

The long and short of baby boomer balance sheets

Multi-asset implications

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IN BRIEF

Baby boomers are entering retirement, bringing with them a median level of household assets considerably higher than that of their parents' generation and, in all likelihood, far exceeding that of the next generation as well. We refer to this massive accumulation of assets—and the impact it is likely to have on the economy, markets and the retirement prospects of multiple generations—as baby boomers' "financial exceptionalism."

This research examines the evolution of baby boomer balance sheets and attempts to assess and quantify its implications for markets and investors. We find:

- Baby boomers, benefiting from a long period of economic growth and stability during the bulk of their peak earning years, have quadrupled their aggregate net worth since the late 1980s. Nonfinancial assets, specifically residential property, played an important role in that wealth accumulation, accounting for two-thirds of median household assets in 2013.
- The next generation has not fared as well. For example, median household net worth for young to middle-aged members of Generation X (Gen X) has declined significantly relative to that for households of a similar age 25 years ago. Given lower current income growth and expected asset returns, the implied savings rate necessary for younger households to match the breadth of baby boomer balance sheets is incredibly large. We believe these younger generations will need to modify saving and investment behaviors and adjust their wealth expectations accordingly.
- Baby boomers will also face trade-offs. Financial assets alone will not support their current levels of consumption expenditure in retirement. The sale of residential real estate is a likely outcome for many households, representing, in our view, an inexorable long-term headwind for the U.S. housing market.

BABY BOOMER HOUSEHOLDS HAVE ACCUMULATED A MEDIAN LEVEL OF ASSETS GOING INTO RETIREMENT THAT FAR EXCEEDS THE PREVIOUS GENERATION'S AND WILL LIKELY FAR SURPASS THAT OF THE NEXT GENERATION AS WELL. We refer to this distinguishing level of attainment—and its potential reverberations in the economy, asset markets and future generations—as baby boomers' "financial exceptionalism," the product of equally exceptional demographics and economic factors.

This elevated level of household assets is associated with a sizable segment of the population crossing the 65-year-old threshold over the next 15 years: between 2014 and 2030, the number of households in the 65- to 75-year-old range and the number over 75 years of age are projected to grow by 48% and 79%, respectively.¹ They will bring a veritable tidal wave of assets with them into retirement.

¹ U.S. Census Bureau.

Exceptional is, by definition, a relative term, and baby boomers' financial exceptionalism is in contrast to the less favorable experience of other generations. Our analysis shows, for example, that in 2013, households 29 to 48 years of age, falling within our definition of Generation X (see Notes and Definitions), had a median household net worth 20% less than that of baby boomers at a roughly similar age 20 years ago. What's more, Gen X's five-year average annual income growth, return on assets and savings rate in 2013 were below those of their baby boomer counterparts at a similar stage of their life cycle.²

This paper documents the extent of baby boomer exceptionalism by looking at the evolution of the generation's household balance sheets. We evaluate and compare the experience and retirement prospects of those currently at or near retirement age with those of today's younger generations. Finally, we derive potential implications for asset markets as baby boomers enter retirement en masse.

Among the first questions we seek to answer:

- How did baby boomers' balance sheets get where they are today (what roles did income growth, asset returns and savings rates play)?
- Which assets—financial and/or nonfinancial—account for the dramatic growth in baby boomer wealth?

We then tackle a more forward-looking set of issues:

- What will it take for subsequent generations—namely, Gen X and millennials—to reach retirement with a level of household wealth comparable to that of today's baby boomers?
- How will baby boomers spend their wealth as they transition from a high earning and saving period in their life cycle to a phase in which savings are drawn down to finance consumption?
- Which assets (such as residential property, equity, bonds and managed assets) may come under selling pressure in this drawdown process?
- How might baby boomers' decisions in retirement impact the investment behavior of Gen Xers in their peak earning and saving years?

² Bureau of Economic Analysis, Board of Governors of the Federal Reserve System—*Survey of Consumer Finances*, J.P. Morgan Asset Management.

NOTES AND DEFINITIONS

In this analysis, we adopt the U.S. Census Bureau's definition of baby boomers as those born from 1946 through 1964, representing the boom years in post-World War II U.S. birthrates. Since no official birth year definitions exist for other generations in the study, we define them as follows:

GENERATIONAL DEFINITIONS

	Born	Age in...	
		1989	2013
Greatest Generation	1925-45	44-64	68-88
Baby boomers	1946-64	25-43	49-67
Generation X	1965-84	05-24	29-48
Millennials	1985-2004	00-04	09-28

Household balance sheet information herein is sourced from the Board of Governors of the Federal Reserve System's triennial *Survey of Consumer Finances* (SCF). Data is available for survey years 1989 through 2013, aggregated for median households within 10-year age groups (for example, those aged 35-44, 45-54, etc., in 2013). The data is used in this analysis in two ways:

- By SCF age groups, for a given year (e.g., median household net worth for those aged 35-44 in 2013). This data does not align precisely with the generational definitions above.
- By generational groups over time (e.g., the median baby boomer household's net worth for survey years 1989-2013). This re-rendering of the data (see Appendix A for details) allows an assessment of baby boomer exceptionalism by comparing the experiences of different generations through time.

Throughout this report:

- Historical dollar amounts are in 2013 U.S. dollars.
- The ages of households (e.g., households 35-44 years old) are defined by the ages of the heads of those households.

For more information on the SCF, see: <http://www.federalreserve.gov/econresdata/scf/scfindex.htm>.

We find that even baby boomers' financial exceptionalism does not ensure a retirement free of trade-offs. Financial assets (which accounted for only one-third of the growth in baby boomers' total assets over the past 25 years) are likely insufficient for the median baby boomer household to support a desirable level of consumption in retirement; this will call for liquidating nonfinancial assets as well—the source of the other two-thirds of asset growth. The alternative—decreasing spending—would be less disruptive to the housing market but would

reduce the tailwind behind aggregate economic growth arising from the strength of baby boomer consumption. Whether baby boomers aggressively spend down their assets in retirement, continue to save or make intergenerational transfers will ultimately determine the extent to which their financial exceptionalism translates into imbalances in welfare across generations. These are important considerations and trends to follow for younger and older generations alike, as well as for those helping them to invest wisely for positive retirement outcomes.

THE EVOLUTION OF HOUSEHOLD BALANCE SHEETS

It is difficult to overstate the demographic exceptionalism of the U.S. baby boomer generation. The surge in post-World War II birth-rates—which increased by about a third compared with the 1930s’ lows and peaked two-thirds higher than today’s—gave rise to a long period of economic prosperity and stability. For instance, baby boomers began to enter the labor force in the 1960s and continued to do so through the 1980s. Over that period (1965-90), labor force participation increased from 59.2% to 66.5%,³ providing a steady tailwind to U.S. economic growth. Combined with the anchoring of inflation expectations in the early 1980s, the new labor market equilibrium laid the groundwork for an extended period of relatively steady investment and productivity growth, contributing to an era known as the Great Moderation (generally defined as beginning in the mid-1980s and ending around 2008).

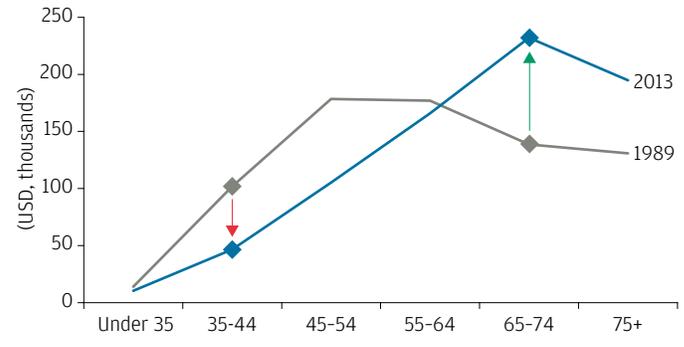
Mind the gap!

During this period of stable growth and moderate inflation, baby boomer balance sheets thrived. In stark contrast, today’s younger households, without having had the benefit of a similarly benign economic environment during their early- to mid-prime earning years,⁴ have not fared as well. In fact, those 35 to 44 years old today have a median net worth of approximately \$47,000, compared with \$102,000 for those of a similar age 25 years ago (EXHIBIT 1). As a result, the net worth distribution across age cohorts looks radically different today than it did a quarter of a century ago.

Additionally, the shape of the wealth distribution has evolved away from the “inverted U” of the late 1980s to something more closely resembling an upward-sloping line in 2013. This implies that the savings behavior of older households has been changing over time. The inverted U pattern of wealth a generation ago

The gap in net worth between older and younger age groups has widened considerably, with the median for younger groups declining and older groups increasing

EXHIBIT 1: MEDIAN U.S. HOUSEHOLD NET WORTH BY AGE GROUP (1989 AND 2013)



Source: Board of Governors of the Federal Reserve System—Survey of Consumer Finances, J.P. Morgan Asset Management; data as of December 31 for each survey year.

was a characteristic feature of the life-cycle hypothesis, a theory seminally described by Franco Modigliani and Richard Brumberg in the 1950s.^{5,6} According to the life-cycle hypothesis, households accumulate wealth through their working years and then draw it down in retirement to finance consumption.

Life-cycle savings, in turn, is related to Milton Friedman’s permanent income hypothesis, which states that people smooth out consumption over time by increasing spending in proportion to changes in their lifetime (“permanent”) income.⁷ While even in 1989 the wealth distribution by age group did not have a perfect U shape (after all, precautionary savings and bequest motives also influence the amount of savings in retirement), it is clearly the case that the life-cycle dynamic has weakened over the last quarter century.

Viewed through the lens of these theories, the higher level of wealth among today’s older households vs. those of preceding generations implies one of two things:

- Windfall gains in asset valuations have increased wealth levels specifically for today’s older households. As an implication, baby boomers are carrying a much higher level of permanent income—and hence more consumption spending power—into retirement than their parents’ generation did.

⁵ Franco Modigliani and Richard H. Brumberg, “Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data,” in *Post-Keynesian Economics*, ed. Kenneth K. Kurihara (Rutgers University Press, 1954).
⁶ Franco Modigliani and Richard H. Brumberg, “Utility Analysis and Aggregate Consumption Functions: An Attempt at Integration,” in *The Collected Papers of Franco Modigliani, Vol. 2: The Life Cycle Hypothesis of Saving*, ed. Andrew Abel (MIT Press, 1980).
⁷ Milton Friedman, “A Theory of the Consumption Function” (Princeton University Press, 1956).

³ Bureau of Labor Statistics.
⁴ For the purposes of this analysis, we define prime earning years as ages 25 to 54.

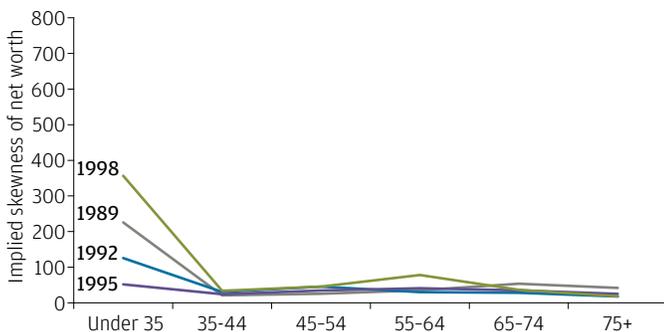
- Savings rates for older households have been increasing over time. That is, older households are simply retaining more income than they used to.

The implication of baby boomer wealth for asset prices and for the prospects of future generations will depend crucially on which story is correct. If older households’ permanent income is higher today but their savings behavior is the same as it has always been (that is, savings rates decline in retirement years), then baby boomers’ balance sheets will be drawn down rather aggressively to finance retirement consumption. Younger households will benefit indirectly from the faster economic growth that spending will confer. If, on the other hand, savings behavior for today’s older households has changed, baby boomers may well maintain relatively large balance sheets in retirement. In that case, the drawdown will be more gradual and diffuse, and the benefits to younger generations more direct as assets transfer intergenerationally. As we document, both stories are true to some extent: baby boomer asset growth came both from high, stable returns and relatively high savings rates.

On the younger side of the age spectrum, household balance sheets are in decidedly worse shape than they were a generation ago. Both the 35- to 44- and the 45- to 54-year-old cohorts had lower net worth in 2013 than their comparable age groups did in 1989. In contrast to the 55-and-older cohorts, this phenomenon could reflect relatively poor asset performance for those age groups, lower income growth, lower savings rates or (as we will show) some combination of the three. In any event, the weaker performance of the younger households’ balance sheets underscores the growing inequality in net worth across age cohorts.

Historically, outliers skewed the distribution of net worth most dramatically for younger households ...

EXHIBIT 2A: SKEWNESS OF HOUSEHOLD NET WORTH BY AGE GROUP



Source: Board of Governors of the Federal Reserve System—Survey of Consumer Finances, J.P. Morgan Asset Management; data as of December 31 for each survey year.

Inequality among Gen Xers

Another perspective on the wealth of younger households can be gleaned from the changing distribution of net worth over time within different age groups.⁸ As illustrated in **EXHIBITS 2A** and **2B**, the skewness of net worth—a measure of inequality—has historically been much higher for younger vs. older households. Stated differently, the vast majority of younger households have relatively low levels of net worth, but a few high net worth outliers skew the distribution to the right.

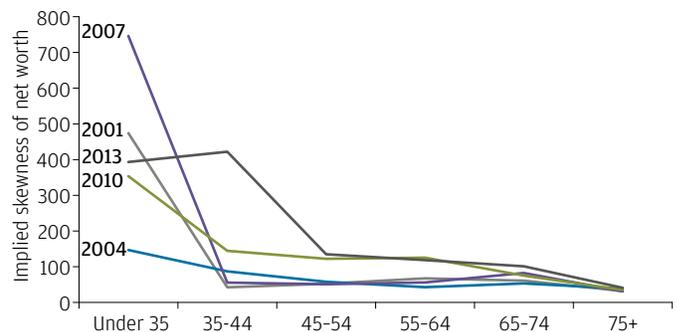
In the 1980s and 1990s, wealth skewness for the older households was positive but relatively low and stable (**EXHIBIT 2A**). Then, in the 2000s, the distributions for middle-aged households began to change and the level of implied inequality increased; by 2013, the skewness of 35- to 44-year-olds’ household net worth was just as high as it was 15 years earlier for those under 35 years of age (**EXHIBIT 2B**). Evidently, the wealth inequality within the youngest age groups has persisted over time; moreover, wealth inequality has generally been increasing for most age groups except the oldest ones.

Taken together, these two trends—the increasing gap in median household wealth between older and younger age groups and the growing wealth inequality within younger and middle-aged cohorts—imply that the number of households with increases in net worth over the past 25 years was much higher for today’s older age groups. In the following sections, we evaluate the drivers of this outperformance by detailing, in turn, the balance sheet composition and the savings rates of baby boomers.

⁸ Under the assumption that household net worth is distributed log-normally within each age group, we estimate the parameters of those distributions—and hence the skewness—from the mean and median net worth statistics in the Survey of Consumer Finances.

... but over time, net worth has become more skewed for older age groups as well

EXHIBIT 2B: SKEWNESS OF HOUSEHOLD NET WORTH BY AGE GROUP



RISE OF THE BABY BOOMER BALANCE SHEET

As a starting point in our analysis of baby boomer balance sheets, we estimate the assets and liabilities of a putative representative baby boomer household over the years 1989-2013.⁹

We also make similar estimates for the Greatest Generation, Gen X and the millennials, as previously defined (see Notes and Definitions, page 2). As there are no official definitions for the birth years of these other generational labels, we use these measures as a rough gauge of the magnitude of baby boomer wealth relative to prior and subsequent generations.

That caveat aside, the aggregate intergenerational differences in wealth accumulation are dramatic. Total baby boomer net worth was \$7 trillion in 2013. If anything, this figure actually understates the size of total baby boomer household wealth, since it uses a median household net worth number rather than the mean.¹⁰ As we saw in Exhibits 2A and 2B, there is a high degree of inequality in net worth across households, which means that the high outliers in the distribution would raise our estimate of each generation's aggregate wealth.

The aggregate net worth accounted for by baby boomers has grown rapidly over time, as shown in **EXHIBIT 3**. Since the late 1980s, the total net worth of those households has more than quadrupled, with over 70% of growth driven by increases in net worth per household and the remainder driven by growth in the number of households.

In stark contrast to the baby boomers, the net worth accounted for by Greatest Generation, Gen X and millennial households is currently substantially lower and has generally grown at a more stable rate.¹¹ Greatest Generation households still preside over \$4.6 trillion in wealth, though that number has been in gradual decline since 2002. Underlying the stability of their aggregate wealth is a tug-of-war between the dwindling number of households—which peaked at 33 million in 1994—and the increase in wealth per household. Since then, the number of Greatest Generation households has declined by 1.7% annually, compared with a 1.0% yearly rise in wealth per household.

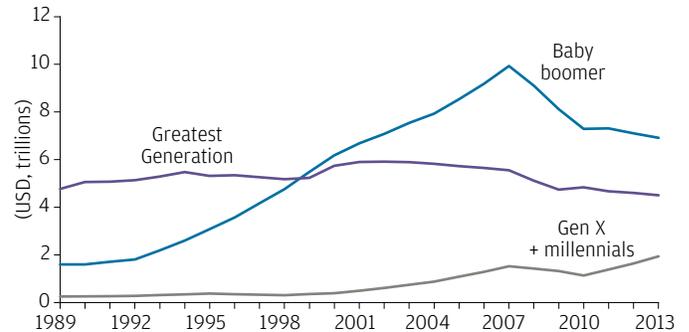
⁹ To be more concrete about the behavior of the baby boomers over time, we transposed the rich data on household assets and liabilities in the *Survey of Consumer Finances* into the balance sheet of a representative baby boomer household. See Appendix A for details on our approach to estimating median baby boomer household balance sheet concepts.

¹⁰ See Appendix A.

¹¹ Much has been made of the idiosyncrasies of millennial households. However, all of them were under 35 years of age as of 2013, making it difficult to parse their specific contribution to total wealth relative to Generation X households—of which roughly a third were under 35 at that time. Given the lack of granularity in the *Survey of Consumer Finances* data, we show those two generations jointly here for the purposes of illustrating aggregate wealth.

Baby boomer aggregate net worth expanded rapidly through 2007, while that for the Greatest Generation, Gen X and millennials grew at a more subdued rate

EXHIBIT 3: ESTIMATED AGGREGATE NET WORTH BY GENERATION



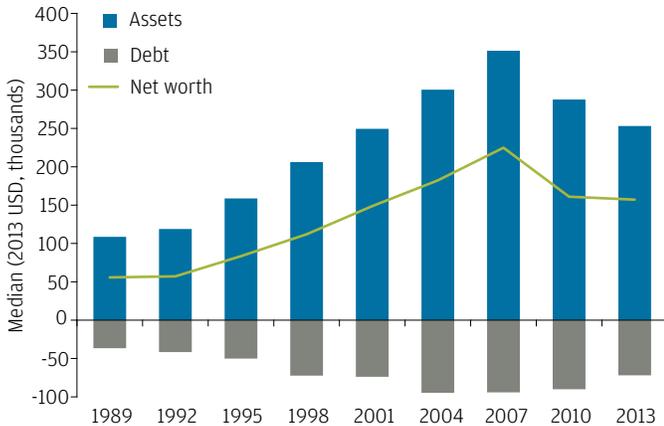
Source: Board of Governors of the Federal Reserve System—*Survey of Consumer Finances*, U.S. Census Bureau, J.P. Morgan Asset Management; data as of December 31 for each survey year.

Notwithstanding low recent rates of household formation, growth in the number of Gen X and millennial households has been robust. Indeed, the combined number of those households, at 56 million, already exceeds the baby boomers' 44 million. However, at just over \$2 trillion, the aggregate wealth of the younger households lags well behind that of both the baby boomers and the Greatest Generation.

Wealth per household for the Gen X + millennial group is much lower for two reasons. The first is that younger households simply have had less time to accumulate assets at this early stage in their life cycle. The second, more concerning reason is the fact that younger households are starting off at a lower initial wealth level, which is then growing more slowly than the wealth of the baby boomers grew during the same stage in their lives. We estimate that the median Gen X household had net worth of \$43,000 in 2013, which compares poorly with the \$57,000 that baby boomers started out with in 1992. Furthermore, the wealth of the median household below the age of 35—which includes both Gen X and millennials—declined from roughly \$14,000 in 1989 to about \$10,000 in 2013 (Exhibit 1). Taken together, the lower initial levels and subsequent lower growth rates of Gen X wealth imply a much lower path of household wealth relative to that of the baby boomers. An obvious concern is that these weaker starting points will compound into gaping differences by the time the younger generations reach retirement age, a difference that we quantify carefully below.

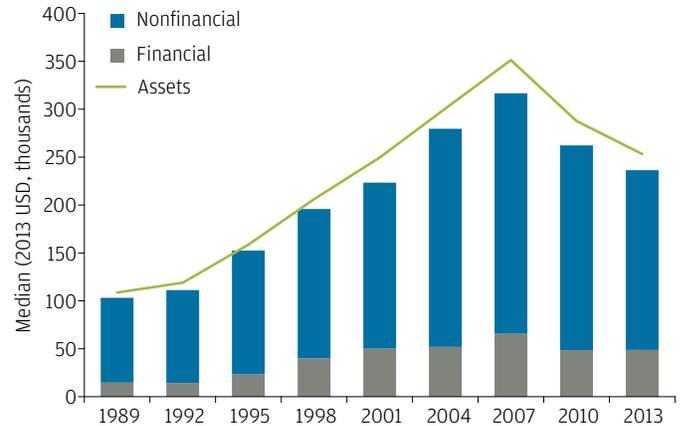
Baby boomer household assets and debt have both grown significantly, but assets have grown more quickly

EXHIBIT 4A: COMPOSITION OF BABY BOOMER NET WORTH



Nonfinancial assets account for roughly 75% of baby boomer assets

EXHIBIT 4B: COMPOSITION OF BABY BOOMER ASSETS



Source: Board of Governors of the Federal Reserve System—*Survey of Consumer Finances*, J.P. Morgan Asset Management; data as of December 31 for each survey year.

Which facets of baby boomers’ balance sheets contributed to the brisk rise in wealth per household? By construction, the increase in wealth reflects faster growth in assets than liabilities, as illustrated in **EXHIBIT 4A**. Note, however, that both assets and debt grew at very fast rates over the past 25 years. Household assets grew by 133%, while household debt—including residential mortgages, other installment loans and lines of credit, and credit card balances—increased by 96%. Residential mortgages on primary residences grew by over 50% and currently account for 75% of household debt. We will return to this point later on, in our discussion of residential assets. For now, it suffices to say that deepening household leverage has been a relevant difference between baby boomer and Greatest Generation households: net worth at retirement age for both generations is about the same, but baby boomers have much higher levels of both assets and debt.

The next few figures document the composition of asset growth for baby boomer households. The first fact that jumps off the page is that the bulk of household assets are accounted for by nonfinancial assets. As shown in **EXHIBIT 4B**, of the roughly \$253,000 of assets owned by the median baby boomer household, about 75% are nonfinancial.

Among nonfinancial assets, residential property plays an outsized role. For instance, of the median baby boomer’s approximately \$187,000 in nonfinancial assets, about 85% are accounted for by primary and other residential property, with the remainder split among nonresidential property, vehicles and

business equity (**EXHIBIT 5A**, next page). Residential property alone has contributed 59% of total asset growth since 1989. Among specific nonfinancial assets, the growth in value of primary residences (having grown in line with the 3% annual rate for overall nonfinancial assets) was not as pronounced as that of second homes and nonresidential property, which grew from much smaller bases, at over 5% per annum.

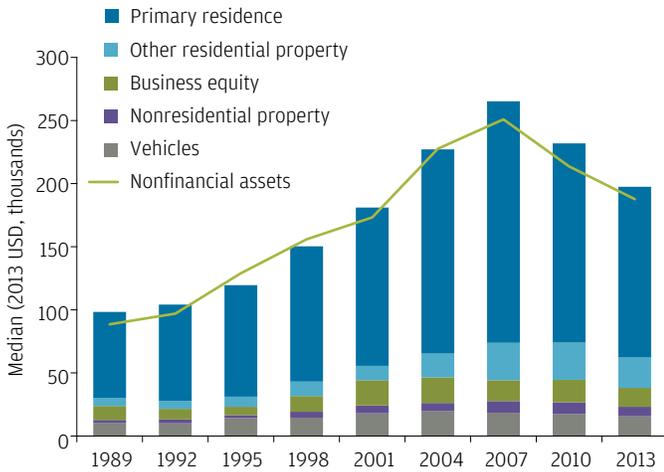
On the financial asset side of the ledger, although financial assets make up only a fifth of assets on baby boomer balance sheets, they drove a third of asset growth, increasing 5.1% annually since 1989, compared with 3.2% for nonfinancial assets. Financial assets now represent about \$50,000 on the balance sheet of the median baby boomer household (**EXHIBIT 5B**, next page). Of that amount, the lion’s share consists of retirement accounts, pooled investment funds and other managed accounts, with smaller contributions from stocks, bonds and transaction accounts.¹²

One important omission in these figures is pension plans. The present value of defined benefit retirement income is difficult to estimate and falls outside the scope of the data on household balance sheets presented here. For those baby boomer households receiving or expecting benefits, our measure of financial assets would thus be an understatement. We note, however, that only a minority of baby boomer households will

¹² In the *Survey of Consumer Finances*, information is collected on the following financial assets: IRA/Keogh accounts, annuities, trusts, managed investment accounts, checking/savings/money market accounts, CDs, savings bonds and other bonds, equities, mutual funds and employer-related pensions.

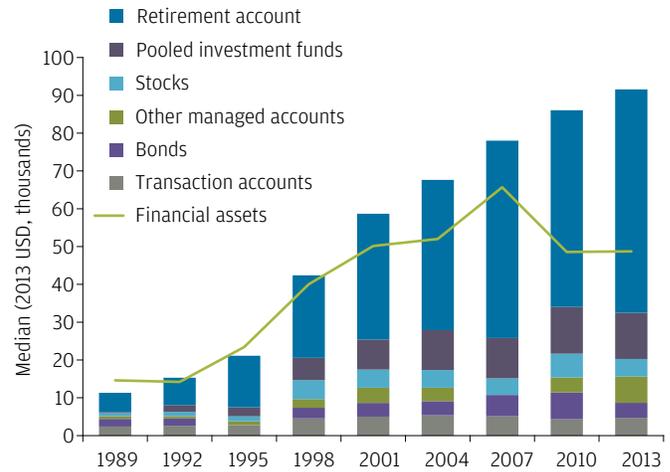
Residential property accounts for the largest share of baby boomer nonfinancial assets

EXHIBIT 5A: COMPOSITION OF BABY BOOMER NONFINANCIAL ASSETS



Financial assets are a smaller, faster-growing component of baby boomer assets but are less equitably distributed

EXHIBIT 5B: COMPOSITION OF BABY BOOMER FINANCIAL ASSETS



Source: Board of Governors of the Federal Reserve System—Survey of Consumer Finances, J.P. Morgan Asset Management; data as of December 31 for each survey year.

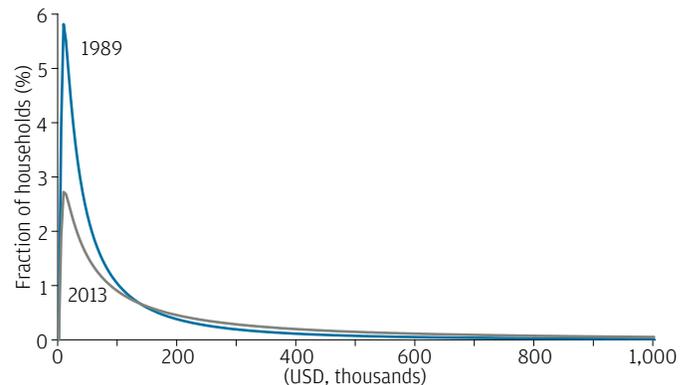
have access to pension benefits (only 43% of baby boomers age 60–64, falling to 22% for those age 46–49), which means that our analysis of median baby boomer household assets would be little affected.¹³

The breakdown of financial assets also underscores the fact that financial asset holdings are very unevenly distributed across households. The inequality is illustrated in Exhibit 5B, which shows that the sum of median financial asset holdings (the sum of the bars, each of which includes only those holding some amount of these component assets) is greater than the total financial asset holdings of the median household (the line, which includes even those households with no financial assets), with the gap growing over time. This observation implies that the distribution of financial assets tends to be concentrated among the same, relatively small, part of the population.¹⁴ In contrast, the distribution of nonfinancial assets is much less skewed; that is, the sum of the bars comes quite close to the median household’s nonfinancial assets.

Notwithstanding the fact that financial asset concentration appears to be increasing over time, the overall distribution of wealth among baby boomer households has broadened. In other words, a greater share of households were able to accumulate wealth as the cohort of households matured. This change is seen in Exhibit 6, which shows our estimate of the baby boomer net worth distribution. In 1989, there was a very high concentration of low wealth households, with about 6% having zero net worth. By 2013, there was a much lower concentration at very meager levels of wealth, with fewer than 3% at zero net worth. More generally, the distribution has flattened out, with higher proportions of households at both intermediate and high levels of net worth by 2013.

Baby boomer net worth has gradually broadened out across households

EXHIBIT 6: THE DISTRIBUTION OF BABY BOOMER HOUSEHOLD NET WORTH



Source: Board of Governors of the Federal Reserve System—Survey of Consumer Finances, J.P. Morgan Asset Management.

¹³ “Fact Book on Retirement Income 2014: A Review of Trends and Activity in the Retirement Income Market,” LIMRA Secure Retirement Institute, 2014.
¹⁴ Note that median total household assets (the solid lines in Exhibit 5A–5B) are based on all households, including those with no assets. Medians for components (e.g., median stock or bond holdings) include only those who hold some level of these assets. If only a small percentage of baby boomers own these component assets, then the sum of the medians for these assets (the sum of the bars) will be greater than median household total assets (the solid lines). As a highly stylized example, if 100% of financial assets were held by the same 5% of the population, then the median household would have a balance of zero, even as the value ascribed to the median financial asset holders changed over time with the value of the underlying assets.

In summary, given the extent to which their balance sheets have burgeoned, baby boomers are bringing into retirement an unprecedented level of assets (roughly \$253,000 for the median household). Household net worth remains highly skewed, but overall inequality has been gradually falling. Both of these facts imply baby boomers will have a relatively high level of consumer spending power in their retirement years.

In the next sections, we investigate two resulting implications:

- Gen X households are very unlikely to arrive at retirement with the level of assets and corresponding consumption power of the baby boomers before them.
- Even for baby boomers, liquidation of assets—including a substantial amount of residential real estate—might be necessary to sustain a desirable level of consumption in retirement.

GENERATION X IS FALLING SHORT IN EVERY DIMENSION

The brisk rate of baby boomer asset accumulation underscores the concern that future generations will not enjoy the same degree of success. In this section, we confirm that suspicion by comparing the prospects for Gen X balance sheets with the “exceptional” standards set by the baby boomers.

To begin, **EXHIBITS 7A** and **7B** compare the drivers of asset accumulation for the median baby boomer and median Gen Xer since 1993—namely, their respective median rates of annual income growth, along with their rates of saving and asset return in each year.

Since we do not observe the last driver directly, we compute return on assets as the residual between the growth of assets

Baby boomers moved through most of their prime earning years with relatively supportive, stable sources of asset growth; so far, the experience of Gen Xers has been rockier and less rewarding

EXHIBIT 7A: SOURCES OF GROWTH FOR THE MEDIAN BABY BOOMER HOUSEHOLD'S ASSETS

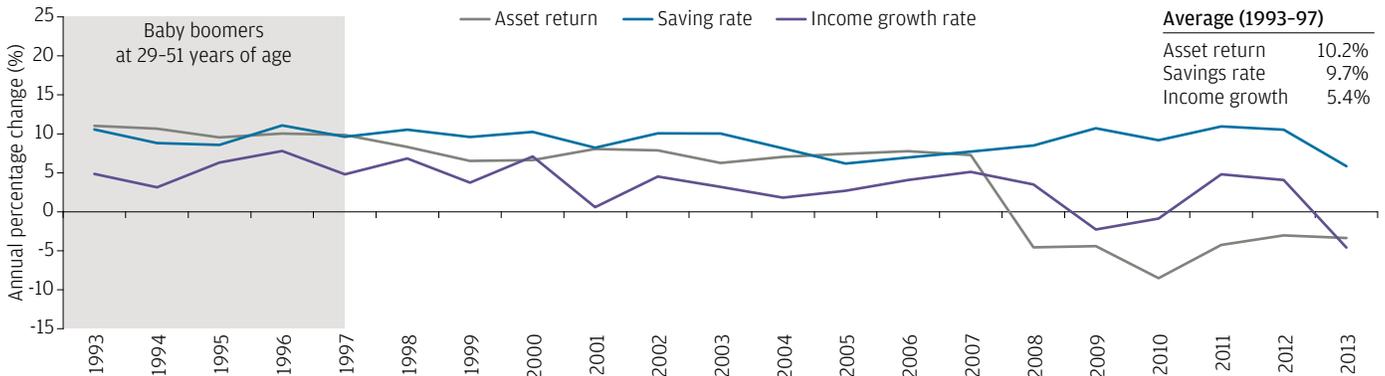
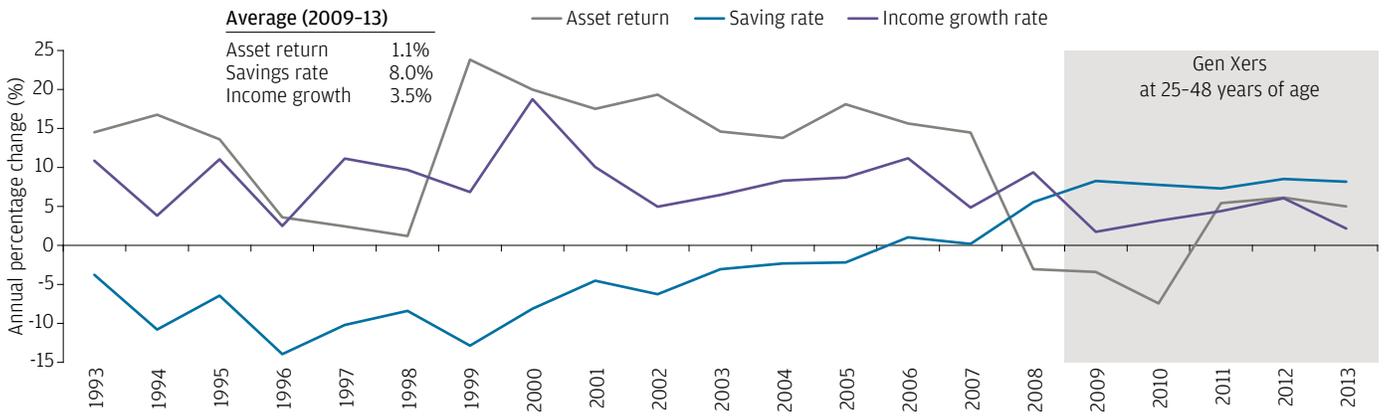


EXHIBIT 7B: SOURCES OF GROWTH FOR THE MEDIAN GEN X HOUSEHOLD'S ASSETS



Source: Board of Governors of the Federal Reserve System—Survey of Consumer Finances, Bureau of Economic Analysis, J.P. Morgan Asset Management.

and the incremental savings of the median household. In other words, if the assets of the median household grow quickly relative to the amount of income saved in a given year, it implies a higher rate of return on its existing stock of savings.

Baby boomers: The gold standard

From 1993 until 2007, the baby boomers enjoyed a good (and fairly stable) run. Average income growth and return on assets were 4.4% and 8.3%, respectively. Notably, income growth remained positive over that entire period, including the mild recession in 2001.

The post-2008 performance has been markedly worse; income growth has averaged just shy of 1%, with much greater volatility. Return on assets has been persistently negative as the contribution of property values to household assets has waned and, more generally, since households went through a process of deleveraging in which they gradually pared down debt balances. This deleveraging process is apparent from the post-recession uptick in savings rates, as well as the very gradual recovery of the residential real estate market.

Savings rates of baby boomers were high and stable over the entire period from 1993 through 2013, averaging 9.2%. That rate is on the high end of mid-life savings rates, which have tended to range between 5% and 10% for those 35 to 64 years old (see **APPENDIX B** for our estimates of savings rate distributions by age group, 1993-2013).

Generation X: Reaching for the bronze?

Generation X’s experience over the 1993-2007 period looks quite different (**EXHIBIT 7B**). Average income growth and return on assets were higher than for baby boomers, at 8.6% and 14.0%, respectively—but far more volatile. Savings rates were low (or negative). Our analysis of savings rates by age group (**APPENDIX B**) indicates that the early and late stages in life are characterized by savings rates that are significantly negative as households smooth out their consumption in relatively low-income periods. From this life-cycle/permanent income perspective, perhaps these findings for Gen X are not so surprising given that their age range in the 1993-2007 period was a youthful 23 to 42 years.¹⁵

¹⁵ For instance, in a report by Moody’s Analytics last year, millennials were reported to have a savings rate of -2% (“Younger Generation Faces a Savings Deficit,” *Wall Street Journal*, November 9, 2014). However, according to our analysis (Appendix B), that rate would appear to be well within a normal range for people aged 25-34.

The most relevant comparison of asset building between baby boomers and Gen Xers is one that evaluates their progress at similar points in their lives. In Exhibits 7A and 7B, we highlight two roughly comparable periods, for which results are summarized in **EXHIBIT 8**:

- for baby boomers: 1993-97, when they ranged in age from 29 to 51
- for Gen X: 2009-13, when they ranged in age from 25 to 48

Drivers of asset accumulation for Gen Xers, now in their prime earning years, do not meet the standard set by baby boomers at a similar point in their life cycle

EXHIBIT 8: COMPARISON OF ASSET GROWTH DRIVERS FOR TWO GENERATIONS, AT SIMILAR POINTS IN THEIR LIFE CYCLES (FIVE-YEAR AVERAGE ANNUAL RATES)

	Generation X (2009-13)	Baby boomers (1993-97)
Income growth (%)	3.5	5.4
Asset return (%)	1.1	10.2
Savings rate (%)	8.0	9.7

Source: Board of Governors of the Federal Reserve System—*Survey of Consumer Finances*, Bureau of Economic Analysis, J.P. Morgan Asset Management; data for the five-year period ended December 31, 2013, for Generation X and December 31, 1997, for baby boomers.

If baby boomers were great savers in mid-life, Gen Xers are shaping up to be merely good. Compared with the 9.7% savings rate of the baby boomers in the above period, Gen X households have ramped up to only 8.2% at present and have been cycling around 8.0% since 2009.

In addition to having marginally lower savings rates, the relatively low income growth rates for Gen X do not bode well as those households reach their prime earning and saving years. Nominal income growth for the median Gen X household was an anemic 2.2% in 2013. The average nominal income growth of Gen X households over the past five years was 3.5%, almost two percentage points lower than baby boomers’ average of 5.4% at a comparable stage in their lives.

A similar line of reasoning can be applied to the return on assets that Gen X households have been realizing and might expect to realize in the future. The nominal return on assets for the median Gen X household was 5.0% in 2013, a relatively strong ending to an otherwise disappointing five-year period in which annual returns averaged 1.1%. Again, this falls well short of the asset growth rate for baby boomers, which averaged 10.2% over a similar five-year period in that generation’s life cycle.

If things had been different for baby boomers ...

The sum of these three forces—lower income growth, lower savings rates and lower returns on assets—can compound into dramatic differences in assets accumulated over time. To illustrate this point, consider the following counterfactual scenario. If the median baby boomer household, starting with median household assets of almost \$109,000 in 1989, had gone through the past 25 years with the same configuration of financial characteristics that the median Gen X household had in 2013 (2.2% annual income growth, 8.2% savings rate and 5% return on assets), the result would have been closer to \$177,000 in assets, or 30% less than the actual result of slightly over \$253,000.

THE GREATEST ROTATION? BABY BOOMER BALANCE SHEETS THROUGH 2030

Our final empirical exercise investigates the implications of outsized baby boomer balance sheets for certain asset markets. Specifically, the “shock” that will radiate through asset markets in the coming years will be the liquidation of baby boomer assets to finance retirement consumption.

Our first question relates to which assets will have to be sold in order to maintain a desirable level of consumption spending. The answer is that for most reasonable trajectories of consumption spending, financial assets alone will be insufficient.

This, in turn, implies that the liquidation of nonfinancial assets—particularly residential real estate—is a likely outcome for a broad swath of baby boomer households.

To fix ideas, we consider what the retirement consumption of the median baby boomer household might look like under various assumptions about the assets they use to finance expenditures. By way of background, we estimate that in 2013 the median household had pre-tax income of \$62,500, annual consumption expenditures of \$55,900 and financial assets of \$48,700.¹⁶ The household would also be entitled to roughly \$30,000 in annual Social Security payments in retirement.

Under most scenarios, financial assets *plus* Social Security would provide annual income streams considerably below baby boomers’ current annual consumption expenditures.

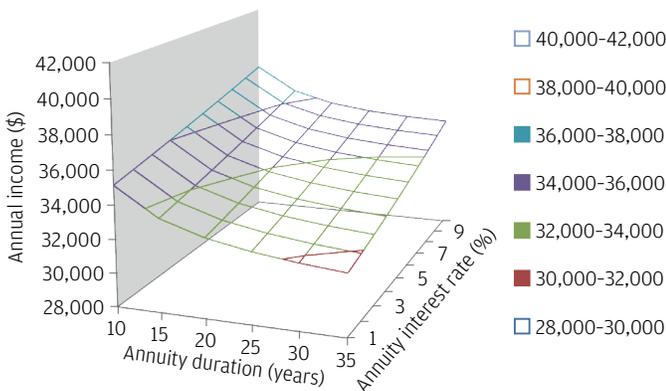
Given these characteristics, the annual income streams implied by Social Security payments plus the annuity value of financial assets (under different assumptions about duration and interest rates) are shown in **EXHIBIT 9A**. Evidently, using financial assets alone to finance post-retirement consumption would imply a large decline in consumption levels. With the bulk of income streams ranging from \$32,000 to \$36,000, consumption

¹⁶ Median after-tax income and consumption expenditures are calculated from the Bureau of Labor Statistics, 2013 Consumer Expenditure Survey. Similar to the balance sheet information for the median baby boomer household, the figures are population-weighted averages of the age-specific medians as reported for 10-year increments up to age 75.

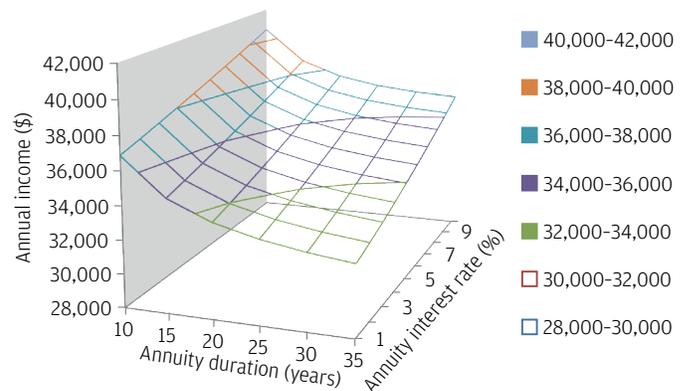
Under most scenarios, financial assets plus Social Security will provide annual income streams considerably below baby boomers’ current annual consumption expenditures

EXHIBITS 9A-B: BABY BOOMER POST-RETIREMENT INCOME WITH DIFFERENT ANNUITY DURATION AND INTEREST RATE ASSUMPTIONS

9A: INCOME FROM FINANCIAL ASSETS AND SOCIAL SECURITY ONLY



9B: ... PLUS TRANSFERS FROM THE GREATEST GENERATION



Source: Bureau of Economic Analysis, Board of Governors of the Federal Reserve System—Survey of Consumer Finances, J.P. Morgan Asset Management.

Note: Annual income is the sum of \$30,000 in Social Security payments and the annual annuity payment implied by the household’s financial assets over each given duration and return assumption. Greatest Generation transfers are estimated by taking the current aggregate value of Greatest Generation household financial assets and distributing them evenly across baby boomer households.

would have to drop by 36% to 43% relative to current levels (\$55,900).¹⁷ In the middle of the distribution, a 20-year annuity yielding 5% plus Social Security would correspond to annual income of only \$36,300.

EXHIBIT 9B shows that adding intergenerational transfers of nonresidential assets from the Greatest Generation is not a panacea.¹⁸ Since the median Greatest Generation household's financial assets are about \$41,000, when divided by about twice as many baby boomer households the incremental spending power from these eventual bequests is rather limited. As seen here, the bulk of income stream results, including the bequests, range from \$34,000 to \$40,000—better, but still considerably below current annual consumption levels.

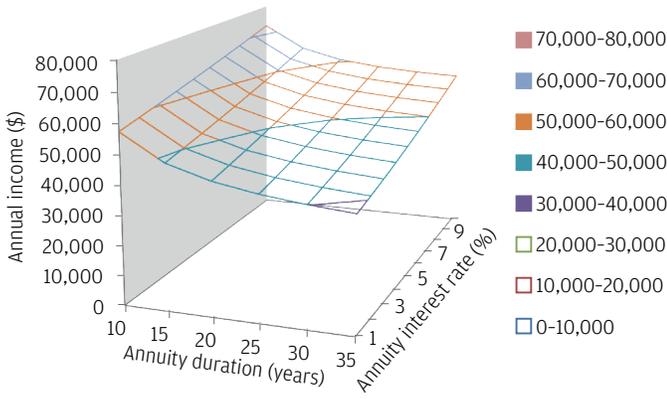
The consumption shortfall implied by the liquidation of financial assets alone means that the residential assets of baby boomers will come under increasing selling pressure as financial resources dwindle. Given the large contribution of residential real estate to baby boomer assets, as documented in the previous section, the sale of residential property suggests quite a different path of consumption spending (**EXHIBIT 10**). The sum of Social

¹⁷ It is fairly well documented that consumption in old age does fall significantly. For instance, the median 75+ household spent 38% less than the median 55- to 64-year-old household in 2013. That said, the decline is not nearly as pronounced (-16%) between 55- to 64- and 65- to 74-year-old households. It is also worth noting that the median of the current vintage of 75-year-old households is actually spending slightly more than what the median 55-year-old households did 20 years prior. Both of these facts strongly suggest that a 36%-43% decline in income would be suboptimal for retirees.

¹⁸ Intergenerational transfers of nonresidential assets are assumed to equal the net worth of the median Greatest Generation household less primary and other residential assets.

Maintaining current consumption levels will require the sale of baby boomer and Greatest Generation residential assets

EXHIBIT 10: BABY BOOMER POST-RETIREMENT INCOME FROM TOTAL NET WORTH AND SOCIAL SECURITY



Source: Bureau of Economic Analysis, Board of Governors of the Federal Reserve System—*Survey of Consumer Finances*, J.P. Morgan Asset Management.

Security payments, Greatest Generation bequests of all assets and liquidation of the entire baby boomer balance sheet implies an annual consumption stream of around \$45,000-\$60,000. The central case of a 20-year annuity at 5% corresponds to annual income of \$50,800, a decrease of only 10% relative to current consumption levels.

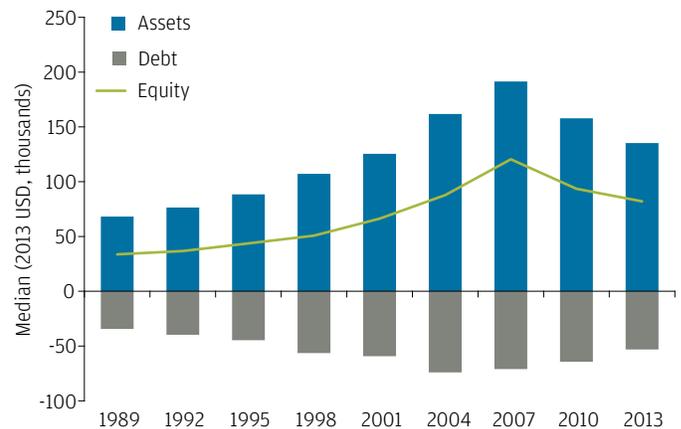
Of course, this last scenario is a highly stylized one. By assuming that net worth is spent down to zero, it ignores the high likelihood that baby boomers set money aside for bequests and/or precautionary savings. But it does illustrate that in order to get remotely close to holding consumption levels steady, the sale of residential assets held by both the Greatest Generation and baby boomers will be required. In terms of magnitude, the total value of baby boomer and Greatest Generation residential property is at least \$10.2 trillion.¹⁹

Another factor working against the maintenance of baby boomers' current primary residences is the associated debt burden. As shown in **EXHIBIT 11**, equity in the median baby boomer's primary residence is only about 60% of the asset's value. The mortgage burden of that household's primary residence, in turn, accounts for 75% of total household debt. As such, the continuation of mortgage payments into a homeowner's late 60s and 70s, coupled with the prospect of declining income in retirement, would crowd out nonresidential spending considerably.

¹⁹ Similar to our caveat regarding aggregate baby boomer assets on page 5, this number is in all likelihood an underestimate of the total real estate holdings of baby boomers and the Greatest Generation, as it is derived from the median household holdings (rather than the mean).

The extent to which baby boomers can draw down equity in their residential assets to finance retirement consumption is limited by mortgage debt associated with those assets

EXHIBIT 11: EQUITY IN BABY BOOMER PRIMARY RESIDENCE



Source: Board of Governors of the Federal Reserve System—*Survey of Consumer Finances*, J.P. Morgan Asset Management; data as of December 31 for each survey year.

The relatively high debt burden of baby boomers' primary residences also implies that the amount of additional liquidity available from home equity, via reverse mortgages or lines of credit, will be limited. Even the extreme case, in which the median baby boomer was able to draw down home equity to 20%, would only add \$4,300 to annual income under the 20-year/5% annuity case. And to the extent credit conditions remain at their current—relatively tight—levels, those assumptions may well be optimistic.

IMPLICATIONS OF FINANCIAL EXCEPTIONALISM

Baby boomers' financial exceptionalism will have dramatic implications for the quality of that generation's retirement, the financial prospects of Gen X and the outlook for a variety of asset markets in the coming years.

The high level of spending power that a "representative" baby boomer household will enjoy sets it apart from previous generations of retirees, with this phenomenon even more pronounced at the higher rungs of the income distribution. That said, for a large share of baby boomers, realizing that higher stream of consumption will necessarily mean selling their primary residence and downgrading, a threat to the already fragile recovery of the U.S. housing market.

From the perspective of Gen X households, the types of liquidity constraints faced by baby boomers might seem like high-class problems. Confronted by lower current income growth and expected returns, as well as marginally lower savings rates, Gen X faces a quandary—it could be the first post-war generation to be worse off in retirement than the previous generation.

Will Gen X households be satisfied with this outcome or will they tighten their belts and ratchet up savings in their peak earning and saving years? The answer to this question could have a non-trivial effect on U.S. personal consumption expenditure growth or, at the very least, imply a significant offset to the faster pace of spending among older households. To be more concrete about this point, in order for Gen X assets to follow a trajectory similar to that of baby boomers' assets, and assuming that nominal income growth recovers to 4% (from 2.2%), the median Gen X household would have to more than double its savings rate—increasing it to 17.5%. The fact that such a significant change in behavior seems implausible suggests that the fate of Gen X's retirement savings hinges on either higher asset returns or a substantial rebound in income growth.

Another intriguing possibility, though one that falls outside the scope of this study, is that Gen X households assume they will be the beneficiaries of future wealth transfers from older, richer baby boomer and Greatest Generation households. A lower savings rate could be justified by these expectations. Generally, such intergenerational considerations remain poorly understood, but they might have large implications for the distribution of spending growth.

A related point is that the U.S. tax code and its treatment of transfers can tilt the savings rate of retired baby boomers in one direction or another. In any event, whether in the form of direct transfers (during the benefactor's lifetime or otherwise) or faster consumer spending that spurs U.S. income growth, the baby boomer balance sheet may yet hold the key to Gen X's financial salvation.

APPENDIX A: ESTIMATING MEDIAN BABY BOOMER BALANCE SHEET COMPONENTS OVER TIME

To capture the behavior of baby boomers over time, we transposed the data on household assets and liabilities in the *Survey of Consumer Finances* into the balance sheet of a representative baby boomer household. This was done for each survey year to create a time series for a given balance sheet item (for example, the median baby boomer household's net worth for 1989–2013). Similar estimates were derived for other generational groups as well.

The table below illustrates the approach by estimating the median baby boomer household's net worth in 2013 and then using that result to estimate baby boomer aggregate net worth in 2013.

The *median baby boomer household's net worth* is a weighted sum of the median household net worth for each of three age groups. The weights are the fraction of years in the baby boomer age range falling within each age group.

The first step is to calculate the weights (Column B). This is simply done by mapping the age range for baby boomers in 2013 (covering 19 years, ages 49–67) into the three 10-year age groups from the SCF data with which it overlaps: age groups from 45–54, 55–64 and 65–74. For example, the weight to be applied to the 45–54 age group's median net worth is .32, since this group includes baby boomers aged 49–54 (or 6 years,

32% of the 19 years in the baby boomer age range). The simplifying assumption is that roughly 32% of baby boomers fell into this category in 2013.

The next step is to apply these weights to the median household net worth associated with each of the age groups (Column D) and sum the results to estimate the median baby boomer household's net worth (\$157,216, Column E).

The *aggregate baby boomer net worth* is the product of the median baby boomer household's net worth (estimated above) and the estimated total number of baby boomer households across the three age groups.

In estimating the number of baby boomer households in each age group, the simplifying assumption is that the percentage of baby boomers is proportionate to the overlap in years between the baby boomers' age range and that of the age group. For example, there are 10 years in the 45–54 age range and six of those overlap with the age range of baby boomers in 2013 (49–67). We assume 60% (or 14,440,800, Column G) of the 24,068,000 households aged 45–54 (Column F) are baby boomers.

Summing across age groups and multiplying the total number of baby boomer households by the median baby boomer household's net worth yields the estimated aggregate baby boomer net worth of \$6.6 trillion.

ESTIMATING MEDIAN AND AGGREGATE BABY BOOMER HOUSEHOLD NET WORTH, 2013

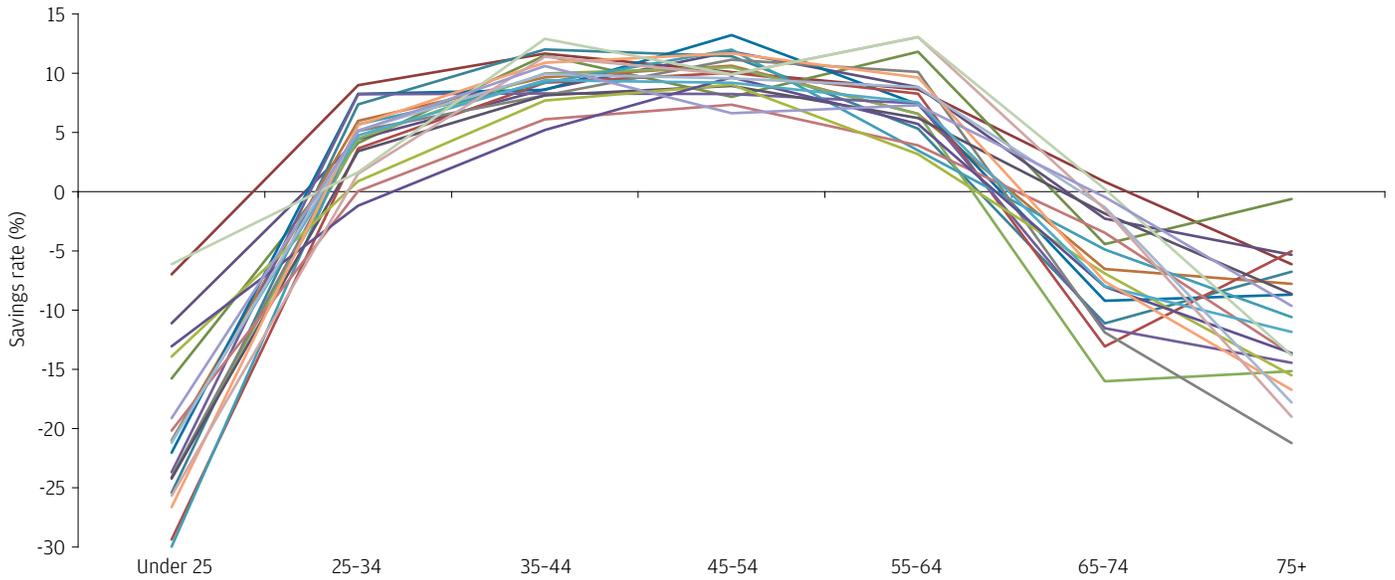
Age group	A Number of years in baby boomer age range (49–67)	B Weights for median household's net worth computation (A/19)	C Weights for number of households computation (A/10 years)	D Median household net worth for age group (\$) (Source: SCF)	E Weighted avg. median baby boomer household's net worth (\$) (B x D)	F Number of households in age group (Source: SCF)	G Number of baby boomer households (C x F)	H Aggregate baby boomer net worth (\$ trillions) (E x G)
45–54	6	0.32	0.60	105,300	33,253	24,068,000	14,440,800	
55–64	10	0.53	1.00	165,900	87,316	22,802,000	22,802,000	
65–74	3	0.16	0.30	232,100	36,647	15,349,000	4,604,700	
Total	19	1.00			157,216		41,847,500	6.6

Source: Board of Governors of the Federal Reserve System—*Survey of Consumer Finances*, J.P. Morgan Asset Management.

APPENDIX B: AN ANALYSIS OF SAVINGS RATES

Over the past two decades, the distribution of savings rates by age group implies that households smooth consumption over time by dissaving in their early and late, lower-income years. We also note that the variation across years is much higher for the younger and older age groups, in sharp contrast to the relatively tight range of savings rates between 35 and 64 years of age.

ESTIMATED SAVINGS RATE BY AGE GROUP, FOR SURVEY YEARS 1993-2013



Source: Bureau of Economic Analysis, Bureau of Labor Statistics, J.P. Morgan Asset Management; data as of December 31 for each survey year, 1993-2013.

Each line is the age-specific savings rate derived by subtracting median consumption expenditures from median after-tax income. Rates are then normalized in each year to aggregate up to the national savings rate.

INVESTMENT INSIGHTS

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