

1. The Demographic Impact on Savings and Wealth: *The Future Global Capital Shortfall*

SUMMARY OF FINDINGS

Over the next two decades, demographic trends will create significant downward pressure on household savings and financial wealth accumulation. These demographic forces – in the absence of changes in household age structure, savings behavior, or rates of financial asset appreciation – will drive a decline in the global growth of net financial wealth (NFW) from the historical rate of 4.5 percent to 1.3 percent.^{1,2} By 2024, this slowing growth will cause NFW to fall some 36 percent, or by \$31 trillion, below what it would have been had the higher historical growth rates persisted.³

The demographic transition is occurring throughout the developed world, albeit with different timing and severity across countries. "Prime savers" are households in their peak income and saving years, while elderly households save less or dissave. Over the past 20 years, Italy and Japan have experienced steep declines in the ratio of prime saver to elderly households, while at the

1 The global results have been derived from our studies of the United States, Japan, Germany, Italy, and the United Kingdom, which together account for approximately 70 percent of world household savings and financial wealth.

2 Unless otherwise noted, all growth rates expressed in real terms. Values are expressed in 2000 US dollars.

3 This study assesses the direction, timing and magnitude of the demographic pressure on household savings and financial wealth accumulation, using country-specific demographic forecasts, empirical observations of historical life cycle and cohort saving behavior, and historical rates of financial asset appreciation (see "Technical Notes" for more details). Our findings should not be interpreted as point forecasts because we do not capture the feedback that will occur as households, markets, and other forces adjust to these demographic changes. For ease of exposition, we use "will" (e.g., savings "will" fall) throughout this document to describe our demographics-driven projections.

same time, the baby boomers in the US were in their peak income-earning and saving years. However, soon after 2000 and leading up to 2024, the US and Germany will join Italy and Japan with a declining proportion of prime saving households.⁴ Amplifying the impact of this aging trend is the reduction in the growth rate of household formation and the behavioral differences in savings patterns between generations. To fully understand the implications of the demographic transition for NFW accumulation, the impact of all these microeconomic forces must be considered and translated into results meaningful for the overall economy.

To provide insight on the implications of demographic change on the global capital market, the McKinsey Global Institute modeled the impact of demographics on household savings and NFW accumulation for five OECD countries that together account for approximately 70 percent of global financial stock.⁵ This approach is designed to yield distinctive results by focusing on NFW accumulation to inform the impact on the global capital market and household economic well-being; adopting a global view to shed light on potential shifts in cross-border capital flows; using sensitivity analysis to identify mitigating drivers; and using a "hybrid" modeling approach which leverages trends in microeconomic behavior to derive results that are meaningful at the aggregate level.

At the regional and country level, the magnitude and timing of the decline in NFW accumulation differ sharply, mostly in line with country-specific demographic drivers and lifecycle savings behavior. Japan, for instance, will experience an absolute decline in household NFW. In Europe, the outcomes range from relatively mild in the UK to more severe in Italy. Finally, the US will experience a moderate decline in the growth rate of its household NFW. Each of these countries will need to grapple with the domestic challenges of lower savings to support a fast-growing retiree population while maintaining investment to sustain economic growth. Given the simultaneously occurring global downward pressure on savings, these countries will find it increasingly difficult to rely on international capital flows to close domestic savings shortfalls. This is a particular challenge for the US, which has been running massive current account

⁴ We use country-specific official government statistics (and definitions) when projecting the number of households.

⁵ See MGI Global Financial Stock report, 2005.

deficits to counterbalance low domestic savings (e.g., in 2003, the US current account deficit topped \$530 billion, while Japan's current account surplus reached \$136 billion).

If developed economies are to navigate smoothly through this demographic transition, they will need to take immediate action to increase savings, reduce borrowing, and further improve the returns that households obtain on their financial assets. Our analysis suggests that such changes, while difficult, can meaningfully counteract the demographic pressures. Fiscal discipline today can yield healthier balance sheets tomorrow.

In the rest of this chapter, we explore these four major topics:

- **The historical evolution of household net financial wealth**, which has been predominantly driven by savings in some countries and financial asset appreciation in others.
- **Emerging demographic pressures** on household net financial wealth, namely changes in the number of households and lifecycle and cohort effects on savings, which vary significantly in timing and severity across countries.
- **The impact of demographic pressures** over the next 20 years, which will slow savings and net financial wealth accumulation across the developed world.
- **Potential changes that would mitigate the impact** of demographic forces, suggesting the direction of potential solutions.

Basic facts on demographic effects on savings

Demographic change can affect savings in three ways:

- **Changing number of households.** Changes in birth rates impact the rate of household formation. Changes in the number of households will impact the aggregate level of savings from households.*
- **"Lifecycle effect."** Household income rises with age and experience before declining in retirement. Concomitantly, the rate of saving out of income generally is low for the young, rises with income gains, and then declines near retirement. These two effects combine to yield a distinct age-based level of savings, often referred to as the "lifecycle effect" on savings. Therefore, as the age distribution of the population changes, the level of savings from the population will also change.
- **"Cohort effects."** Younger birth cohorts will earn different levels of income and choose to save at different rates than their predecessors did at the same age. For example, 30-year-olds in the 1990s earn different levels of income and choose to save at different rates than 30-year-olds in the 1970s. These behavioral shifts, often called "cohort effects" on savings, affect the level of household savings in the future.

Since savings is an important driver of household wealth accumulation, understanding the demographic impact on savings provides a necessary foundation to assessing the demographic impact on overall financial wealth accumulation (see next box).

* In addition to the growth rate of household formation, declining birth rates have also had an impact on household size. For our analysis, we use official government statistics on projected household formation, which take into account changes in household size, and thus make no independent assessment of future household size.

Basic facts on savings and wealth accumulation

The appropriate measure of household saving is a topic of frequent debate within the literature, with arguments for and against alternative treatments of income, taxes and outlays. Measures of wealth accumulation are also frequently put forward as more comprehensive assessments of households' ability to maintain future consumption levels. This box provides a brief overview of the differences between savings and wealth accumulation, and explains the rationale for our focus on net financial wealth accumulation.

- **Personal savings:** National accounts, such as the National Income and Product Accounts (NIPA) in the US or the SNA93 in Japan, are focused on measuring the economic value of current production, and thus measures income arising from current production. Personal saving is derived by deducting consumption, interest payments on consumer debt, and current transfer payments from personal disposable income. Because it is derived from current production, it is well suited to informing the domestic savings-domestic investment balance. In addition to the national accounts definition of savings, alternative definitions exist that provide different views of saving (see Reinsdorf, 2004, for an overview of alternative saving measures in the US).
- **Changes in Wealth:** Savings is an important component of changes in household wealth. Wealth held by households can change in two ways: households can purchase new assets with savings and existing assets can be revalued because of changing market prices. Because wealth is a measure of households' ability to finance future consumption, changes in the wealth of households thus provide a comprehensive view of changes in household economic well being – a fact noted by various authors (Bosworth, 2004 and Reinsdorf, 2004).

This project's objective is to understand the impact of demographic change on the global capital market and household economic well being. We therefore focus on the *financial* component of household wealth (*net financial wealth*) because 1) it represents the liquid and transferable financial wealth that is intermediated through the global capital market to fuel global investment and growth, and 2) it represents a good proxy for overall household economic well being because the majority of household assets are financial (in the US, consistently between 60 and 70 percent since 1950).

Recognizing that changes in financial and real estate wealth can affect household spending behavior, we have incorporated estimates of financial and real estate wealth effects on spending in the US analysis. While consumer durables represent important assets for some households, we have also adhered to the National Accounts classification of durables as consumption, since durables are not liquid and investable in the same way as financial assets.

HISTORICAL EVOLUTION OF HOUSEHOLD NET FINANCIAL WEALTH

Households accumulate financial wealth by purchasing new assets⁶ using savings out of current income or through the revaluation of existing assets. At the same time, households assume financial liabilities mainly through mortgages and revolving credit. Net financial wealth (NFW) is the difference between financial assets and liabilities. Real estate can affect net financial wealth through the so-called real estate "wealth effect" whereby an increase in real estate wealth induces higher spending and reduces savings.

The global aggregate NFW of households increased at a 4.5 percent annual rate between 1982 and 2003. For most of this period, net financial wealth grew fairly consistently, closely following a historical trend line. In the late 1990s, the technology, media and telecommunications bubble produced a massive surge in the growth rate (Exhibit 1).⁷

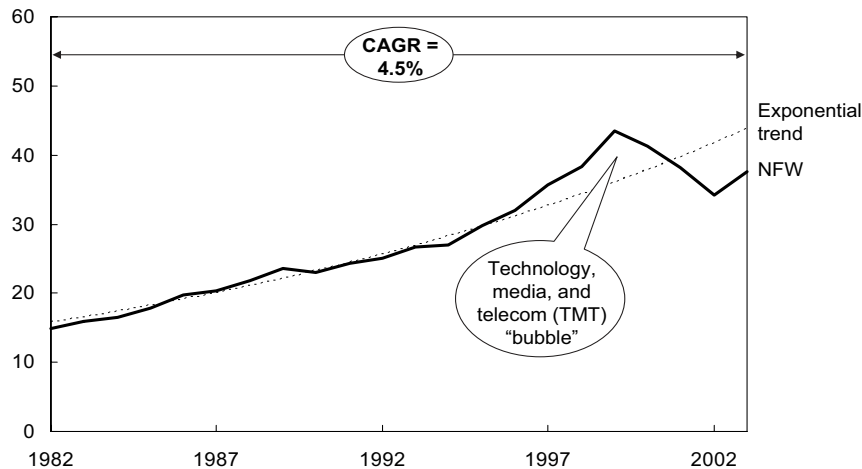
⁶ We have used a broad definition of financial assets including deposits, stocks, life insurance and pension fund reserves, etc.

⁷ While these numbers aggregate four countries (Germany excluded due to data limitations), the US and Japan account for approximately 85 percent of the figure.

Exhibit 1

**HOUSEHOLD NET FINANCIAL WEALTH (NFW) FOR
SELECTED COUNTRIES* 1982-2003**

\$ Trillions, 2000



* Includes US, Italy, Japan, UK (Germany excluded due to limited historical data)
Source: McKinsey Global Institute Household Financial Wealth Model

This section documents the key historical trends of NFW accumulation at the global level by considering the evolution of financial assets and liabilities. For financial assets, we point to the equity market bubble of the late 1990s as a significant discontinuity, and to the importance of differences in asset allocation across countries as a driver of appreciation. Correspondingly, we observe the rapid growth rate of liabilities and the link between growth in liabilities and the growth in mortgage debt.

Household financial assets

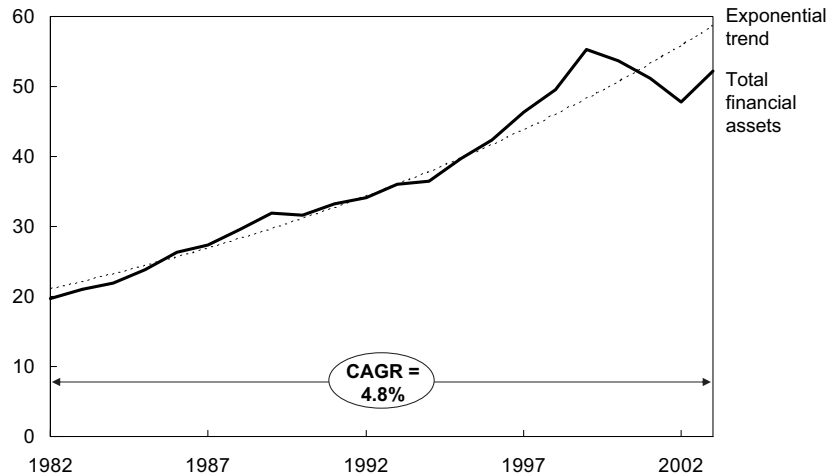
Household financial assets grew at 4.8 percent annually over the 1982-2003 period (Exhibit 2). Financial asset growth was relatively stable prior to the late 1990s, when extraordinary equity market gains and subsequent declines caused an increase in volatility.

We observe differences across countries in four dimensions of household financial wealth: drivers of accumulation, asset allocation patterns, appreciation rates, and wealth effects on savings behavior.

Exhibit 2

HOUSEHOLD FINANCIAL ASSETS FOR SELECTED COUNTRIES* 1982-2003

\$ Trillions, 2000



* Includes US, Italy, Japan, UK (Germany excluded due to limited historical data)
Source: McKinsey Global Institute Household Financial Wealth Model

Drivers of asset accumulation differ across countries. The stock of financial assets held by households can change in two ways: households can purchase new assets and existing asset holdings can be revalued because of changing market prices.⁸ Our discussion of wealth accumulation includes changes in both (see box, "Basic facts on savings and wealth accumulation," for details).

Japan and the US present contrasting examples of how households accumulate assets. In Japan, where asset appreciation was a net negative, purchases of new assets are the sole driver of financial asset accumulation. In the US, the situation is much different. From 1975 to 2003, almost 30 percent of the change in US household financial assets results from asset appreciation (Exhibit 3). From an overall household wealth perspective, in the US, the traditional notion of asset accumulation through "savings out of income" is being displaced by financial and real estate asset appreciation as the channel of wealth accumulation (Exhibit 4).

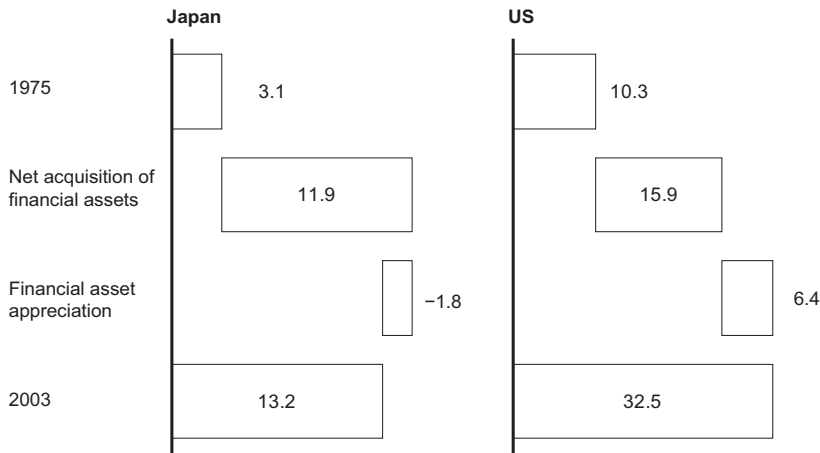
⁸ See "Technical Notes" for a definition of the relationship between saving out of income as defined in the national accounts, and the net acquisition of financial assets as defined in the flow of funds accounts.

Exhibit 3

DRIVERS OF FINANCIAL ASSET GROWTH IN THE US AND JAPAN

Change in households financial assets 1975-2003

\$Trillions, 2000; percent

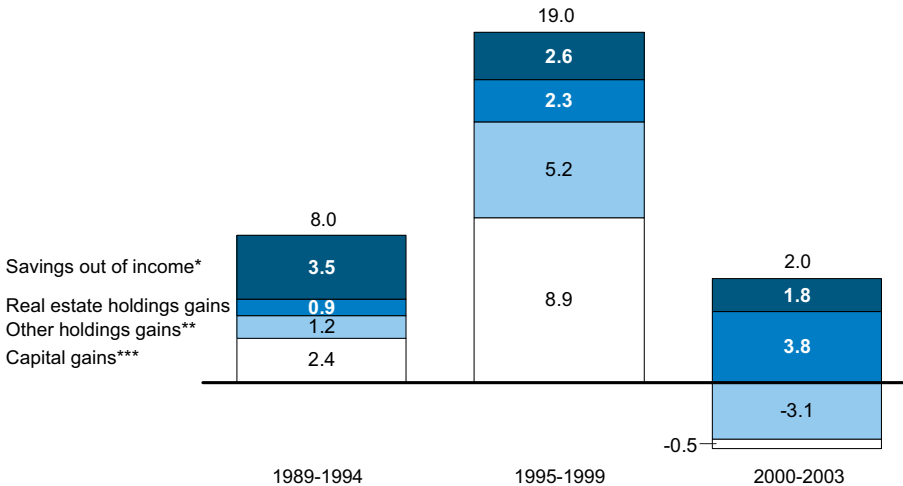


Source: Bank of Japan; Economic and Social Research Institute (ESRI), Cabinet Office, Government of Japan; Federal Reserve Flow of Funds

Exhibit 4

CONTRIBUTION TO CHANGE IN US HOUSEHOLD NET WORTH BY ASSET CATEGORY

\$ Trillions, 2000



* Tangible and financial net investment (equivalent to savings from income)

** Includes holding gains from equity in noncorporate business, life insurance/pension fund reserves, bank personal trusts, consumer durable goods, equipment/software, and a statistical discrepancy

*** On equities and mutual funds

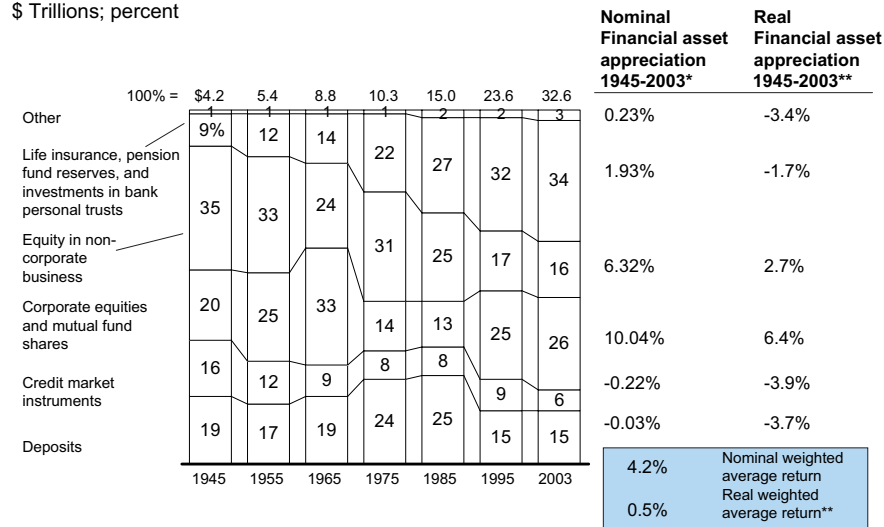
Source: Federal Reserve Flow of Funds; MGI analysis

Household asset allocation differs across countries. The ways households allocate their financial assets is an important driver of overall asset accumulation, because the mix of instruments held by households determines the rate of return they receive. Across countries, households are making different asset allocation decisions. In the US, for example, only 15 percent of household assets remained in deposits in 2003 (down from 25 percent in 1975; Exhibit 5), while that figure in Japan was 52 percent (marginally down from 54 percent in 1975; Exhibit 6).

Exhibit 5

US HOUSEHOLD FINANCIAL ASSET DISTRIBUTION 1945-2003

\$ Trillions; percent



* Computed from the flow of funds as the residual of the annual change in asset value and annual net acquisition of this asset

** Based on Personal Consumption Expenditures Price Deflator, average inflation (1945-2003) of 3.7%

Source: Team analysis, Flow of Funds

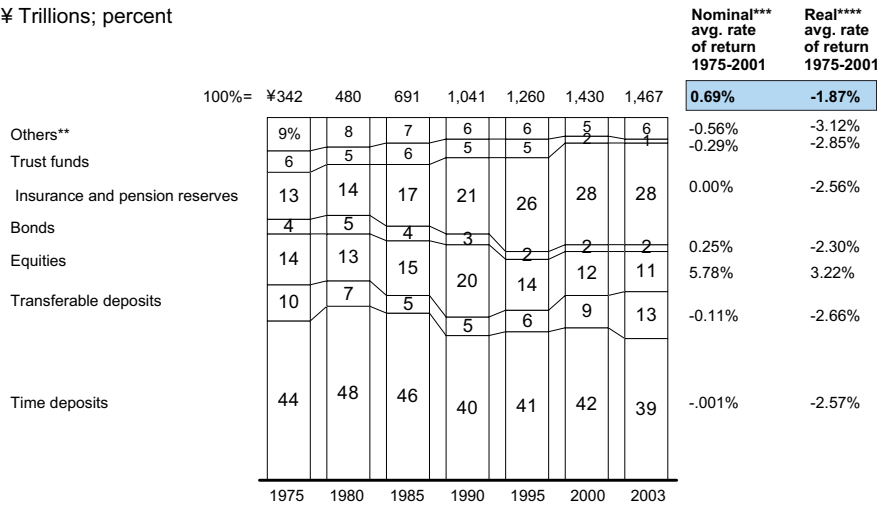
Rates of financial asset appreciation differ across countries.⁹ Household asset allocation, rates of inflation, and equity market performance largely explain differing real rates of financial asset appreciation seen across countries. Japan, Germany and Italy have all experienced negative rates over the past 30 years, while the UK and US have enjoyed positive rates (Exhibit 7).

9 Total returns on financial assets, as commonly understood, are a combination of realized capital income and unrealized asset appreciation. Realized capital income, including interest and dividends, is by convention counted as personal income, a portion of which is saved. The revaluation of asset holdings therefore only captures unrealized asset appreciation (or depreciation). All references to *financial asset appreciation (FAA)* constitute these unrealized gains, and are adjusted for inflation. Realized capital gains are not counted in the national accounts as savings, see Reinsdorf, 2004. We capture the impact of realized capital gains on purchases of new assets because asset accumulation is driven by the net acquisition of financial assets as measured by the flow of funds accounts (see "Technical Notes" for details).

Exhibit 6

JAPANESE HOUSEHOLD FINANCIAL ASSET DISTRIBUTION 1975-2003*

¥ Trillions; percent



* Since only asset stocks are available for 2002 and 2003, asset distribution is available up to 2003 but returns are only available up to 2001

** Refers to the regrouped section of the new SNA (includes assets such as investment trusts and derivatives)

*** Applying the flow of funds portfolio distribution and implied financial asset appreciation

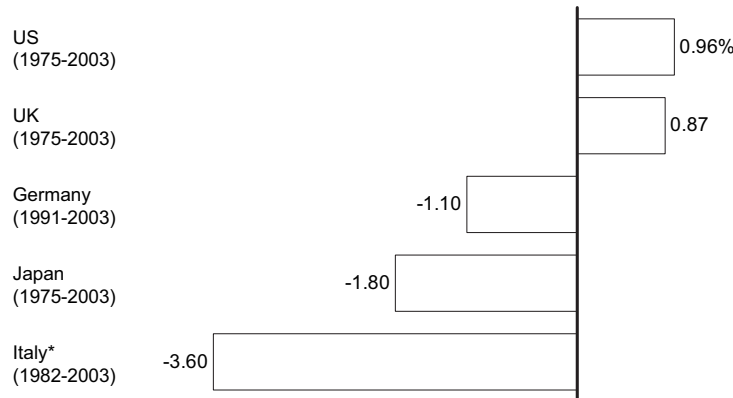
**** Based on Personal Consumption Expenditures Price Deflator, average inflation 1975-2001 of 2.56%

Source: Team Analysis, Japanese Flow of Funds, Bank of Japan

Exhibit 7

REAL RATE OF FINANCIAL ASSET APPRECIATION IN THE DEVELOPED WORLD

Percent, adjusted for inflation



* Data inconsistency in 1986 necessitated an assumption (used 1985 value)

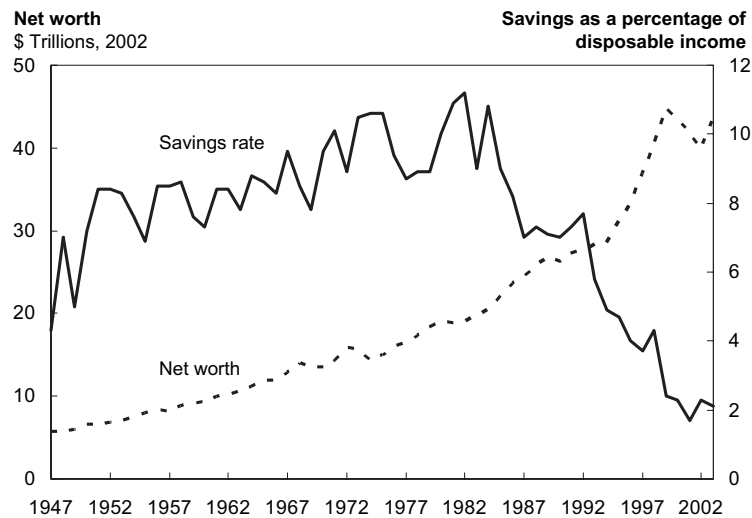
Source: McKinsey Global Institute Household Financial Wealth Model

In Japan, the relatively low rate of financial asset appreciation is related to households' overwhelmingly allocating to lower-yielding assets, such as transferable deposits (which from 1975 to 2001 yielded an average real return -2.7 percent) and time deposits (with an average real return of -2.6 percent over the period).

Wealth effects on savings behavior are rising in importance. When households experience gains on financial and real estate assets, they tend to consume more. This is collectively known as "wealth effects" on consumption (and, by extension, savings). Empirical research in the US has estimated that for every \$1 increase in real estate and financial wealth, consumption is increased by 5 to 8 cents and 3 to 5 cents, respectively.¹⁰ Therefore, fluctuating equity and housing markets impact household savings behavior. As the stock of assets rise, so too does the importance of wealth effects on savings (see Exhibit 8 for the US example). Similar trends are observed in Germany, Italy, and UK.

Exhibit 8

US HOUSEHOLD SAVINGS RATE AND NET WORTH 1947-2002



Source: Federal Reserve Flow of Funds; BEA

¹⁰ For more information on wealth effects, see Davis and Palumbo (2001) and Case, Quigley and Shiller (2000).

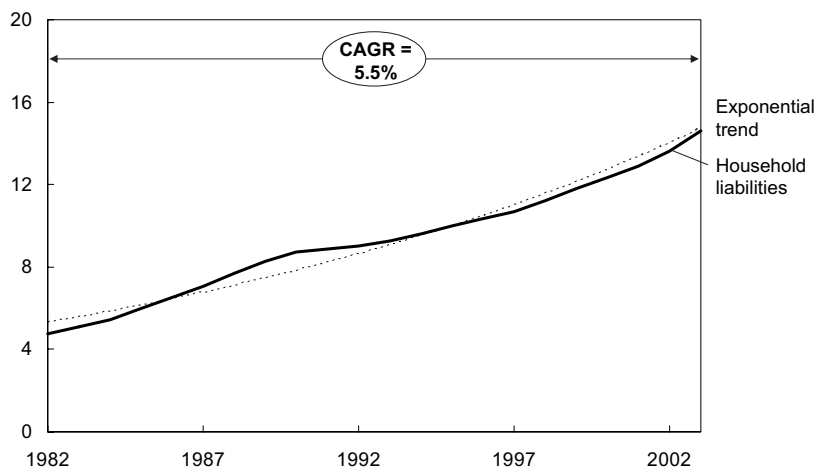
Household liabilities

Household liabilities have grown at a faster pace than household *financial* assets, with a 5.5 percent compound annual growth rate since 1982 (Exhibit 9).

Exhibit 9

HOUSEHOLD LIABILITIES FOR SELECTED COUNTRIES* 1982-2002

\$ Trillions, 2000



* Includes US, Italy, Japan, Korea, UK (Germany excluded due to limited historical data)
Source: McKinsey Global Institute Household Financial Wealth Model

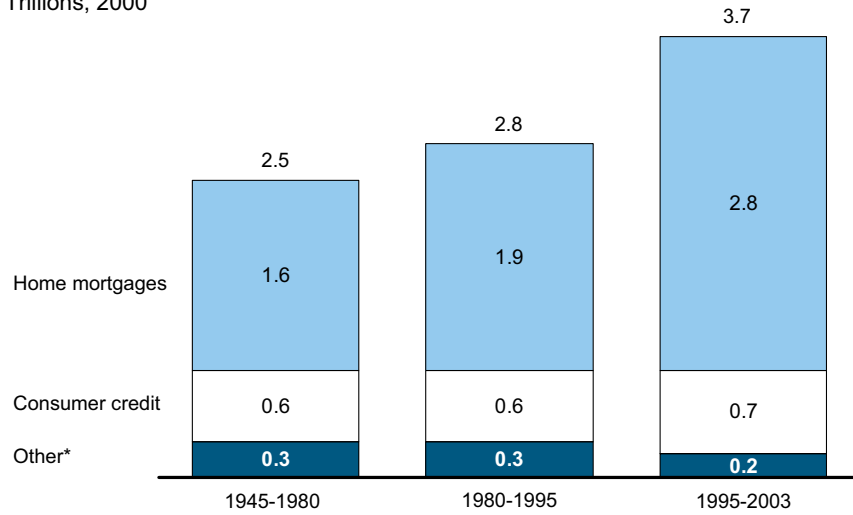
Real estate appreciation driving growth in mortgages. Markets such as the US and UK are experiencing a strong appreciation in real estate values. In these countries, growing mortgage debt has been driving increases in liability accumulation (in the US and UK, home mortgages have seen annual growth of 6.5 percent and 7.5 percent, respectively, since 1982; see Exhibit 10 for the US example and Exhibit 11 for the UK example).

Increased access to liabilities driving liability overall accumulation. Other countries with less developed banking sectors, such as Italy, have witnessed very large increases in liabilities (e.g., 7.5 percent annual growth since 1982) as borrowing restrictions have gradually decreased (with, for example, the level of down payment required to purchase housing falling from approximately 50 percent to 10 percent).

Exhibit 10

PERIOD CHANGE IN US HOUSEHOLD LIABILITIES BY TYPE

\$ Trillions, 2000

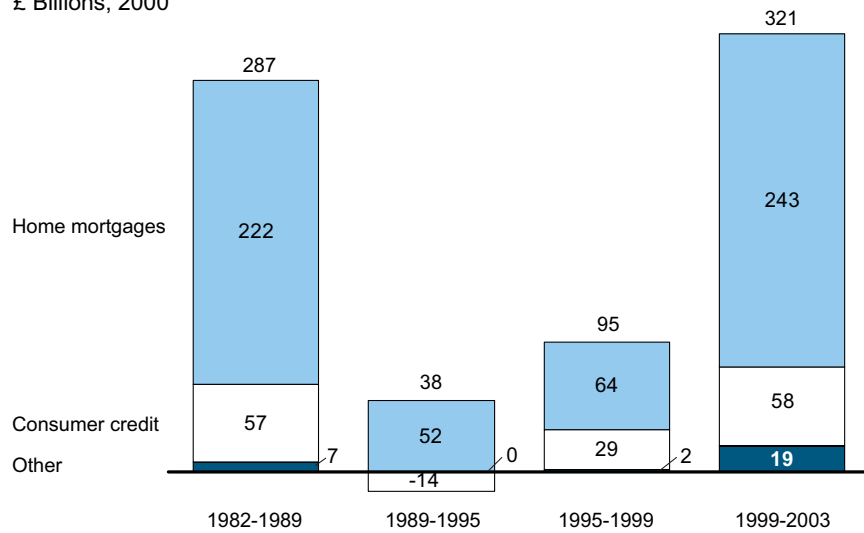


* Includes municipal securities, bank loans, commercial mortgages, security debt, trade payables, and unpaid insurance premiums
 Source: Federal Reserve Flow of Funds; MGI analysis

Exhibit 11

PERIOD CHANGE IN UK HOUSEHOLD LIABILITIES BY TYPE

£ Billions, 2000



Source: ONS (Blue Book, UK StatBase)

Younger cohorts borrowing more. Across countries, younger cohorts are generally more willing to take on higher levels of debt. For example, cohort analysis in Japan shows higher levels of liability accumulation by younger cohorts.

DEMOGRAPHIC DRIVERS OF CHANGE IN HOUSEHOLD NET FINANCIAL WEALTH

The accumulation of household net financial wealth is closely linked to the demographic profile of a country's households. The developed world is going through a major demographic transition. Some countries, such as Japan and Italy, are already experiencing significant change, while others, such as the US, will soon experience significant aging as the large baby boomer cohort retires over the next decade:

- **Households available to create wealth will be limited** by slowing population growth and reduced household formation.
- **Financial asset accumulation will slow** because falling prime saver ratios and cohort-specific behavioral changes will lower average saving per household.
- **Liability growth will slow or remain on trend** as higher borrowing by younger cohorts mitigates positive impact of older households' reducing liabilities.

This section discusses in detail these sources of change and outlines the key differences across countries.

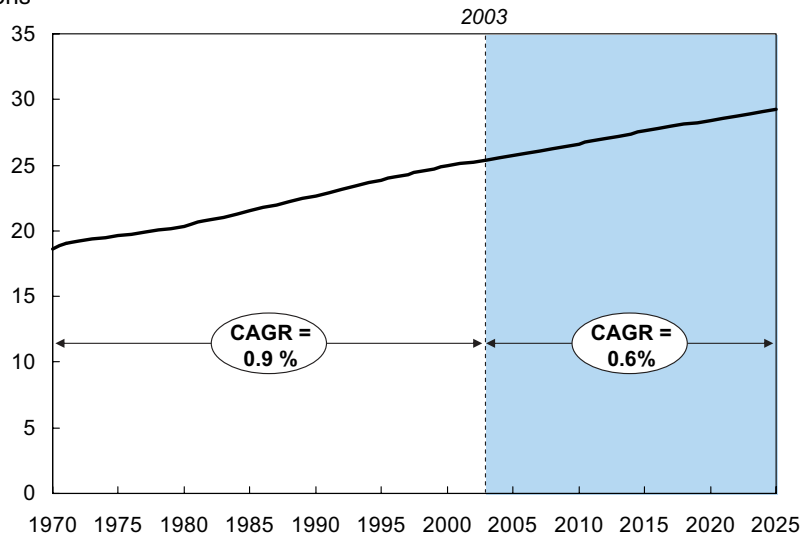
Slowing population growth will reduce household formation

Lower birth rates in the developed world are driving a sustained slowdown in the growth rate of household formation. The rate of deceleration varies sharply across countries. The UK, for example, is experiencing relatively moderate declines (from 0.9 percent historically to 0.6 percent in the next 20 years; Exhibit 12). In Japan, low birth rates and immigration flows will combine to cause a relatively severe and abrupt deceleration in the number of households in the next 20 years (from 1.6 to 0.2 percent; Exhibit 13).

Exhibit 12

NUMBER OF UK HOUSEHOLDS 1970-2025

Millions

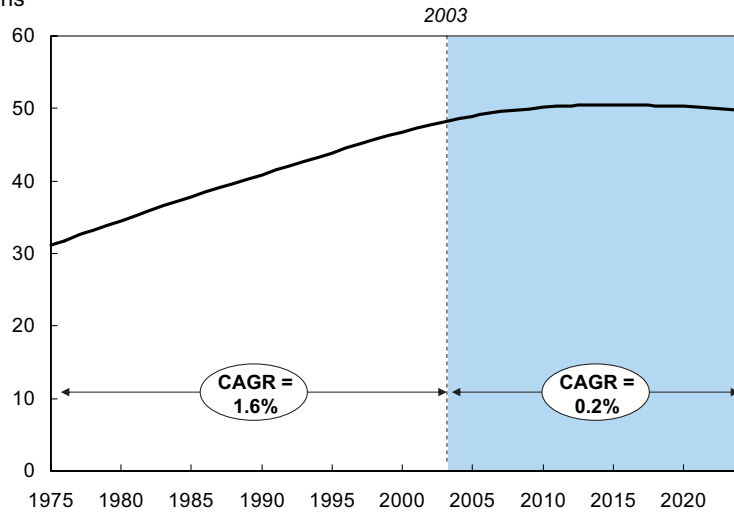


Source: ONS; Government Actuary, Office of the Deputy Prime Minister (ODPM); Scottish Executive; MGI estimates

Exhibit 13

NUMBER OF HOUSEHOLDS IN JAPAN 1975-2024

Millions



Source: National Institute of Population and Social Security Research, Japan

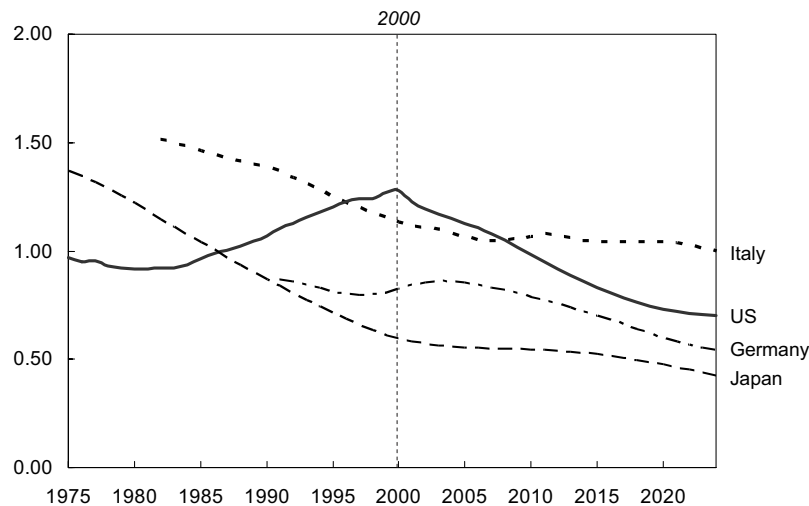
Financial asset accumulation will be slowed by lower average savings per household

Average household savings will be lower because there will be fewer households in their prime saving years; moreover, in the US and Japan, prime saver households that consume more and save less (relative to prime saver households in the past) will become increasingly dominant.

Prime saver ratio is declining. The prime saver ratio measures the number of households in their prime saving years relative to the number of elderly households who save at lower rates or dissave. Comparing prime saver ratios across major developed economies reveals an important inflection point around 2000 (Exhibit 14).

Exhibit 14

RATIO OF HOUSEHOLD PRIME SAVERS* TO ELDERLY IN 4 MAJOR ECONOMIES 1975-2024



* Prime Savers defined as the 20-year age band with maximum savings (35-54 in US, 45-64 in Italy, 35-54 in Germany; 30-50 in Japan)
Source: McKinsey Global Institute Household Financial Wealth Model

Prior to 2000, Japan and Italy were experiencing systematic declines in their prime saver ratios, as their populations passed through major demographic transitions, while Germany was relatively flat and the US was experiencing a very robust increase its prime saver ratio. However, after 2000, the US entered a new phase of systematic declines in its prime saver ratio, which Germany will join 5 years later, while Japan and Italy stabilize at very low levels.

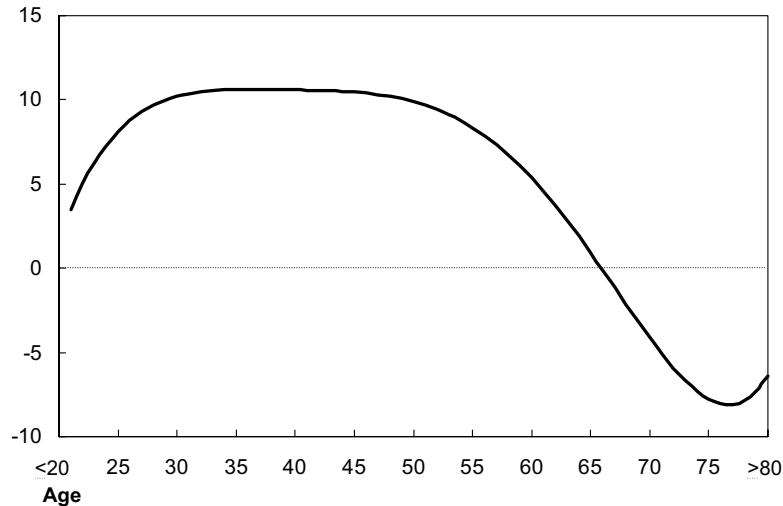
The declining prime saver ratio will moderate asset accumulation because aging households are moving into the low saving and dissaving parts of their life cycle.

- **Age-based lifecycle savings behavior impacts savings and wealth accumulation.** Country-specific research reveals a wide range of age-based lifecycle savings patterns. The US, Japan, and Germany exhibit the traditional "hump-shaped" lifecycle behavior, with savings levels high between, roughly, ages 30 and 50, then falling off in older age (exhibits 15-17); Italy demonstrates a flatter lifecycle savings curve (Exhibit 18); and the UK (Exhibit 19) demonstrates a counter-intuitive profile, with increased savings in older age.

Exhibit 15

US LIFECYCLE SAVINGS CURVE

Annual savings per household – cohort 1945-54
\$ Thousands, 2000

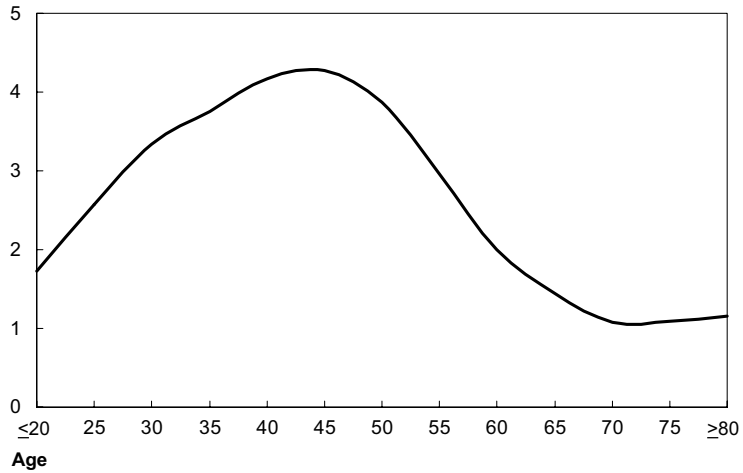


Source: Bureau of Labor Statistics (BLS) Consumer Expenditure Survey; MGI estimates

There are a number of explanations for these differences. One is that many countries have tight constraints on borrowing. In Italy, for example, home buyers needed to supply a 50 percent down payment, which has historically led to high savings rates among households in their 20s and 30s. This picture contrasts sharply with that in the US, where a down payment of 10 percent is usually sufficient and thus the desire to own a home does less to encourage higher savings.

Exhibit 16
LIFECYCLE SAVINGS CURVE FOR GERMANY

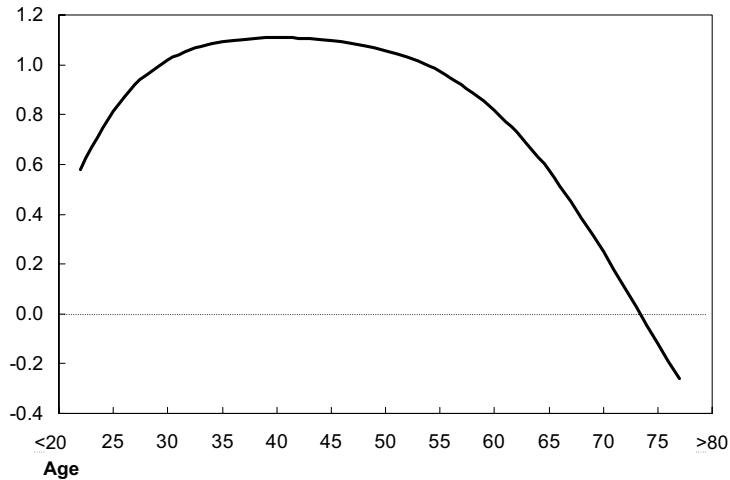
Annual savings per household – representative cohort*
€ Thousands, 2000



* Not calibrated to the national account levels
Source: Börsch-Supan; McKinsey Global Institute Household Financial Wealth Model

Exhibit 17
LIFECYCLE SAVINGS CURVE FOR JAPAN

Annual savings per household – 1945-49 cohort
¥ Millions, 2000

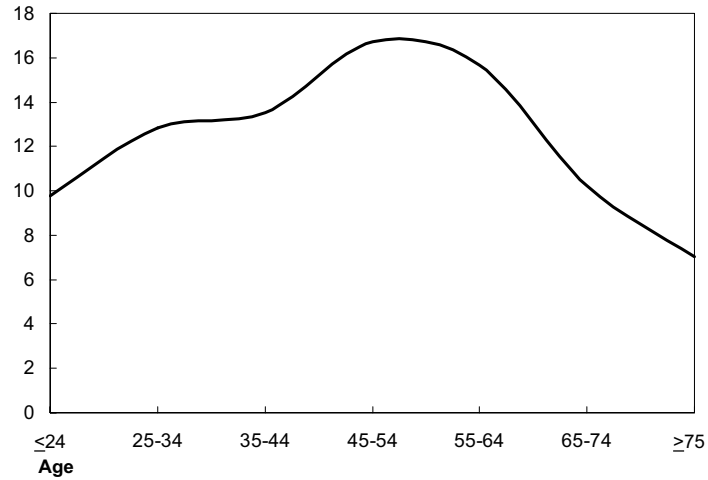


Source: Family Expenditure Survey, Japan; MGI estimates

Exhibit 18

LIFECYCLE SAVINGS CURVE FOR ITALY

Annual savings per household – representative cohort*
€ Thousands, 2000

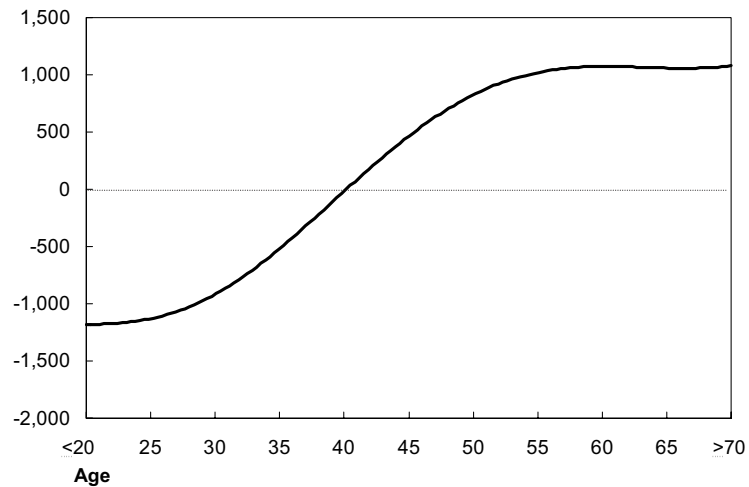


* Not calibrated to the national account levels
Source: Baldini, Mazafferro (2003); McKinsey Global Institute Household Financial Wealth Model

Exhibit 19

UK LIFECYCLE SAVINGS CURVE

Annual savings per household – 1936-40 cohort*
£, 2000



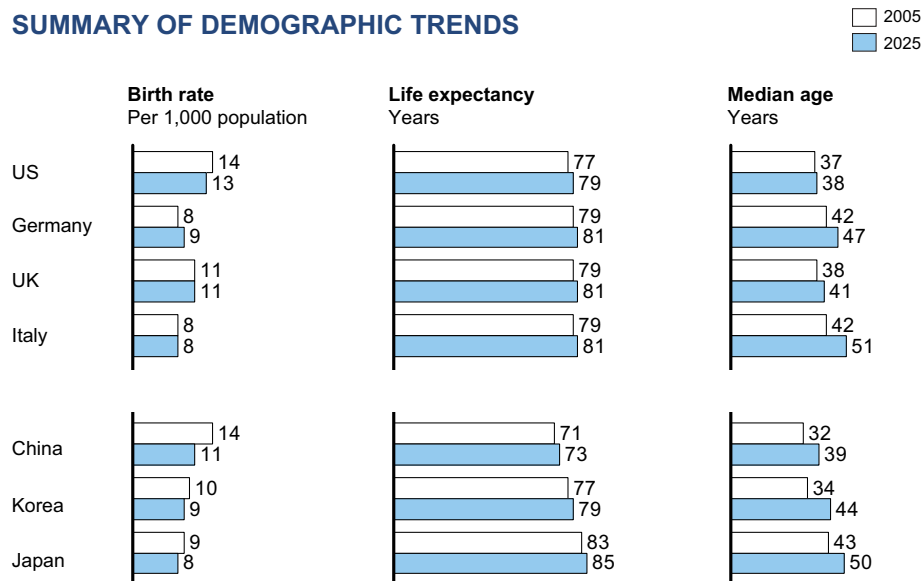
* Not calibrated to national account level
Source: Banks and Rohwedder (2003), MGI analysis

Also, as Orazio Attanasio (2004) has commented, the discontinuities affecting household composition can affect lifecycle savings behavior – female participation in the labor force by itself would be expected to influence age effects on savings. Cultural attitudes and approaches to savings and risk tolerance also help explain the different savings profile around the world.

- **The population of the developed world is shifting towards the lower saving and dissaving parts of their lifecycle.** The pace of aging of the developed world's population differs sharply across countries, due to a range of factors including the size of the baby boom cohort, changes in birth rates, increases in life expectancy. For example, in the next 20 years the median age will increase by 7 years in Japan but only 1 year in the US. Overall, the US and UK will experience the most mild demographic changes while Italy and Japan will have the most severe (Exhibit 20 summarizes all demographic trends).

Exhibit 20

SUMMARY OF DEMOGRAPHIC TRENDS



Source: UN World Population Prospects, 2002 revision (official government statistics may differ slightly)

Lower saving by younger cohorts. A second driver of lower savings per household is the presence of cohort effects – that is, differences in the savings behavior across generations. In both the US and Japan, where we were able to

leverage cohort-level data, younger cohorts were observed to be saving less than previous cohorts. (Exhibit 21 for the US and Exhibit 22 for Japan). As these younger cohorts move up the age band, they will continue to save less than previous cohorts as they follow the expected lifecycle pattern. This will exacerbate the problem of the declining prime saver ratio, as the prime savers will be saving less on average than comparable prime savers in the past.¹¹

Aging population will slow upward trend in household debt

Changes in household liabilities are driven by lifecycle borrowing behavior and the increasing ability and willingness of households to take on debt. Liability to income ratios have been increasing throughout the developed world, as the reduction in borrowing constraints and the creation of new liability products has combined with the increasing willingness of younger generations to assume higher levels of indebtedness.

Going forward, there are two opposing forces which will determine liabilities accumulation: increasing willingness of younger households to take on debt versus the paydown of debt as households age. These trends differ across countries but in general liabilities growth slows or remains on historical trend (see country stories for details). If all else is equal, weaker liability growth will boost NFW accumulation.

DEMOGRAPHIC IMPACT ON HOUSEHOLD NET FINANCIAL WEALTH GOING FORWARD

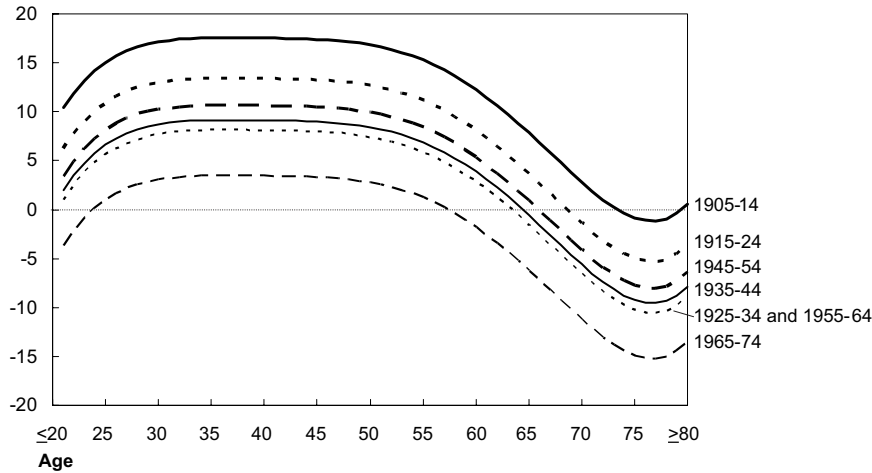
What do these demographic changes mean for the global economy? How does household growth and aging impact financial balance sheets? Our analysis suggests that, in the absence of significant shifts in demographics, in rates of financial asset appreciation, or in savings behavior by households, there will be significant downward pressures on household savings and NFW accumulation globally. The timing and magnitude of the pressure varies across countries, consistent with each country's demographic profile and the nuances of household saving behavior.

¹¹ Cohort effects may be caused by a number of factors, including generational attitudes towards savings, availability of savings opportunities, and household construction. See "Technical Notes" for further discussion.

Exhibit 21

LIFECYCLE SAVINGS CURVES FOR 7 US COHORTS

Annual savings per household
\$ Thousands, 2000

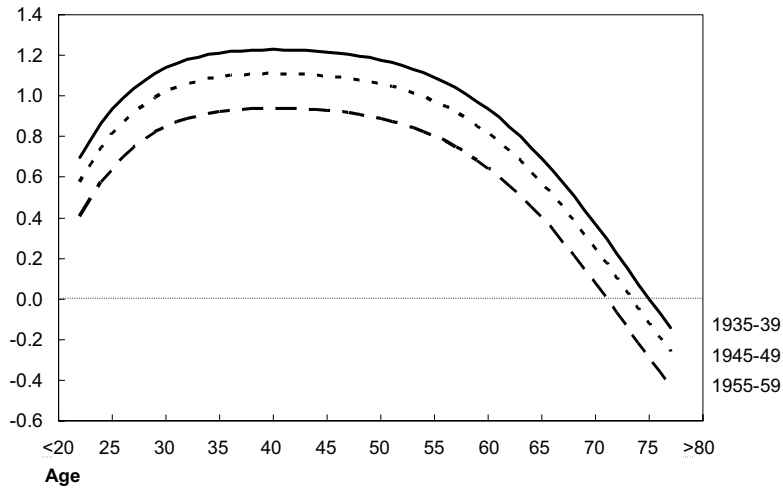


Source: BLS Consumer Expenditure Survey; MGI estimates

Exhibit 22

LIFECYCLE SAVINGS CURVES FOR 3 JAPANESE COHORTS

Average savings per household
¥ Millions, 2000



Source: Family Expenditure Survey, Japan; MGI estimates

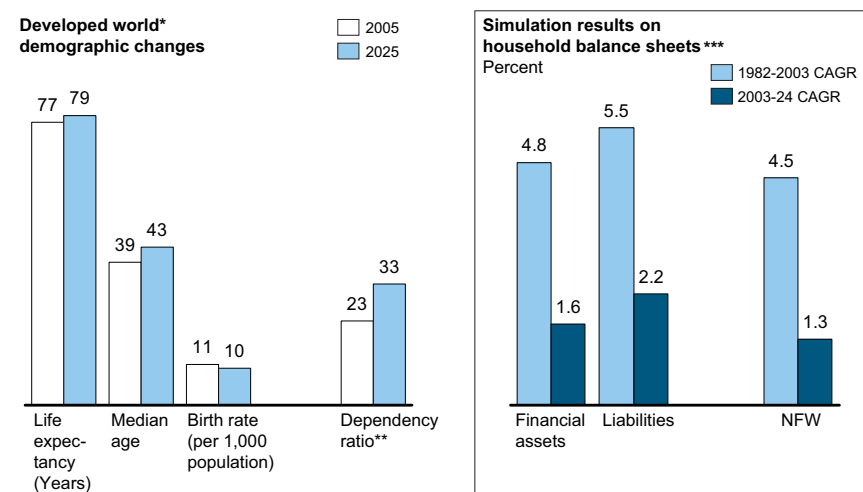
This section describes the aggregate global projection of the demographic impact, and provides an overview of results by individual country.

Aggregate results show a strong demographic impact

Overall, our simulation projects a decline in growth of household NFW across the developed world. By 2024 NFW will fall some 36 percent, or by \$31 trillion, below what it would have been had the higher historical growth rates persisted. The slowdown in savings flows contribute significantly to a drop in the growth rate of household financial assets, from 4.8 to 1.6 percent; at the same time, growth in financial liabilities will fall from 5.5 to 2.2 percent. When netting out the financial assets and liabilities, the growth rate of NFW will decline from 4.5 to 1.3 percent (exhibits 23-27).

Exhibit 23

DEMOGRAPHIC TRENDS AND DECLINING GROWTH RATE IN FINANCIAL ASSETS, LIABILITIES, AND NET FINANCIAL WEALTH



* As defined by the UN to include all regions of Europe plus Northern America, Australia/New Zealand and Japan
 ** Defined as the ratio of the population aged 65 years or over to the population aged 15-64
 *** Combined results for US, UK, Japan, Italy (Germany excluded due to lack of historical data)
 Source: UN World Population Prospects (2002 revision); McKinsey Global Institute Household Financial Wealth Model

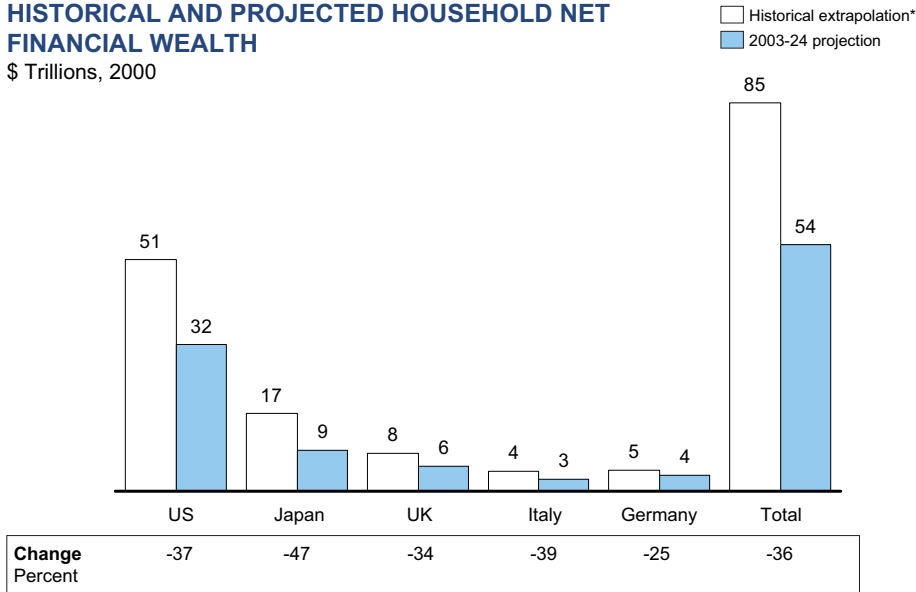
Country results vary in severity

While all the countries we have analyzed will experience a decline in the growth rate of household wealth accumulation, the magnitude and timing of the decline differs dramatically. Overall, Japan and Italy have the most severe declines, while the US and UK have the most moderate declines.

Exhibit 24

HISTORICAL AND PROJECTED HOUSEHOLD NET FINANCIAL WEALTH

\$ Trillions, 2000

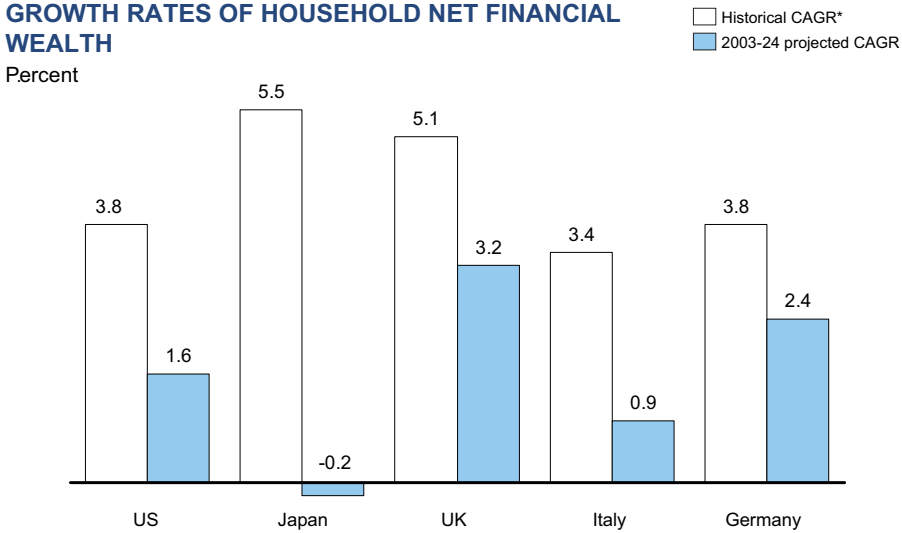


* US, 1975-2003; Japan, 1989-2003; UK, 1975-2003; Italy, 1986-2003; Germany, 1991-2003
 Source: McKinsey Global Institute Household Financial Wealth Model; xe.com exchange rates

Exhibit 25

GROWTH RATES OF HOUSEHOLD NET FINANCIAL WEALTH

Percent



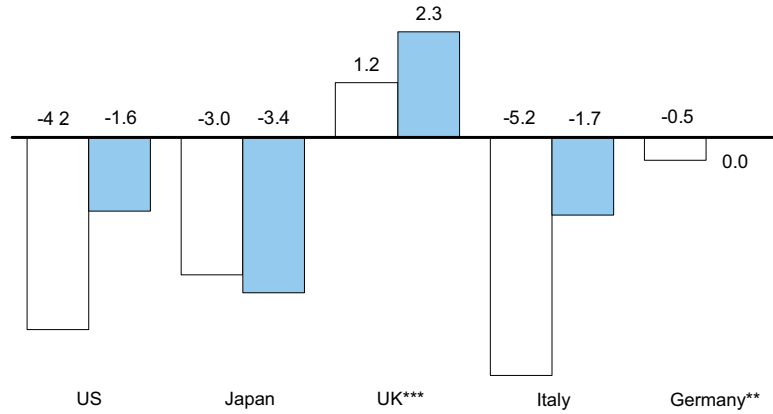
* US, 1975-2003; Japan, 1975-2003; UK, 1975-2003; Italy, 1986-2003; Germany, 1991-2003
 Source: McKinsey Global Institute Household Financial Wealth Model

Exhibit 26

SAVINGS FLOWS GROWTH RATES

Percent

□ Historical CAGR*
 ■ 2003-24 projected CAGR



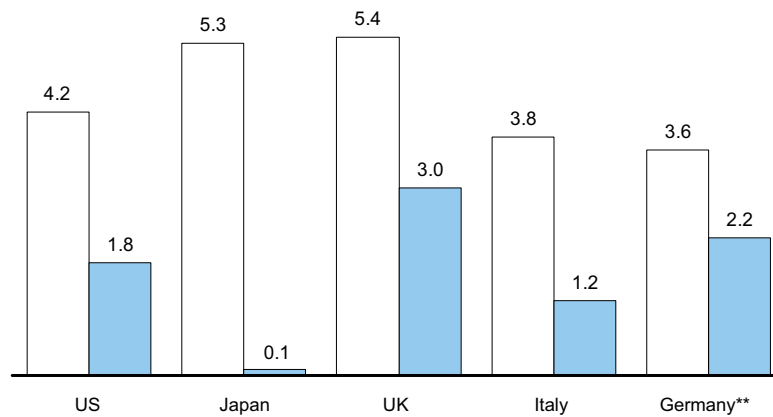
* US, 1975-2003; Japan, 1975-2003; UK, 1975-2003; Italy, 1986-2003; Germany, 1991-2003
 ** Limited historical data for Germany due to reunification
 *** Due to unique UK lifecycle saving curve where older households save more
 Source: McKinsey Global Institute Household Financial Wealth Model

Exhibit 27

GROWTH RATES OF HOUSEHOLD FINANCIAL ASSET ACCUMULATION

Percent

□ Historical CAGR*
 ■ 2003-24 projected CAGR



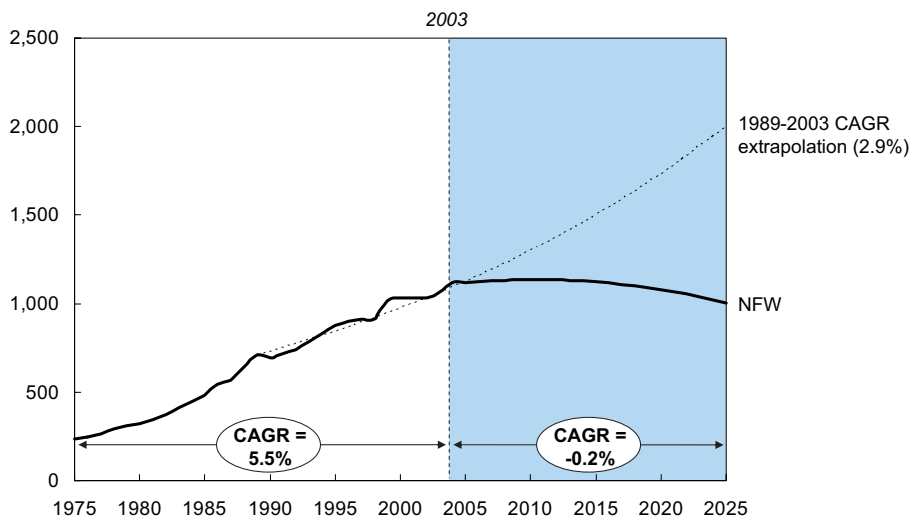
* US, 1975-2003; Japan, 1975-2003; UK, 1975-2003; Italy, 1986-2003; Germany, 1991-2003
 ** Limited historical data for Germany due to reunification
 Source: McKinsey Global Institute Household Financial Wealth Model

- Japan.** The most dramatic decline in household financial wealth will be Japan's, where the growth rate will drop by 3.1 percentage points from the extrapolated historical trend line to -0.2 percent annually. A combination of a rapidly aging population, very low birth rates, low returns on financial assets, a steep lifecycle savings curve, and negative cohort effects result in a strong demographic pressure, reducing overall household wealth accumulation (Exhibit 28).

Exhibit 28

**TOTAL NET FINANCIAL WEALTH – JAPANESE HOUSEHOLDS
1975-2024**

¥ Trillions, 2000



Source: ESRI, Cabinet Office, Government of Japan; Bank of Japan, Family Expenditure Survey, Japan; McKinsey Global Institute Household Financial Wealth Model

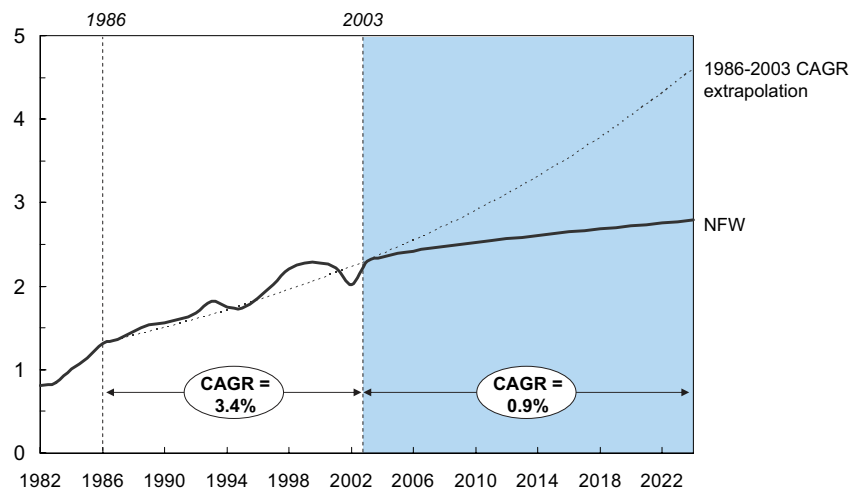
- Europe.**¹² Europe presents a broad spectrum of results. Italy will experience a relatively large decline in its wealth accumulation growth rate, falling 2.5 percentage points to a projected growth rate of 0.9 percent, due to its significantly aging population. However, these results are muted due to the relatively flat lifecycle savings curve.

12 As Europe integrates and grows to encompass fast-growing and younger developing economies, individual country findings will be increasingly subject to a broader range of forces – the EU picture as a whole may improve from a demographic and financial asset appreciation perspective and individual countries, such as Italy, may benefit from higher returns and easier access to regional savings pools.

The declines are less marked in Germany and the UK (growth rates declining by 1.4 percentage points to a projected growth rate of 2.4 percent and 1.9 percentage points to a projected growth rate of 3.2 percent, respectively), due to Germany's higher savings rates and the UK's healthier demographics (exhibits 29-31). However, for these countries cohort effects were not explicitly modeled (see “Technical Notes” for details).

Exhibit 29

TOTAL NET FINANCIAL WEALTH – ITALIAN HOUSEHOLDS 1982-2024
 € Trillions, 2000



Source: PFA database (Italian EFIC); Bank of Italy; McKinsey Global Institute Household Financial Wealth Model

- **US.** The US will experience a moderate decline in the growth rate of household net financial wealth (declining 2.2 percentage points to a projected growth rate of 1.6 percent). Reduced saving among younger cohorts is responsible for a large part of the US decline, while the strong historical rate of financial asset appreciation and relatively mild demographics work to mitigate the decline (Exhibit 32).

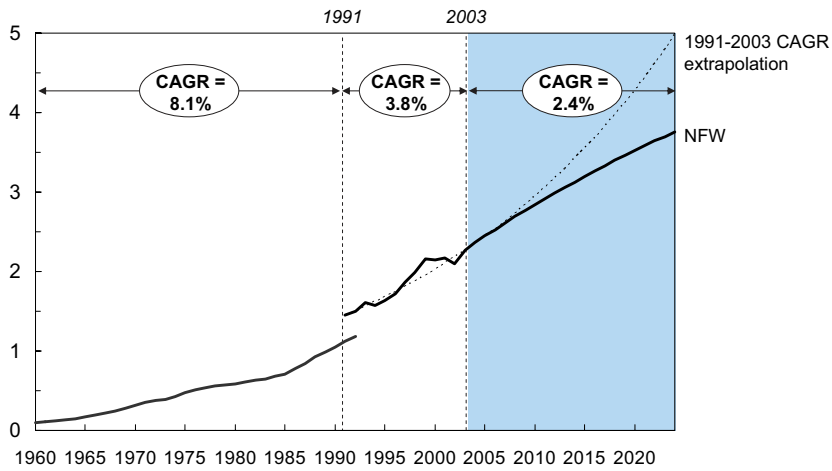
Impact on financial asset appreciation is ambiguous

The impact of the demographically driven decline in savings on financial asset appreciation is unclear. An important determinant is whether demographic

Exhibit 30

TOTAL NET FINANCIAL WEALTH – GERMAN HOUSEHOLDS 1960-2024

€ Trillions, 2000

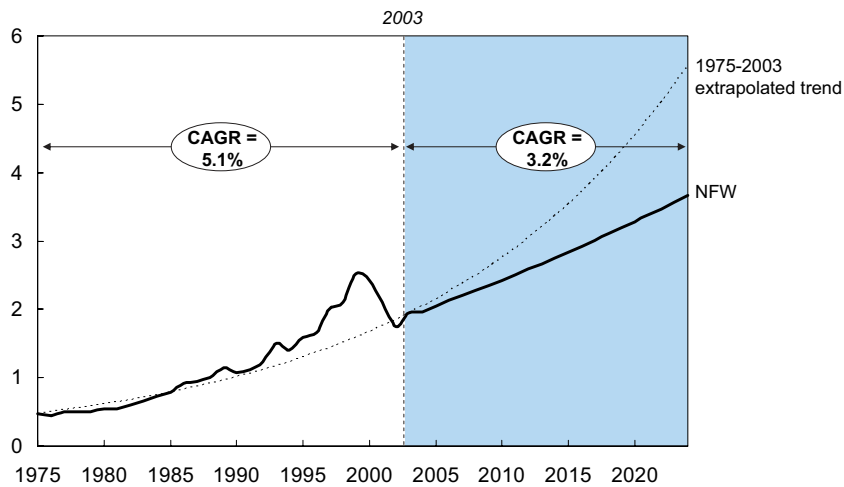


Note: Estimated for the former West Germany between 1960 and 1991
Source: Deutsche Bundesbank; McKinsey Global Institute Household Financial Wealth Model

Exhibit 31

TOTAL NET FINANCIAL WEALTH – UK HOUSEHOLDS 1975-2024

£ Trillions, 2000

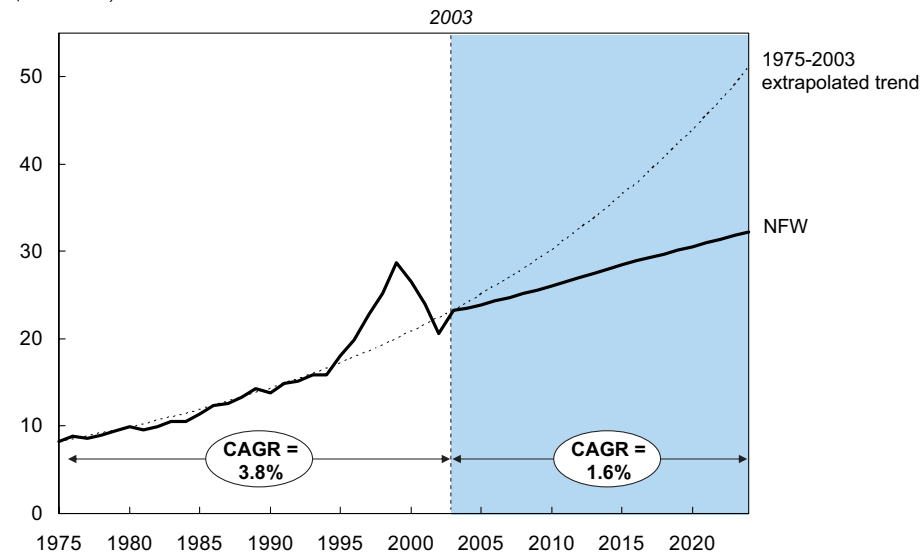


Source: ONS (Blue Book, UK StatBase); McKinsey Global Institute Household Wealth Model

Exhibit 32

TOTAL NET FINANCIAL WEALTH – US HOUSEHOLDS

\$ Trillions, 2000



Source: BLS Consumer Expenditure Survey, Diary Survey; Federal Reserve Flow of Funds (June 2004); McKinsey Global Institute Household Wealth Model

forces will reduce the rate of domestic investment by more than it reduces saving. For example, if investment falls faster than savings because of reduced capital requirements to support a slower-growing labor force, then, all else equal, rates of return on domestic capital will likely fall. Moreover, it is unclear to what extent demographic change is factored into today's prices. Empirical analysis is inconclusive on the relative impacts of demographics on savings and investment, as is direct empirical analysis on the impact of demographic change on rates of financial asset appreciation (see Bosworth, 2004, for a review of existing research on this topic).

Cross-border capital flows unlikely to make up domestic shortfalls

Reductions in global savings suggest implications for the balance of international capital flows. Historically, Japan has been an important net supplier of capital to countries with low domestic savings, such as the US. Foreign countries have been willing to lend to the US and other deficit countries the funds necessary to finance their domestic demand. For example, the US has run current account deficits for the last 20 years (excluding the small Gulf

War-related surplus in 1991), while Japan has run large surpluses over the same period. Japan's current and projected demographically driven savings decline, however, calls into question the sustainability of such a paradigm. To the extent that reductions in household savings are reflected in national savings, Japan will no longer have the savings to continue such lending.¹³ Factoring in Europe's demographic situation, which is also pointing to declines in savings, an adjustment in global flows and prices will need to occur.

The nature of this adjustment is open to debate. Some believe that other foreign sources of capital will emerge, particularly China. A closer look at China reveals, however, that, even with a set of aggressive assumptions (about growth and savings levels), the Chinese economy will not be large enough to supply meaningful levels of capital to the developed world in the next two decades. Chinese urban households are currently far less wealthy than their Japanese and US counterparts (Exhibit 33) and, even if China maintained its string of unprecedented growth, it would still take over three decades to reach Japanese levels of GDP per capita (Exhibit 34). More importantly, for the world to tap into China's pool of savings, the Chinese government would need to liberalize capital controls. Finally, China would have to have enough savings left over after financing massive internal investment needs. The absence of a new large capital supplier will force countries to make difficult choices – such as to raise interest rates to attract scarce capital, to reduce borrowing, or to enact structural reform to achieve higher productivity growth.

NAVIGATING THE DEMOGRAPHIC TRANSITION

The findings discussed above point to a significant demographic pressure on financial wealth accumulation, which, if left unchecked, could have serious consequences for households, domestic economies, and the global economy.¹⁴ What can be done today to preempt such a situation? We have performed sensitivity analyses on key drivers of the country models and discuss the results in this section. Our analysis suggests that demographic pressures on wealth accumulation can be counteracted by other changes, but it will not be easy. Achieving higher rates of asset appreciation is the most effective change across

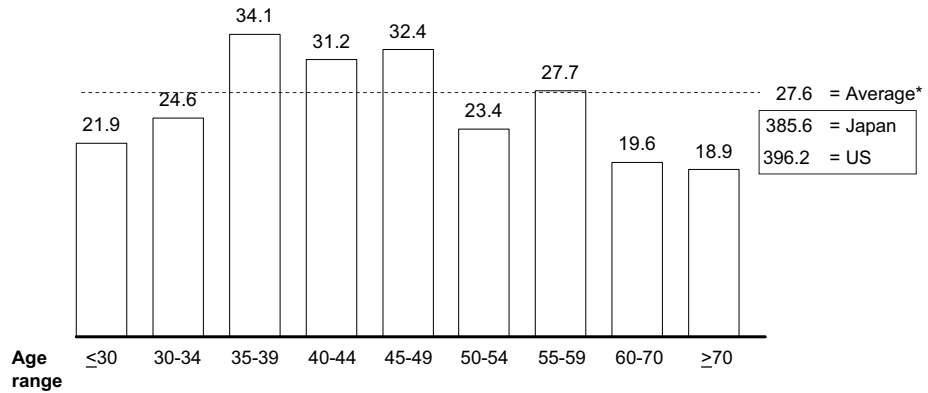
¹³ See in "Technical Notes, "Projections of the Japanese Current Account."

¹⁴ See country chapters for discussion on household and domestic economy implications.

Exhibit 33

AVERAGE AGE GROUP DISTRIBUTION OF ASSETS FOR URBAN HOUSEHOLDS IN CHINA 2002

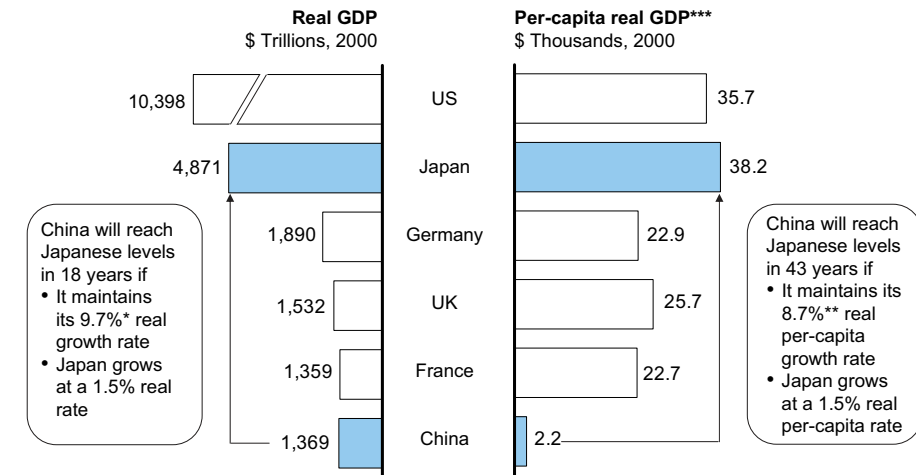
\$ Thousands



* Sample weighted; US and Japan are for 2001
Source: China Statistics Bureau; Survey of Consumer Finance, US; Family Expenditure Survey, Japan

Exhibit 34

REAL GDP AND REAL PER-CAPITA GDP OF MAJOR WORLD ECONOMIES 2003

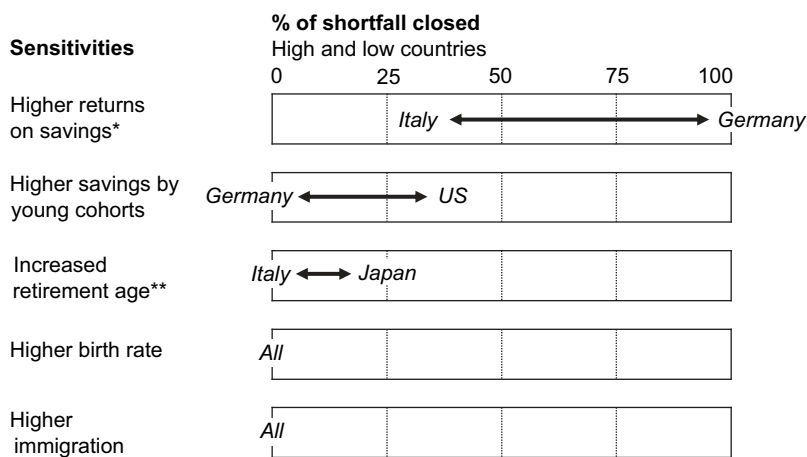


* Equals CAGR for real GDP in China, 1990 and 2003
** Equals CAGR for real per-capita GDP in China, 1990-2003; per-capita real GDP in 2003 for China is urban per-capita GDP, based on an estimate of the GDP for the top 660 cities in China
*** Not at PPP
Source: Chinese Statistical Abstract, 2004; Global Insight; MGI analysis

all countries, followed by increasing household saving. Directly changing demographics through changes in birth rates or immigration do not materially affect wealth accumulation over the 20-year period (Exhibit 35). These findings indicate the direction of appropriate policy and individual objectives to respond to the demographic challenge.

Exhibit 35

ADDRESSING THE WEALTH SHORTFALL



* Impact of a 1% increase in rate of financial asset appreciation
 ** Estimated by prolonging peak saving years by 5-10 years
 Source: McKinsey Global Institute Household Wealth Model; MGI analysis

Higher rates of asset appreciation is the most effective change. A key finding from the analysis is that the impact of demographics can be significantly mitigated by material increases in the rate of financial asset appreciation (FAA). For example, in Germany, if the rate of FAA increased from the historical average of -1.1 to 0 percent on average over the next two decades, household net financial wealth would remain on the historical trend line. In the US, the rate of return would need to be more than doubled to have a similar impact. In other countries with negative rates of financial asset appreciation, bringing the rate to 0 percent would significantly increase the NFW projections.

The high sensitivity to the rate of FAA comes from the fact that the rate impacts the stock of total financial assets in contrast to the flow of savings. Given that the stock of financial assets is so large in these developed economies, changes that have an impact on the stock are much more important than changes affecting the flow of savings.

Governments can encourage higher rates of financial asset appreciation by taking various steps including increasing economywide capital efficiency, encouraging more efficient intermediation within the financial sector, and supporting more diverse asset allocation decisions by households. Households can take a more proactive approach to achieving higher returns.

- **Increasing capital efficiency.** Making better use of resources is a key ingredient to higher FAA. Higher productivity leads to efficiency gains and earnings growth, which ultimately lead to higher FAA. Previous MGI research has articulated the key drivers of productivity improvement.¹⁵ Among the most important drivers are:
 - Increasing competition, particularly for protected and/or state-owned enterprises;
 - Encouraging innovation, protecting intellectual property, and the successful adoption of new technologies.
- **More efficient intermediation.** More efficient intermediation encourages higher returns by reducing the share of returns captured by the financial system and increasing the share captured by investors (e.g. reducing spreads between what financial intermediaries earn on their assets and pay on their liabilities). Furthermore, more transparent and liquid systems encourage managers to earn higher returns by exposing lower performers and facilitating quick and decisive investor reaction. Policymakers can improve financial sector efficiency by taking steps to
 - Encourage competition within the financial sector while maintaining appropriate checks and balances to create healthier balance sheets (e.g., in limiting non-performing loans);
 - Enhance legal protections and regulatory transparency (e.g., investor rights, dispute resolution and bankruptcy rules);
 - Reorganize inefficient sectors and institutions (e.g. postal systems).

¹⁵ See "The Economic Growth Potential," McKinsey Global Institute, 2000.

-
- **More diversified asset allocation.** Our research has shown that countries with more diverse asset allocation profiles experience higher rates of FAA. The US and UK had the highest percentage of assets in tradable securities, which carries with it higher risk and volatility but also higher rates of FAA. Increased diversification can be encouraged through
 - Increasing investor access to global opportunities by removing capital controls and other restrictions such as "foreign content restrictions" on retirement savings plans;
 - Creating programs to improve investor education;
 - Creating tax incentives to encourage a more diversified portfolio (e.g., tax breaks for investments in certain investment vehicles).

Changing saving behavior can partially mitigate demographic pressures.

Changes in household saving behavior can affect wealth accumulation, but the magnitude of changes in behavior has to be significant. We tested two potential approaches to changing saving behavior – prolonging peak savings and raising younger generations' savings.

- **Prolonging peak savings years has varying impact, but limited in most countries.** Higher household savings through extending peak income can impact the downward demographic pressure on savings. However, a key challenge to this change is determining the impact on consumption of increases in income. For the purposes of testing the impact, we kept income and consumption constant and prolonged the peak of the lifecycle savings curve by 5 years. A variety of policies could potentially lead to higher savings, such as increases in retirement age.

The impact of this change varies across countries consistent with the shape of the lifecycle savings curve. In Italy, for example, a relatively flat curve limits the impact, with the net financial wealth projection increasing from 0.9 to 1.0 percent, and the shortfall off trend decreasing by 2 percent. Japan, with its steep curve, experiences the most significant benefit, as its net financial wealth projection increases from -0.2 to 0.7 percent and its shortfall decreases by 24

percent. Therefore, the impact of policies that prolong peak savings is highly country-specific.

- **Raising younger generations' savings can have significant impact.**

As discussed earlier, younger generations are saving less. To test the impact of changes in this trend, in the US and Japan, we eliminated the consumption cohort effect for younger households, while allowing the income cohort effect to continue. This results in increased saving by younger cohorts. This type of behavior could be encouraged by policies designed to discourage or postpone consumption, such as encouraging higher proportions of non-cash or deferred compensation, "baby bond" initiatives such as those in the UK, and even imposing mandatory savings programs.

This scenario led to higher savings in both the US and Japan. In Japan, it led to an increase in the growth rate of net financial wealth from -0.2 to 0.8 percent, and closed the shortfall by 26 percent, while in the US, the impact was more dramatic, with an increase in growth rate from 1.6 to 2.4 percent and the shortfall closing by 30 percent. The conclusion from this analysis is that, while very difficult to implement, policies to reduce consumption can be a powerful driver in some countries to mitigate part of the impact from the demographic transition.

Changing demographics, through higher immigration and birth rates, does not materially affect net financial wealth accumulation in the short or medium term. Increasing birth rates is not effective in increasing net financial wealth over the next 20 years because higher birth rates do not produce prime savers for several decades. Increasing immigration, even at the highest levels projected by government statistics, is not large enough to change overall demographic structure, and thus does not materially impact net financial wealth accumulation.

- **Immigration has limited impact on the demographic pressure.**

While immigration is much discussed as a potential solution to aging, even the most aggressive immigration scenarios do not materially change a country's demographic structure over 20 years. In

Germany, household projections by age group were obtained by the Bundesbank, incorporating the most aggressive immigration scenarios (300,000 new immigrants per year, as opposed to 200,000 immigrants per year in the base case).

When the new immigration scenarios were added to the model, however, the results were insignificant, as they increased 2024 total net financial assets by 0.7 percent. The impact was negligible because the most aggressive immigration scenario added only 0.7 million households by 2024, an increase of only 2 percent. It is also worth noting that the weighted average age of the new immigrants is 33, and therefore the opportunity to increase the impact of immigration by adding even younger immigrants is limited. This process to test immigration was replicated in the other countries with similar results. The conclusion from this analysis is that while immigration does improve overall wealth accumulation, the size of the most aggressive policy estimates is not nearly large enough to impact the declining growth rate in household wealth accumulation.

- **Increasing birth rates is ineffective for raising 20-year financial wealth accumulation.** Adopting policies to increase birth rates is another frequently discussed solution to aging. However, given households typically reach their prime saving years between the ages of 30 to 50, the impact of higher birth rates on increasing savings (through more prime savers) will be delayed by several decades. Thus, while higher birth rates is clearly a strong long-term solution, it should not be viewed as an option to counteract the aging of the baby boomers.