

4. Germany: *Demographic Impact on Savings and Wealth – Storm Clouds Gathering*

SUMMARY OF FINDINGS

Over the next 20 years, demographic trends are expected to exert significant pressure on the growth of German household savings and net financial wealth (NFW) accumulation, with potentially substantial implications for economic growth. Our analysis suggests that in the absence of dramatic changes in population trends, savings behavior, or rates of financial asset appreciation, there will be no overall growth in annual real savings flows; indeed, savings flows will begin declining in 2015. As a result, expected real growth in household net financial wealth will drop by more than one-third, from 3.8 percent over the 1991-2003 period, to 2.4 percent through 2024. This declining growth would cause German household NFW to fall some 25 percent or €1.2 trillion¹ below what it would have been had the higher 1986-2003 growth rates persisted.²

Germany is about to experience an important demographic shift which will reduce the population's ability to support wealth accumulation. This change, consisting of baby boomers retiring and saving less, and a slow down in the growth rate of households, will result in a decline in the growth rate of NFW, with important implications for households and the overall economy.

1 Unless otherwise noted, all growth rates hereafter quoted in real terms; values are in 2000 constant euros.

2 In this study we focus on assessing 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 lifecycle 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 demographically driven projections.

For households, NFW accumulation is a good proxy for economic well-being, and a slower rate of wealth accumulation implies a reduction in future living standards. For the economy, there will be less household savings to support a fast-growing retiree population, and it will become more difficult to support domestic investment and sustain strong economic growth.

To navigate smoothly through this demographic transition, German households and their government will need to take actions to halt the decrease in saving and to improve the returns that households obtain on their portfolios. These objectives will be not easy to achieve and will require sustained coordinated efforts by the public and private sector. Moreover, our work in Japan, the US and other European countries indicates that these economies are facing similar downward demographic pressures on NFW accumulation. As a result, most of these countries will also be coping with a domestic savings shortfall, potentially limiting their ability to be net exporters of capital.³

In this chapter, we explore these issues in greater detail, with a particular focus on the following dimensions:

- The historical evolution of household NFW accumulation;
- The slowdown in household formation and changes in household behavior, which will drive changes in household NFW;
- The impact of demographic changes on household NFW accumulation over the next 20 years;
- Changes that could mitigate the impact of demographic forces, and resulting potential policy directions.

³ As Europe integrates and grows to encompass younger, faster-growing economies to the east, Germany, as an EU and Eurozone member, may benefit from positive Europe-wide trends/effects, including the positive demographic impact of adding younger countries to the European economy, potentially higher overall growth and higher returns on Euro-denominated financial assets, and easier access to regional savings pools.

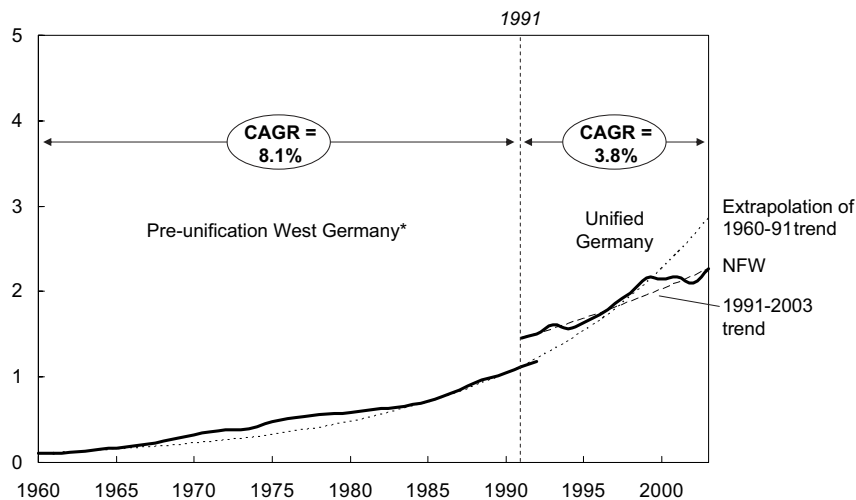
HISTORICAL EVOLUTION OF HOUSEHOLD NET FINANCIAL WEALTH

German household NFW accumulation went through two distinct phases during the past 40 years. Prior to 1991, the former West Germany was undergoing rapid economic development and as a result, household NFW accumulation was robust and grew steadily at a very healthy rate of 8.1 percent. Unification has transformed the German economic landscape, as millions of less-wealthy East German households have been absorbed into the economy. Since 1991, the NFW growth rate dropped to an average of 3.8 percent (Exhibit 1).

Exhibit 1

GERMAN HOUSEHOLD NET FINANCIAL WEALTH (NFW) 1960-2003

€ Trillions, 2000



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

Basic facts on net financial wealth accumulation

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.

The *Net acquisition of financial assets* – purchases less sales – is largely driven by contemporaneous savings out of income.⁴ 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.⁵ 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.

The stock of financial assets less outstanding liabilities equals the net financial wealth of households (NFW). We focus on measuring the demographic impact on NFW because metric enables us to build our understanding of the demographic impact on the global capital market. It also helps us understand the impact on households because NFW is a good proxy for overall economic well being (see Global Chapter for discussion).

The change in NFW accumulation during the high growth, pre-unification period (prior to 1991) and the post-unification slowdown (1991-2003) can be further analyzed by considering the evolution of financial assets and liabilities.

Household financial assets

Financial asset growth in Germany declined in the post-unification period because of deteriorating savings and low rates of FAA. Growth in household

4 See "Technical Note" 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.

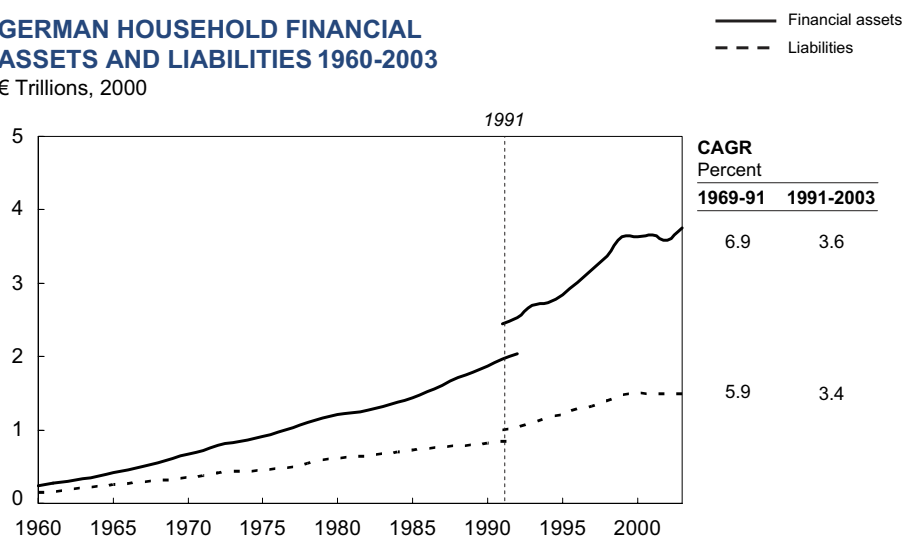
5 Realized capital gains are not counted in the national accounts as savings, see Reinsdorf (2004). We capture the impact of realized capital gains on purchases of new assets because asset accumulation is driven by the net acquisition of financial assets as measured by the flow of funds accounts (see "Technical Note" for details).

financial assets has slowed from 6.9 percent pre-unification (1960-91) to 3.6 percent since (Exhibit 2). The post-unification period can be further segmented into a "higher growth phase" from 1991 to 1999, when financial assets, fueled by an equity bubble, grew at 5.1 percent, and a "stagnant phase" from 1999 to 2003, when financial assets grew at 0.9 percent.

Exhibit 2

GERMAN HOUSEHOLD FINANCIAL ASSETS AND LIABILITIES 1960-2003

€ Trillions, 2000



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

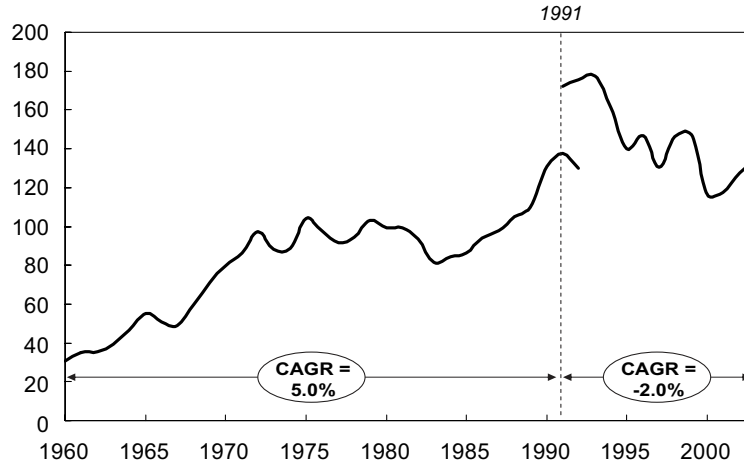
Savings drives financial asset growth. The primary driver of financial asset acquisition by German households has been their historically strong savings behavior. When savings weakened, acquisition of financial assets dropped. German households exhibited a steady decline in their savings in the 1990s, with the savings rate declining from a peak of 13 percent in 1991 to 9.7 percent in 2000. Lower net acquisition of financial assets is one of the ramifications of this change in savings behavior; net acquisitions were declining at a 2 percent rate in the period 1991-2003 (Exhibit 3).

- **High savings rate in West Germany prior to unification.** The robust growth of financial assets during 1960-91 was primarily driven by combination of high savings rates of German households and strong economic growth in West Germany, which boosted income growth. As German households allocated their financial assets mostly in low risk

Exhibit 3

**NET ACQUISITION OF FINANCIAL ASSETS
BY GERMAN HOUSEHOLDS 1960-2003**

€ Billions, 2000



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

assets – deposits comprised almost 50 percent of total financial assets and were growing at a strong 3.9 percent in this period (Exhibit 4) – little or no growth in the stock of financial assets occurred through asset appreciation.

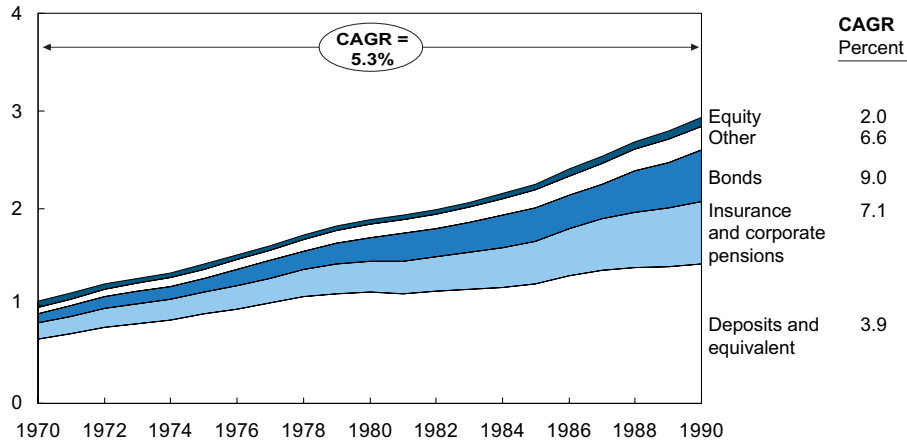
- **Integration of less wealthy East German households.** In contrast to the previous period, during the 1991-2003 period, the ability of households to save and their willingness to do so declined considerably, leading to the decline in savings flows. While deposits still constitute the largest share of financial assets, their growth slowed significantly to 1.5 percent (Exhibit 5)

Financial assets have not appreciated. Given their conservative portfolio allocation, it is not surprising that German households have seen low real gains on their stock of financial assets. Historical real rates of FAA in Germany had been negative in pre-unification Germany. Except within the technology, media, and telecommunications bubbles, these rates have remained negative between 1991 and 2003, and averaged -1.1 percent (Exhibit 6). To put this in perspective, the average rate of FAA was the highest in the US, where it

Exhibit 4

GERMAN HOUSEHOLD FINANCIAL ASSET ALLOCATION 1970-90

DEM Trillions, 1990

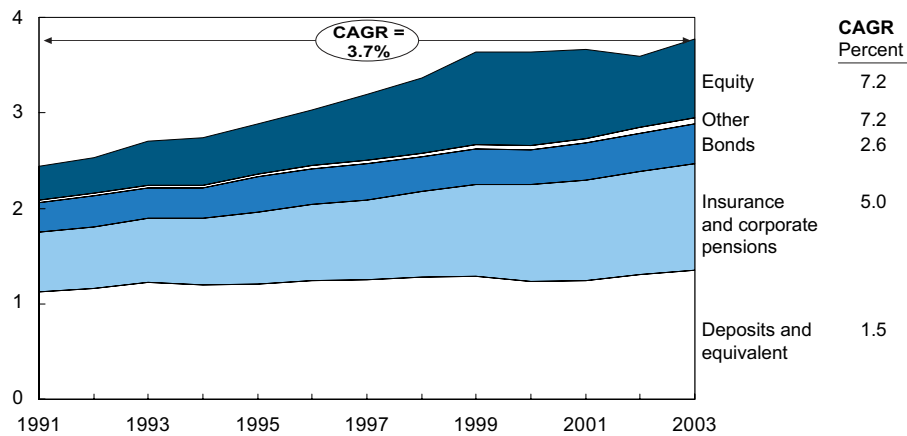


Source: Deutsche Bundesbank

Exhibit 5

GERMAN HOUSEHOLD FINANCIAL ASSET ALLOCATION 1991-2003

€ Trillions, 2000

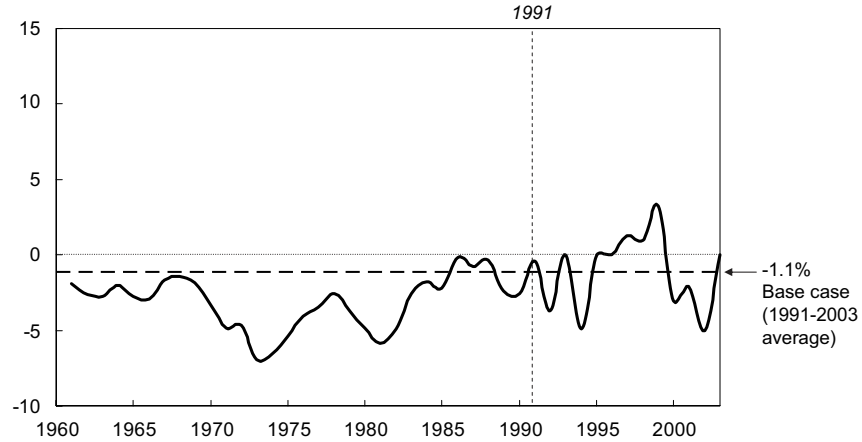


Source: Deutsche Bundesbank

Exhibit 6

REAL RATE OF GERMAN HOUSEHOLD FINANCIAL ASSET APPRECIATION* 1960-2003

Percent



* Calculated on the total stock of financial assets and acquisition of net financial assets
Source: Deutsche Bundesbank; McKinsey Global Institute Household Financial Wealth Model

averaged 0.96 percent between 1975 and 2003. For Japan and Italy, however, rates of FAA were negative and lower than in Germany.

Low rates of FAA can be explained by households' conservative financial asset allocation, inflation rates, and equity market performance. An important characteristic of German household asset allocation is the large proportion of deposits, deposit equivalents, and bonds (at 47 percent in 2003 as compared to 21 percent in the US) and the smaller share of equities in the overall financial asset portfolio.

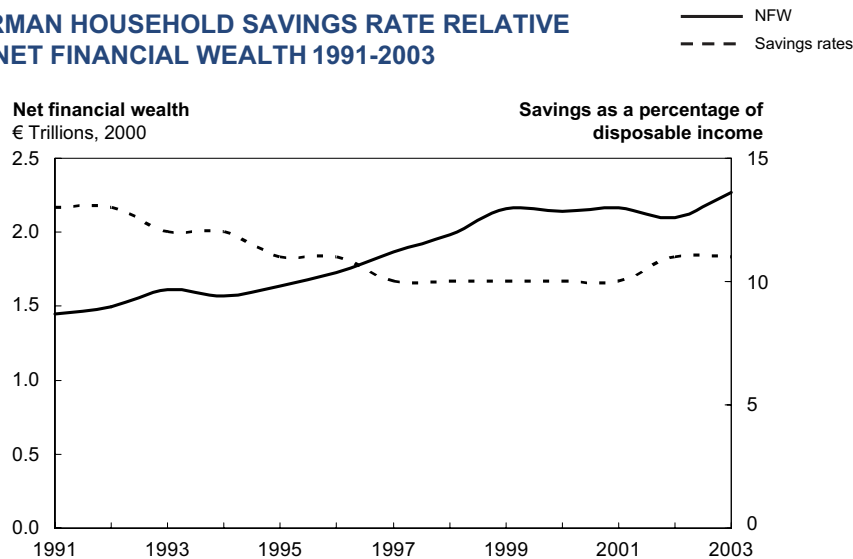
Moderate wealth effect reduced household savings. Numerous studies have established that households adapt their spending based on changes in their financial and real estate wealth. The gradual decline in the flow of savings and the declining savings rates in the nineties are correlated with the steady increase in household NFW, which can be attributed to a mild "wealth effect" (Exhibit 7).

Household liabilities

As in the case of financial assets, household liabilities grew at a slower rate in

Exhibit 7

GERMAN HOUSEHOLD SAVINGS RATE RELATIVE TO NET FINANCIAL WEALTH 1991-2003



Source: Deutsche Bundesbank; McKinsey Global Institute Household Financial Wealth Model

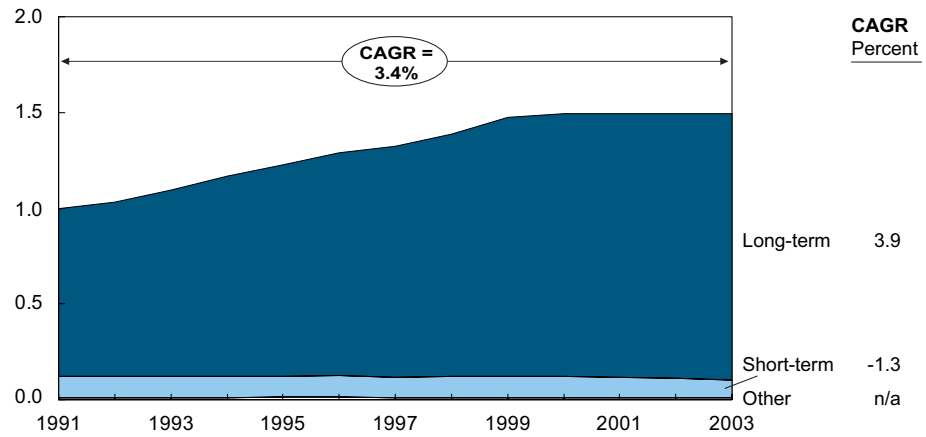
the post-unification era and experienced a similar slowdown in growth from 2000 onward.

- Relative to financial assets, liabilities experienced a relatively milder decline in growth rate, from 5.9 percent during 1960-91 to 3.4 percent in the 1991-2003 period (Exhibit 2).
- More than 90 percent of German household borrowing is in the form of long-term loans, which have grown at 3.9 percent from 1991 to 2003. Short-term loans have actually declined over the same period at -1.3 percent CAGR. Mortgages were the largest and fastest-growing component of the long-term loans, with mortgage loans growing by 4.2 percent and increasing their share of total liabilities from 60 percent in 1991 to 66 percent in 2003 (Exhibits 8 and 9).
- Liabilities accumulation also began to slow in 2000, consistent with the slowdown in financial assets. The slowdown in liabilities was driven mostly by slowdowns in mortgages (Exhibit 9).

Exhibit 8

COMPOSITION OF GERMAN HOUSEHOLD LIABILITIES BY LOAN DURATION 1991-2003

€ Trillions, 2000

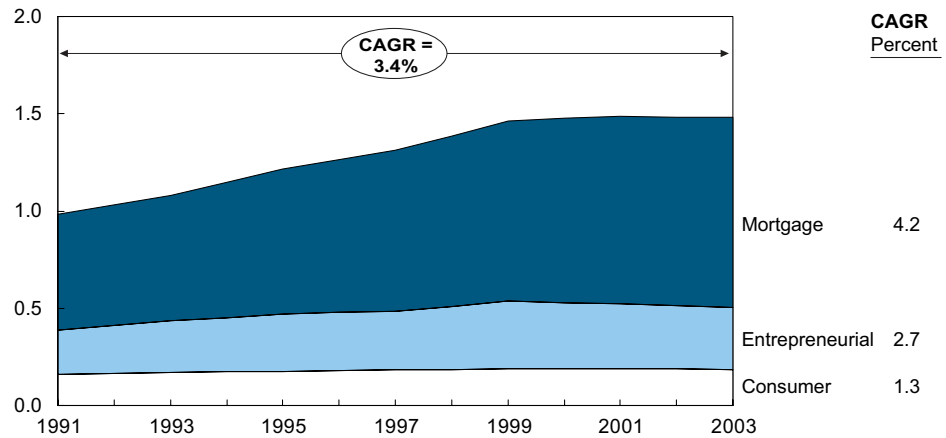


Source: Deutsche Bundesbank

Exhibit 9

COMPOSITION OF GERMAN HOUSEHOLD LIABILITIES BY LOAN TYPE 1991-2003

€ Trillions, 2000

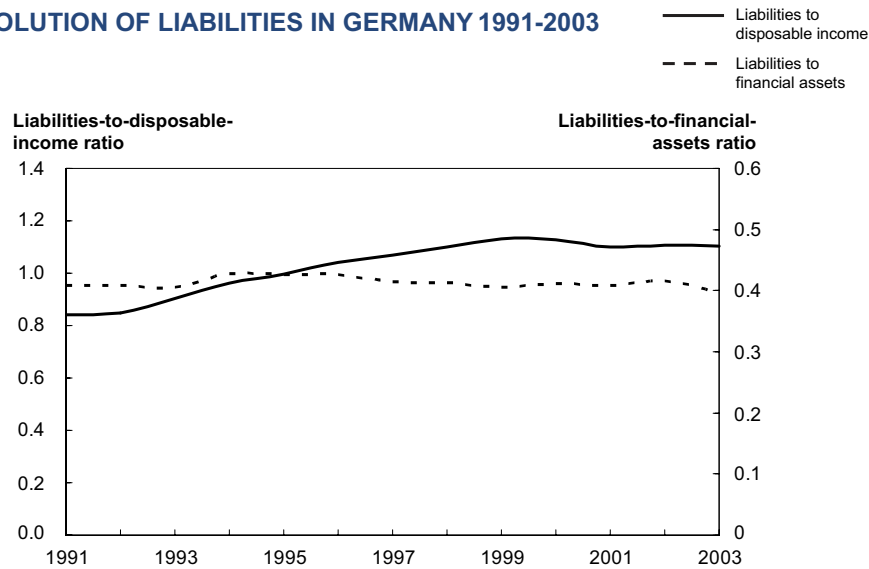


Source: Deutsche Bundesbank

The liabilities-to-income ratio grew faster than the liabilities-to-assets ratio in the 1991-2003 period (Exhibit 10). The evolution of these indebtedness ratios implies that German households are increasing their willingness to take on debt.

Exhibit 10

EVOLUTION OF LIABILITIES IN GERMANY 1991-2003



Source: Deutsche Bundesbank; McKinsey Global Institute Household Financial Wealth Model

KEY DEMOGRAPHIC DRIVERS OF CHANGE IN HOUSEHOLD NET FINANCIAL WEALTH

Germany's demographic structure is now passing through an important inflection point: its baby boomers are approaching retirement age and this will have an increasingly negative impact on NFW accumulation in the years ahead. This demographic pressure comes from two sources.

- **Households available to create wealth will be limited** by slowing population growth and reduced household formation
- **Financial asset accumulation will slow** because the falling prime saver ratio will lower average savings per household and limit the pool of money that can be allocated to acquiring financial assets

Slowing population growth will reduce household formation

Falling birth rates will cause the German population to start declining in 2015. The most impacted population age group will be those under 25, a group that has been declining since 1973. The population over 55, on the other hand, will grow between 2003 and 2024. The combination of these two factors will cause a lag between the start of the population decline and the time when we will observe a decline in the number of households.

Birth rates are falling. Between 1960 and 2003 birth rates have fallen by more than half while at the same time death rates remained relatively stable. The resulting decline in the young population is a key driver of the slowing growth in number of households.

Adult population is increasing, with total population declining. While the total German population will begin to decline within the next two decades, the adult population (defined as people above 17) will still increase, with the group 55 and over growing the most at 1.3 percent per year. With an older population characterized by a higher household-to-population ratio than any other age group, the decline in the number of households will lag the decline in total population.

Household formation is reduced. Historically in pre-unification West Germany, the growth in the number of households was at an already low 1.3 percent per annum over the 1960-90 period. With the integration of East Germany in 1991, the combined German household growth rate fell by more than half, to 0.6 percent, and is expected to further slow to 0.3 percent (Exhibit 11).

Lower rates of household formation will constrain aggregate wealth accumulation since there will be fewer households earning income and generating savings.

Financial asset accumulation will be slowed by lower savings per household

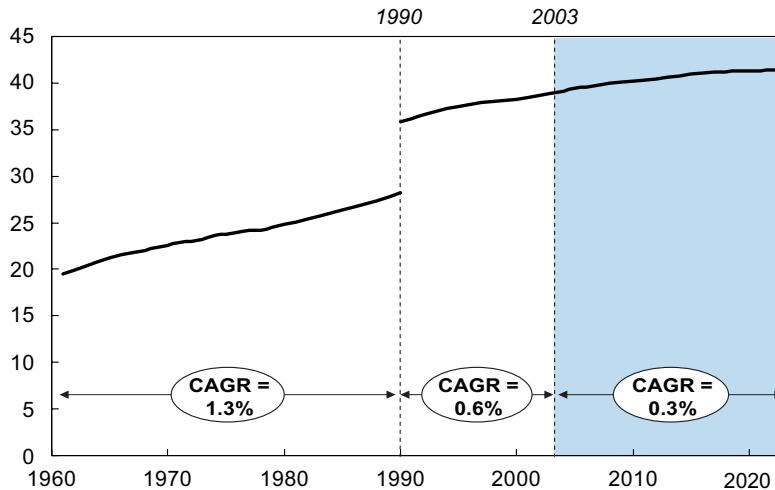
Average savings per household will be reduced going forward because there will be fewer households in their prime saving years.

Prime saver ratio is declining. The prime saver ratio measures the number of households in their peak savings years (defined as the 20-year age bracket with

Exhibit 11

NUMBER OF GERMAN HOUSEHOLDS 1960-2024

Millions



Source: Statistisches Bundesamt; McKinsey Global Institute Household Financial Wealth Model

maximum household savings) relative to the number of elderly households (who save at lower rates or dissave) and therefore, captures the lifecycle effects caused by aging. The ratio of German prime savers to elderly households has just passed an inflection point: after slightly increasing since unification, the prime saver ratio will consistently decline over the next two decades, reaching 0.54 by 2024. This decline will impact the flow of savings from German households as older households save less.

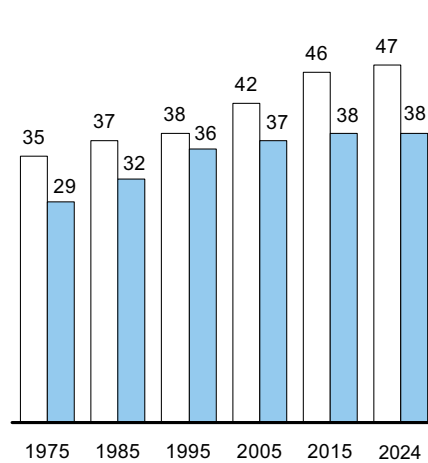
- **The German population is aging rapidly.** With a median age of 42 in 2005, the Germans are already significantly older than the US population, with a median age of 37. Germany is also aging faster than the US, with the German median age shifting to 47 by 2024, while the US median age remains just 38 (Exhibit 12). At the same time, the number of individuals in Germany aged 65 or more will rise from 18 percent in 2003 to 23 percent by 2024.
- **Population aging impacts wealth accumulation through lifecycle savings behavior.** Germany has a traditional "hump-shaped" lifecycle

Exhibit 12

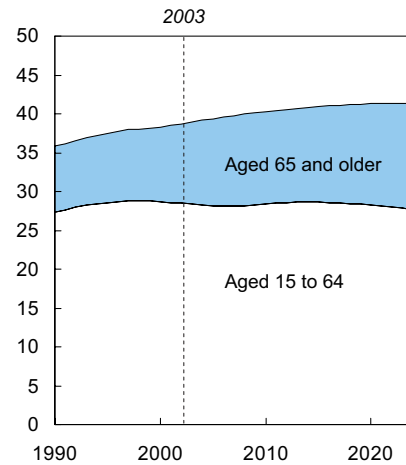
POPULATION AGING TRENDS

Median age of population in Germany and the US 1975-2024
Years

Germany
US



Age of head of German household 1990-2024
Millions of households



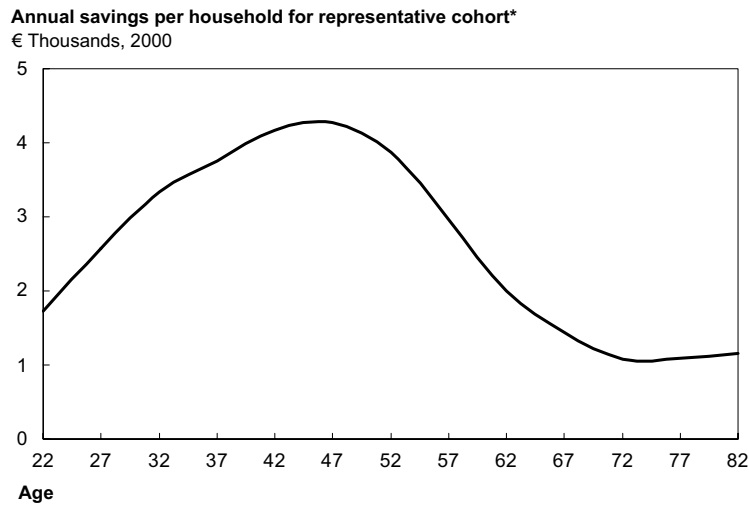
Source: Statistisches Bundesamt; UN World Population Prospects; McKinsey Global Institute Household Financial Wealth Model

profile. The German household lifecycle savings curve is steeply inclined, reaches a peak in the late 40s, and then rapidly slopes down in the late fifties and retirement years. With income peaking at age 54 and the savings rate hitting the highest point earlier at 41, an average German household experiences peak savings around ages 45-49. This relatively early age for peak savings magnifies the impact of an aging population since the decline in savings occurs at an earlier age than in other countries. Therefore, as the German population ages, it will experience a "lifecycle effect" on savings earlier than in other countries that have peak savings at later ages (Exhibit 13).

While population aging will affect German savings and NFW accumulation in the next two decades, the impact may be appreciably larger after 2024 because of the impending sharp decline in population (Exhibit 14).

Exhibit 13

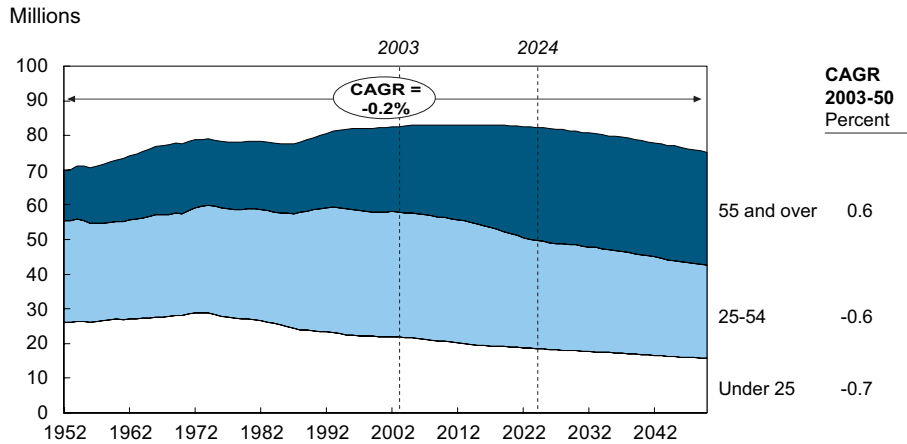
GERMAN LIFECYCLE SAVINGS CURVE



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

Exhibit 14

GERMAN POPULATION BY AGE GROUP 1952-2050



Source: Statistisches Bundesamt Deutschland

DEMOGRAPHIC IMPACT ON HOUSEHOLD NET FINANCIAL WEALTH GOING FORWARD

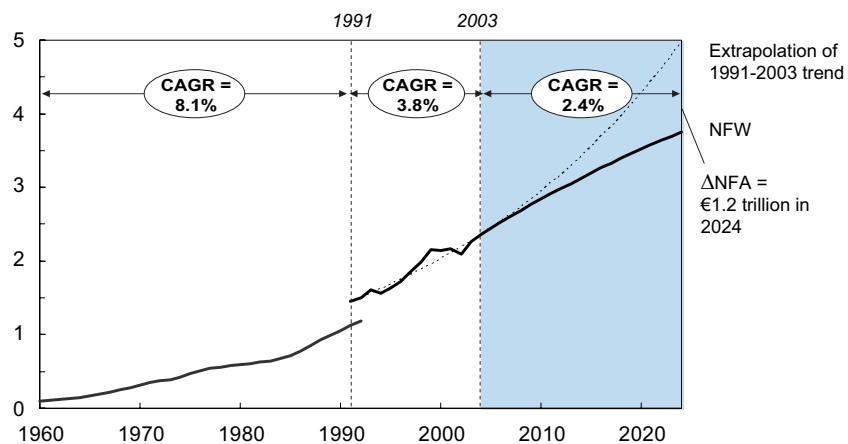
The preceding discussion has set the historical context, and outlined the demographic drivers of household behavior and how they impact savings and NFW accumulation. This section describes the aggregate implications of this microeconomic behavior.

Growth in German NFW will decline. Demographic changes in Germany add up to a stagnating picture for savings and slowing NFW accumulation over the next two decades. With a declining prime saver ratio, Germany is beginning to face a demographic headwind. With declining growth in financial assets and liabilities, growth in German NFW will fall to 2.4 percent annually from 2003 through 2024, ending up some 25 percent or 1.2 trillion below what it would be had historical growth rates persisted (Exhibit 15).

Exhibit 15

GERMAN HOUSEHOLD NET FINANCIAL WEALTH 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

The slowing growth of German NFW is primarily driven by lower growth in financial assets. This, in turn, is fueled by a demographically-driven stagnation of savings flows.

Projected financial assets and liabilities

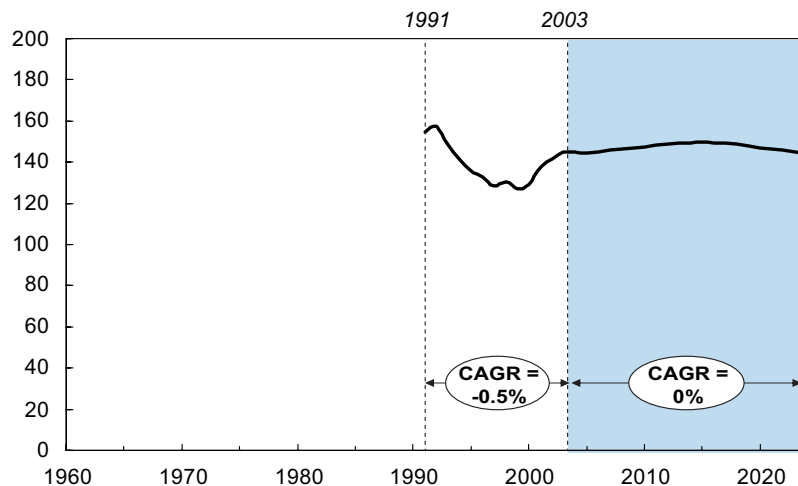
A falling prime saver ratio and slowing household growth will result in a stagnation of savings flows and will drive declines in the rate of financial asset accumulation.

- **Household savings will stagnate.** With the gradual decline in the prime saver ratio, aggregate savings is expected to grow slowly until 2015 and steadily decline afterwards. This will result in a stagnant overall growth rate of 0.0 percent over the next two decades (Exhibit 16).

Exhibit 16

ANNUAL SAVINGS OF GERMAN HOUSEHOLDS 1991-2024

€ Billions, 2000



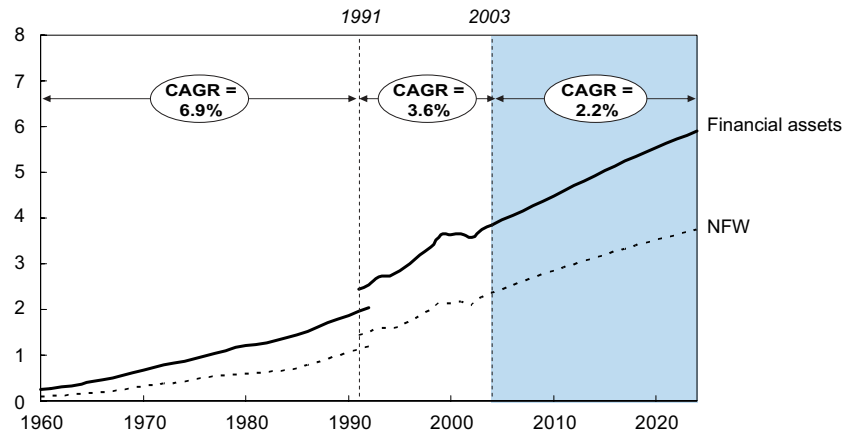
Source: Deutsche Bundesbank; McKinsey Global Institute Household Financial Wealth Model

- **Financial asset growth will decline.** From 2005 onwards, the demographic pressure in Germany will push the growth rate of financial asset accumulation below historical trends. Our simulation implies that German household financial assets will grow in the next two decades at a slower rate, dropping from 3.6 percent over the 1991-2003 period down to 2.2 percent over the next two decades (Exhibit 17).

Exhibit 17

GERMAN HOUSEHOLD FINANCIAL ASSETS 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

- **Growth of liabilities will slow down.** Overall liabilities are projected to grow at 1.8 percent (Exhibit 18). While the liability-to-income ratio will continue increasing up to 1.5 in 2024, the liability-to-assets ratio will remain fairly constant and slightly lower than in the historical period (Exhibit 19).⁶

NAVIGATING THE DEMOGRAPHIC TRANSITION

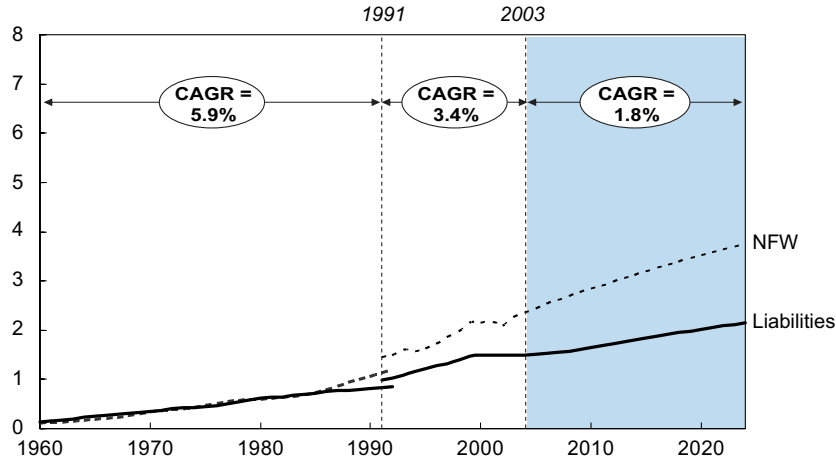
Our baseline projection for Germany shows that, in the absence of dramatic changes in population trends, savings behavior, or rates of financial asset appreciation, the demographic pressure will cause reductions in the growth rate of NFW. Depending on how the economy responds, there may be a number of downside risks to the economy as a whole. For instance, lower savings could imply less accumulation of capital, less growth, and less real domestic income creation. This slowdown would, in turn, reduce corporate earnings and

⁶ In projecting future liabilities growth, we therefore assume a German liabilities-to-income ratio growing at historical trend. With the US benchmark liability-to-income ratio currently at approximately 1.2, our base case makes for a good initial scenario. Our assumption on growth of liabilities-to-income ratio at historical trend will bring this ratio to 1.5 in 2024, which is within the range of the US benchmark. The liabilities to financial asset ratio remains stable.

Exhibit 18

GERMAN HOUSEHOLD LIABILITIES 1960-2024

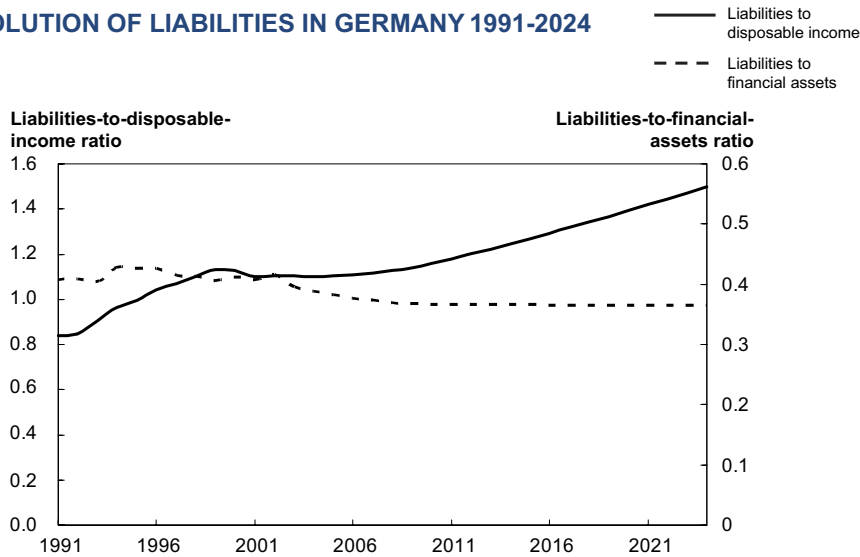
€ Trillions, 2000



Note: Liabilities-to-income ratio growing at historical trend and liabilities to financial assets ratio slightly declining in the projection period; estimated for the former West Germany between 1960 and 1991
 Source: Deutsche Bundesbank; McKinsey Global Institute Household Financial Wealth Model

Exhibit 19

EVOLUTION OF LIABILITIES IN GERMANY 1991-2024



Source: Deutsche Bundesbank; McKinsey Global Institute Household Financial Wealth Model

government tax revenues, at the same time when Germany will be grappling with fast-rising health care and pension costs. This could inflate government budget deficits, increasing the risk of a rise in real interest rates, the crowding out of private-sector borrowers and further declines in investment.

Our analysis suggests that the household growth rate of NFW will decline and will considerably depart from historical trends. While there are no easy answers to how to effectively mitigate this slow down, there are a number of changes that could potentially counteract the demographic pressure on NFW accumulation. German households and their government will need to take action to increase household savings, reduce government borrowing, and improve rates of financial asset appreciation. These objectives will require coordinated efforts by the public and private sector, sustained over the foreseeable future.

In this section we use sensitivity analysis to test whether changes in the key drivers of our model can meaningfully alter our projections. Our objective is to isolate the high impact drivers that could suggest changes in future policy directions. The results of this exercise are three-fold:

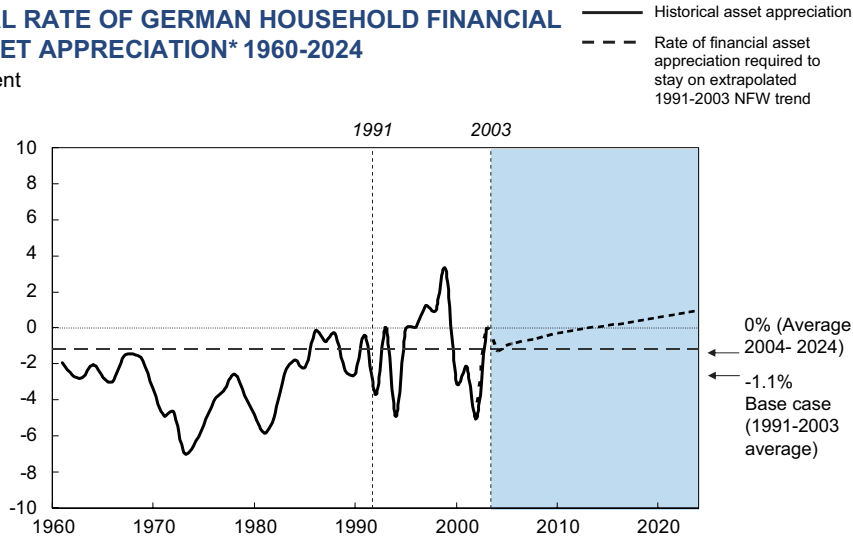
- Raising rates of financial asset appreciation would have a significant impact on NFW accumulation and have the potential to fully counterbalance demographic pressure;
- Policies that change household behavior and *substantially* increase savings could help partially relieve the demographic pressure on NFW accumulation;
- Changes in immigration and birth rates would have little if any impact on NFW accumulation over the next 20 years.

Higher rates of FAA can fully counterbalance demographic pressure. NFW accumulation would be stronger if households were able to achieve higher rates of financial asset appreciation in the future. Our current baseline assumption of -1.1 percent reflects the historical average for the period 1991 through 2003. Increasing the average rate of financial asset appreciation to 0 percent in the forecast period (Exhibit 20) changes our baseline growth rate of 2.4 percent to 3.8 percent – the rate at which NFW accumulated historically – and fully offsets the demographic pressure (Exhibit 21).

Exhibit 20

REAL RATE OF GERMAN HOUSEHOLD FINANCIAL ASSET APPRECIATION* 1960-2024

Percent

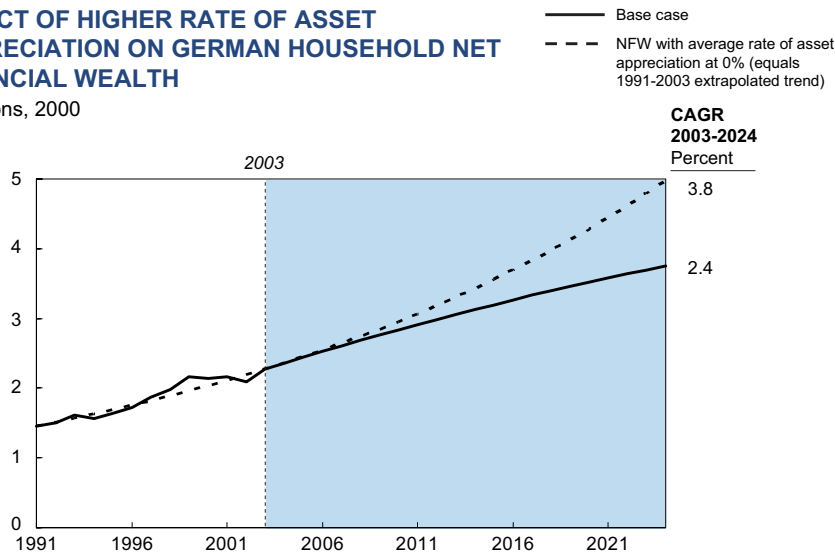


* Calculated on the total stock of financial assets and acquisition of net financial assets
 Note: Estimated for the former West Germany between 1960 and 1991
 Source: Deutsche Bundesbank; McKinsey Global Institute Household Financial Wealth Model

Exhibit 21

IMPACT OF HIGHER RATE OF ASSET APPRECIATION ON GERMAN HOUSEHOLD NET FINANCIAL WEALTH

€ Trillions, 2000



Source: Statistisches Bundesamt Deutschland; McKinsey Global Institute Household Financial Wealth Model

Working off such a large stock of financial assets, the rate of FAA is clearly a high-impact driver of asset accumulation, but difficult to influence. Given that the German market is not as efficient as its US counterpart, and German households historically allocated their financial assets in low-risk, low-return products, an opportunity exists to encourage higher rates of FAA through changes to the financial system and household behavior. (See chapter 1 for a discussion of possible methods to increase rate of FAA.)

Extending peak saving years can fuel increase of NFW. The simulation outcome is moderately sensitive to drastic changes in the shape of the lifecycle savings curve. Prolonging the peak income and saving years of the households by 10 years (Exhibit 22) results in a moderate increase in NFW accumulation (leading to a rate of accumulation of 3 percent) and is not sufficient by itself to fully counterbalance the demographic pressure (Exhibit 23). This sensitivity leads us to believe that changes to the retirement age and other actions that could affect household lifecycle savings behavior, while working in the positive direction to improve the savings flow and NFW accumulation, will not be sufficient to fully counterbalance demographic pressure.

Changing demographics, through higher immigration and birth rates, does not materially impact 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 affect net financial wealth accumulation.

- **Increased immigration has negligible effect on population trends.**

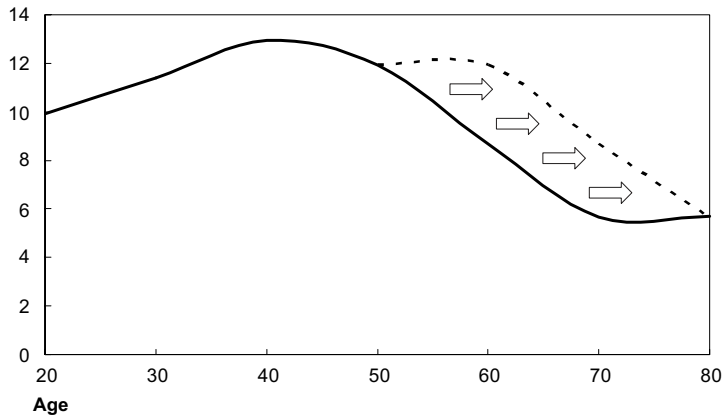
Given that a slowdown in household formation is an important demographic force in the projection period, we tested the impact of increases in immigration. Assuming a higher rate of immigration only marginally increases the number of households participating in wealth creation and has marginal impact on aggregate saving and, ultimately, on the rate of financial asset accumulation. An increase in net immigration by 100,000 people per annum (an additional 2 million people over the next two decades) corresponds to an extra 700,000 households (1.6 percent more households than in the base

Exhibit 22

SENSITIVITY SCENARIOS – IMPACT OF LARGE AND RAPID CHANGE IN SAVINGS BEHAVIOR ON GERMAN HOUSEHOLD SAVINGS RATES*

Percent of disposable income

- Baseline scenario
- - - Scenario with assumed shift in savings behavior



* Representative cohort; not calibrated to the national account levels; roughly corresponds to gradual prolonging peak saving period of the household life cycle by 10 years

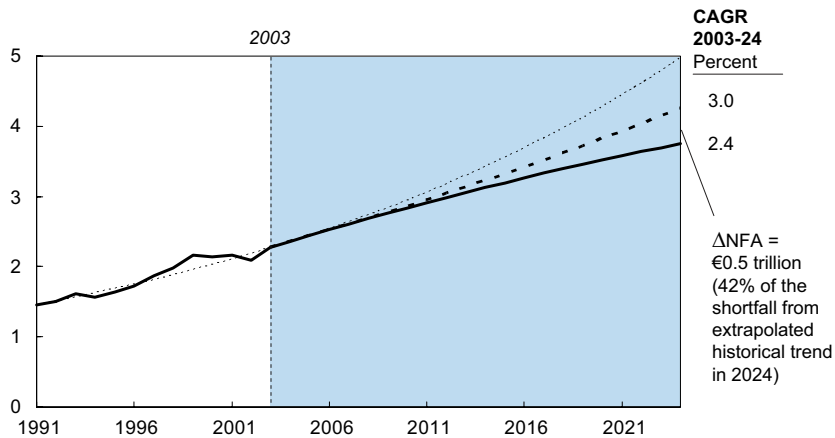
Source: Börsch-Supan; McKinsey Global Institute Household Financial Wealth Model

Exhibit 23

IMPACT OF SAVINGS BEHAVIOR SHIFT ON GERMAN HOUSEHOLD NET FINANCIAL WEALTH

€ Trillions, 2000

- Base case
- - - NFW with savings behavior shift
- Extrapolation of 1991-2003 trend



Source: Statistisches Bundesamt; McKinsey Global Institute Household Financial Wealth Model

case) by 2024. This increases the rate of NFW accumulation by 0.7 percent relative to the base case, which is negligible (exhibits 24-25).

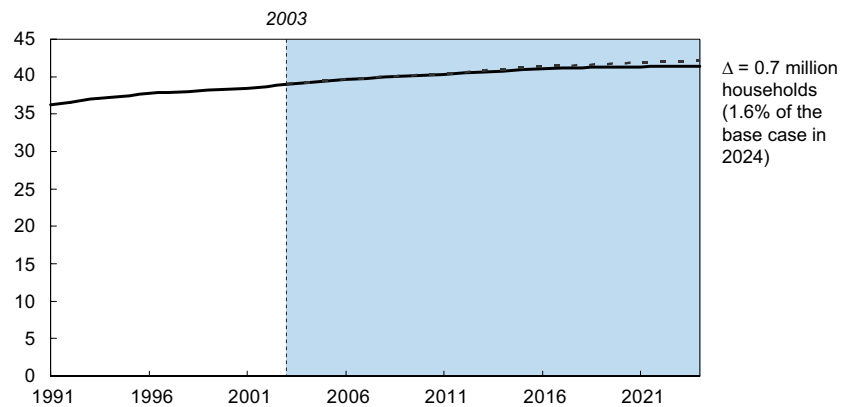
- **Increasing birth rates is ineffective for raising 20-year net financial wealth accumulation.** Adopting policies to increase birth rates is another frequently discussed solution to aging. However, given households typically reach their prime saving years between the ages of 35 and 54 in Germany, the impact of higher birth rates on increasing savings (through more prime savers) will be delayed by several decades. Thus, while higher birth rates could provide a long term solution, it does not address the impact of the aging baby boomers on NFW accumulation over the next 20 years.

Exhibit 24

SENSITIVITY SCENARIOS – IMPACT OF INCREASED IMMIGRATION ON NUMBER OF GERMAN HOUSEHOLDS

Millions

— Immigration at 200,000 per annum (base case)
- - - Immigration at 300,000 per annum (aggressive scenario*)

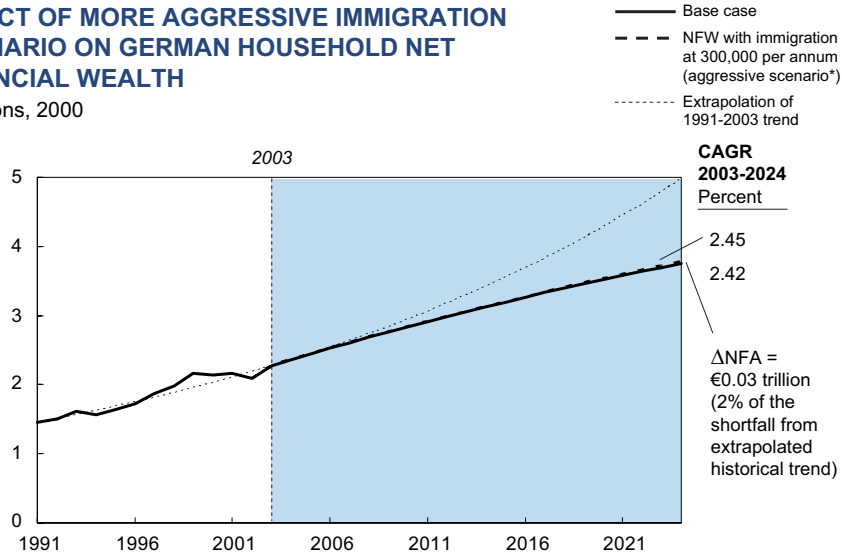


* Most aggressive variant of the three migration variants considered by German Federal Statistical Office
Source: Statistisches Bundesamt Deutschland; McKinsey Global Institute Household Financial Wealth Model

Exhibit 25

IMPACT OF MORE AGGRESSIVE IMMIGRATION SCENARIO ON GERMAN HOUSEHOLD NET FINANCIAL WEALTH

€ Trillions, 2000



* Most aggressive variant of the three migration variants considered by German Federal Statistical Office
Source: Statistisches Bundesamt; McKinsey Global Institute Household Financial Wealth Model