

Global Balance Sheet

The future of wealth and growth hangs in the balance

Authors

Jan Mischke
Olivia White
Eckart Windhagen
Jonathan Woetzel
Michael Birshan
Sven Smit
Arvind Govindarajan
Szabolcs Kemeny

Editor

Janet Bush



McKinsey Global Institute

The McKinsey Global Institute was established in 1990. Our mission is to provide a fact base to aid decision making on the economic and business issues most critical to the world's companies and policy leaders. We benefit from the full range of McKinsey's regional, sectoral, and functional knowledge, skills, and expertise, but editorial direction and decisions are solely the responsibility of MGI directors and partners.

Our research is currently grouped into five major themes:

- Productivity and prosperity: Creating and harnessing the world's assets most productively
- Resources of the world: Building, powering, and feeding the world sustainably
- Human potential: Maximizing and achieving the potential of human talent
- Global connections: Exploring how flows of goods, people, and ideas shape economies
- Technologies and markets of the future: Discussing the next big arenas of value and competition

We aim for independent and fact-based research. None of our work is commissioned or funded by any business, government, or other institution; we share our results publicly free of charge; and we are entirely funded by the partners of McKinsey. While we engage multiple distinguished external advisers to contribute to our work, the analyses presented in our publications are MGI's alone, and any errors are our own.

You can find out more about MGI and our research at www.mckinsey.com/mgi.

MGI Directors

Sven Smit (chair)

Chris Bradley

Kweilin Ellingrud

Marco Piccitto

Olivia White

Jonathan Woetzel

MGI Partners

Michael Chui

Mekala Krishnan

Anu Madgavkar

Jan Mischke

Jeongmin Seong

Tilman Tacke

Contents

At a glance	iv
Introduction	1
Two decades of growing ‘paper wealth’ but slow economic growth	6
Are the forces that propelled global balance sheet growth shifting?	14
Four scenarios cover the range of plausible economic outcomes to 2030	20
Working for accelerated productivity, but preparing for less favorable outcomes	30
Appendix	34
Acknowledgments	40

At a glance

- **Asset price inflation over the past two decades has created about \$160 trillion in “paper wealth.”** Economic growth was sluggish, inequality rose, and every \$1.00 in investment generated \$1.90 in debt.
- **Current tremors in the financial system may signal a shift in how the world borrows, lends, and accrues value, with a wide range of plausible long-term scenarios.** We model four economic scenarios—return to past era, higher for longer, balance sheet reset, and productivity acceleration—to understand what the future might hold for the world’s balance sheet.
- **Three of the potential scenarios are far from ideal—two are “pick your poison” and the third a double dose.** Volatility may prove temporary and balance sheet expansion may resume as savings bid up the price of existing assets once again rather than flowing to productive investments. Or high inflation and interest rates could persist, resembling the US economy after the 1970s oil shock. The worst case would look more like Japan after its real estate and equity bubble burst in the 1990s, with drawn-out deleveraging and a sharp contraction in asset prices. For instance, US equities and real estate values might drop by more than 30 percent between now and 2030.
- **By far the most desirable outcome is to accelerate productivity so that economic growth catches up with the balance sheet.** Only this scenario combines strong growth in income, wealth, and balance sheet health.
- **Decision makers will need the imagination to prepare for the full range of scenarios while maintaining steadfast determination to achieve the best.** Accelerating productivity growth will require countering headwinds, such as aging or more complex supply chains, through well-directed investment to seize the power of both technology and human capital. The die is not yet cast.

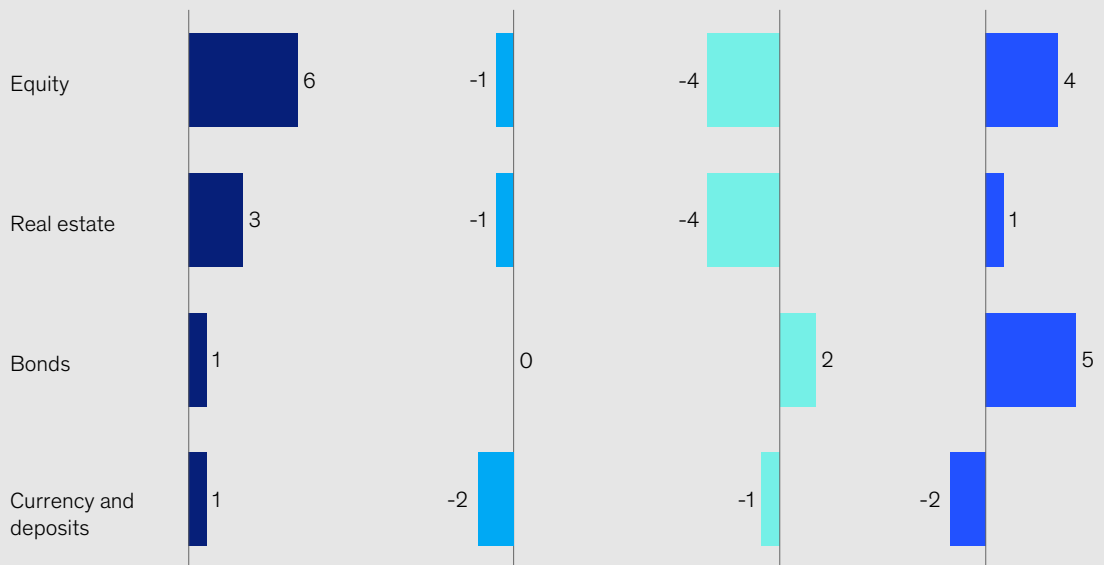


Exhibit

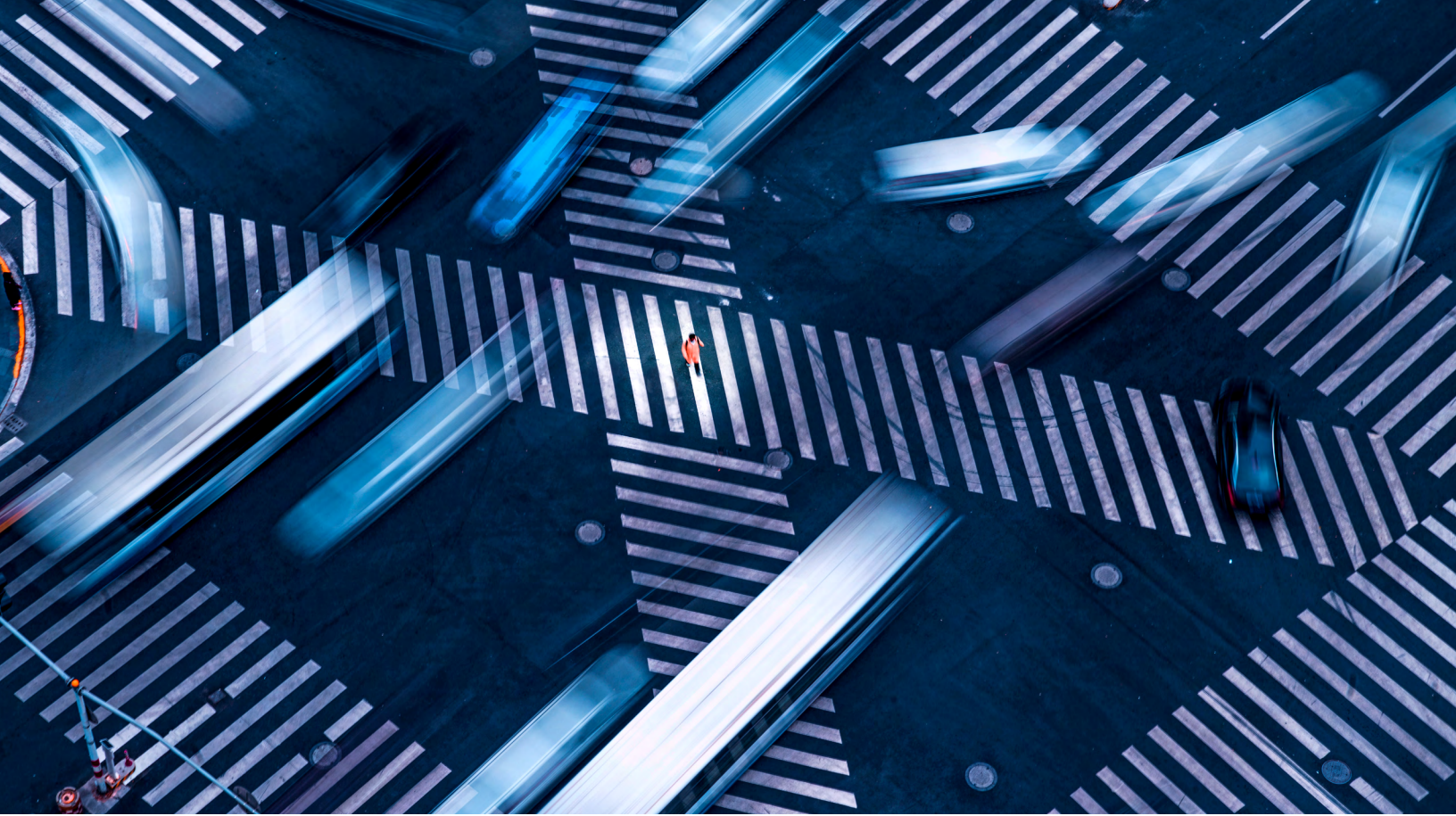
Four broad economic and balance sheet scenarios to 2030 are possible.

	Return to past era	Higher for longer	Balance sheet reset	Productivity acceleration
	Like United States post–global financial crisis, late 2000s–2010s	Like United States post–oil shock, 1970s	Like Japan post–real estate bubble, 1990s	Like United States post–WWII, late 1940s–1950s
What would happen	Back to weak investment and savings glut	Strong desired investment and consumption despite headwinds to growth	Fiscal and monetary tightening; financial system “accidents”	Technology deployment and productive investment
What it means	Sluggish growth, rising wealth on paper, growing balance sheet risk	Gains in nominal but loss in real wealth	Asset correction and balance sheet stress	Growth in real wealth, declining balance sheet risk
Growth¹	Slightly below trend ²	About 0–1 p.p. above trend	About 1 p.p. below trend	About 1 p.p. above trend
Inflation¹	About 0–1 p.p. below target ³	About 2 p.p. above target	About 1 p.p. below target after initial spike ⁵	About 1 p.p. above target
Real rate¹	About -1% ⁴	About 0%	About -1–0% (after an initial spike)	About 1%

Growth in asset values, US example (real, CAGR 2022–30, %)



¹2022–30 average. ²Assuming a return to 2008–16 average in the United States after recession in 2023. ³2 percent US inflation target. ⁴Central bank policy rates. ⁵2022–30 average here is 0–1 p.p. above target due to this initial spike.
 Note: Total market values do not describe asset performance.
 Source: Citibank; Consensus Economics; Deloitte Insights; EconForecasting; Goldman Sachs; IMF; JPMorgan; Morgan Stanley; OECD; PwC; USDA; World Bank; McKinsey Global Institute analysis



Introduction

Recent turbulence in the banking world comes against a backdrop of higher interest rates colliding with high leverage amid heightened geopolitical tensions. This is a major change in background conditions from the years of loose money and seemingly endless increases in wealth.

Over the past two decades, the global balance sheet expanded much faster than GDP. Debt grew, as did asset prices. But productivity and economic output did not keep pace, and inequality rose (for more detail, see Box 1, “What is the global balance sheet?”).¹

By late 2022, instability in the global economy and the balance sheet had become apparent.² In 2022 alone, households lost \$8 trillion of wealth.

The future of wealth and economic growth hangs in the balance. How long might stress in the financial system last? Is the world facing a major rebalancing in its balance sheet?³ How severe could the impact on real estate, equity, and debt become, and what might happen to deposits? What is the optimal course of action for stakeholders, from investors to financial institutions to policy makers?

¹ *The rise and rise of the global balance sheet: How productively are we using our wealth?* McKinsey Global Institute, November 2021.

² *Global balance sheet 2022: Enter volatility*, McKinsey Global Institute, December 2022.

³ Adam Tooze, “We are living through a trillion-dollar rebalancing,” *Financial Times*, March 31, 2023.

The range of plausible long-term paths remains wide. Much depends on whether the world returns to an era of weak investment and a glut of savings, entailing slow GDP growth, low interest rates, and unabated expansion of the global balance sheet. On another path, stronger consumption and higher investment requirements for the net-zero transition, supply chain reconfiguration, or defense lead to persistently higher inflation and interest rates. What would the policy response be, and could strong tightening trigger an asset price correction and balance sheet reset? Or could productivity growth come to the rescue, generating higher rates of economic growth as capital is redirected toward productive investment opportunities?

In this paper, the McKinsey Global Institute (MGI) models four scenarios to capture the range of potential outcomes. We call them “return to past era,” “higher for longer,” “balance sheet reset,” and “productivity acceleration.” In the most desirable scenario by far, productivity accelerates so that economic growth catches up with the balance sheet, thereby combining fast GDP growth, rising wealth, and a healthier balance sheet. The three other scenarios are all far from ideal, each in its own way.

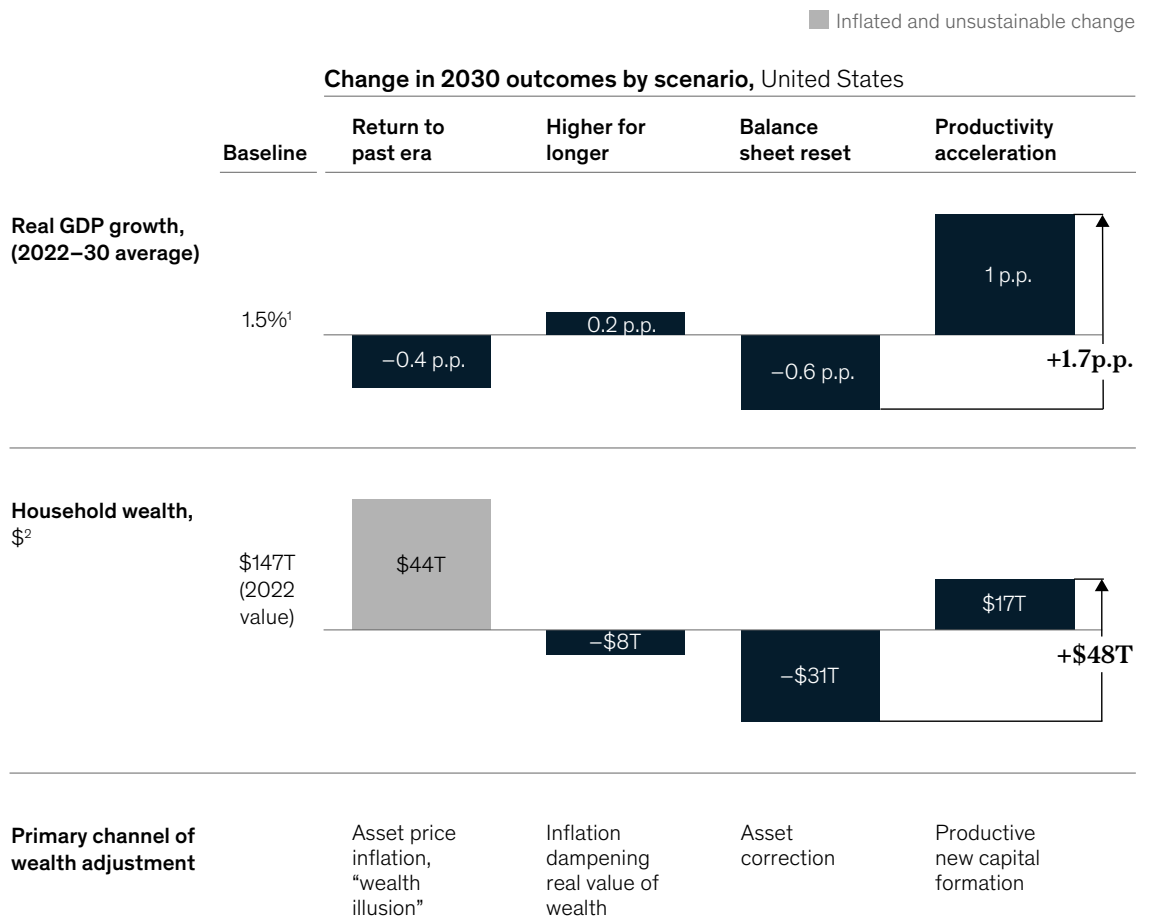
The stakes are high. The economic, banking, and investment landscape of the next ten years may look very different from that of the past 20 years. The differential impact of the scenarios on economic output is enormous, and the fallout for the balance sheet an order of magnitude larger still. MGI has developed a model for the economy and the balance sheet for the United States, the United Kingdom, and Germany. A balance sheet reset in the United States would lower annual GDP growth by 1.7 percentage points, compared with an accelerated productivity scenario (Exhibit 1). Likewise, total household wealth would be \$48 trillion lower in a reset scenario than in a productivity acceleration one.⁴ Beyond a potential decline in wealth, which would likely produce its own scarring effects, a reset with material asset price correction would also mean that many debt-financed assets end up underwater. This would amplify existing stress in the financial system. For this reason, decision makers need to pay close attention to balance sheet impact when making choices for economic policy.

The economic, banking, and investment landscape of the next ten years may look very different from that of the past 20 years.

⁴ These numbers exclude the “return to past era” scenario in which the rise in wealth would be higher still but unsustainable in the long run.

Exhibit 1

GDP growth varies by 1.7 percentage points and household wealth by \$48 trillion across scenarios in the United States.



¹All figures in terms of 2022 dollars. Average forecasted growth over 2022-30 by Federal Reserve according to FOMC March 2023 projections.

²All figures in terms of 2022 dollars.

Source: Federal Reserve; MGI Global Balance Sheet (GBS) model; McKinsey Global Institute analysis

McKinsey & Company

Box 1

What is the global balance sheet?

To construct a global balance sheet, MGI added up all real assets in the economy (for example, real estate, infrastructure, machinery, commodities, and intangibles) as well as all financial assets and liabilities (for instance, equity, debt, loans, deposits, pension assets, and liabilities).¹ All sectors are included—households, government, and nonfinancial and financial corporations (Exhibit 2). All assets and liabilities are valued at market prices.² The global balance sheet has three components that interlock: (1) the financial sector: financial assets and liabilities held by financial institutions, which help intermediate those held by other sectors; (2) the financial system: financial assets and liabilities held by households, governments, and nonfinancial corporations, often used to finance real assets with capital or net worth held by other people or institutions; and (3) the real economy: real assets and the net worth resulting from creating those assets.³

¹ Countries included in MGI's global balance sheet work are Australia, Austria, Belgium, Canada, Central and Eastern Europe (including the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia, and Slovenia), China, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Portugal, South Korea, Spain, Sweden, the United Kingdom, and the United States. The global average is an extrapolation derived from a weighted average of 30 countries (based on GDP) that account for approximately 77 percent of global GDP.

² As per the guidelines stipulated in *Valuation of debt securities at both market and nominal value*, IMF Committee on Balance of Payments Statistics, October 2020. Market values and par values have historically approximated each other and diverged in episodes of quick changes in interest rates over the past 20 years; see "Market value of U.S. government debt," Federal Reserve Bank of Dallas, accessed May 5, 2023.

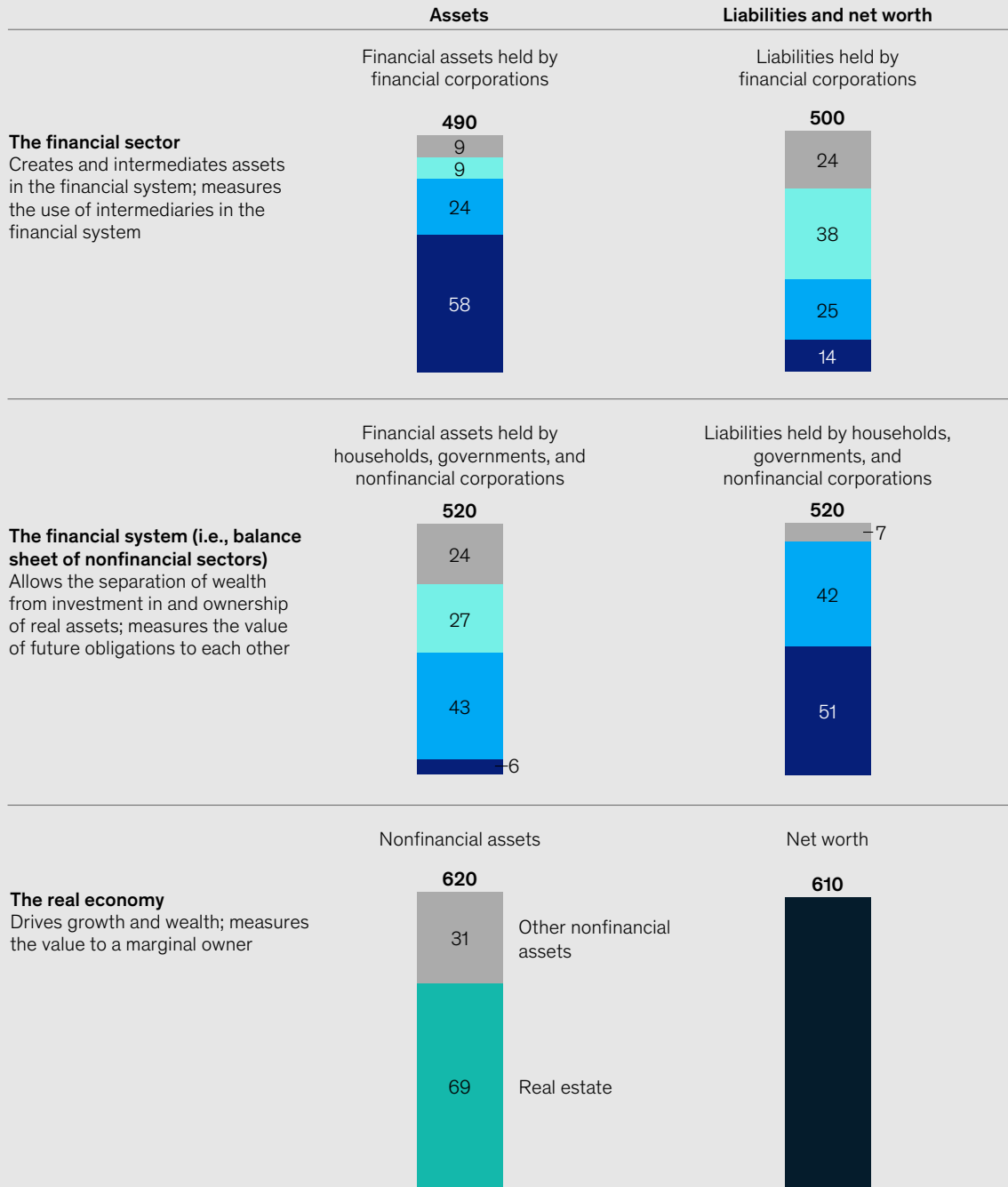
³ The "correct" size of finance has been debated for a while. See, for instance, Robin Greenwood and David Scharfstein, "The growth of finance," *Journal of Economic Perspectives*, volume 27, number 2, Spring 2013.

Exhibit 2

The global balance sheet consists of three interlocking balance sheets of, coincidentally, ~\$500 trillion to \$600 trillion each.

Size of balance sheet, consolidated data,¹
\$ trillion in 2021, %

■ Debt and loans ■ Equity ■ Currency and deposits ■ Other financial assets



¹Moved from unconsolidated financial data in 2020 report to consolidated, which reduced financial assets and liabilities by about \$100 trillion each.
 Note: The global average is an extrapolation derived from a weighted average of 30 countries based on GDP representing 77% of global GDP. Figures may not sum to 100%, because of rounding.
 Source: Federal Reserve Board; national statistics offices; OECD; World Bank; McKinsey Global Institute analysis



Two decades of growing ‘paper wealth’ but slow economic growth

The past two decades stand in marked contrast to the post–World War II historical trajectory of global wealth (and debt) accumulation. Before the turn of the millennium, growth in global net worth largely tracked GDP growth. But then something unusual happened. Around the year 2000, with timing that varied by country, net worth, asset values, and debt began growing significantly faster than GDP (Exhibit 3). In contrast, productivity growth among G-7 countries has been sluggish, falling from 1.8 percent per year between 1980 and 2000 to 0.8 percent from 2000 to 2018.⁵

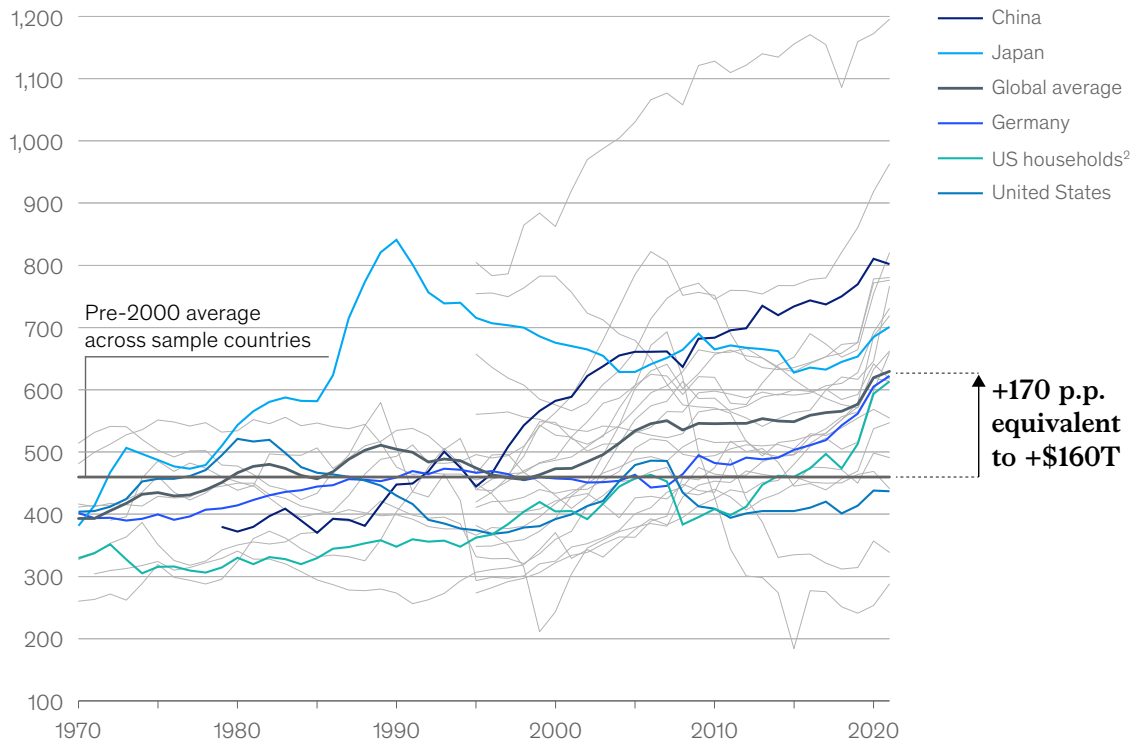
⁵ All productivity figures drawn from Alistair Dieppe, ed., *Global productivity: Trends, drivers, and policies*, World Bank, 2021.

Exhibit 3

The global balance sheet began rapidly outgrowing GDP in about 2000.

Global¹ net worth market prices relative to nominal GDP, 1970–2021

Net worth/GDP, %



¹Global average is derived from 30 countries that account for ~77% of global GDP: Australia, Austria, Belgium, Canada, Central and Eastern Europe (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia, and Slovenia), China, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, South Korea, Spain, Sweden, United Kingdom, and United States.

²For the United States, household net worth and country net worth differ markedly due to high values of corporate equity relative to assets.
Source: OECD; McKinsey Global Institute analysis

McKinsey & Company

Between 2000 and 2021, asset price inflation created about \$160 trillion in “paper wealth.” Valuations of assets like equity and real estate grew faster than real economic output.⁶ And each \$1.00 in net investment generated \$1.90 in net new debt. In aggregate, the global balance sheet grew 1.3 times faster than GDP. It quadrupled to reach \$1.6 quintillion in assets, consisting of \$610 trillion in real assets, \$520 trillion in financial assets outside the financial sector, and \$500 trillion within the financial sector.

Balance sheet expansion accelerated during the pandemic as governments launched large-scale support for households and businesses affected by lockdowns.⁷ During 2020 and 2021, global wealth relative to GDP grew faster than in any other two-year period in the past 50 years. The creation of new debt accelerated to \$3.40 for each \$1.00 in net investment.

⁶ The resulting increase in capital deployed needed to generate a dollar of output—or decline in capital productivity—is mostly concentrated in real estate and declining real estate yields. Gross fixed capital formation in real terms has stayed broadly consistent with output growth.

⁷ For a detailed discussion of pandemic effects, see *Global balance sheet 2022: Enter volatility*, McKinsey Global Institute, December 2022.

Values of all major asset types grew relative to GDP as real interest rates declined

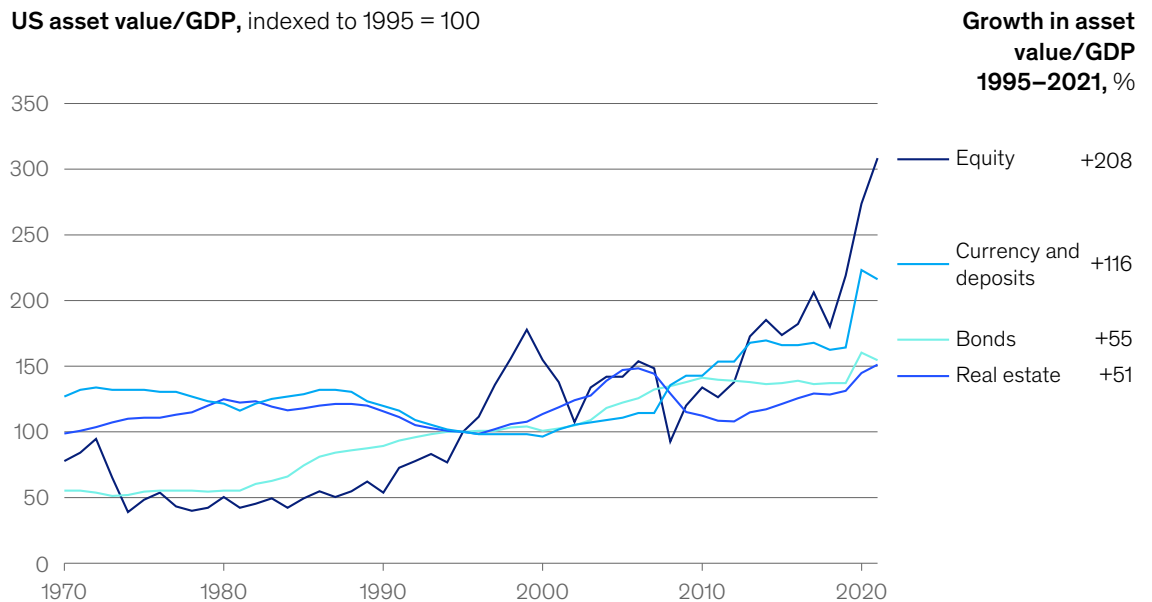
By 2021, four types of assets made up 80 percent of the three interlocking global balance sheets (financial sector, financial balance sheet of nonfinancial sectors, and the real economy): real estate (27 percent), equity (21 percent), debt (20 percent), and currency and deposits (12 percent).⁸ All four have risen relative to GDP since 2000, including real estate by 33 percent more, equity by 100 percent more, and debt by 90 percent more. Currency and deposits grew 124 percent faster than GDP.

The broad pattern of growing asset value holds across economies, but with variations in timing and relative pace of growth across asset types.⁹ Taking the United States as an example, the four largest balance sheet items outgrew GDP by between 50 percent (real estate) and 200 percent (equity) at market values relative to 1995 values (Exhibit 4).¹⁰ In the United Kingdom, growth was faster still in real estate and debt, and slower in equity. In Germany, balance sheet expansion was less pronounced across asset classes.

Exhibit 4

Growth in US assets has outpaced that of GDP since about the mid-1990s.

Change in asset value at market prices relative to nominal GDP, 1970–2021



Source: Federal Reserve Board; national statistics offices; OECD; World Bank; World Inequality Database; McKinsey Global Institute analysis

McKinsey & Company

⁸ The remainder of the balance sheet includes other nonfinancial assets, such as mineral and energy reserves, intangibles, and equipment, and other financial assets, such as monetary gold and special drawing rights.

⁹ In this analysis, definitions are as follows: equity is consolidated equity liabilities of nonfinancial and financial corporations; real estate is land, dwellings, and nonresidential buildings assets across sectors; debt is consolidated debt liabilities of nonfinancial corporations, households, and governments; bonds are short-term and long-term debt securities liabilities for all nonfinancial and financial corporations (corporate bonds) and government (government bonds); and currency and deposits are currency and deposit liabilities of financial institutions, including the central bank. All are measured at market value.

¹⁰ For the United States, the United Kingdom, and Germany, due to the dot-com bubble, 1995 is a better reference point than 2000 for global analyses in this paper. In 2021, the contribution to the US balance sheet of these line items was: equity \$52 trillion, real estate \$58 trillion, bonds \$38 trillion, and currency and deposits \$25 trillion.

A structural decline in real interest rates underpinned the expansion of the balance sheet, all while economic growth remained sluggish. For example, in the United States, forward-looking expectations for real interest rates steadily declined between 1995 and 2021. Low interest rates encouraged borrowing, lowering the cost of loans and bonds and spurring commercial banks to collect—and create—deposits. In highly simplified terms, an overhang of capital chased too few productive investment opportunities, and much of it flowed to real estate and equity, driving up prices. Debt rose faster than net investment, and paper wealth grew.

In the rest of this section, we explore the drivers of balance sheet growth across the four asset classes.¹¹

Falling real interest rates fueled the rise of real estate values

The decline in real interest rates has played a remarkable role in driving real estate valuations (Exhibit 5). Investors could afford to pay more for a property with a given rent, and therefore value-to-rent multiples rose. The cost of equity for real estate also fell, amplifying the effect. This meant that the effective yield of real estate, or cap rates, dropped.¹²

Despite this marked decline in yields, rents (including imputed rents on owner-occupied buildings) kept growing. The rent share of GDP expanded (in the United States) or declined (in the United Kingdom and Germany) modestly while growth in the number and quality of buildings trailed GDP growth by a wide margin.¹³ Scarcity of supply—particularly in superstar cities—played a role.¹⁴ Almost one-third of the global value of real estate is concentrated in those cities, where further densification faces political difficulties and prices have been high and rising over the past several decades. This trend has slowed over the past few years, and prices have gone up less in these cities than elsewhere as the pandemic increased work-from-home arrangements and some people moved farther away from work.¹⁵

There are some country variations. In the United States, for example, the market value of real estate expanded 1.5 times faster than GDP from 1995 to 2021. While there was a significant correction after the global financial crisis, the rise quickly resumed. Declining real interest rates drove almost the entire increase.

¹¹ To quantify the relative importance of different drivers, MGI uses a class-specific discounted expected cash-flow model, varying parameters across our scenarios in a model-consistent way. This was then fitted to, and back-tested with, asset data in MGI's global balance sheet database. See the appendix for more information on valuation methodology.

¹² Cap rate is a term used in the real estate industry to describe net operating income relative to the value of a building. The widespread use in the industry of cap rates and cap rate projections is often based more on empirical observation and trends than scientifically backed, and this may have contributed to the evolution of price. See Donald MacKenzie, *An engine, not a camera: How financial models shape markets*, MIT Press, August 2008.

¹³ The stock of capital in buildings grew more slowly than GDP in real or constant currency terms. It did grow faster than GDP in nominal terms as construction costs escalated much faster than general inflation, and real estate including land grew faster still as land prices soared. MGI focused on the relationship in constant currency, as land price effects mostly reflect the changes in interest rates and capital included separately in this analysis, and escalation of construction costs affects new buildings only on the margin. Regardless of the chosen metric, the rent share of GDP overall, which combines capital stock growth and rent relative to capital stock, was remarkably constant, growing slowly in the United States and declining slowly in the United Kingdom and Germany.

¹⁴ MGI's 2018 analysis of superstars looked at 3,000 of the world's largest cities and defined 50 of them as superstars. This group of 50 accounted for 8 percent of global population but 21 percent of world GDP. Their average per capita GDP was 45 percent higher than that of peers in the same region and income group, and the gap has grown. The growth of superstar cities is fueled by gains in median labor income and wealth from real estate and investor income. See *Superstars: The dynamics of firms, sectors, and cities leading the global economy*, McKinsey Global Institute, October 2018; and Jo Constantz, "A \$300,000 salary feels like \$100,000 in the priciest US cities," Bloomberg, April 15, 2023.

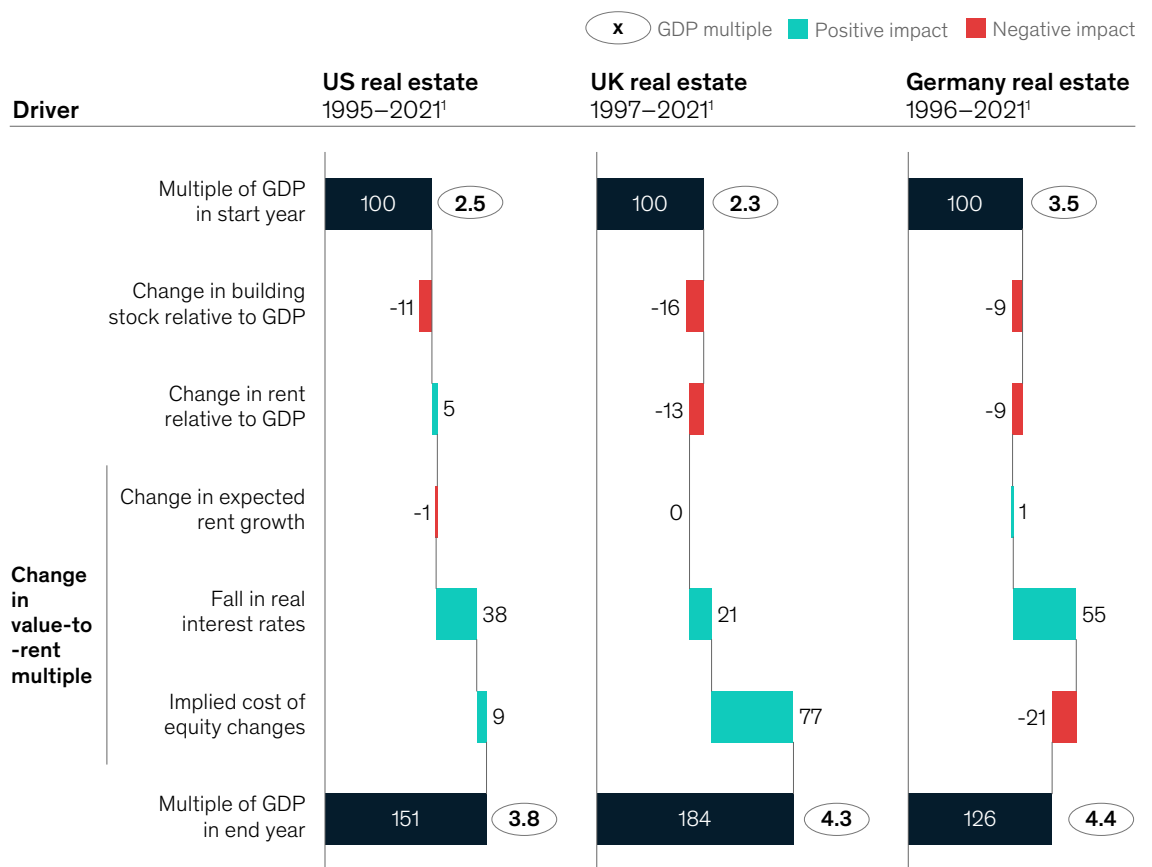
¹⁵ An MGI report on the effects of the pandemic and working from home on real estate is due to be published in mid-2023.

In the United Kingdom, real estate grew even more strongly relative to GDP than in the United States. Declines in the real estate cost of equity played a comparatively larger role. As investors felt prices could only go up, risk perceptions and the cost of equity declined sharply before the global financial crisis. After correcting upward as a result of that crisis, the cost of equity fell again.¹⁶

Exhibit 5

Real estate market value growth was driven mostly by falling real interest rates in the past era.

Growth in market value of real estate; change in multiples of GDP (starting year = 100)



¹Time periods differ due to data availability.

²Change in the building capital stock relative to GDP (both in constant currency terms).

Source: *BIS Quarterly Review*, March 2015; MGI GBS model; national statistics offices; Oxford Economics; McKinsey Global Institute analysis

McKinsey & Company

¹⁶ Interestingly, the cost of equity for real estate did not seem to alter much with changes in interest rates in any of the three countries. Broadly, investors take account of interest rate risk, moving risk premiums up when interest rates fall and vice versa. As a result, in the United States, for instance, the cost of real estate equity declined only a little during the “irrational exuberance” of the 2005–07 bubble, expanded with the bust, and declined again during a run-up in prices between 2020 and 2021.

In Germany, real estate values experienced a long period of decline relative to GDP in the late 1990s and early 2000s as a real estate bubble in eastern Germany following reunification corrected. As a result, the German real estate industry went through the global financial crisis relatively unscathed and then began to catch up rapidly as interest rates declined.

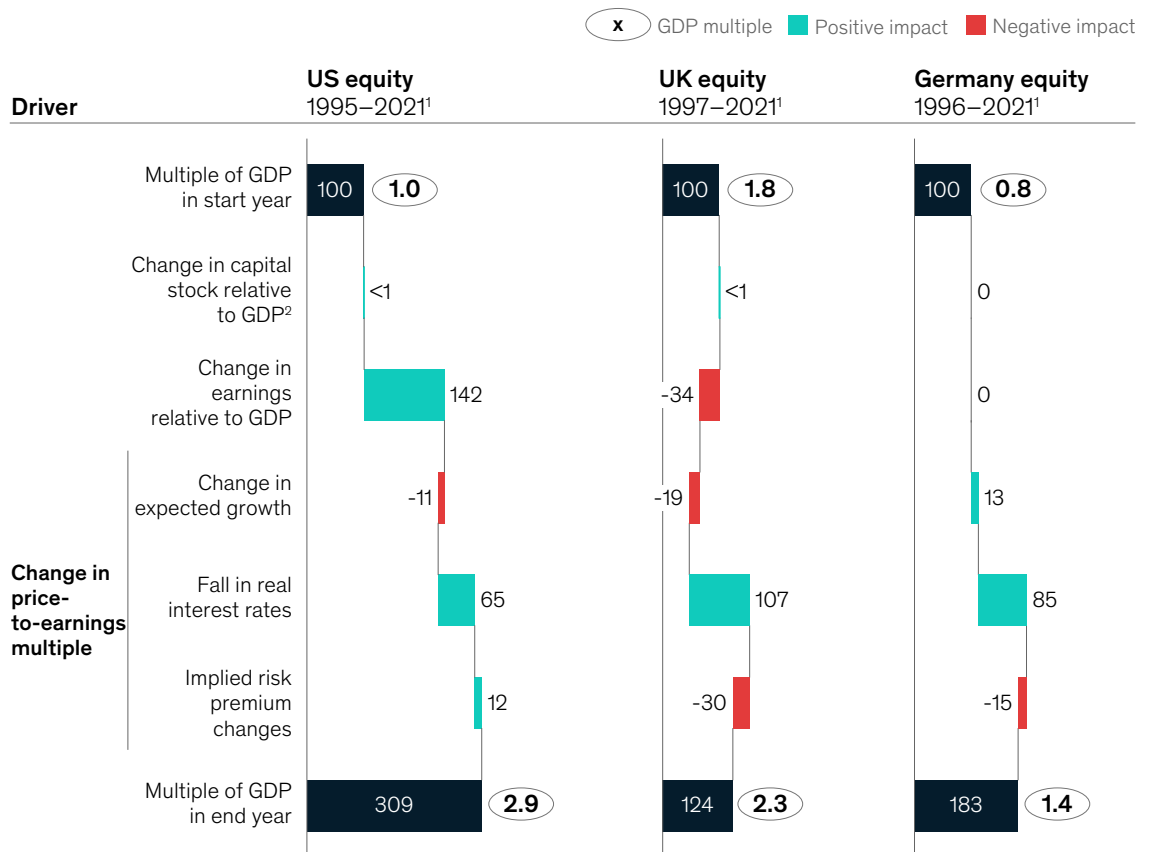
Declining real interest rates drove growth in equities, and in the United States, increasing returns on capital also played an important role

Falling real interest rates boosted equity values across economies as future earnings were discounted at a lower rate. In both the United Kingdom and Germany, falling rates were responsible for all of the growth in equity values relative to GDP between 1995 and 2021. In the United States, they contributed about one-third of this growth (Exhibit 6).

Exhibit 6

Equity market value growth was fueled by declining real interest rates in the past era and, in the United States, also a rising earnings share of GDP.

Growth in market value of equity (listed and unlisted); change in multiples of GDP (starting year = 100)



¹Time periods differ due to data availability.

²Change in corporate capital (excl. land) relative to GDP, both in current prices.

Source: *BIS Quarterly Review*, March 2015; MGI GBS model; national statistics offices; Oxford Economics; McKinsey Global Institute analysis

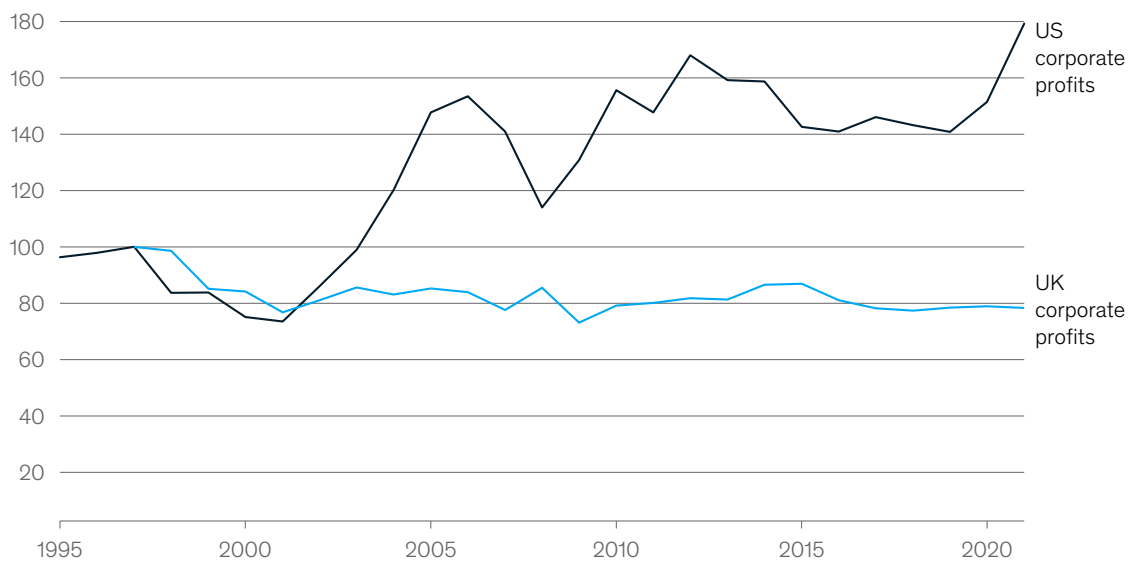
However, another powerful factor was also at work in the United States: a rising GDP share of corporate earnings, which contributed two-thirds of the growth in equity values versus GDP. The earnings share of GDP rose by 80 percent from 1995 to 2021 to 12.3 percent—the highest share in a century (Exhibit 7). The earnings share grew despite the fact that the stock of corporate capital, as is common, closely tracked GDP.¹⁷

A number of factors contributed to this increase in earnings relative to GDP, as past MGI research shows.¹⁸ One was company-level superstar effects, particularly in the digital economy.¹⁹ Others include rising automation and a decline in labor bargaining power in some sectors, including from globalization, offshoring, and shifts in production to less unionized states.²⁰ Changes in corporate tax rates may also have played a role.

Exhibit 7

US corporate profits as a share of GDP have increased since the mid-1990s and are at historic highs.

Corporate profits as share of GDP, indexed to 1997 = 100, 1995–2021



Source: MGI GBS model; national statistics offices; Oxford Economics; World Bank; McKinsey Global Institute analysis

McKinsey & Company

¹⁷ For this analysis, MGI uses the stock of nonfinancial corporate capital, excluding land but including intangibles, relative to GDP, both at current market values.

¹⁸ *A new look at the declining labor share of income in the United States*, McKinsey Global Institute, May 2019.

¹⁹ Superstar effects refers to a large share of profits and growth going to a small number of firms and regions, thus generating very high returns on invested capital. For more information, see *Superstars: The dynamics of firms, sectors, and cities leading the global economy*, McKinsey Global Institute, October 2018. Also see Thomas Philippon, *The great reversal*, Harvard University Press, October 2019.

²⁰ Anna Stansbury and Lawrence H. Summers, *The declining worker power hypothesis: An explanation for the recent evolution of the American economy*, Brookings Papers on Economic Activity, Spring 2020.

Our analysis suggests that investors did not—and do not—expect the earnings share to rise further. Yet investors do seem to build in an expectation for the earnings share to remain at today’s high levels and for long-term real interest rates to stay low, judging by current US equity valuations.²¹

For each \$1.00 of net new investment, \$1.90 of new debt was created

With equity values climbing, debt rose sharply, too, and, with it, equivalent wealth for lenders and bond holders. By the end of 2021, in the United States, Japan, China, and all major European economies other than Germany, debt was not only higher relative to GDP than in 2000 but even increasing from the peak following the 2008 global financial crisis. In the United States the figure climbed from 2.5 to 2.8 times GDP, in the United Kingdom from 2.5 to 2.8, in Japan from 3.4 to 4.3, and in China from 1.6 to 2.7. In Germany, debt remained stable at about 2.0 times GDP.²²

Globally, for every \$1.00 of net investment, \$1.90 of additional debt was created.²³ Much of this debt financed new purchases of existing assets. Rising real estate values and low interest rates meant that households could borrow more against existing homes. Rising equity values meant that corporates could use leverage to reduce their cost of capital, finance mergers and acquisitions, conduct share buybacks, or increase cash buffers. Governments also added debt, particularly in response to the global financial crisis and the pandemic. Interestingly, rising bond prices as interest rates declined played only a minor role driving the debt-to-GDP ratio, as the time range used is much longer than typical bond maturities.²⁴

Currency and deposits in commercial and central banks have expanded

Growth in deposits exceeded GDP growth in the United States, the United Kingdom, and Germany. In the United States, the volume of currency and deposits in commercial and central banks expanded from 0.6 times GDP in 1995 to 1.2 times GDP in 2021; it is now 80 percent higher relative to GDP than the average of the past century. In the United Kingdom deposits grew from 1.9 times GDP in 2000 to 3.5 times GDP in 2021, and in Germany from 1.4 times GDP to 1.9 times GDP.

In the United States, the rise unfolded in three waves, with varying drivers. Loose mortgage lending before the global financial crisis in 2008 triggered the first wave. At the financial system level, every new loan requires a corresponding new deposit.²⁵ A second wave came with quantitative easing and thus the creation of central bank (or “outside”) money in response to the crisis.²⁶ Finally, a third wave occurred with another round of quantitative easing in response to the pandemic. Moreover, the support for households and firms during the COVID-19 pandemic led to excess saving as households spent less during lockdowns.²⁷

²¹ To value assets in our three classes, we use class-specific discounted expected cash flows, varying parameters across our scenarios in a model-consistent way. See Robin Greenwood and David Scharfstein, “The growth of finance,” *Journal of Economic Perspectives*, volume 27, number 2, Spring 2013; and Jason Furman and Wilson Powell III, “A tight US labor market stays tight,” Peterson Institute for International Economics, September 2022. For a different approach, see Óscar Jordà et al., “The rate of return on everything, 1870–2015,” *The Quarterly Journal of Economics*, volume 134, issue 3, August 2019.

²² Short- and long-term loan and bond liabilities for governments, households, and nonfinancial corporations at market prices.

²³ Outside the financial sector.

²⁴ As a simplified intuition, in the very long run and at the total economy level, every bond is eventually held to maturity.

²⁵ A new deposit is created with every new loan, and therefore new lending means new money creation and growing deposits at the financial system level. This is about the creation of so-called inside (or endogenous) money, as opposed to central-bank-controlled outside or high-powered money. See Michael McLeay, Amar Radia, and Ryland Thomas, “Money creation in the modern economy,” *Quarterly Bulletin*, Bank of England, March 14, 2014.

²⁶ The analysis includes central bank as well as other financial sector deposits.

²⁷ Excess savings and pent-up demand were particularly high in the United States. Here, the less developed social security system meant that support measures (like the Paycheck Protection Program) could not be targeted precisely. See Jérémie Cohen-Setton and Jean Pisani-Ferry, *When more delivers less: Comparing the US and French COVID-19 crisis responses*, Peterson Institute for International Economics, 2020.



Are the forces that propelled global balance sheet growth shifting?

Weak investment and excess saving have prevailed over the past several decades, underpinning expansion of the global balance sheet.²⁸ There was a relative paucity of productive options for savers—retail as well as institutional—and the price of existing homes and shares duly rose. GDP growth remained below its structural potential. Central banks kept interest rates low to stimulate economic activity, aiming for their inflation targets.²⁹ This was classic “secular stagnation.”³⁰

Might this be changing? Much in the world certainly seems to be shifting, from geopolitics to technology, energy systems, and demographics.³¹ It is possible that the more structural forces behind high savings and weak investment will themselves shift, although this remains a matter of uncertainty and debate.

²⁸ Ex post, savings—domestic and foreign capital inflows—and investment are arithmetically identical in an economy, balanced out by the interest rate but also by changes in GDP growth and the broader economic equilibrium, but this report uses the notions of “savings overhang” and “investment overhang” in an ex ante understanding.

²⁹ This may have entailed a drop in real interest rates beyond the effect of the savings overhang. See Claudio Borio, Piti Disyatat, and Phurichai Rungcharoenkitkul, *What anchors for the natural rate of interest?* BIS working papers number 777, March 2019.

³⁰ See, for instance, Lawrence H. Summers, “Accepting the reality of secular stagnation,” *Finance & Development*, International Monetary Fund, March 2020; and Kathryn Holston, Thomas Laubach, and John C. Williams, “Measuring the natural rate of interest: International trends and determinants,” *Journal of International Economics*, volume 108, supplement 1, May 2017.

³¹ See also *On the cusp of a new era?* McKinsey Global Institute, October 2022; *World economic outlook: A rocky recovery*, International Monetary Fund, April 2023; and *Global financial stability report: Safeguarding financial stability amid high inflation and geopolitical risks*, International Monetary Fund, April 2023.

Will investment requirements and demand for capital grow after decades of decline?

Over the past several decades, there has been too little productive investment. In advanced economies, net investment has declined as a share of GDP. In the 2010s, this ratio was roughly 50 percent lower than before the 2008 financial crisis in Europe, and 40 percent in the United States (Exhibit 8).³² Markedly, in the aftermath of the global financial crisis, private-sector investment plummeted in the face of uncertainty and weak demand outlooks.³³ Capital deepening (growth in capital stock per worker) dropped to the lowest rate in the post–World War II period. Public investment has also lagged, including in infrastructure and affordable housing. In infrastructure, for example, past MGI analysis showed that the United States invested about 0.4 percent of GDP less than the estimated amount needed to support economic growth between 2010 and 2020.³⁴

Much in the world certainly seems to be shifting, from geopolitics to technology, energy systems, and demographics. It is possible that the more structural forces behind high savings and weak investment will themselves shift, although this remains a matter of uncertainty and debate.

³² The sharpest decline occurred around the time of the global financial crisis, but net investment never fully recovered thereafter. Note that MGI looks at net investment here rather than the more common gross investment figure, because net investment corresponds to long-term capital stock buildup and creating long-term stores of value.

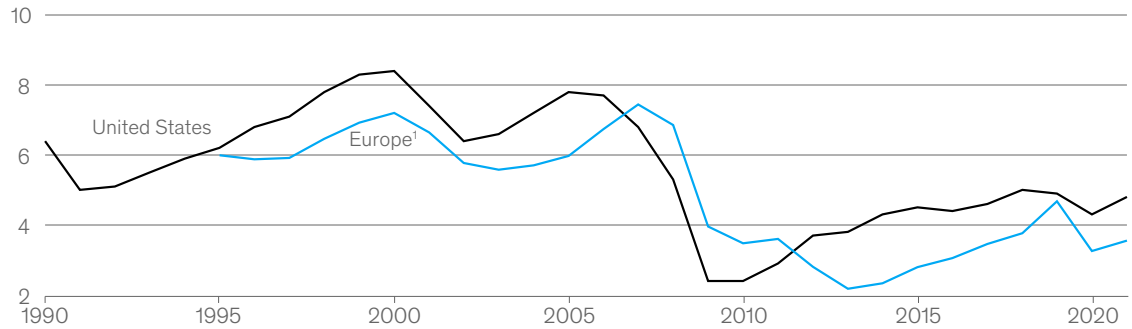
³³ *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018; and *Innovation in Europe: Changing the game to regain a competitive edge*, McKinsey Global Institute, October 2019.

³⁴ *Bridging global infrastructure gaps*, McKinsey Global Institute, June 2016; the cited figure comes from subsequent unpublished annual updates.

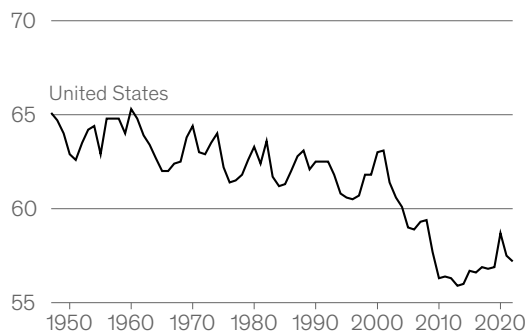
Exhibit 8

Are the forces underpinning weak investment and a glut of savings shifting?

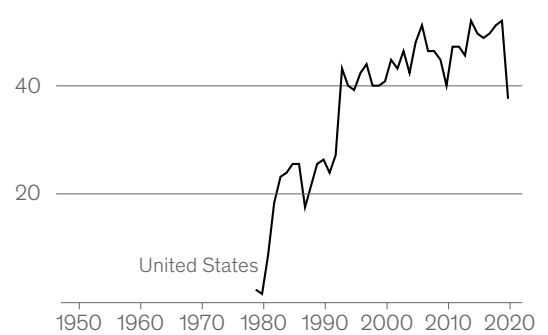
Net fixed investment as a share of GDP, %, 1990–2021



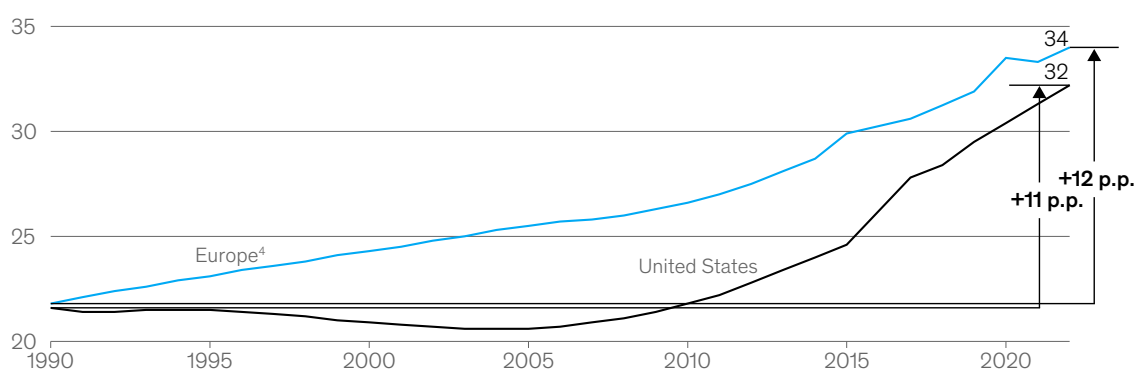
Total compensation share of gross value added,² %, 1947–2022



Gini coefficient,³ index 0–100, 1979–2022



Number of people aged 65 and over per one person aged 20 to 64 years, %, 1990–2022



¹Includes Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.
²Adjusted for self-employed income (non-farm business sector, ~75% of total economy), from Labor Productivity and Costs database, Bureau of Labor Statistics.
³Gini index measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus, a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.
⁴All countries included in footnote 1 and United Kingdom.
 Source: OECD; US Bureau of Labor Statistics; World Bank World Development Indicators; McKinsey Global Institute analysis

Uncertainty is high and decisions can yet determine the path ahead, but overall, investment, and thus demand for capital—and its cost—could well rise substantially. Even if not all incremental investment is productive, economic growth could accelerate.

- **Infrastructure investment rises.** Particularly in the United States, a shift appears to be emerging after decades of underinvestment in infrastructure. For example, the Infrastructure Investment and Jobs Act, signed into law in November 2021, provides for an incremental \$550 billion in government spending focused on public transit, high-speed broadband, clean drinking water, and electric vehicle charging infrastructure.³⁵ Higher infrastructure investment will accelerate productivity growth.
- **Energy transition gains momentum.** MGI research suggests that the net-zero transition alone will need incremental investment equivalent to about two percentage points of GDP in the 2020s.³⁶ This will likely initially dampen productivity growth at first but could accelerate it in the long run.³⁷
- **Intangible assets continue to grow.** Investment in intangible assets, such as in digitization and R&D, has risen and will continue to rise steadily as they become structurally more important for the economy. However, two factors have limited the speed of this growth. First, the skills needed to deploy intangible assets have been in short supply. This could change with increased investment in skill building and deployment of easier-to-use AI technology. Second, intangible assets have struggled to serve as a vehicle for long-run savings. Because of their shorter life cycles, they can absorb savings only for a more limited period before becoming obsolete or passing value on to consumers as competition picks up. While regulation could limit such spillovers, this would be negative for growth.³⁸
- **Geopolitics drive a stepping up in investment related to defense, supply chains, and industrial policy.** More fractured geopolitics may increase investment in supply chain reconfiguration, industrial policy initiatives, and defense—with mixed outcomes for productivity. New business investment is rising in areas like chips and clean tech, and supply chains are being reconfigured.³⁹ Done well, this can lead to more resilient and still productive local economies, but it can also lead to less efficiency at a global scale. In the case of defense, European economies have tended to not invest in line with their NATO commitments, but in the wake of Russia's invasion of Ukraine, they are stepping up. While some of these investments may generate productivity, especially at the national level, politically induced investments do generally face the risk of unproductive capital allocation.⁴⁰

³⁵ *Updated fact sheet: Bipartisan Infrastructure Investment and Jobs Act*, White House, August 2, 2021.

³⁶ This includes spending across energy- and land-use systems such as power, mobility, and buildings, to name a few. It includes some categories of physical assets that are typically considered consumer durables, for example passenger cars. It also includes spending on both low-emissions assets (for example, renewable power) and some high-emissions assets (for example, internal combustion engine vehicles and gas-based power), which would continue, especially in the early years of the transition. See *The net-zero transition: What it would cost, what it could bring*, McKinsey Global Institute, January 2022; *Global trade: The complication of concentration*, McKinsey Global Institute, January 2023; and *Toward a sustainable, inclusive, growing future: The role of business*, McKinsey Global Institute, November 2022.

³⁷ During the transition, many investments will not be commercially viable and will duplicate existing higher-emitting capital stock. But in the long run, many sectors will see productivity grow. To name just one example, electric vehicles require much less labor to produce and maintain than more complex internal combustion engine cars.

³⁸ Where companies can obtain superstar position or use IP protection, they can keep the value of their intangibles for longer.

³⁹ Examples of such industrial policy include the Inflation Reduction Act and the CHIPS and Science Act in the United States in 2022, and the European Chips Act proposed by the European Commission, also in 2022. See "CHIPS for America Act & FABS Act," Semiconductor Industry Association, accessed May 5, 2023; and "European industrial strategy," European Commission, accessed May 5, 2023.

⁴⁰ Lee J. Alston et al., *Brazil in transition: Beliefs, leadership, and institutional change*, Princeton University Press, 2016.

Are the forces behind the savings glut on the wane?

Three factors that drove a glut of savings in the past stand out. Each of them may be shifting:

— Rising inequality and declining labor share of income: Reversal under tight labor markets?

For decades, inequality rose and the labor share of income declined.⁴¹ This has reduced consumption by channeling a disproportionate share of value creation to the wealthy, who tend to save more than the population overall.⁴² Rising saving by the wealthy has bid up prices for assets, particularly those with expected higher returns. At the same time, corporate earnings have grown rapidly, particularly in the United States, driving equity valuations and thus balance sheet growth further.

Some of the factors underpinning income inequality and declining labor shares may shift in the longer term, boosting consumption relative to savings. In the United States in recent years, the trajectory on both, labor share and inequality, has already become much flatter (again, see Exhibit 8). Workers' bargaining power could rise if the labor market remains tight and unions regain influence, particularly in the United States.⁴³ Superstar dynamics and globalization, which lifted incomes for all but not in the same way for everyone, are being exposed to changing domestic and global politics and rules.⁴⁴ Talent shortages have boosted wages in general, particularly for higher-skill workers.⁴⁵ At the same time, automation has undermined the wages of low- and medium-skill workers.⁴⁶ The advent of generative AI may affect the wage premium for skills. For now, it is too soon to know where we are going. In 2022 and early 2023, wage growth did accelerate markedly, but in most economies it remained below inflation, and earnings have grown faster.⁴⁷

— Aging: Shift from saving for retirement to spending in retirement? An aging population has consequences for an economy's aggregate savings rate.⁴⁸ The conventional view holds that households accumulate wealth to prepare for retirement and then run down savings in retirement. But, with some variation across countries, households have not been spending savings as much as the conventional argument suggests, rather keeping capital as precautionary savings and to be inherited by their offspring; this is the so-called retirement savings puzzle.⁴⁹

⁴¹ For a discussion of the drivers of labor share declines, see *A new look at the declining labor share of income in the United States*, McKinsey Global Institute, May 2019.

⁴² MGI research estimated that differences in the marginal propensity to consume between lower- and higher-income quintiles added about one percentage point of GDP to US savings between 2000 and 2014, and more recent research also highlights the strong influence of inequality on savings and interest rates. See *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018. Also see Atif Mian, Ludwig Straub, and Amir Sufi, *What explains the decline in r*? Rising income inequality versus demographic shifts*, Federal Reserve Bank of Kansas City, August 2021.

⁴³ For more information about the role of declining bargaining power in the past, see, for example, Anna Stansbury and Lawrence H. Summers, *The declining worker power hypothesis: An explanation for the recent evolution of the American economy*, Brookings Papers on Economic Activity, Spring 2020. For a discussion of the role of bargaining power on inflation, see Guido Lorenzoni and Iván Werning, *Inflation is conflict*, NBER working paper, April 2023.

⁴⁴ David H. Autor and David Dorn, "The growth of low-skill service jobs and the polarization of the US labor market," *American Economic Review*, volume 103, number 5, August 2013.

⁴⁵ *The future of work after COVID-19*, McKinsey Global Institute, February 2021.

⁴⁶ See, for example, Claudia Goldin and Lawrence F. Katz, "Long-run changes in the wage structure: Narrowing, widening, polarizing," *Brookings Papers on Economic Activity*, Fall 2007.

⁴⁷ See Isabel Schnabel, "Inflation in the euro area and US—causes, persistence and outlook," European Central Bank, April 2023; Oscar Arce, Elke Hahn, and Gerrit Koester, "How tit-for-tat inflation can make everyone poorer," The ECB Blog, European Central Bank, March 30, 2023; and Isabella M. Weber and Evan Wasner, "Sellers' inflation, profits and conflict: Why can large firms hike prices in an emergency?" *Review of Keynesian Economics*, volume 11, number 2, April 2023.

⁴⁸ See, for instance, James M. Poterba, "Retirement security in an aging population," *American Economic Review*, volume 104, number 5, May 2014; Karen E. Dynan, Wendy Edelberg, and Michael G. Palumbo, "The effects of population aging on the relationship among aggregate consumption, saving, and income," *American Economic Review*, volume 99, number 2, May 2009; Andres Papetti, *Demographics and the natural real interest rate: Historical and projected paths for the euro area*, European Central Bank Working Paper Series number 2258, March 2019; Atif Mian, Ludwig Straub, and Amir Sufi, *What explains the decline in r*? Rising income inequality versus demographic shifts*, Federal Reserve Bank of Kansas City, August 2021; and Marco del Negro et al., "Safety, liquidity, and the natural rate of interest," *Brookings Papers on Economic Activity*, Spring 2007.

⁴⁹ This difference varies with national conditions. For instance, in a defined-benefits system, based on social security contributions (payroll taxes) to a pay-as-you-go system, there is less incentive to save. The capacity to save also differs across income strata, and differences across nations in inequality matter. See Charles Yuji Horioka and Luigi Ventura, "Do the retired elderly in Europe decumulate their wealth? The importance of bequest motives, precautionary saving, public pensions, and homeownership," *Review of Income and Wealth*, December 2022.

Do demographics therefore imply a continuous savings glut, or are we more likely to experience a “great reversal”? The mainstream view’s answer is that the savings surplus is set to continue for an extended period.⁵⁰ But a minority position holds that the trend is about to break, that consumption expenditure (such as old-age healthcare costs) could rise substantially, and aggregate savings could fall.⁵¹ In addition, a rising dependency ratio means that the number of people dissaving in retirement relative to those saving during working life will grow (again, see Exhibit 8). Balance sheet expansion—asset valuation effects—also may play a role. If retirees no longer benefit from the same rate of asset price appreciation as in past decades, they will have to consume more of their savings.

- **Savings glut from net exporters: Retreating?** Particularly after the 1997 Asian financial crisis, economies in the region built up large foreign reserves to self-insure as a buffer against future shocks, which repeatedly led to sudden stops in capital flows. Much of this pool of reserves was invested in US Treasuries, bidding up their prices, which is tantamount to lowering their yields.⁵² The stunning net exports of China, but also of other net exporters like Japan and oil-exporting countries, added to this trend. China’s foreign reserves peaked at nearly \$4 trillion in 2014, of which more than \$1 trillion was directly invested in US Treasuries. But those holdings have since declined. Amid rising geopolitical tensions, the future path remains to be seen.

Can supply respond?

If the balance between investment and savings does shift, headwinds from demographics and geopolitics may make it difficult to meet the demand generated. Global labor supply grew rapidly in recent decades, adding capacity to an economy with soft demand. In advanced economies, rising participation by women has so far compensated for a rising share of the population in retirement age. However, as the population continues to age, the relative number of working-age people will continue to fall.⁵³ In addition, about 60 million workers around the world ultimately serve North American demand, and about 50 million European demand.⁵⁴ Geopolitical forces may affect these global flows and increase supply pressures locally.

On the upside, technology promises to generate tailwinds for supply. Could they move the economy from productivity stagnation to more innovation in and diffusion of technology? Past decades were characterized by slow productivity growth across advanced economies.⁵⁵ So far, digitization has not translated into increasing productivity growth. But this could change as adoption spreads and technologies such as artificial intelligence add new capabilities.⁵⁶

⁵⁰ Olivier Blanchard, *Fiscal policy under low interest rates*, The MIT Press, 2023.

⁵¹ This view has been defended by, for instance, Charles Goodhart and Manoj Pradhan, in *The great demographic reversal: Ageing societies, waning inequality, and an inflation revival*, Palgrave Macmillan, 2020.

⁵² Ben S. Bernanke, *Why are interest rates so low, part 3: The global savings glut*, Brookings Institution, April 2015; Charles Bean et al., *Low for long? Causes and consequences of persistently lower interest rates*, Geneva Reports, number 17, 2015; Brad W. Setser, *The return of the East Asian savings glut*, Council on Foreign Relations, October 2016.

⁵³ This holds broadly across the globe, with the notable exception of Africa.

⁵⁴ Based on OECD estimates of trade in employment. Figures include estimates of workers in every country serving final demand located in North America or Europe, excluding workers serving intraregional demand (for example, workers in Germany serving demand in France). Includes both manufacturing and services but not primary resources. See *Global flows: The ties that bind in an interconnected world*, McKinsey Global Institute, November 2022.

⁵⁵ *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018.

⁵⁶ See *The future of work and innovation: Robert Gordon and Erik Brynjolfsson debate at TED2013*, TED Blog, April 23, 2013; Robert J. Gordon, *The rise and fall of American growth: The U.S. standard of living since the Civil War*, Princeton University Press, 2016; and Eric Brynjolfsson and Andrew McAfee, *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*, W. W. Norton & Company, 2014.



Four scenarios cover the range of plausible economic outcomes to 2030

To provide a window into an uncertain future, MGI developed four scenarios for how the economy and the global balance sheet might evolve in the period to 2030 (Exhibit 9). They differ in how forcefully and persistently the balance of desired savings and investment described in the previous section will shift, and in choices about monetary and fiscal policy as well as productivity investments. Each scenario—return to past era, higher for longer, balance sheet reset, and productivity acceleration—includes a pathway to 2030 for GDP growth, inflation, and interest rates, the aim being to explore the longer-term trajectory rather than to make short-term predictions for the next year or two (Exhibit 10).⁵⁷ MGI built a quantitative scenario model for the United States, United Kingdom, and Germany, but the characteristics are applicable more broadly.

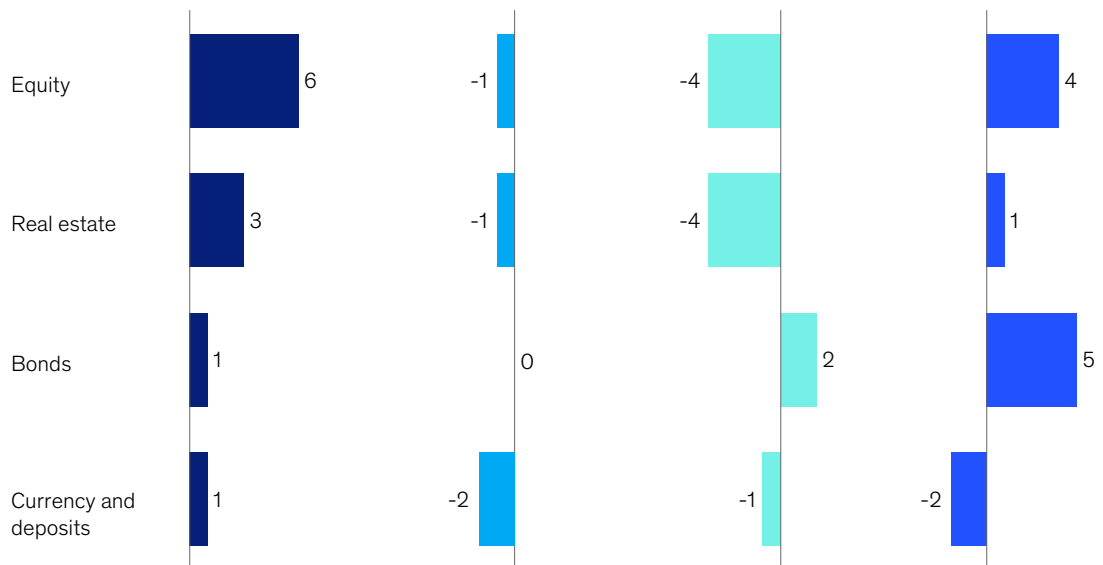
⁵⁷ MGI applied a multiple-step approach to developing the macroeconomic scenarios. The first step was setting average and end-of-period growth, real interest rates, and inflation based on the fundamental characteristics defining the scenarios. Interest rates and inflation were calibrated using an adjusted Taylor rule that determines a typical policy rate given a certain rate of inflation. Next came overlaying the results of a general equilibrium model—created by McKinsey in collaboration with Oxford Economics—as well as data from historical reference periods to determine the shape of the curves in the shorter run. Finally, the results were fine-tuned in collaboration with economic experts and external forecasts. For shorter-term scenarios developed by McKinsey and Oxford Economics, see “2023, a testing year: Will the macro-scenario range widen or narrow?” McKinsey & Company, January 2023.

Exhibit 9

Four broad economic and balance sheet scenarios to 2030 are possible.

	Return to past era	Higher for longer	Balance sheet reset	Productivity acceleration
	Like United States post-global financial crisis, late 2000s–2010s	Like United States post-oil shock, 1970s	Like Japan post-real estate bubble, 1990s	Like United States post-WWII, late 1940s–1950s
What would happen	Back to weak investment and savings glut	Strong desired investment and consumption despite headwinds to growth	Fiscal and monetary tightening; financial system “accidents”	Technology deployment and productive investment
What it means	Sluggish growth, rising wealth on paper, growing balance sheet risk	Gains in nominal but loss in real wealth	Asset correction and balance sheet stress	Growth in real wealth, declining balance sheet risk
Growth¹	Slightly below trend ²	About 0–1 p.p. above trend	About 1 p.p. below trend	About 1 p.p. above trend
Inflation¹	About 0–1 p.p. below target ³	About 2 p.p. above target	About 1 p.p. below target after initial spike ⁵	About 1 p.p. above target
Real rate¹	About -1% ⁴	About 0%	About -1–0% (after an initial spike)	About 1%

Growth in asset values, US example (real, CAGR 2022–30, %)



¹2022–30 average. ²Assuming a return to 2008–16 average in the United States after recession in 2023. ³2 percent US inflation target. ⁴Central bank policy rates. ⁵2022–30 average here is 0–1 p.p. above target due to this initial spike.
 Note: Total market values do not describe asset performance.
 Source: Citibank; Consensus Economics; Deloitte Insights; EconForecasting; Goldman Sachs; IMF; JPMorgan; Morgan Stanley; OECD; PwC; USDA; World Bank; McKinsey Global Institute analysis

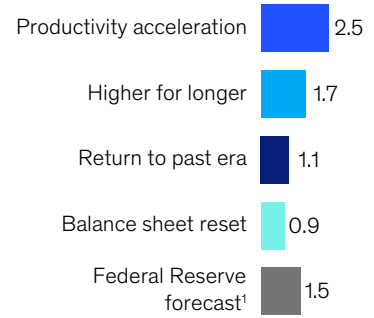
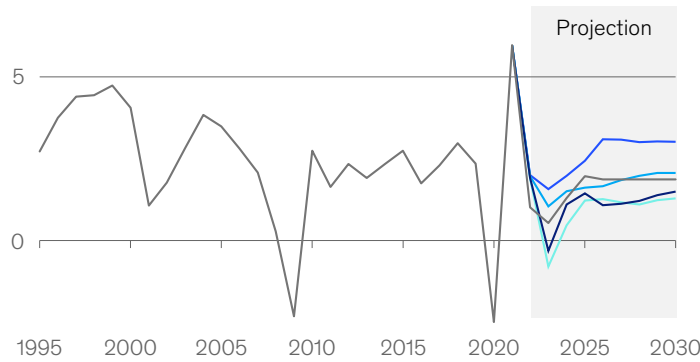
Exhibit 10

There are several plausible pathways for macroeconomic variables.

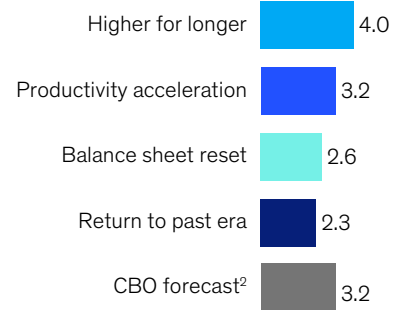
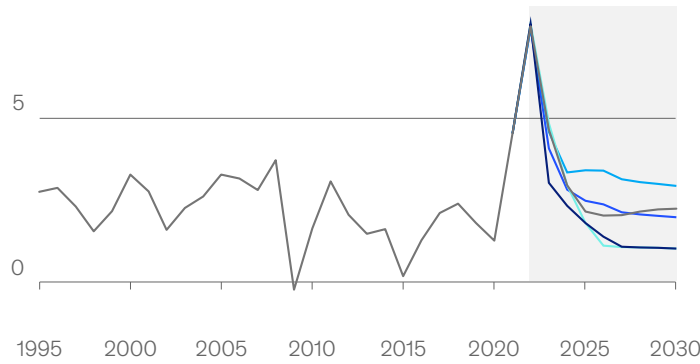
Example scenarios for the United States

2022–2030 average

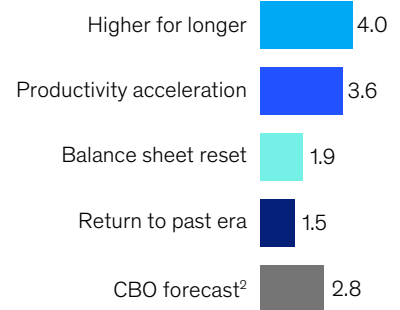
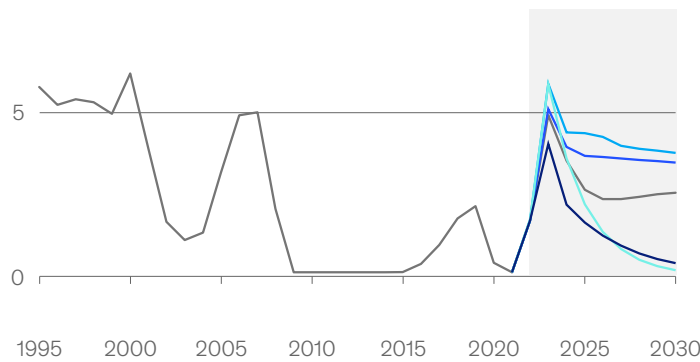
Real GDP growth, YoY, %



Inflation, YoY, %



Nominal interest rates,³ %



¹FOMC projections (March 2023).

²CBO projections (February 2023).

³Central Bank Policy Rates.

Source: Oxford Economics; McKinsey Macro Scenarios; OECD; CBO; Federal Reserve; McKinsey Global Institute analysis

Each of the pathways is plausible; none were developed using extreme or low-probability assumptions (for more detail, see Box 2, “Development of macroeconomic scenarios”).⁵⁸

Box 2

Development of macroeconomic scenarios

MGI developed four scenarios that differ in how forceful and persistent shifts in savings and investment will be, as well as in what the societal and policy response will be. We then translated the four scenarios into macroeconomic pathways for GDP growth, inflation, and interest rates. Through these pathways, we aim to understand trajectories to 2030 rather than make short-term predictions over the next year or two.

Each pathway is plausible; none were developed using extreme or low-probability assumptions, such as a material worsening of global tension leading to a broadening of global conflict, or a global collapse in financial systems—both of which would trigger a sharp increase in risk premiums and a massive decline in asset prices.¹

While each of the scenarios has historical analogies, there are also marked differences.

- **Return to past era versus 2000–20.** This scenario looks very similar to what the United States and other countries have experienced over the past ten to 20 years.
- **Higher for longer versus 1970s stagflation in the United States.**² Inflation is lower, at 4.0 percent per year versus 9.3 percent per year on average in the 1970s, thanks to stronger central bank action. The real market value of equity declines more slowly, at minus 2.0 versus minus 3.8 percent per year. Real estate performs less well, at minus 1.0 versus plus 3.4 percent per year total market value growth in real terms, as it is starting from a much higher level relative to GDP today than in the 1970s and because of a stronger interest rate response.

¹ See Jeffrey Frankel, “Black swans: A comment on ‘Financial cycles: What? How? When?’ by Claessens, Kose and Terrones,” in Richard Clarida and Francesco Giavazzi, *NBER International Seminar on Macroeconomics*, University of Chicago Press, 2011.

² Defined as the period from 1973 to 1981.

⁵⁸ History is littered with examples of “black swan” events. Risks such as a material worsening of global tension leading to a broadening of global conflict, or a global collapse in financial systems—both of which would trigger a sharp increase in risk premiums and a massive decline in asset prices—are not covered by MGI’s scenarios. See also Jeffrey Frankel, “Black swans: A comment on ‘Financial cycles: What? How? When?’ by Claessens, Kose and Terrones,” in Richard Clarida and Francesco Giavazzi, *NBER International Seminar on Macroeconomics*, University of Chicago Press, 2011.

Box 2 continued

- **Balance sheet reset versus 2008 global financial crisis or Japan in the 1990s.** As in the 2008 crisis, equity and real estate sharply correct. In this scenario, however, the structural drivers of savings versus investments point the other way, the natural rate of interest is higher, and monetary policy does not come to the rescue in the same way. As a result, the total market value of equity decreases by 4.0 percent per year in real terms through 2030 (compared with an increase of 3.2 percent per year over the period surrounding the global financial crisis).³ So does real estate in real terms (minus 4.0 percent per year in real terms, compared with minus 2.3 percent during the 2008 global financial crisis). This situation somewhat resembles Japan in the 1990s; total net worth relative to GDP contracted by 20 percent from 1990 to 2000 and was still down 17 percent from its peak 30 years later, in 2021.
- **Productivity acceleration versus 1990s.** This scenario somewhat resembles the period of very rapid productivity growth in the late 1990s and early 2000s as the development of PCs, software, and other technologies finally led to an acceleration in productivity growth, resolving the Solow Paradox.⁴ Real GDP growth accelerated by 1.1 percentage points (from 3.4 percent per year on average to 4.5 percent on average), compared with 0.9 percentage points in this scenario (from 2.2 percent per year on average to 3.0 percent on average). The real market value of equity grew faster, at 12.5 versus 4.0 percent per year in this scenario, as it started from less elevated levels. The real market value of real estate grew at 4.2 percent per year historically, compared with 1.0 percent per year in this scenario.

In the United States, current forecasts by the Congressional Budget Office (CBO) and the US Federal Reserve appear to fall at about the midpoint of the four MGI pathways. The same applies to market-implied interest and inflation expectations. According to data from the Federal Reserve Bank of New York, markets expect inflation to sharply decline in 2023, reaching about 4 percent, and eventually falling to 2.4 percent in 2030. The yield curve of US Treasuries suggests that markets expect the nominal central bank interest rates to come down gradually as inflation is subdued, reaching 3.3 percent by 2030.

³ The period surrounding the global financial crisis is defined as 2005 to 2013.

⁴ The Solow Paradox is named after Nobel laureate Robert Solow, who said in 1987, "You can see the computer age everywhere but in the productivity statistics." See *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018.

Return to past era scenario: Unsustainable balance sheet expansion at the expense of GDP growth

It remains possible that shocks will prove temporary, the structural overhang of savings will prevail, low interest rates will return, and balance sheet expansion will resume. At first blush, this scenario may appear attractive because wealth continues to grow. But that growth comes at the expense of real economic output, accentuates inequality, and continues to raise the risk of financial stress and future corrections (all numbers in this and the three other scenarios are for the United States).

- **What happens: Secular stagnation returns.** In this scenario, inflation comes down over the next couple of years to well below 2 percent. Labor market tightness subsides, and unemployment settles at previous or slightly elevated rates. Demand is weak and mediocre GDP growth resumes, averaging roughly 1 percent between now and 2030. The earnings share of GDP continues to grow. Smart money chases opportunities in capital appreciation, such as real estate, rather than productive investment. Real interest rates turn slightly negative again. Capital is misallocated, and productivity growth remains low.
- **Balance sheet outcomes: Continued expansion and vulnerability.** The balance sheet continues its secular expansion relative to GDP, but, as before, remains vulnerable to future shocks and disruptions. The total market value of equity, adjusted for inflation, grows roughly in line with past rates as the tailwinds of strong earnings and low interest rates continue. The value of real estate continues to benefit from low interest rates. The total value of bonds grows as leveraging resumes. Only deposits modestly retreat as central banks reduce the size of their balance sheets. Real household wealth grows by a cumulative 28 percent, or \$40 trillion on paper, with rising wealth inequality.

The “return to past era” scenario may appear attractive, but growth comes at the expense of real economic output, accentuates inequality, and continues to raise the risk of financial stress and future corrections.

Higher for longer scenario: Using inflation to lower balance sheet vulnerabilities at the expense of price stability

If investment picks up and the savings glut wanes in a meaningful and persistent way despite headwinds impeding GDP growth, inflationary pressure may become entrenched. Then if policy tightening remains moderate due to financial stability risks, the economy may experience a higher for longer scenario. This scenario has parallels with 1970s stagflation in the United States, albeit with somewhat lower inflation (4 percent rather than 9 percent).⁵⁹ While the lack of price stability in this scenario is problematic, it comes with solid income growth, positive (if not impressive) growth in wealth, and improved balance sheet stability.

- **What happens: Persistently elevated inflation and rates.** In this scenario, inflation settles at roughly 4 percent as tight labor supply continues and the net-zero transition, supply chain reconfiguration, and national defense add two to three percentage points to the investment share of GDP. Nominal wages rise quickly, and consumption is strong. Policy rates rise in response but, with rising stress in the financial system, not by enough to bring inflation down to target. Strong demand and higher investment—even if not all of it is productive—support GDP growth somewhat above the recent trend. With bargaining power shifting in favor of workers and more forceful competition policy, corporate earnings grow more slowly than labor income and GDP. Risk premiums rise by one to two percentage points relative to averages over the past decade as volatility stays high.
- **Balance sheet outcomes: Stagnation in real values and balance sheet contraction relative to GDP.** The size of the balance sheet overall starts to revert toward historic averages relative to GDP, due to the combination of inflation and somewhat stronger GDP growth. As earning growth slows, the total market value of equity (adjusted for inflation) contracts in absolute terms and as a multiple of GDP. The market value of real estate falls in real terms as higher interest rates weigh more strongly for investors than inflation protection benefits and additional construction. Debt and deposits grow to finance higher investment, but more slowly than inflation; their ratios to GDP also decline.⁶⁰ Real household wealth contracts by a cumulative 8.5 percent or \$12.6 trillion.

While the lack of price stability in the “higher for longer scenario” is problematic, it comes with solid income growth, positive (if not impressive) growth in wealth, and improved balance sheet stability.

⁵⁹ Defined as the period from 1973 to 1981.

⁶⁰ Debt servicing cost would still increase over time with higher interest rates. For a broader discussion of the relationship of debt and inflation, see M. Ayhan Kose et al., *Government debt has declined but don't celebrate yet*, Brookings Institution, February 2023; and Christopher J. Neeley, *Inflation and the real value of debt: A double-edged sword*, Federal Reserve Bank of St Louis, August 2022.

Balance sheet reset scenario: A drawn-out recession is the worst case for wealth, income, and financial stability

Tighter policy, perceptions of rising risk, and stress or even failures in financial systems could lead to a sharp correction in asset values as well as a prolonged recession and a period of deleveraging. Monetary and fiscal policy cannot come to the rescue as they did in the global financial crisis because balance sheets are already large. This scenario bears some resemblance to what happened in Japan in the 1990s.⁶¹

- **What happens? A very hard landing and an almost-lost decade.** Forceful monetary and fiscal tightening ends the bout of inflation. But higher real interest rates expose elevated debt levels and asset prices, which drop significantly. Financial institutions come under pressure with potential additional bank closures; value losses in bonds as well as in commercial and other real estate bite strongly into capital buffers. In the worst case, liquidity crunches force a fire sale of assets, further depressing values and triggering more systemic financial stress. Affected countries—and even the global economy—face debt restructuring or a drawn-out period of deleveraging. Uncertainty and risk premiums rise materially, and monetary and fiscal policy softens again to stabilize economic activity. Balance sheet adjustment drags down economic growth via deleveraging and thus weak demand as consumers pay back debt rather than spending. The supply side sees zombification of firms, banks, and assets, as well as capital starvation and weak investment. Deleveraging could last for a decade, and GDP growth would be one percentage point lower than in the previous decade. What makes the situation particularly difficult is that almost all sectors and countries are affected simultaneously at this stage, but deleveraging of one sector or country typically requires another one to add debt.⁶² Socializing the losses could accelerate the adjustment, but it is more difficult to achieve with already-high public debt and long central bank balance sheets.⁶³
- **Balance sheet outcomes: Asset correction and deleveraging.** Overall, the size of the balance sheet corrects relative to GDP. The total market value of equity declines in real terms and as a multiple of GDP. Equities are negatively affected by a brief spike in real interest rates (but then supported as rates come down again), increased uncertainty and risk premiums, and muted GDP growth and earnings expectations. For instance, US equities and real estate values might drop by more than 30 percent between now and 2030. Real estate values fall in real terms and relative to GDP, driven primarily by higher rates as well as falling tolerance for risk. Bond premiums grow, and debt and deposits come under pressure from deleveraging, although the public sector is assumed to have to further grow its debt to stabilize the economy. Real household wealth declines by a cumulative 20 percent—as in the case of total net worth in Japan in 1990 to 2000—or \$30 trillion by 2030.⁶⁴

⁶¹ For an account of that period, see Richard Koo, *Balance sheet recession: Japan's struggle with uncharted economics and its global implications*, John Wiley & Sons, 2003.

⁶² Alternatives are debt restructuring, or wealthy households consuming their savings so that indebted ones can pay off their debt. One example is the global financial crisis, in which households and financial institutions deleveraged on the back of the public sector's growing its debt. Another is the large current account surpluses that Japan and Sweden generated after their respective real estate bubbles popped, to support domestic deleveraging.

⁶³ See Barry Eichengreen et al., *In defense of public debt*, Oxford University Press, 2021.

⁶⁴ In Japan, net worth was still down 17 percent from its peak 30 years later, in 2021.

Productivity acceleration scenario: The Goldilocks outcome; rapid GDP growth improves wealth and balance sheet health

The scenario decision makers should strive toward is the one in which investment strengthens and is productive, accelerating productivity growth. This scenario somewhat resembles the period of very rapid productivity growth in the late 1990s and early 2000s. The balance sheet grows, but less quickly than GDP, and therefore is healthier and more sustainable.

- **What happens? Productive investment and technology adoption step up to drive productivity.** The forces outlined in the previous section lead to continued strong demand and an abundance of attractive investment opportunities. New investment materially accelerates productivity growth and GDP growth by one percentage point compared with the past decade. Faced with tight labor markets, firms accelerate investment in and adoption of digital and automation technology, fostering productivity growth. Reimagined supply chains remain efficient, and a new wave of emerging economies provides ample global labor. Industrial policy successfully drives innovation and technology. Fast supply growth moderates inflationary pressure. Inflation declines to target while real interest rates rise to about 1 percent on average, further supporting productive capital allocation.
- **Balance sheet outcomes: Sustainable growth.** Thanks to rapid GDP growth, the size of the balance sheet overall as a multiple of GDP declines slightly. The total real market value of equity grows only modestly more slowly than in the past, but it declines relative to accelerating GDP. Faster economic growth nearly compensates for losing tailwinds from a growing earnings share of GDP and a slight headwind from rising real interest rates. The value of real estate (adjusted for inflation) broadly stagnates, and it therefore declines relative to GDP.⁶⁵ The total value of bonds grows to finance higher investment despite headwinds from interest rates. In a stable economy, deposits shrink in real terms as central banks roll back their balance sheets with quantitative tightening. Real household wealth grows by a cumulative 11 percent or \$16 trillion.

The divergence of asset values and debt from GDP may end, reshaping the economic, banking, and investment landscape

Decision makers have become used to a balance sheet, both debt and asset values, that outgrew GDP for decades, but the next decade could see the world heading in a materially different direction. In all but one scenario—the return to past era—current asset price and financial system volatility prove to be only the early signs of a fundamental shift in how the balance sheet grows relative to GDP. In three of the four scenarios, the balance sheet contracts relative to GDP, be it via asset correction and deleveraging, inflation higher than nominal asset and debt growth, or faster GDP growth (Exhibit 11).

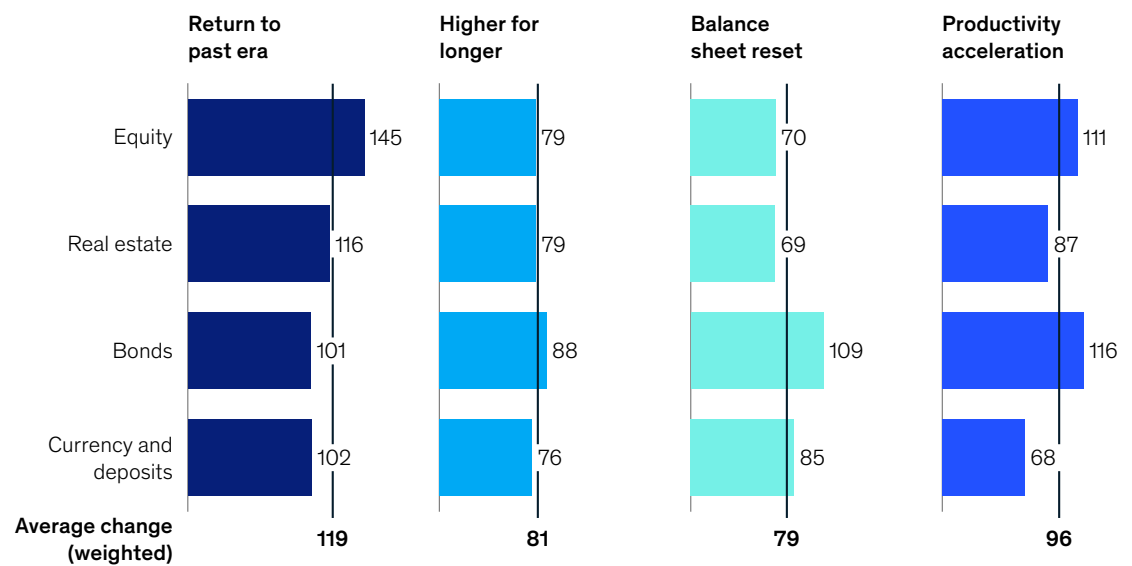
⁶⁵ The sensitivity of real estate prices to real interest rates is much higher than for equity, and their sensitivity to GDP growth lower.

Exhibit 11

In all but the “return to past era” scenario, the size of the balance sheet and its major components declines relative to GDP by 2030.

Total market value as multiple of GDP (2022 = 100), United States

2030 scenarios



Source: MGI GBS Model; McKinsey Global Institute analysis

McKinsey & Company

Growth in equity, real estate, bonds, and deposits looks markedly different than in the past two decades. For instance, during the past 20 years, the total market value of the equity of listed as well as unlisted companies has grown by 5 percent annually in real terms; in the period to 2030, rates vary between minus four percent in a balance sheet reset scenario and plus six percent in a return to past era scenario. (Note that these numbers represent total market value growth, not performance, nor price.)⁶⁶

There are similarities and variations depending on the country. Notably, equities decline less in Germany and the United Kingdom than in the United States in the higher for longer and balance sheet reset scenarios, largely reflecting the fact that they did not experience as large a run-up in corporate earnings. In real estate, Germany and the United Kingdom experience a smaller decline relative to GDP than the United States in the higher for longer and productivity acceleration scenarios as interest rates rise less amid somewhat slower growth.

⁶⁶ Growth in the market value of all assets is not the same as performance. Volume effects such as new share issuances, new privately held firms, and newly built real estate drive part of the growth in total market values, but this does not result in higher prices for owners of assets today. MGI estimates that annual asset price growth could be roughly one to three percentage points lower than growth in total asset market values. However, asset performance includes annual yields, such as dividends or rents, which are not included in these calculations.



Working for accelerated productivity, but preparing for less favorable outcomes

Decision makers will need to adjust their thinking to potentially a very different world economy and global balance sheet in the decade ahead, and indeed for an unusually wide range of potential outcomes. This calls for longer-term thinking, and a much broader set of indicators—including the global balance sheet itself—to be accounted for in strategy and planning than arguably they have been used to. Governments and corporations alike should collectively strive toward accelerated productivity growth, the only one of MGI's modeled scenarios that achieves strong growth in income and wealth over the long term *and* a healthy global balance sheet. At the same time, however, they should actively prepare for less favorable outcomes.

Striving toward higher productivity is vital

Productivity growth and the choices made to achieve it are of preeminent importance in the current environment. Only an acceleration of productivity growth can underpin economic growth in the long term—and a healthy, sustainable global balance sheet. The situation has become much more urgent and important. Typically, policies to drive productivity achieve a few tens of basis points of additional economic growth. Now, the difference in household wealth between a productivity acceleration and a balance sheet reset scenario amounts to \$48 trillion in the United States alone. Monetary and fiscal policy makers face a predicament: fail to tighten enough, and inflation stays uncomfortably high; tighten too much, and wealth and the financial system face stress. Without faster GDP growth, the line between these outcomes may be very thin.

What is needed to achieve a productivity acceleration scenario? First and foremost, it requires productive capital allocation and investment as well as more rapid adoption of digital tools, MGI research has shown (see the appendix for more detail on actions to drive productivity growth).⁶⁷ Reshaping the financial system to focus capital allocation toward new, productive capital formation could also help. What could shift the relative attractiveness of financing new businesses and projects in energy or infrastructure versus financing existing asset transactions like mortgages for existing homes at ever-rising prices or leveraged buyouts?

Moving toward higher productivity growth also requires decision makers to believe that it is achievable and to translate it into a credible outlook. If firms prepare for a slowdown in GDP growth or a recession, they are less likely to invest. Instead, waiting becomes attractive. Real estate developers, for instance, expecting lower prices, will delay developing new projects. Banks focused on strengthening their balance sheets will tighten lending standards, reducing the production of loans. All this might set the scene for a self-fulfilling prophecy of doom and gloom. Leadership from both public and private sectors will need to articulate the basis for the acceleration scenario in order to make it happen.

Only an acceleration of productivity growth can underpin economic growth in the long term—and a healthy, sustainable global balance sheet.

⁶⁷ See *Infrastructure productivity: How to save \$1 trillion a year*, McKinsey Global Institute, January 2013; *A blueprint for addressing the global affordable housing challenge*, McKinsey Global Institute, October 2014; *Bridging global infrastructure gaps*, McKinsey Global Institute, June 2016; Tera Allas, "How the public sector fits in the productivity puzzle," McKinsey Center for Government, January 2018; *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018; *Will productivity and growth return after the COVID-19 crisis?* McKinsey Global Institute, March 2021; *The net-zero transition: What it would cost, what it could bring*, McKinsey Global Institute, January 2022; Anthony B. Atkinson, *The Atkinson review, final report: Measurement of government output and productivity for the national accounts*, Palgrave Macmillan, 2005; William J. Baumol et al., *The cost disease: Why computers get cheaper and health care doesn't*, Yale University Press, 2013; Gabriel J. Felbermayr, Hendrik Mahlkow, and Alexander Sandkamp, *Cutting through the value chain: The long-run effects of decoupling the East from the West*, CESifo EconPol Policy Brief number 41, 2022; and *Rekindling US productivity for a new era*, McKinsey Global Institute, February 2013.

Firms will need to develop strategies to get ahead of a broad range of long-term outcomes

Since uncertainty may persist for at least some time, firms will need to plan for multiple scenarios. Past strategies may work well in a return to past era. Yet the other possibilities, and particularly the higher for longer and balance sheet reset scenarios, involve ruptures that arguably need a material shift in thinking, particularly among investors and financial institutions. Reacting to shifts in the macro environment will no longer suffice. Firms should identify markers for which scenario the world is headed toward, plan for a sufficiently broad set of scenarios, and test risk management approaches, as well as adjusting business models and seeking new growth opportunities.

- **Identify markers for which scenario the world is headed toward.** Many players still emphasize short-term financial indicators such as the latest inflation readings, an interest rate decision by the US Federal Reserve or Bank of Japan, and the reaction to any of these in the financial markets. Longer-term structural shifts generally attract less attention.

Given today's high uncertainty and structural forces shaping possible futures, decision makers need to look further ahead.⁶⁸ This means tracking indicators on the factors that might drive investment and savings, which are now shifting. They should also look at long-run drivers of supply and productivity growth, as well as the political and economic constraints that may shape the trajectory of fiscal and monetary policy (for more detail on potential markers, see the appendix).

- **Plan for a sufficiently broad and long-term set of scenarios.** What consequences would business bear, for instance, if interest rates and inflation stayed high for a decade or, in contrast, if GDP growth were to materially accelerate? To provide some examples:
 - How can investors and asset managers develop foresight and adjust asset portfolios? “Everything will be fine if you take a ten-year perspective” may apply less than in the past, whether for asset prices, financing conditions, or economic parameters. The scenarios have significantly different outcomes for different asset classes, and these need to be accounted for. For instance, in a higher for longer scenario, asset managers will want to contemplate reducing their relative weighting of growth equity funds. In several scenarios, cap rates would rise and stay higher, affecting investment cases for real estate developers.⁶⁹
 - How can banks rethink deposit models and secure liquidity and longer-term funding in the transition to a new interest rate regime? In several scenarios, deposits will fall at a systemic level, not only for individual banks.
- **Test and strengthen risk management approaches.** This might include bolstering equity buffers, strengthening balance sheets, or offloading macro risk. Stress-testing business models and balance sheets to these scenarios—or reverse stress-testing which parameters and thresholds would expose the largest vulnerabilities—should be a priority.

⁶⁸ Dominic Barton, Dezső Horváth, and Matthias Kipling, eds., *Re-imagining capitalism*, Oxford University Press, 2016.

⁶⁹ Cap rates are the quotient of net operating income divided by the market value of real estate. A cap rate compression results in rising prices that deliver windfall profits for real estate investors.

- **Adjust business models and seek new growth opportunities.** A sustained shift in the macro environment can make some business models partially obsolete and others newly attractive. To provide some examples for the questions that may be asked:
- For investors, how to prioritize opportunities to capture value creation, including earnings and rent growth in scenarios where multiples no longer expand? Even with market headwinds, there will, of course, be opportunities in individual investments, from neighborhood redevelopment in postpandemic real estate to new business models in corporations. And in any case, increasing fiscal support, with rising investment in defense, energy, automation, and AI, could be available.
 - For financial institutions, how to restructure business models that often are still hardwired into an expanding balance sheet, abundant liquidity, and substantial maturity transformation of liabilities? What sources of revenue beyond net interest income could be most promising across scenarios? Examples for fee-based income include payments, advisory transaction pricing and facilitation, the origination and financing of new capital projects, and ecosystem services such as real estate brokerage and moving services. Mortgages (even more so in commercial real estate) and Lombard loans may require a critical reappraisal.
 - For banks, how to anticipate substantial shifts of product, customer segment, and geographic attractiveness? Increasing the speed of capital and business reallocation could pay off and capture money in motion ahead of competitors. In a higher for longer scenario, for instance, lower- and middle-income and -wealth quintiles could make up some of the ground they lost to higher-income and wealth quintiles. M&A opportunities will abound.

The turbulence of recent times is a shock to the system after a period of relative calm for the global economy and uninterrupted decades of rising wealth (and debt) on paper. The path ahead is highly uncertain, the range of possible scenarios unusually wide. The situation demands that assumptions be revisited and planning, strategy, and business models adjusted. The adjustment from what went before may well be prolonged.



Appendix

This appendix has the following sections:

- MGI's approach to decomposing drivers of market value growth in equity, real estate, bonds, and deposits
- MGI's approach to modeling expansion or contraction of asset values relative to GDP
- A broader suite of markers
- Levers that drive productivity growth

MGI's approach to decomposing drivers of market value growth in equity, real estate, bonds, and deposits

To value assets, MGI used class-specific, discounted expected cash flows, varying parameters across the scenarios in a model-consistent way. This approach takes account of changes in the quantity of bonds, stocks, and buildings; changes in cash flows or income generated from them; and changes in how the cash flows are valued or the multiples of value applied to income. In simplified terms, this multiple is the inverse of the discount rate, or of the weighted average cost of capital minus the rate of growth. The exact approach varies by asset type, as follows:

- **Real estate.** The factors used in the model are the total rent income for owners (determined by rent as a share of GDP, including imputed rent for owner-occupied buildings, and the net operating margin); rent growth expectations (estimated via market-implied inflation expectations and rent growth above inflation from historical data); and the cost of capital (50 percent real estate cost of debt per the risk-free long-term rate and the mortgage spread, and 50 percent the real estate cost of equity).
- **Equities.** The factors used are total corporate earnings (after interest, depreciation, and tax) as a share of GDP, generated by unlisted as well as listed firms; earnings growth expectations (estimated via market-implied inflation expectations, real GDP growth, and expected earnings growth above inflation and GDP growth); and the cost of capital (determined by the risk-free long-term interest rate and the equity market risk premium).
- **Corporate and government bonds.** The factors used are the par value of corporate and government bonds relative to GDP and the yield to maturity (as determined by the coupon rate, maturity, and the risk premium as well as expectations on real interest rates and inflation). Interestingly, while there can be substantial swings in bond values when interest rates change, when looking at long periods well beyond average maturities, the impact from interest rate changes becomes less important.
- **Currency and deposits.** The change in total stock of deposits relative to GDP is linked to interest rates, lending, and monetary policy (that is, the provision of bank reserves by central banks).⁷⁰ As there is no valuation effect, we have not built a model to decompose drivers.

MGI's approach to modeling expansion or contraction of asset values relative to GDP

MGI built a scenario model to understand the evolution of the global balance sheet and project the total economy market value of all nonfinancial corporate equity (unlisted and listed), real estate, bonds, and currency and deposits. This model accounts for volume and valuation effects.

On the volume side, the stock of corporate capital as well as the stock of real estate (price adjusted) have grown slightly more slowly than GDP; this analysis assumes that the same relationship holds. Depending on the scenario, an increase in the investment rate of GDP is added. For bonds, a baseline of growth with GDP is assumed and is then adjusted by scenario based on the investment, inflation, and leveraging or deleveraging environment. For currency and deposits, steady growth with GDP as a baseline is used and is adjusted for scenario-specific monetary policy environments. As currency and deposits are currently at very elevated levels compared with historical averages, in most cases that means a contraction. The main reason for that is less provision of bank reserves or quantitative tightening.

On the valuation side, the same asset pricing models, calibrated for the historical decomposition of drivers of value growth, are applied. Growth, inflation, and interest rate parameters are applied from the macro model. For earnings relative to GDP, continued growth, stagnation, or partial mean reversion to historic averages are assumed, depending on the scenario. The rent share of GDP has been relatively constant

⁷⁰ Deposit assets are looked at by households, corporations, and governments.

historically. Some variations are assumed depending mostly on consumer purchasing power by scenario in the future. The development of equity risk premiums has historically evolved in a relatively narrow band, with obvious deviations during episodes of boom and bust. The average of the previous era was applied in most scenarios, with an increase in risk premiums in the balance sheet reset scenario and, to a lesser extent, in the higher for longer scenario. Real estate risk premiums have been highly volatile, but the total cost of equity has been fairly flat outside of boom and bust periods. For this reason, in this case, too, averages for the cost of equity in the previous era are applied. There is an uptick in the cost of equity in the balance sheet reset scenario.

The results of the modeling are shown in Exhibits A1 and A2. The primary swing factors are GDP growth, the earnings share of GDP, real interest rates, and risk premiums.

Exhibit A1

Shifts in profit share of GDP and real interest rates are important contributors to equity-to-GDP changes.

Contributions to increase in equity total market value relative to GDP, United States, 2022–30 (2022 = 100)



Note: Change in expected excess rent or profit assumed to not have a long-term effect. We apply year-over-year changes in modeled values to the actual ratio to GDP in 2022, leading to modeling errors in 2022 and 2030.
Source: MGI GBS Model; McKinsey Global Institute analysis

Exhibit A2

The real-estate-to-GDP ratio primarily changes because of shifts in the rental share of GDP, real interest rates, and risk premiums.

Contributions to increase in real estate total market value relative to GDP, United States, 2022–30 (2022 = 100)

X GDP multiple Positive impact Negative impact



Note: We apply year-on-year changes in modeled values to the actual ratio to GDP in 2022, leading to modeling error in 2022 and 2030. Change in expected excess rent/profit assumed to not have an effect in long term.
Source: MGI GBS Model; McKinsey Global Institute analysis

McKinsey & Company

A broader suite of markers

- **Investment acceleration and productivity impact.** Are net-zero commitments accelerating and being followed through with real investment in a long-run, affordable way? Is defense spending picking up materially? Are supply chains shifting in resilient but still efficient ways or in more politically driven ones that add mercantilism to national security concerns and result in duplication and inefficiencies?
- **Inequality, wage, and profit dynamics.** Are wages in lower quintiles rising notably faster than in the top quintile in the case that labor bargaining power recovers consistently and increases? Are political and regulatory approaches to competition policy, pricing (or market power), and taxation becoming more robust?
- **Aging dynamics.** Are retirement ages rising faster than life expectancy or the other way round? Are retirees continuing to save the way they did in past decades, or are diminished asset price gains forcing them to exhaust savings more rapidly? Will they save more to prevent this?
- **Global capital flows and supply chains.** Is there continued openness to trade in sectors where there are no national security concerns or a lasting shift toward protecting domestic producers? How are cross-border capital flows shifting?
- **Monetary and fiscal policy and financial stress.** Will central bankers remain committed to fighting inflation if significant financial stress is looming? Will the public and its elected leaders accept elevated inflation or financial stress and asset losses? Which institutions would become insolvent if they needed to recognize losses on (commercial) real estate or long-dated bonds as well as long-duration loans (“mark to market”), and how much do they matter for the broader financial system and for doom-loop effects for asset prices if they are forced to sell under stress?

Levers that drive productivity growth

What drives productivity growth has been discussed extensively in past MGI research. Priorities could include the following:

- **Enable more rapid digitization.** Policy makers would do well to pay particular attention to doing what they can to enable accelerated diffusion of technology. By doing so, more firms could reap the full benefits of automated business processes and customer interaction, artificial intelligence, new materials, and so on. This could add a full percentage point to productivity and GDP growth.⁷¹
- **Drive productive investment, including in skills.** Priorities could include public investment in areas from infrastructure to basic research to education and skills; overhauling land markets to support affordable housing development; and setting the conditions for investment related to the net-zero transition to pick up.⁷² It will be important to ensure that industrial policies—that is, investment launched and supported by the public sector, such as the US Inflation Reduction Act and the CHIPS and Science Act—add to innovation and productivity.

⁷¹ *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018; and *Will productivity and growth return after the COVID-19 crisis?* McKinsey Global Institute, March 2021.

⁷² *Infrastructure productivity: How to save \$1 trillion a year*, McKinsey Global Institute, January 2013; *Bridging global infrastructure gaps*, McKinsey Global Institute, June 2016; *A blueprint for addressing the global affordable housing challenge*, McKinsey Global Institute, October 2014; *The net-zero transition: What it would cost, what it could bring*, McKinsey Global Institute, January 2022.

- **Transform public-sector productivity.** In the public sector, from education to healthcare, there are ample productivity opportunities. Tackling those could be a big win, particularly in the aftermath of considerable expansion in the public sector and stress on public services as the result of a wave of government intervention and increased healthcare demands during the pandemic.⁷³
- **Initiate structural reform to drive productivity in the private sector.** Smart regulation is particularly important. Regulation, addressing externalities, is often necessary and desirable, yet too much bureaucracy, complexity, and red tape can be as harmful as uncertainty and a lack of clarity about what the rules will be. Each sector has specific step-up opportunities, including expanded adoption of digital technologies, such as online retail, electric and autonomous mobility, smart grids, and industrialized construction. It will be critical to hasten progress.
- **Maintain openness to trade.** Considerations related to strategic autonomy are arguably leading to a shift in the patterns of global cross-border flows, and this may continue.⁷⁴ The search is under way for a new balance between national security concerns and cost-efficient production. Cutting through the value chain comes, inevitably, with lost opportunities.⁷⁵ Yet it is important to keep in mind that the most resilient systems are not the most local ones, but the most diverse ones.⁷⁶ The Organisation for Economic Co-operation and Development has found that a “localized regime” in which trade was 18 percent lower would result in the level of global GDP being 6 percent lower.⁷⁷

⁷³ *The public-sector productivity imperative*, McKinsey Global Institute, March 2011; Tera Allas, “How the public sector fits in the productivity puzzle,” McKinsey Center for Government, January 2018; Anthony B. Atkinson, *The Atkinson review, final report: Measurement of government output and productivity for the national accounts*, Palgrave Macmillan, 2005; and William J. Baumol et al., *The cost disease: Why computers get cheaper and health care doesn't*, Yale University Press, 2013.

⁷⁴ *Global flows: The ties that bind in an interconnected world*, McKinsey Global Institute, November 2022; and “The complication of concentration in global trade,” McKinsey Global Institute, January 2023.

⁷⁵ Gabriel J. Felbermayr, Hendrik Mahlkow, and Alexander Sandkamp, *Cutting through the value chain: The long-run effects of decoupling the East from the West*, CESifo EconPol Policy Brief number 41, 2022.

⁷⁶ *Global flows: The ties that bind in an interconnected world*, McKinsey Global Institute, November 2022; and “The complication of concentration in global trade,” McKinsey Global Institute, January 2023.

⁷⁷ *Global value chains: Efficiency and risks in the context of COVID-19*, OECD Policy Responses to Coronavirus (COVID-19), 2021.

Acknowledgments

This is the third publication in MGI's ongoing research on the global balance sheet, a lens on the health and wealth of the global economy. It builds on MGI's 2021 report *The rise and rise of the global balance sheet: How productively are we using our wealth?* and its 2022 paper *Global balance sheet 2022: Enter volatility*.

The research was led by Jan Mischke, an MGI partner in Zurich; Olivia White, a McKinsey senior partner and a director of MGI in San Francisco; Eckart Windhagen, a McKinsey senior partner and a member of the MGI Council in Frankfurt; Jonathan Woetzel, a McKinsey senior partner and a director of MGI in Shanghai; Michael Birshan, a McKinsey senior partner and a member of the MGI Council in London; Sven Smit, a McKinsey senior partner and chairman of MGI in Amsterdam; Arvind Govindarajan, a McKinsey partner in the Boston office; and Szabolcs Kemeny, director of research at McKinsey in Budapest. The team was led by Jorge Sanchez Cumming, a McKinsey consultant in London, and Varun Char, a McKinsey consultant in New York. The team comprised Mohammed Abo Taleb, Oni Bhaumick, Alexander Green, Malik Jabati, and Mario Rojas. We are grateful to MGI fellow Rebecca J. Anderson for her guidance; to MGI director and senior partner in Sydney Chris Bradley; and to Janet Bush, MGI executive editor, who helped write and edit the report.

We give particular thanks for his committed guidance and input to Hans-Helmut Kotz, a resident fellow at the Minda de Gunzburg Center for European Studies at Harvard University, a senior fellow of the Leibniz Institute for Financial Research SAFE, and an MGI adviser. We also thank Paul Ackermann, former vice chairman, Wells Fargo Securities; Guy Moszkowski, Santander Holdings USA Inc. board member; Jonathan Lurie, managing partner, Realty Corporation Ltd.; Alan M. Taylor, C. Bryan Cameron Chair in International Economics and distinguished professor of economics and finance at the University of California, Davis; and John Walsh, former acting comptroller of the currency and executive director of the Group of Thirty.

We are also grateful for enormously helpful discussions about the global balance sheet with a number of leading experts. We thank Marco Buti, Tommaso Padoa-Schioppa Chair, European University Institute; Karen Dynan, professor, Harvard Kennedy School; Barry Eichengreen, professor, UC Berkeley; Gabriel Felbermayr, president, WiFo, Vienna; Olivier Garnier, director general for Economics and International at Banque de France; Charles Goodhart, professor, London School of Economics; Joachim Nagel, president, Deutsche Bundesbank; Adam Posen, president, Peterson Institute for International Economics; Manoj Pradhan, founder and CEO, Talking Heads; Andrew Sheng, chairman, the George Town Institute of Open and Advanced Studies, Penang, Malaysia; and Ignazio Visco, governor, Banca d'Italia. While we are grateful for all their input, any errors are our own.

Many McKinsey colleagues gave us input and guidance, namely Ashwin Adarkar, Andreas Bohn, Sarah Dahlgren, Miklos Dietz, Ben Dimson, Jonathan Dimson, Jon Godsall, Eric Hazan, Tom Isherwood, Somesh Khanna, Tim Koller, Ida Kristensen, Pankaj Kumar, Ju-Hon Kwek, Jean-Christophe Mieszala, Marco Piccitto, Jon Seitz, Joydeep Sengupta, and Christian Zahn. We would like to thank Niklas Berglind, Maria Bernier, Alain Imbert, Bunsho Kure, Erik Rong, Bjorn Sass, and Atushi Yamazaki for their country-specific economic expertise.

Finally, we want to thank Rachel Robinson, MGI director of publishing; Vasudha Gupta, MGI's manager of editorial operations; David Batcheck, MGI digital editor; and MGI specialist Tim Beacom. We appreciate the help of our external communications colleagues Rebeca Robboy, Shannon Ensor, and Nienke Beuwer.

This research contributes to our mission to help business and policy leaders understand the forces transforming the global economy. As with all MGI research, it is independent and has not been commissioned or sponsored in any way by any business, government, or other institution.

McKinsey Global Institute

May 2023


Copyright © McKinsey & Company

Designed by the McKinsey Global Institute

www.mckinsey.com/mgi

 [@McKinsey_MGI](https://twitter.com/McKinsey_MGI)

 [@McKinseyGlobalInstitute](https://www.facebook.com/McKinseyGlobalInstitute)

 [@McKinseyGlobalInstitute](https://www.linkedin.com/company/McKinseyGlobalInstitute)

Subscribe to MGI's podcast, *Forward Thinking*:

mck.co/forwardthinking