outcomes for quite a large swath of investors.[14] Based on the data, we propose that customization is likely to add value for the vast majority of asset-owning households.

CONCLUSION

Characteristics of the average U.S. household balance sheet have changed dramatically over the past 40 years. The ratio of wealth to income has increased by around 3x over this period as households have increasingly accumulated wealth through savings and asset price appreciation. Furthermore, these aggregate time trends obscure significant variation in diversity in the nature of household balance sheets. Despite this, asset allocation in retirement accounts has generally not reflected this high degree of variation in household characteristics.

Asset allocations based solely on age are difficult to justify for households in 2022. The distribution of wealth is particularly wide across U.S. households, even more so than the variation across wage income. This is particularly true for wealth accumulated through retirement accounts, where we generally see a "have and have not" effect with respect to accumulated wealth at or near retirement. And while the variation in household demographics and economic characteristics is likely well known, at least at an intuitive level, the asset allocation implications of this diversity are much less well understood.

Diversity among U.S. households should have meaningful asset allocation implications, which are likely underappreciated and certainly not generally adhered to in typical retirement savings vehicles. The significant differences across households in terms of key characteristics like wages, liquid assets and home values have important implications for portfolio construction that investors should be able to account for in their retirement plans. Moreover, the differences among households suggest that glide path customization based on wages and asset balances appears appropriate for the majority of retirement plan participants.

13 It isn't until we reach median net worth households that we see balances larger than $5,000 at any age.

14 For example, households in the 50th–90th percentiles have wage earnings that represent at least 80% of their total income, and their nonretirement, nonhousing wealth is generally on the order of only 15%–25% of total assets. Please see the appendix for more detail.

APPENDIX: HETEROGENEITY IN MIDDLE WEALTH HOUSEHOLDS

Figure 7 shows the distribution of household-level DC/IRA balances by age for households across asset percentiles.

Figure 7: Distribution of DC balances ($)

	Asset percentile	5th	25th	Median	75th	95th
Age 30 to 39 years old	<25%	–	–	–	–	3,100
	25%–50%	–	–	3,800	18,000	60,000
	50%–75%	–	–	8,000	40,000	118,000
	75%–90%	–	3,500	35,000	92,000	181,700
	90%–99%	–	24,000	58,000	200,000	484,000
	99%+	–	17,000	150,000	445,000	788,000
Age 40 to 49 years old	<25%	–	–	–	–	18,000
	25–50%	–	–	–	50,000	119,000
	50–75%	–	–	37,000	142,000	294,000
	75–90%	–	52,000	149,000	321,000	663,400
	90–99%	–	200,000	440,000	770,000	1,794,000
	99%+	–	210,000	650,000	1,231,000	4,300,000
Age 50 to 59 years old	<25%	–	–	–	–	26,000
	25%–50%	–	–	800	44,100	112,790
	50%–75%	–	–	64,000	197,000	419,000
	75%–90%	–	17,400	142,000	555,000	1,200,000
	90%-99%	19,000	248,620	700,000	1,290,000	2,156,000
	99%+	–	25,000	879,000	2,100,000	4,890,000

Source: PIMCO and the Survey of Consumer Finances as of 2019. DC balances are calculated as described in the text.

We show the distribution of wealth in nonretirement, nonhousing assets by age and net worth percentile in Figure 8.

Figure 8: Allocation to nonretirement, nonhousing assets

	Asset percentile	5th	25th	Median	75th	95th
Age 30 to 39 years old	<25%	24%	100%	100%	100%	100%
	25%–50%	0%	5%	25%	63%	100%
	50%_75%	0%	1%	4%	18%	71%
	75%–90%	0%	2%	5%	21%	83%
	90%–99%	0%	5%	14%	43%	73%
	99%+	55%	75%	82%	90%	96%
Age 40 to 49 years old	<25%	1%	29%	100%	100%	100%
	25%–50%	0%	1%	5%	18%	100%
	50%–75%	0%	1%	5%	20%	59%
	75%–90%	1%	4%	13%	29%	65%
	90%–99%	1%	12%	34%	59%	91%
	99%+	22%	64%	85%	91%	96%
Age 50 to 59 years old	<25%	0%	6%	100%	100%	100%
	25%–50%	0%	1%	4%	15%	92%
	50%–75%	0%	2%	6%	27%	64%
	75%–90%	0%	2%	9%	25%	66%
	90%–99%	1%	19%	49%	71%	89%
	99%+	47%	74%	86%	96%	97%

Source: PIMCO and the Survey of Consumer Finances as of 2019. DC balances are calculated as described in the text.

At every age, the lowest-net-worth percentiles and the highest-net-worth percentiles have large amounts of assets outside of their primary residences and homes. Though this is a common feature between the lowest and highest percentiles, it is for very different reasons. Households below the 25th percentile of net worth have large outside allocations because they likely own neither a home nor a retirement account, and it is not until the 90–99th percentile, and particularly the 99th percentile and above, that households have significant investments outside of their homes and retirement balances.

REFERENCES

Auclert, Adrien, Hannes Malmberg, Frederic Martenet and Matthew Rognlie. "Demographics, Wealth, and Global Imbalances in the Twenty-First Century." NBER Working Paper 29161, August 2021.

Bodie, Zvi, Alan J. Marcus and Robert C. Merton. "Defined Benefit Versus Defined Contribution Pension Plans: What are the Real Trade-offs?" In *Pensions in the U.S. Economy*, eds. Zvi Bodie, John B. Shoven and David A. Wise. Chicago: University of Chicago Press, 2008.

Bodie, Zvi, Robert C. Merton and William F. Samuelson. "Labor Supply Flexibility and Portfolio Choice in a Life Cycle Model." *Journal of Economic Dynamics and Control*, July–October 1992.

Financial Accounts of the United States – Z.1. Board of Governors of the Federal Reserve System. federal-reserve.gov/releases/z1/default.htm

Investment Company Institute. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2019." *ICI Research Perspective*, May 2022.

Moore, James, Steve Sapra and Niels K. Pedersen. "The PIMCO Glide Path Construction Process." PIMCO, June 2017.

Munnell, Alicia. "The Shift From DB to DC." In *The Oxford Handbook of Pensions and Retirement Income*, eds. Gordon L. Clark, Alicia Munnell and J. Michael Orszag. Oxford: Oxford University Press, 2006.

Poterba, James M. "Retirement Security in an Aging Population." *American Economic Review*, May 2014.

Poterba, James. "Saver Heterogeneity and the Challenge of Assessing Retirement Saving Adequacy." *National Tax Journal*, March 2015.

Poterba, James, Steven Venti and David Wise. "The Composition and Drawdown of Wealth in Retirement." *Journal of Economic Perspectives*, Fall 2013.

Sabelhaus, John and Alice Henriques Volz. "Are Disappearing Employer Pensions Contributing to Rising Wealth Inequality?" FEDS Notes. Board of Governors of the Federal Reserve System, February 1, 2019. https://doi.org/10.17016/2380-7172.2308

Survey of Consumer Finances. Board of Governors of the Federal Reserve System, 2019. federalreserve.gov/econres/scfindex.htm-

Vlieghe, Gertjan. "Running Out of Room: Revisiting the 3D Perspective on Low Interest Rates." Speech given at the London School of Economics 26 July 2021.

The discussions included herein are general in nature and not based on any particularized financial situation, or need, and are not intended to be, and should not be construed as, a forecast, research, investment advice or a recommendation for any specific PIMCO or other strategy, product or service. Individuals should consult with their own financial advisors to determine the most appropriate allocations for their financial situation, including their investment objectives, time frame, risk tolerance, savings and other investments. All investments contain risk and may lose value.

Glide Path is the asset allocation within a Target Date Strategy (also known as a Lifecycle or Target Maturity strategy) that adjusts over time as the participant's age increases and their time horizon to retirement shortens. The basis of the Glide Path is to reduce the portfolio risk as the participant's time horizon decreases. Typically, younger participants with a longer time horizon to retirement have sufficient time to recover from market losses, their investment risk level is higher, and they are able to make larger contributions (depending on various factors such as salary, savings, account balance, etc.). Generally, older participants and eligible retirees have shorter time horizons to retirement and their investment risk level declines as preserving income wealth becomes more important.

Target Date Funds are designed to provide investors with a retirement solution tailored to the time when they expect to retire or plan to start withdrawing money (the "target date"). Target Date Funds will gradually shift their emphasis from more aggressive investments to more conservative ones based on their target dates. Target Date Funds invest in other funds and instruments based on a long-term asset allocation glide path developed by an investment manager, and performance is subject to underlying investment weightings, which will change over time. An investment in a Target Date Fund does not eliminate the need for an investor to determine whether a Fund is appropriate for his or her financial situation. An investment in a Fund is not guaranteed. Investors may experience losses, including losses near, at, or after the target date, and there is no guarantee that a Fund will provide adequate income at and through retirement.

This material contains the opinions of the manager and such opinions are subject to change without notice. This material has been distributed for informational purposes only and should not be considered as investment advice or a recommendation of any particular security, strategy or investment product. Information contained herein has been obtained from sources believed to be reliable, but not guaranteed.

PIMCO as a general matter provides services to qualified institutions, financial intermediaries and institutional investors. Individual investors should contact their own financial professional to determine the most appropriate investment options for their financial situation. This is not an offer to any person in any jurisdiction where unlawful or unauthorized. | **Pacific Investment Management Company LLC**, 650 Newport Center Drive, Newport Beach, CA 92660 is regulated by the United States Securities and Exchange Commission. | **PIMCO Europe Ltd (Company No. 2604517)** is authorised and regulated by the Financial Conduct Authority (12 Endeavour Square, London E20 1JN) in the UK. The services provided by PIMCO Europe Ltd are not available to retail investors, who should not rely on this communication but contact their financial adviser. | **PIMCO Europe GmbH (Company No. 192083, Seidlstr. 24-24a, 80335 Munich, Germany), PIMCO Europe GmbH Italian Branch (Company No. 10005170963), PIMCO Europe GmbH Irish Branch (Company No. 909462), PIMCO Europe GmbH UK Branch (Company No. 2604517) and PIMCO Europe GmbH Spanish Branch (N.I.F. W2765338E)** are authorised and regulated by the German Federal Financial Supervisory Authority (BaFin) (Marie- Curie-Str. 24-28, 60439 Frankfurt am Main) in Germany in accordance with Section 15 of the German Securities Institutions Act (WpIG). The Italian Branch, Irish Branch, UK Branch and Spanish Branch are additionally supervised by: (1) Italian Branch: the Commissione Nazionale per le Società e la Borsa (CONSOB) in accordance with Article 27 of the Italian Consolidated Financial Act; (2) Irish Branch: the Central Bank of Ireland in accordance with Regulation 43 of the European Union (Markets in Financial Instruments) Regulations 2017, as amended; (3) UK Branch: the Financial Conduct Authority; and (4) Spanish Branch: the Comisión Nacional del Mercado de Valores (CNMV) in accordance with obligations stipulated in articles 168 and 203 to 224, as well as obligations contained in Tile V, Section I of the Law on the Securities Market (LSM) and in articles 111, 114 and 117 of Royal Decree 217/2008, respectively. The services provided by PIMCO Europe GmbH are available only to professional clients as defined in Section 67 para. 2 German Securities Trading Act (WpHG). They are not available to individual investors, who should not rely on this communication.| **PIMCO (Schweiz) GmbH (registered in Switzerland, Company No. CH-020.4.038.582-2)**. The services provided by PIMCO (Schweiz) GmbH are not available to retail investors, who should not rely on this communication but contact their financial adviser. | **PIMCO Asia Pte Ltd** (Registration No. 199804652K) is regulated by the Monetary Authority of Singapore as a holder of a capital markets services licence and an exempt financial adviser. The asset management services and investment products are not available to persons where provision of such services and products is unauthorised. | **PIMCO Asia Limited** is licensed by the Securities and Futures Commission for Types 1, 4 and 9 regulated activities under the Securities and Futures Ordinance. PIMCO Asia Limited is registered as a cross-border discretionary investment manager with the Financial Supervisory Commission of Korea (Registration No. 08-02-307). The asset management services and investment products are not available to persons where provision of such services and products is unauthorised. | **PIMCO Investment Management (Shanghai) Limited** Unit 3638-39, Phase II Shanghai IFC, 8 Century Avenue, Pilot Free Trade Zone, Shanghai, 200120, China (Unified social credit code: 91310115MA1K41MU72) is registered with Asset Management Association of China as Private Fund Manager (Registration No. P1071502, Type: Other) | **PIMCO Australia Pty Ltd** ABN 54 084 280 508, AFSL 246862. This publication has been prepared without taking into account the objectives, financial situation or needs of investors. Before making an investment decision, investors should obtain professional advice and consider whether the information contained herein is appropriate having regard to their objectives, financial situation and needs. | **PIMCO Japan Ltd**, Financial Instruments Business Registration Number is Director of Kanto Local Finance Bureau (Financial Instruments Firm) No. 382. PIMCO Japan Ltd is a member of Japan Investment Advisers Association, The Investment Trusts Association, Japan and Type II Financial Instruments Firms Association. All investments contain risk. There is no guarantee that the principal amount of the investment will be preserved, or that a certain return will be realized; the investment could suffer a loss. All profits and losses incur to the investor. The amounts, maximum amounts and calculation methodologies of each type of fee and expense and their total amounts will vary depending on the investment strategy, the status of investment performance, period of management and outstanding balance of assets and thus such fees and expenses cannot be set forth herein. | **PIMCO Taiwan Limited** is managed and operated independently. The reference number of business license of the company approved by the competent authority is (110) Jin Guan Tou Gu Xin Zi No. 020. 40F., No.68, Sec. 5, Zhongxiao E. Rd., Xinyi Dist., Taipei City 110, Taiwan (R.O.C.). Tel: +886 2 8729-5500. | **PIMCO Canada Corp.** (199 Bay Street, Suite 2050, Commerce Court Station, P.O. Box 363, Toronto, ON, M5L 1G2) services and products may only be available in certain provinces or territories of Canada and only through dealers authorized for that purpose. | **PIMCO Latin America** Av. Brigadeiro Faria Lima 3477, Torre A, 5° andar São Paulo, Brazil 04538-133. |
No part of this material may be reproduced in any form, or referred to in any other publication, without express written permission. PIMCO is a trademark of Allianz Asset Management of America L.P. in the United States and throughout the world. ©2024, PIMCO.