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Crumbling Yet Unbroken: The Chronic Crisis of "Three Lows and Three Highs" in a Risk-Shrouded World Economy (2008–2025)

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ABSTRACT

Since the 2008 global financial crisis, the world economy and financial system have entered a prolonged phase of structural adjustment. The development paradigm once supported by rapid growth, deepening globalization, and accommodative macroeconomic policies has gradually receded, giving way to a new configuration characterized by persistently low growth, heightened uncertainty, and intertwined structural risks. Following the shock of the COVID-19 pandemic, these challenges have become even more complex: global growth momentum has weakened markedly; inflation and interest rates have risen; fiscal deficits and public debt burdens continue to expand; globalization has encountered mounting resistance; and trade and supply chains are undergoing accelerated fragmentation. Emerging forces such as artificial intelligence (AI) and green technologies offer substa ntial potential, yet simultaneously introduce new asymmetries and regulatory challenges. Against this backdrop, the vulnerability of the world economic and financial system has increased. Meanwhile, the intensifying trend of population ageing further amplifies long-term uncertainties regarding global economic prospects. This paper aims to systematically examine the evolution, drivers, and internal logic of the world economy under major shocks and deep structural shifts, providing an analytical framework for understanding the profound transformation currently underway.

1.Introduction

In the two decades preceding the 2008 global financial crisis, the world economy benefited substantially from rapid growth and deepening globalization. Following the crisis, however, it entered a prolonged period of stagnation marked by sluggish economic and labor productivity growth, widening fiscal deficits, rising government debt, and persistently low inflation and interest rates. The outbreak of COVID-19 in 2020 and the subsequent sequence of shocks further intensified these pressures: growth and productivity remained subdued, fiscal and debt burdens continued to escalate, and a new set of constraints—high inflation, elevated interest rates, and heightened uncertainty — came to the forefront. The interaction of these forces not only eroded the foundations of the pre-crisis high-growth paradigm but also increased the vulnerability of the global economic and financial system, rendering its future trajectory more difficult to anticipate.

Against this backdrop, it is essential to examine the origins and internal linkages of the emerging configuration commonly described as "three lows and three highs." This paper analyzes the current global landscape along three central dimensions: the long-term drift toward low growth and high uncertainty; the accumulation of fiscal and financial risks in a high-debt, high-leverage environment; and the structural challenges shaped by technological transformation and population ageing. By integrating data, trends, and underlying mechanisms, the paper aims to map the evolving contours of the world economy and financial system, and to identify potential

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avenues for national policy responses and enhanced international coordination.

2.The Global Economy Under Low Growth and Rising Uncertainty

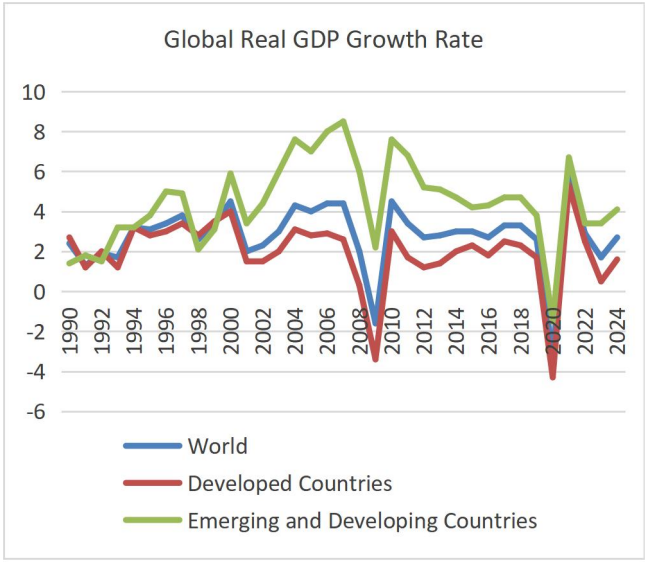
Given the broader context outlined above, a first step is to examine the changing patterns of global economic growth and uncertainty—the most visible and foundational component of the "three lows and three highs." Trends in growth momentum and productivity shape not only short-term economic conditions but also influence fiscal sustainability, financial stability, and the formation of expectations across societies.

2.1.Persistent Declines in Economic and Labor Productivity Growth

Over the past 35 years, the world economy has experienced two distinct phases. Between 1990 and 2007, global economic performance followed a clear upward trend, with average annual GDP growth rising from around 2 percent in the early 1990s to roughly 4 percent by the mid-2000s. During this period, emerging markets and developing economies served as the primary engines of global expansion, with average growth accelerating from below 2 percent to between 7 and 8 percent. Advanced economies also exhibited overall improvement despite cyclical fluctuations.

Following the 2008 financial crisis, however, and further under the shock of the COVID-19 pandemic, growth slowed sharply across all major country groups. Both global output and the growth rates of advanced, emerging, and developing economies showed a consistent and marked decline, with each post-crisis recovery exhibiting weaker momentum than before. Relative to the 1990 – 2007 period, average annual GDP growth fell by 0.64 percentage points for the world as a whole, by 1.25 percentage points for advanced economies, and by 0.05 percentage points for emerging and developing economies. The downward trend became particularly pronounced in the aftermath of the pandemic (Figure 1).

Not only has actual economic growth weakened, but potential growth has also declined markedly across the world and within major country groups after the global financial crisis. According to estimates by the World Bank, between 2011 and 2021, average annual potential growth fell by 0.9 percentage points for the world as a whole, by 0.8 percentage points for advanced economies, and by 1 percentage point for emerging and developing economies, compared with the 2000–2010 period. Among the 173 countries covered in the World Bank dataset, 96 percent of advanced economies and 57 percent of emerging and developing economies experienced declines in potential growth, indicating a high degree of synchronicity and consistency across regions[1].



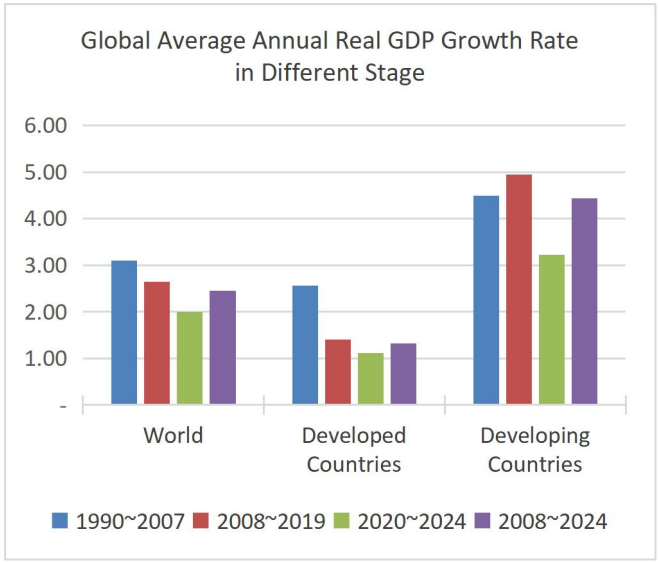


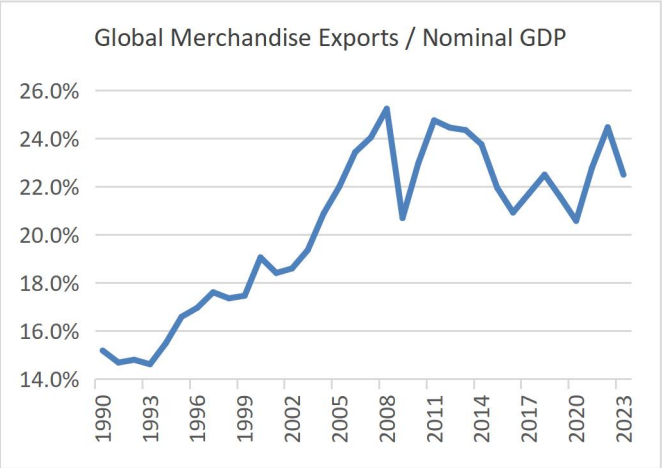
Fig 1. World Economic Growth from 1990 to 2024

Data Source: World Bank (World Development Indicators, released in 2024)

Accompanying the persistent post-crisis slowdown in global growth are two closely related structural trends. The first is the weakening of global trade under rising anti-globalization pressures. Trade had been one of the core engines of global expansion since the 1990s: over nearly two decades of rapid growth, the ratio of global merchandise exports to GDP rose from around 15 percent to over 25 percent by 2008, and between 1990 and 2008, average annual export growth (9.3 percent) significantly outpaced growth in world nominal GDP (6.3 percent) (Figure 2). Yet the global financial crisis accelerated the rise of anti-globalization sentiment in advanced economies. As the crisis inflicted deeper losses on the middle class, support for populist and protectionist positions increased sharply in countries such as the United States[2], contributing to the electoral coalition that ushered in the Trump administration in 2016 and its assertive unilateral trade agenda[3]. As a result, global exports declined significantly in both share and growth rate after the crisis. Following a brief rebound in 2021–2022 during the post-pandemic recovery, global trade contracted again sharply in 2023 (Figure 2).

The second structural trend is the prolonged weakness in investment and employment. On one hand, the financial crisis and the COVID-19 pandemic directly disrupted labor supply, heightened uncertainty, and led firms to adopt more cautious

investment and hiring strategies, exerting persistent downward pressure on employment and capital formation[4,5]. On the other hand, sluggish trade growth after the crisis also contributed to a sharp decline in global foreign direct investment (FDI). As these mechanisms interacted, the ratio of net FDI inflows to global GDP fell from over 5 percent before the global financial crisis to below 2 percent by 2022, based on authors' calculations using data from the World Bank's World Development Indicators. Over the same period, investment levels across advanced economies dropped substantially relative to pre-crisis projections[6].



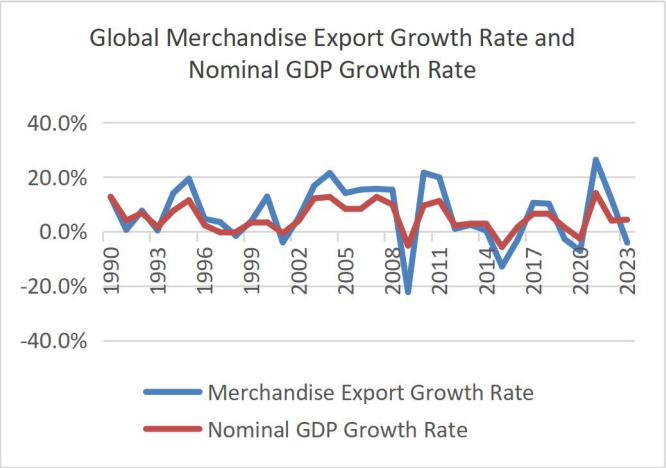


Fig 2. World Trade Growth from 1990 to 2024

Data Source: World Bank (World Development Indicators, released in 2024), WTO (Global Trade Outlook and Statistics, 2024)

At the same time, labor productivity growth across different regions and country groups also exhibited a broadly synchronous decline after the global financial crisis, further weighing on global economic performance. In this context, labor productivity refers to real output per worker per year, measured in constant prices. Advanced economies had already entered a long-term slowdown in productivity growth beginning in the 1980s; during 2000–2007, their average annual productivity growth fell by 0.57 and 0.24 percentage points relative to the 1980s and 1990s, respectively. Yet supported by emerging and developing economies, global labor productivity still recorded gains during the same period—rising by 0.53 and 0.50 percentage points relative to the 1980s and 1990s.

This pattern of structural divergence shifted sharply after the financial crisis. Productivity growth declined markedly in both advanced and emerging economies: between 2008 and 2018, average annual growth fell by 0.87 percentage points in advanced economies and by 0.74 percentage points in emerging economies compared with the early 2000s. Global productivity growth also dropped by 0.6 percentage points during the same period (Figure 3). Although a temporary rebound occurred during the COVID-19 pandemic due to mobility restrictions and measurement effects, productivity growth fell back to below pre-pandemic levels once these effects dissipated, reinforcing the persistent global productivity slowdown[7,8]. Existing research suggests that the post-crisis decline in investment across country groups is a primary driver of the widespread fall in labor productivity[9]. Rising trade fragmentation and demographic ageing further compound these structural headwinds, placing additional constraints on long-term productivity growth[8].

Moreover, the interaction between declining labor productivity and prolonged economic sluggishness can reinforce one another through reduced investment, weaker employment growth, and slower trade expansion, potentially locking economies into a negative feedback loop of low growth and low productivity.

These developments imply that major economies are increasingly shifting policy attention away from short-term demand stimulus toward strengthening potential growth. Persistently weak productivity trends, subdued investment appetite, and the erosion of globalization's supportive effects have compelled policymakers to rely more heavily on structural tools to anchor long-term expectations—such as facilitating technological diffusion, improving the institutional and regulatory environment, and enhancing the efficiency of capital formation. For China, maintaining credible openness expectations, advancing institutional openness, and strengthening supply-side resilience are essential for preserving external attractiveness and growth momentum amid accelerated global trade fragmentation. At the same time, the ability to improve coordination among trade, industrial, and technology policies—and thereby avoid the additional costs imposed by fragmentation—has become an increasingly important challenge for economies worldwide.

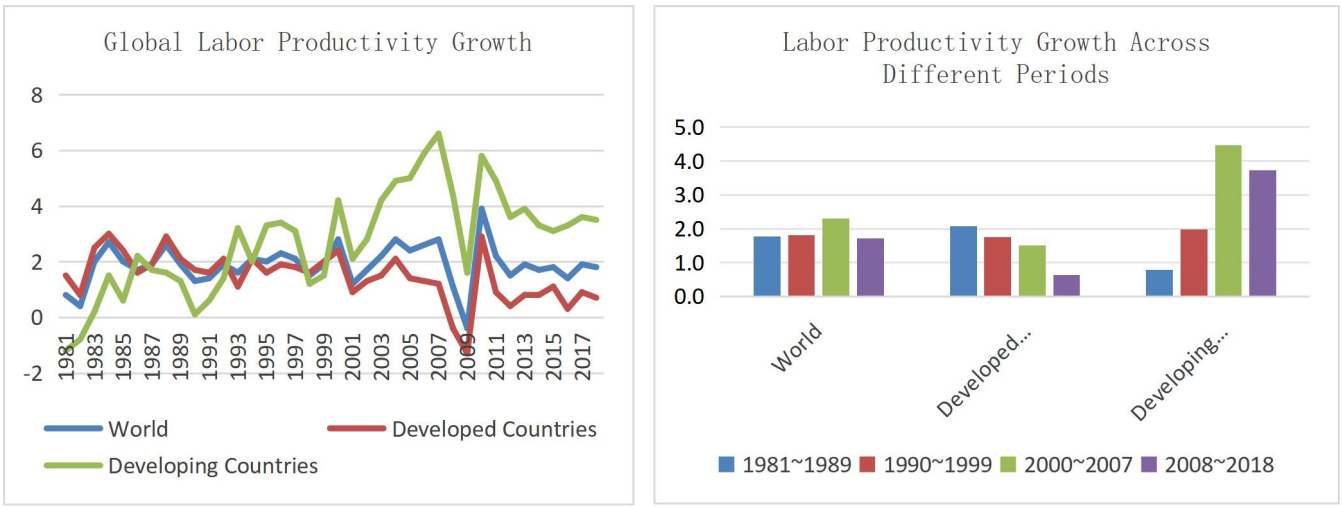


Fig 3. Global Labor Productivity Growth, 1981–2018

Source: World Bank (World Development Indicators, 2018).

2.2.Persistently Rising Fiscal Deficits and Public Debt

Mirroring the trajectory of global economic growth, fiscal deficits and public debt levels have also undergone a two-stage evolution since the 1990s, with both indicators rising rapidly after the global financial crisis.

On fiscal deficits, nearly all country groups experienced continuous and significant improvement prior to the crisis. According to IMF data, between 1990 and 2007 the average fiscal deficit of advanced economies fell from around 3 percent of GDP to roughly 1.5 percent, while emerging and developing economies shifted from deficits of about 2.5 percent of GDP to nearly 1 percent fiscal surplus. This favorable trend reversed sharply after the financial crisis and deteriorated further following the pandemic. During 2020 – 2024, average fiscal deficits reached 5.9 percent of GDP for advanced economies, 5.9 percent for emerging market and middle-income economies, and 4.4 percent for low-income countries—approximately double their pre-pandemic averages dating back to the 1990s (Figure 4).

Public debt displayed a similar turning point, moving from divergence across country groups before the crisis to broad-based increases afterward. In the decade following the crisis (2008 – 2019), the public debt-to-GDP ratio of advanced economies rose dramatically from 70 – 75 percent to around 100 percent, and surged further to about 108 percent after the pandemic. In the United States, federal government debt exceeded 122 percent of GDP in 2024, approaching its historical peak. Developing economies also reversed the deleveraging progress achieved in the early 2000s, with public debt ratios climbing steadily throughout the post-crisis period. After the pandemic, the debt-to-GDP ratios of middle-income and low-income economies reached roughly 70 percent and 53 percent respectively — nearly double their pre-pandemic levels. China's government debt-to-GDP ratio exceeded 96 percent in 2024, significantly higher than the average of developing economies (Figure 5).

In addition to cyclical shocks, several global structural forces have placed sustained upward pressure on fiscal deficits and public debt across country groups. First, subdued global growth and the acceleration of trade fragmentation constrain the pace at which fiscal revenues can expand. Second, the high levels of public debt accumulated during the pandemic, combined with aggressive monetary tightening by major central banks such as the Federal Reserve, have sharply increased debt-servicing costs for many countries. Third, the labor-market and social disruptions caused by the financial crisis and the pandemic, together with rising old-age dependency ratios in both advanced economies and major emerging markets, have placed additional pressure on social welfare expenditure. Fourth, heightened geopolitical tensions in the post-pandemic period have led many countries to increase defense-related spending, further expanding fiscal outlays[10]. Taken together, these factors are likely to push global fiscal deficits and public debt levels higher and keep them elevated for an extended period.

According to the IMF's latest projections, by 2030 the fiscal deficit as a share of GDP for advanced economies, middle-income economies, and low-income economies is expected to reach 4 percent, 5.4 percent, and 3.2 percent respectively, while their public debt-to-GDP ratios are projected at 113.3 percent, 84.2 percent, and 45.2 percent. With the exception of low-income economies, debt levels in most groups are expected to remain elevated[11].

This evolving debt landscape imposes tighter constraints on fiscal policy and compels governments to reassess expenditure composition and long-term fiscal sustainability. Advanced economies must confront the mounting long-term burdens associated with social welfare, pension obligations, and sovereign interest payments. Emerging economies, by contrast, face the challenge of strengthening institutional transparency and improving the quality of their tax base to avoid accumulating external vulnerabilities in a high-interest-rate environment. For China, advancing fiscal system reform, improving the efficiency of public resource allocation, and clarifying the division of fiscal responsibilities between central and local governments will help alleviate debt pressures and expand room for countercyclical policy. Overall, fiscal policy in the coming years will need to rely more on structural adjustments than on broad-based deficit expansion.

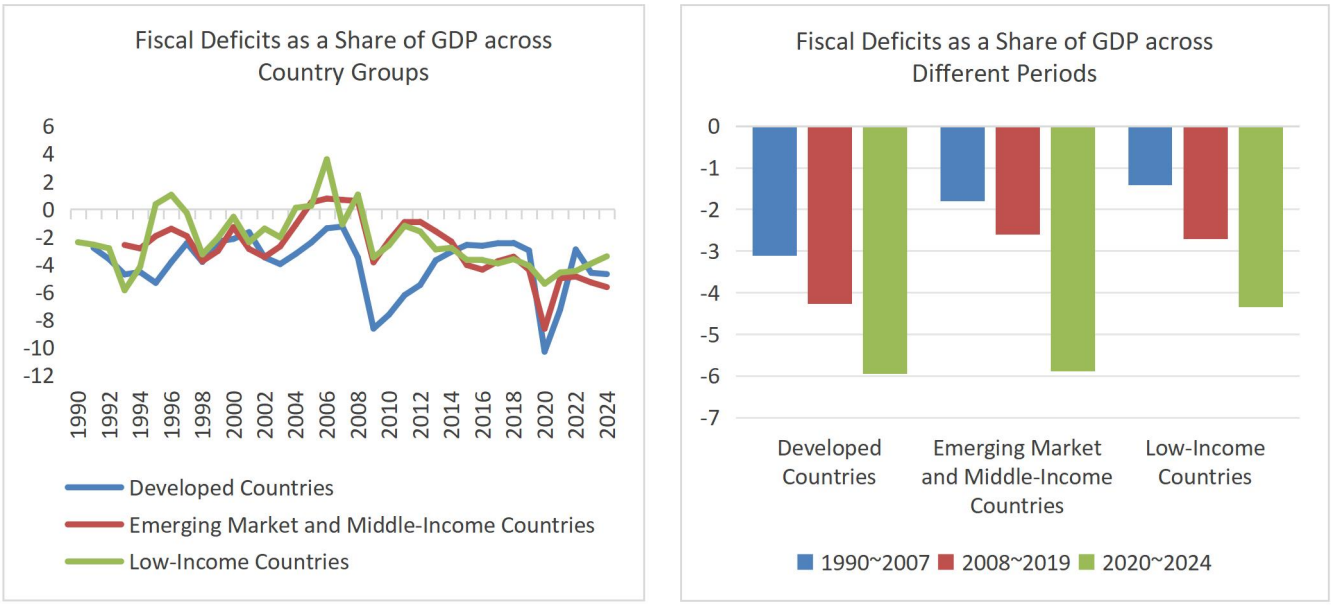


Fig 4. Evolution of Global Fiscal Balances, 1990–2024

Source: International Monetary Fund (IMF), World Economic Outlook Database (2024).

Note: Negative values indicate fiscal deficits; positive values indicate fiscal surpluses.

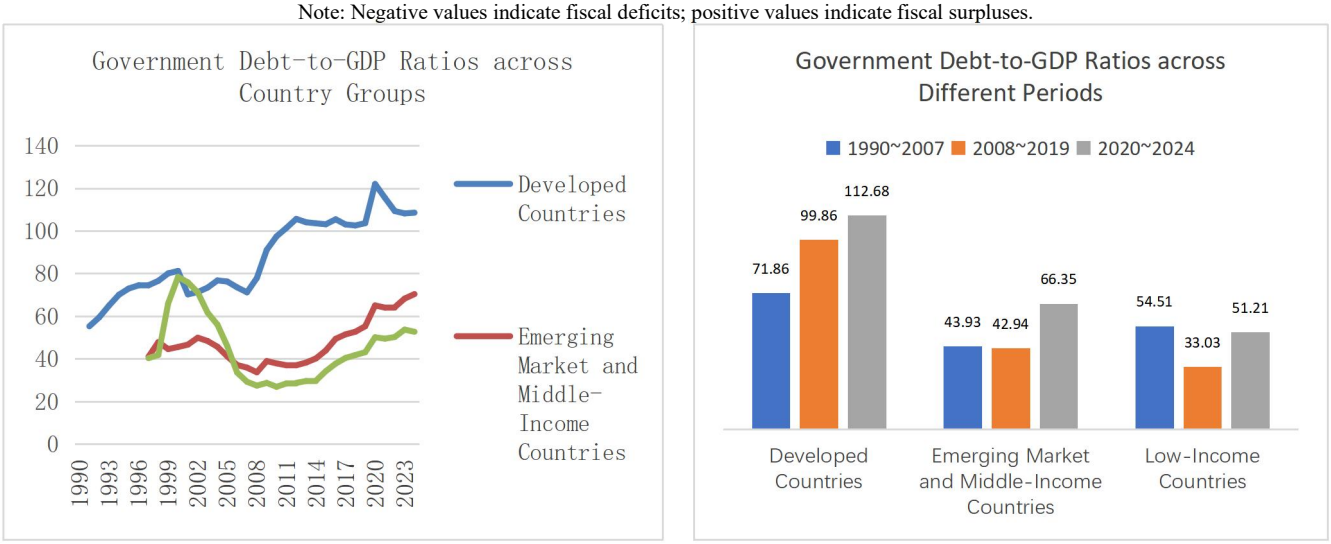


Fig 5. Evolution of Global Government Debt, 1990–2024

Source: International Monetary Fund (IMF), World Economic Outlook Database (2024).

2.3.The Return of High Inflation and Heightened Uncertainty

Global inflation dynamics and commodity price behavior shifted dramatically after the COVID-19 pandemic. High inflation and volatile energy and commodity prices have once again become major challenges for the world economy.

Following the 2008 financial crisis, the prolonged period of weak global growth coincided with more than a decade of persistently low inflation. By 2019, inflation rates for the world as a whole, for advanced economies, and for developing economies had fallen to around half their pre-crisis levels—3.5 percent, 1.4 percent, and 5.1 percent, respectively. Over the same period, the growth of global agricultural and energy prices also slowed sharply, with major commodities such as wheat, corn, and crude oil experiencing years of negative price growth. Low inflation loosened monetary constraints, and accommodative monetary policy along with low interest rates became the post-crisis norm. "Low inflation and low interest rates" emerged as defining features of the global economy in the aftermath of the financial crisis[6].

This pattern shifted abruptly after the pandemic. Massive fiscal and monetary stimulus in advanced economies, combined with pandemic-related supply disruptions and subsequent geopolitical conflicts, pushed inflation sharply higher across country groups beginning in 2020. By 2022, inflation reached 8.6 percent globally, 7.3 percent in advanced economies, and 9.5 percent in developing economies—its highest level this century[12]. Major central banks responded with rapid and aggressive rate hikes, pushing interest rates in advanced economies back to levels not seen since the early 2000s. High inflation and high interest rates have thus become defining features of the post-pandemic global economy.

At the same time, inflation uncertainty also rose sharply, driven by heightened volatility in global energy and commodity prices, frequent geopolitical conflicts, accelerated

trade fragmentation and supply-chain reconfiguration, and increased uncertainty surrounding fiscal and monetary policy. Inflation uncertainty now exceeds levels observed during the early 1980s and the 2008 financial crisis[13]. More broadly, the World Uncertainty Index[14] shows that overall economic uncertainty surged rapidly after the pandemic, with heightened volatility and increasingly synchronized movements across country groups[15]. Elevated uncertainty may suppress global investment, consumption, and trade, further weighing on global growth.

In a landscape shaped by both high inflation and elevated uncertainty, the policy space for monetary authorities has narrowed considerably. Stabilizing market expectations has become increasingly important. Central banks in the United States and Europe must navigate a more fine-grained balance between growth risks and persistent inflation dynamics, while the transparency of policy communication now exerts more direct influence on cross-border capital flows and asset price volatility. For China, the global high-interest-rate environment has heightened the importance of maintaining monetary policy independence and preserving sufficient room between the pressures of domestic growth stabilization and external spillovers. More broadly, reducing inflation uncertainty requires strengthening national-level frameworks for energy security, supply-chain resilience, and price monitoring—conditions that allow aggregate-demand management to operate within a more predictable and controllable environment.

3.Global Finance Under Multiple Layers of Risk

The global financial landscape in the post-crisis and post-pandemic era has undergone four major structural transformations. First, the world has returned to an environment of high debt and high leverage, with public debt ratios rising sharply in advanced economies and aggregate debt levels increasing in many emerging markets. Second, the growing intermediation role of nonbank financial institutions—combined with the expansion of financial assets held outside the traditional banking system—has fueled larger and more mobile cross-border speculative capital flows, while tighter linkages with banks through credit channels have increased the overall interconnectedness of the financial system. Third, global equity market capitalization has expanded significantly, alongside a rising dependence on U.S. markets and a small group of large U.S. technology firms, increasing concentration risk. Fourth, uncertainty surrounding major central banks' monetary policy paths has risen markedly, constraining decision-making and raising the potential for policy misalignment. Taken together, these changes point toward a global financial environment characterized by heightened vulnerabilities and a greater likelihood of systemic stress.

3.1.A New Global Financial Landscape of High Debt and High Leverage

Since the 2008 financial crisis, the global debt and financial structure has undergone pronounced dynamic shifts. After the crisis, the world briefly entered a period of deleveraging: between 2009 and 2014, the global bond-market capitalization-to-GDP ratio fell sharply from over 125 percent to roughly 104 percent (Figure 7). In the United States, total financial assets across equities, bonds, and the banking system fell from 509 percent of GDP in 2002 to 456 percent in 2014, reflecting a significant deleveraging process[16].

This trend reversed after 2015. Global debt once again began expanding faster than the global economy, and on the eve of the pandemic, the global bond-market capitalization-to-GDP ratio had already risen by nearly 20 percentage points from 2014 to reach 124 percent. Coordinated large-scale fiscal and monetary stimulus implemented during the pandemic pushed this ratio more than 10 percentage points higher (Figure 7).

A striking feature of this post-pandemic re-leveraging is its breadth and synchronicity across countries and sectors. According to IMF data, macroeconomic leverage ratios—defined as total economy-wide debt relative to GDP—rose sharply in 2020 for both advanced and emerging economies, increasing by 34 percent and 53 percent relative to their average levels in the 2010s. Yet the paths diverged afterward: by 2023, the aggregate debt-to-GDP ratio of advanced economies had fallen back to around 270 percent, close to its pre-pandemic average, whereas the ratio for emerging economies remained elevated at around 200 percent.

From the perspective of institutional sectors, the post-pandemic surge in government borrowing has been the primary driver of the increase in global leverage. Government debt worldwide amounted to 94 percent of global GDP in 2023—13 percentage points higher than its pre-pandemic average—while private-sector leverage rose only modestly by about 5 percentage points. Clear divergences also emerged across country groups: private-sector leverage in advanced economies declined continuously after 2020, falling to 158 percent of GDP in 2023, nearly 5 percentage points below pre-pandemic levels. In contrast, private-sector leverage in emerging economies remained high, standing 24 percentage points above its pre-pandemic average in 2023 (Figure 8).

In summary, three marked shifts have occurred in global debt and leverage patterns since the crisis. First, the post-crisis deleveraging trend has been decisively reversed, with overall global debt levels rising significantly after the pandemic. Second, leverage dynamics have diverged between advanced and emerging economies, with advanced-economy leverage returning toward pre-pandemic norms while emerging-economy leverage remains elevated. Third, the post-pandemic leverage cycle has been driven primarily by governments rather than the private sector, with the most pronounced contrast emerging between declining private-sector leverage in advanced economies and persistently high leverage across both government and private sectors in emerging markets.

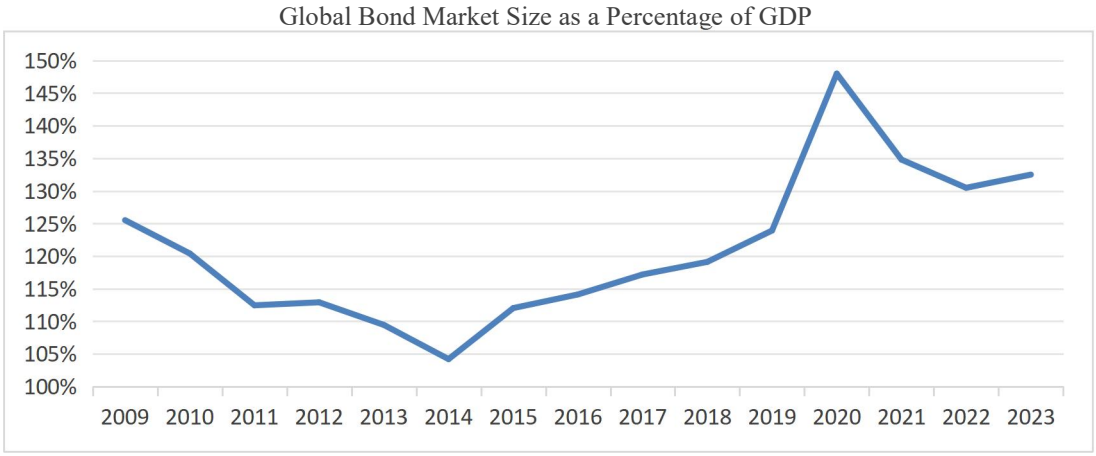


Fig 7. Global Bond Market Size as a Share of GDP

Data source: Calculations based on SIFMA (Capital Markets Fact Book, 2023).

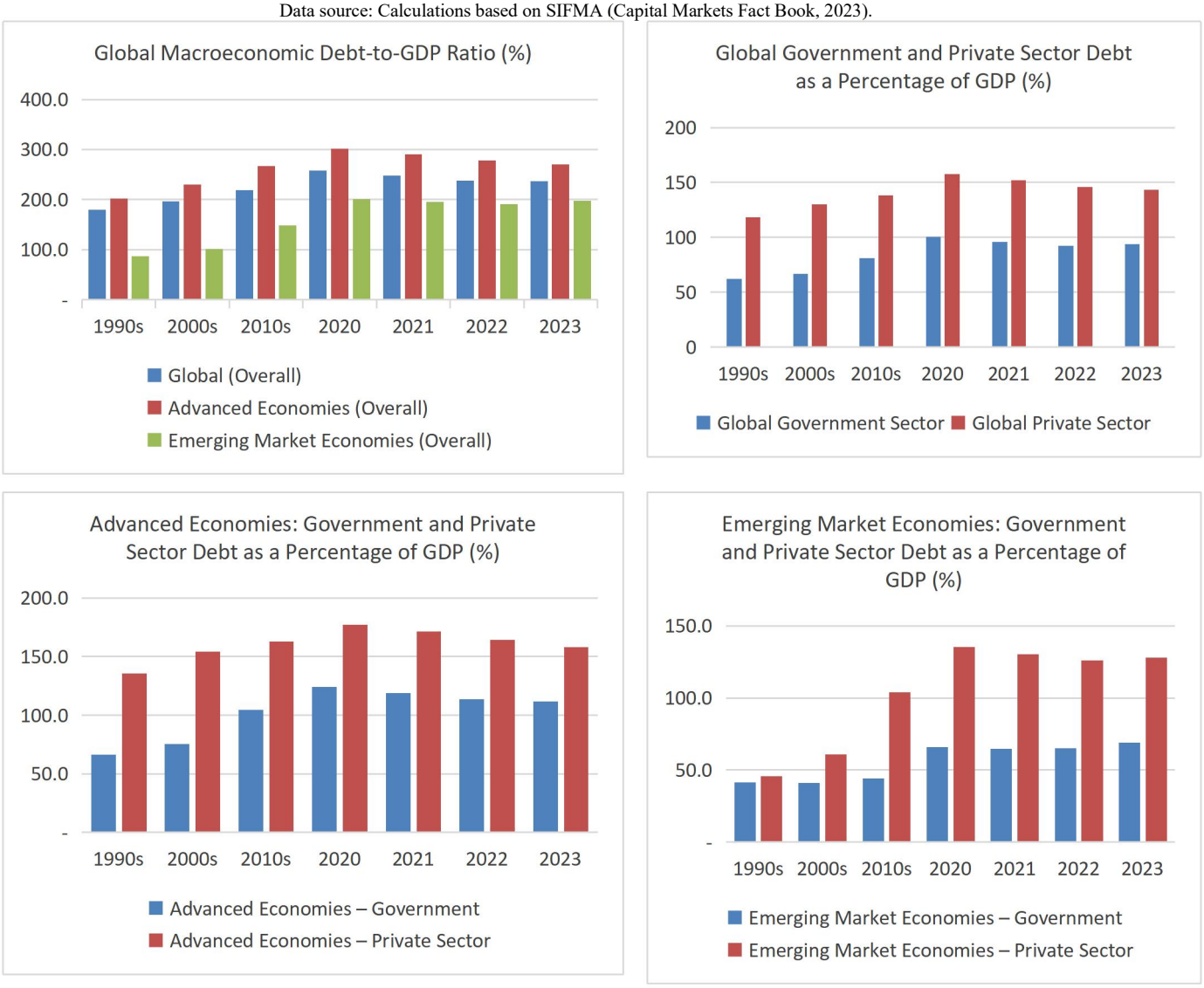


Fig 8. Evolution of Debt-to-GDP Ratios by Country Type and Economic Sector, 1990–2023

Source: International Monetary Fund (IMF), Global Debt Database (2023).

3.2.Rising Financial System Vulnerability Amid Structural Shifts in Intermediation

The architecture of global financial intermediation has undergone profound changes in the post-crisis era, altering both the transmission channels of capital flows and the internal dynamics of financial networks. As nonbank financial institutions (NBFIs) increasingly take on functions traditionally associated with banks, the scale, mobility, and concentration of global financial capital have grown, raising the overall fragility of the system.

A major factor behind this shift has been the substantial tightening of regulatory requirements on banks after the global financial crisis. Stricter capital and liquidity standards encouraged financial activity to migrate toward entities such as mutual funds, hedge funds, insurance companies, and trust firms. As a result, NBFIs expanded at a far faster pace than the banking sector. According to BIS data, their total assets rose from 167 percent of world GDP in 2009 to 224 percent in 2023, whereas banking-sector assets increased only from 164 percent to 177 percent of world GDP over the same period.

The growing weight of NBFIs has also reshaped global asset allocation. One important development is their elevated cross-border exposure: except for more conservative pension funds, most major NBFI categories maintain foreign asset and liability positions far larger than those of banks—by roughly 27 percent and 20 percent on average (Figure 9, left). Another significant feature is the speed with which NBFIs adjust portfolios across jurisdictions, reflecting their more flexible mandates and higher tolerance for speculative positions[17]. At the same time, NBFIs display far greater concentration in their asset holdings compared with banks[16]. The post-crisis and post-pandemic surge in government borrowing further reinforced this pattern, as institutional investors incorporated large volumes of sovereign bonds into their portfolios. In the United States, for instance, the share of Treasuries held by overseas private-sector investors has risen from about 27 percent in 2010 to 55 percent in recent years (Figure 9, right). Taken together, these trends have created a financial environment characterized by more mobile capital, higher concentration risk, and greater sensitivity to shifts in global sentiment.

As NBFIs expand their balance sheets, their interactions with traditional banks have deepened as well. In the United States, loans from banks to NBFIs increased from 6 percent of total bank lending in 2010 to 16 percent in 2024—equivalent to 160 percent of banks' regulatory capital[18]. This rising interconnectedness increases the system's exposure to shocks in both market-based and bank-based financial segments. A localized decline in asset prices that triggers forced sales by institutional investors can now propagate more readily through bank balance sheets, amplifying market stress and heightening the risk of systemic spillovers.

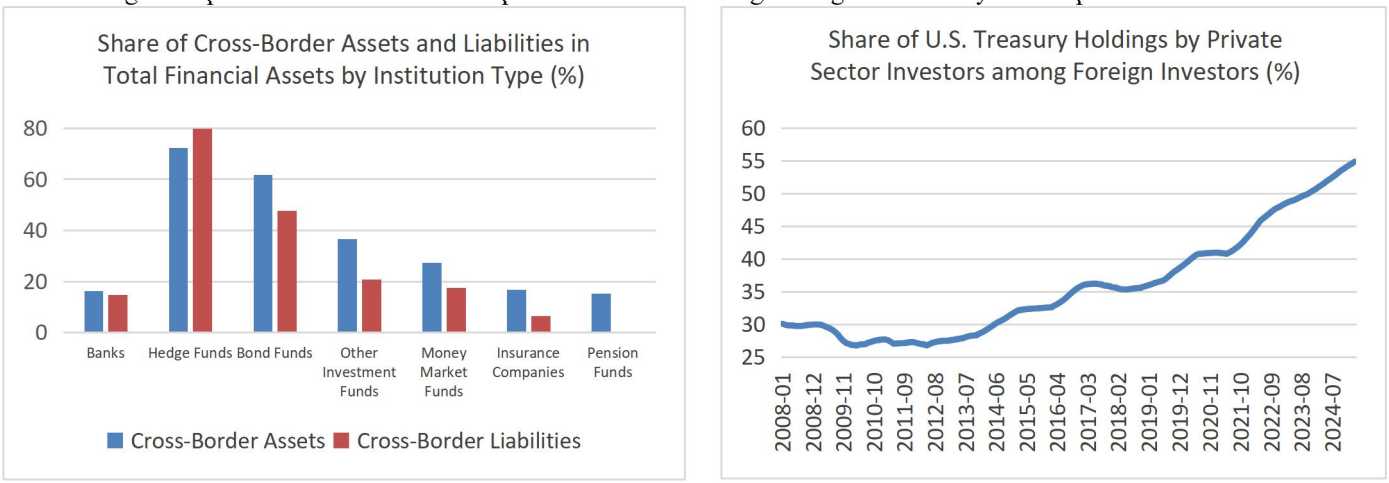


Fig 9. Cross-Border Asset and Liability Holdings and U.S. Treasury Holdings of Private Sector Investors

Source: Bank for International Settlements (BIS).

3.3.A Rising Yet Increasingly Unbalanced Global Equity Market

Since the global financial crisis, equity markets worldwide have generally trended upward, but several notable structural shifts have emerged in recent years. Major economies' equity markets now display much stronger co-movement, while internal divergences across sectors have become more pronounced. At the same time, global equity valuations have grown increasingly dependent on the U.S. market, and the U.S. market itself has become highly reliant on a small group of large technology firms. These developments have significantly increased the concentration of global equity-market risk, raising the vulnerability of global capital and financial markets.

At the country level, global equities have risen continuously since 2011, with notable corrections in 2018 and 2022 due to trade tensions and the Federal Reserve's rate hikes. Yet these interruptions did not alter the broader upward trajectory. By the end of 2023, global equity-market capitalization exceeded world GDP by a substantial margin. Equity markets in the United States, the European Union, and China broadly followed this global trajectory, with the U.S. market outperforming the others in terms of gains and stability[19]. The U.S. market, however, outperformed both the EU and China, exhibiting stronger gains and lower volatility. Meanwhile, co-movement among major equity markets has increased markedly in recent years, particularly during periods of global shocks.

Structural shifts have also occurred in the distribution of global equity capitalization across major economies. Since the crisis, the U.S. market has gained a markedly larger share of global equity value, while China's share has increased more gradually. In contrast, the relative shares of the EU and Japan have declined over time. As a result, global equity markets have grown substantially more dependent on U.S. performance, particularly in the post-crisis and post-pandemic era.

Within national markets, sectoral dynamics have changed even more dramatically. The share of digital and emerging technology firms in U.S. equity markets has continued to rise

since the crisis. A small group of firms—often referred to as the "Magnificent Seven" (including Nvidia, Google, Amazon, Meta, Tesla, Microsoft, and Apple)—accounted for 18 percent of the S&P 500's total market capitalization at the end of 2019, more than 13 percentage points higher than before the financial crisis. The pandemic-related surge in demand for digital services, together with rapid advances in artificial intelligence, further amplified this trend: by 2025, these firms collectively represented more than 32 percent of S&P 500 market value (based on MacroMicro data). This heightened reliance on a handful of large technology companies has increased the probability of valuation bubbles and raised the overall risk profile of U.S. equities, which in turn amplifies vulnerabilities across global markets.

3.4.Heightened Uncertainty Surrounding Major Central Banks' Monetary Policies

Following the 2008 global financial crisis and the COVID-19 pandemic, major advanced-economy central banks—including those of the United States, the euro area, and Japan—responded with large-scale interest rate cuts and highly accommodative monetary policies. Their policy trajectories exhibited a high degree of synchrony throughout these crisis periods. Since the second half of 2024, however, monetary-policy paths have diverged sharply. In the post-pandemic period, major advanced-economy central banks have increasingly pursued divergent monetary-policy paths. The Federal Reserve has maintained a relatively tight policy stance amid persistent inflationary pressures, while the European Central Bank has moved toward easing in response to weaker growth conditions. At the same time, the Bank of Japan has gradually shifted away from ultra-accommodative policies as domestic inflation strengthened. These policy divergences have widened interest-rate differentials across major currencies and contributed to heightened exchange-rate volatility, including episodes of U.S. dollar appreciation and increased volatility in dollar–yen movements.

Beyond actual policy divergence, monetary-policy expectations have also become more uncertain. Since 2021, disagreement in financial markets over the future path of U.S. monetary policy has broadened and remained elevated, showing little sign of easing even as economic activity and inflation appeared to stabilize during 2023[20]. Post-pandemic geopolitical tensions, coupled with the sharp rise in global trade-conflict risks following Donald Trump's return to the U.S. presidency, have further heightened downside risks to the world economy and amplified financial-market fragility. In early 2025, for instance, President Trump repeatedly called for interest-rate cuts and publicly floated the idea of dismissing Federal Reserve Chair Jerome Powell. These developments have also complicated the Federal Reserve's policy environment by increasing the constraints it faces.

Uncertainty was magnified by the Trump administration's strong inclination toward political intervention in monetary policy and its escalating conflict with the Federal Reserve—illustrated by repeated public demands in 2025 for immediate rate cuts and explicit threats to dismiss the Fed Chair. Such pressures have injected an additional source of unpredictability into U.S. monetary policy, with potential consequences for global macro-financial conditions.

The deepening divergence of major central banks' monetary policies, combined with heightened uncertainty over future policy paths, is likely to exert significant influence on global exchange rates and cross-border capital flows. These dynamics raise the probability of financial-market volatility, investor sell-offs of risk assets, and capital outflows from emerging markets. In a post-pandemic world characterized by elevated debt levels and tighter financial interconnectedness, such shocks could propagate more rapidly and pose meaningful risks to global financial stability.

Structural changes within the global financial system have made it increasingly difficult for traditional regulatory frameworks to contain key sources of risk—particularly in an environment where nonbank institutions are expanding rapidly, asset concentration is rising, and cross-border capital flows are becoming more volatile. Advanced economies now face a greater need for more granular, "look-through" identification of risk along funding chains and for strengthened rules on liquidity stress testing and concentration management on the asset side. Emerging economies, by contrast, must advance institutional reforms that improve capital-market transparency, strengthen local-government debt governance, and develop more credible default-resolution mechanisms in order to slow the accumulation of systemic vulnerabilities.

For China, tighter oversight of shadow banking activities and clearer regulation of local government financing vehicles will be essential to preventing localized stresses from spilling over into the broader financial system. At the global level, closer coordination of capital-flow management policies and improved data sharing under multilateral frameworks will also become increasingly important for mitigating cross-border financial risks.

4.Technological Disruption and Transformative Innovation

Over the decade following the global financial crisis, technological progress accelerated dramatically, producing breakthroughs with far-reaching implications. Rapid advances in green technologies, artificial intelligence, and digital technologies have positioned these sectors among the most powerful forces shaping the current and future trajectory of the global economy and financial system. Innovations in these areas are capable of reshaping production processes, financial transactions, and the organization of economic activity more broadly, with the potential to trigger fundamental shifts in development paradigms. At the same time, the rapid expansion of these emerging industries may displace or disrupt segments of traditional economic and financial activity, altering global industrial structures, affecting market dynamics, and reshaping patterns of economic and geopolitical competition. Managing the risks arising from such transitions has therefore become a central challenge for policymakers in major economies.

4.1.Green Technology and the Paradigm Shift in Energy and Industry

As climate risks continue to mount, carbon neutrality has emerged as one of the most urgent global priorities. The growing international consensus around carbon neutrality and the steady rollout of national commitments signal that the traditional development paradigm shaped by the industrial era is gradually giving way to a new green-led model[21]. Innovation in green and low-carbon technologies now constitutes the fundamental driver of progress toward carbon-neutrality goals and has become a defining force in the evolution of global energy and industrial systems.

One clear manifestation of this transformation has been the emergence of green and low-carbon technology industries as new engines of global growth. Since the early 2010s, industries such as solar photovoltaics, wind power, electric vehicles, lithium batteries, and advanced materials have expanded rapidly along their respective global value chains. In 2023, these sectors collectively contributed an estimated 10 percent to global GDP growth[22], underscoring their growing influence over the direction of the world economy.

Yet the geography of green-industry development remains uneven, intensifying competition and friction across countries and regions. China has established significant leadership in several key segments—including solar power, wind energy, batteries, and electric vehicles. The impact of these industries on traditional energy sectors and automotive manufacturing in advanced economies has prompted the European Union, the United States, and others to adopt protectionist measures restricting Chinese exports. Such actions have constrained the diffusion of green innovation and slowed the broader deployment of related technologies.

The global climate agenda has faced additional setbacks. In early 2025, shortly after returning to office, President Trump announced the United States' withdrawal from the Paris Agreement, dealing a significant blow to global climate cooperation and efforts to advance carbon-neutrality commitments. Combined with rising green-industry tensions, these developments may hinder progress toward global decarbonization and exacerbate climate risks. In turn, heightened climate uncertainty could impose deeper challenges for sustaining economic growth and safeguarding global financial stability.

4.2.Breakthroughs in Artificial Intelligence Are Reshaping the Global Economic Landscape

Since the COVID-19 pandemic, the emergence of generative artificial intelligence—exemplified by ChatGPT—has achieved transformative breakthroughs and rapid iterative progress. AI has become a central driver of frontier technological development and is likely to fundamentally reshape how the global economy operates and evolves. It has also become a core arena of strategic competition between major powers such as the United States and China.

The impact of AI on economic performance, social development, and the global balance of competitiveness is expected to be transformative, potentially determining both the direction and speed of what many describe as the fourth industrial revolution. A growing body of research converges on the view that AI will deliver substantial gains in global labor productivity, with effects spreading across sectors and industries. It can accelerate automation and intelligent manufacturing, raise productivity in service sectors—traditionally constrained by labor-intensive processes—and enable the emergence of entirely new industries. McKinsey estimates that, at 2021 purchasing power parity, generative AI alone could raise global GDP by USD 2.6–4.4 trillion annually, an increase approaching or even surpassing the size of the United Kingdom's entire economy[23].

Driven by the fear of falling behind, governments and multinational corporations have intensified investment and strategic positioning across all segments of the AI value chain. This influx of public and private capital has fueled a surge in AI-linked financial assets. Since 2023, investor enthusiasm for leading AI companies has pushed the Nasdaq index to repeated record highs, reinforcing the perception that AI is reshaping the frontier of global capital markets.

However, the rapid advance of AI has also magnified existing economic imbalances and heightened financial vulnerabilities. First, developing AI capabilities requires a deep pool of talent, substantial financial resources, and a sophisticated digital and data infrastructure. As a result, countries beyond the U.S. and China face structural disadvantages. As AI technologies diffuse into broader economic activity, these technological gaps may harden into more persistent competitiveness gaps, increasing global inequality in innovation capacity and industrial upgrading.

Second, the concentration of global financial capital in AI-related assets has raised the dependence of major equity markets—especially the Nasdaq—on a small number of dominant AI firms. Researchers have identified early signs of speculative dynamics reminiscent of the late-1990s dot-com bubble[24]. A correction triggered by overstretched valuations or policy uncertainty could propagate across markets through multiple transmission channels, posing significant risks to global financial stability.

Third, unlike previous technological revolutions based strictly on physical innovation, AI introduces the possibility of direct competition between algorithmic systems and human labor. This creates an urgent need for early, comprehensive regulatory frameworks to prevent long-term risks to social welfare or even broader existential concerns. Yet no globally coherent governance framework currently exists. Regulatory divergence is widening further as President Trump's new administration adopts a unilateral and deregulatory approach toward AI, making coordinated international standards increasingly difficult to achieve.

4.3.Digital Technologies and the Reconfiguration of Global Finance

Since the early 2010s, cryptocurrencies—led by Bitcoin—have expanded rapidly and gained global traction. By the end of 2024, nearly 10,000 cryptocurrencies were in circulation, and more than 560 million people worldwide held some form of crypto asset, according to data from Statista and Triple A.

Both figures have continued to rise quickly entering 2025. The boom in crypto markets has in turn accelerated the

development and maturity of blockchain technologies. Central banks, governments, and major technology companies have begun deploying these technologies to design central bank digital currencies (CBDCs), stablecoins, and other digital or tokenized monetary instruments. Such innovations will have far-reaching implications for global payments, financial transactions, and even monetary policy operations.

From a positive perspective, a transaction infrastructure built on CBDCs, stablecoins, and blockchain-based settlement could reduce transaction costs and counterparty risks, while significantly improving settlement efficiency. It also enables more countries to reduce—or even bypass—their reliance on traditional systems such as SWIFT and the correspondent banking model that underpins global payments. This shift could meaningfully weaken the ability of the United States and other Western economies to leverage their influence over traditional payment rails as a tool of financial sanctions, potentially pushing the global monetary and financial system toward a more decentralized equilibrium.

Yet the risks are equally substantial. A global financial infrastructure built on advanced digital technologies would be far more complex than its traditional counterpart, raising exposure to cyberattacks and other operational vulnerabilities and making system-wide disruptions more difficult to contain. Moreover, cryptocurrencies such as Bitcoin do not function as sovereign legal tender. Their expanding scale and usage could challenge the structure of a monetary system anchored in central bank–issued fiat currencies and complicate monetary policy transmission. The speculative nature of crypto assets, combined with limited regulatory oversight and high anonymity, also increases the difficulty of enforcing anti–money laundering (AML) measures and combating illicit financial activities, thereby heightening risks to global financial stability.

Taken together, technological innovation is reshaping sources of growth while also altering the channels through which risks propagate. Policymakers face the task of balancing innovation with safeguards against systemic vulnerabilities. In green technologies, the challenge lies in promoting industrial upgrading without allowing policy competition to escalate into trade conflict. The rapid diffusion of AI requires early development of governance frameworks that clarify regulatory expectations around model transparency, data security, and labor-market adjustment. Digital financial technologies are advancing quickly, but the complexity and cross-border nature of new infrastructures demand more robust supervisory architectures. For China, sustaining technological leadership while coordinating innovation diffusion, financial stability, and long-term industrial strategy will be essential to the quality and resilience of future growth.

5.The Long-Term Dynamics of Global Population Aging

The global population structure is undergoing profound structural shifts along both the vertical and horizontal dimensions. Vertically, the world faces the coexistence of continued population growth and sharply declining fertility rates. According to United Nations projections, the global population reached roughly 8.2 billion in 2024 and is expected to keep expanding through the mid-2080s, reaching around 10.2 billion by 2100. At the same time, global fertility has fallen from 5.0 births per woman in 1950 to just 2.3 in 2024. The combination of rising population numbers and declining fertility implies a rapid intensification of population aging: the share of people aged 65 and over is projected to rise from about 10% in 2024 to roughly 22.5% by 2100, pushing the world into a “super-aged” demographic era[25].

Horizontally, the demographic trajectories of different country groups continue to diverge. Fertility rates in Europe and North America are already far below replacement levels; those in Latin America and most of Asia hover slightly above or at replacement thresholds. Only Africa—especially low-income economies in Sub-Saharan Africa—continues to maintain high fertility rates[26]. This divergence will amplify global imbalances in labor force distribution. Advanced and emerging economies will encounter shrinking labor supplies and intensifying aging pressures, while many low-income countries will need to absorb rapidly expanding youth populations and labor inflows.

Population structure is among the most fundamental determinants of long-term economic trajectories, and aging is extremely difficult to reverse once established. Cross-regional disparities in the distribution of working-age populations will likely magnify the challenges associated with these demographic shifts.

Population aging affects economic performance through a wide set of channels, and its macro-financial implications tend to accumulate over long horizons. A rising share of older individuals reshapes the supply side of the economy by slowing the expansion of the labor force and dampening gains in labor productivity. As the average age of workers increases, the aggregate intensity and efficiency of labor input decline, reducing overall productive capacity[27,28]. Demographic change also alters consumption dynamics: older households typically experience slower income growth and display lower marginal propensities to consume, which weakens aggregate demand[29]. Their spending is more concentrated in basic goods and services, which may restrain the upgrading of consumption structures[30]. At the same time, aging places persistent pressure on public budgets through rising pension, healthcare, long-term care, and other welfare expenditures, thereby tightening fiscal space in many economies[31]. As these forces interact, debt burdens rise while the room for countercyclical fiscal policy narrows.

Demographic shifts also influence the behavior of interest rates, inflation, debt dynamics, and financial portfolios. Longer life expectancy and an older population structure generally raise precautionary savings and reduce risk appetite, exerting downward pressure on the natural rate of interest and limiting the capacity of monetary policy to stimulate demand via rate cuts[32]. The consequences for inflation are more complex: weaker consumption can ease price pressures temporarily, yet a shrinking workforce may lift wages over time, while growing demand for healthcare and age-related services alters the sectoral composition of inflation. These developments complicate inflation management for central banks. In parallel, aging amplifies vulnerabilities in public finances and financial markets. Governments may need to

issue more debt as expenditures rise and the tax base erodes. Older savers gravitate toward bonds and deposits, influencing asset prices and potentially increasing market sensitivity to shifts in portfolio preferences[33]. Banks facing slower deposit growth may seek higher returns through riskier cross-regional investments, heightening credit risks[34]. These patterns collectively increase the difficulty of stabilizing both economic activity and financial conditions.

The demographic imbalance between rapidly aging advanced and emerging economies and the youthful populations of many low-income countries may also intensify social and political tensions. Within aging societies, a heavier dependency burden on working-age cohorts can lead to higher taxation and fuel intergenerational strain. Across countries, sustained labor-force growth in low-income African economies—combined with limited local job creation—may encourage outward migration toward economies where aging has tightened labor markets. Such movements risk inflaming political sensitivities in destination countries, strengthening populist and protectionist sentiment, and increasing global economic and financial uncertainty.

Taken together, the long-term trajectory of global population aging is already well established, and its effects are amplified by the stark regional imbalances in labor-force distribution, especially the continued expansion of working-age populations in low-income African economies. These demographic patterns are set to reshape the global economic, financial, social, and political landscape over the medium to long run. Growth rates and potential output are likely to weaken, while fiscal pressures, debt vulnerabilities, and financial-market risks become more pronounced. At the same time, demographic asymmetries may heighten both domestic and cross-border social tensions, adding further uncertainty to the global outlook.

The shift in demographic structure fundamentally alters the logic of growth and compels governments to reassess the long-term sustainability of their labor markets, fiscal systems, and financial architectures. Extending labor-force participation, strengthening childcare provision, and raising employment rates among women and older workers are emerging as shared policy priorities in advanced and major emerging economies. Structural reforms to pension systems, long-term care arrangements, and industrial composition will play an increasingly central role in adapting to aging societies.

For China in particular, sustaining potential growth as the labor supply weakens will depend heavily on technological progress, industrial upgrading, and continued investment in human capital. The scale of demographic pressures also underscores the importance of forward-looking fiscal planning and social policy design, ensuring that today's institutional choices do not harden into burdens that limit future policy flexibility.

6.Conclusions

The world economy and financial system are undergoing a period of profound transition and structural realignment. Since the 2008 global financial crisis, a combination of long-term structural trends, institutional shifts, and recurrent shocks has gradually pushed the global economy away from the high-growth paradigm supported by globalization, demographic dividends, and accommodative macroeconomic policies. What has emerged instead is a new phase characterized by slower growth, heightened uncertainty, and a more complex configuration of risks. These shifts are reflected not only in deteriorating macroeconomic indicators but also in shrinking policy space, rising governance challenges, and a more fragmented environment for international cooperation.

Across both advanced and emerging economies, the twin shocks of the 2008 crisis and the 2020 pandemic weakened economic potential, dampened investment and employment, and slowed the momentum of globalization and trade expansion. Global growth and labor productivity have moved onto a downward trajectory, raising concerns that the world economy may fall into a "low-growth – low-productivity" feedback loop. At the same time, fiscal deficits and government debt have risen systematically across country groups. In an environment where high inflation, elevated interest rates, and weak growth coexist, governments face mounting challenges to maintaining fiscal and debt sustainability. The scope for deploying conventional countercyclical fiscal and monetary tools has narrowed significantly, placing unprecedented constraints on macroeconomic policy.

Financial structures have also shifted in ways that increase fragility. After a brief post-crisis period of deleveraging, the global economy re-entered an upcycle of rising leverage from the mid-2010s onward, a trend further amplified by pandemic-era stimulus. Debt composition and financial vulnerabilities have continued to worsen. Nonbank financial institutions now play a more prominent role in cross-border capital flows, global equity markets show greater dependence on a small set of markets and sectors, and the monetary policy paths of major central banks have diverged more visibly. Heightened uncertainty around policy trajectories adds further volatility. In a tightly interconnected global financial system, local disturbances can spill over rapidly through asset prices, capital flows, and exchange-rate channels, creating the potential for amplified systemic stress.

More fundamentally, two long-term forces—technological disruption and demographic aging — are concurrently reshaping the structural foundations of global economic and financial development. Breakthroughs in green technologies, artificial intelligence, and blockchain-based digital finance hold the potential to transform production, transaction structures, and financial infrastructure, offering new sources of productivity growth. Yet they also introduce new asymmetries, intensify international competition, and expose gaps in regulatory capacity. Meanwhile, persistent global population aging is altering long-term development logic across multiple dimensions: slowing labor-force growth, weakening consumption upgrading, increasing pressure on public pensions and healthcare systems, pushing down natural interest rates, and reshaping asset-allocation patterns. Imbalances in regional labor-force distribution and migration pressures may become important drivers of future global economic and political tensions.

Against this backdrop — marked by weakening growth momentum, tighter policy constraints, and overlapping

structural risks — the world economy faces a future of heightened uncertainty. Meeting this challenge requires not only preserving macroeconomic stability but also constructing forward-looking and coordinated policy strategies across key domains.

From a fiscal-policy perspective, countries need to shift gradually from broad-based expansion to more sustainability-oriented and structurally targeted approaches. Expenditure priorities should tilt toward areas that raise potential growth—green and digital infrastructure, education and skill formation, research and development in critical technologies, and systems supporting childcare and long-term care. On the revenue side, tax-system modernization, base broadening, and enhanced budget transparency can strengthen resilience. For economies already burdened with high debt, strengthening medium-term fiscal frameworks and stabilizing debt ratios will be essential for containing systemic risk.

In monetary and financial policy, the coexistence of high inflation and high interest rates demands a more balanced approach to managing expectations and safeguarding financial stability. Central banks must navigate carefully between controlling inflation and avoiding sharp economic slowdowns. Stronger macroprudential tools, enhanced stress testing, and more comprehensive oversight of nonbank intermediaries, shadow-banking activities, and cross-border capital movements will be increasingly important. For emerging markets, maintaining an appropriate degree of monetary-policy autonomy and exchange-rate flexibility can help mitigate the transmission of global rate volatility.

In trade and industrial policy, supply-chain fragmentation and rising geopolitical risks call for a reassessment of long-term openness strategies. Diversifying supply-chain layouts and strengthening regional coordination can reduce exposure to concentrated disruptions. Institutional openness, regulatory transparency, and improvements in the business environment remain critical for sustaining attractiveness to global capital and technology flows. For large emerging economies such as China, advancing high-standard openness, promoting industrial upgrading, and deepening the domestic unified market can strengthen the interaction between internal and external demand and secure a more resilient position in global restructuring.

Technological and demographic policies must also adapt to the new landscape. Green transition pathways, AI development, and digital-finance infrastructure require governance frameworks that keep pace with innovation. Establishing clearer standards for technology, data security, and financial risk boundaries can reduce policy uncertainty and prevent regulatory lag. Population aging, largely irreversible in the short term, underscores the need to raise labor-force participation, improve human-capital formation, and reform pension and long-term care systems. For countries facing labor deficits or surpluses, well-managed cross-border labor mobility may serve as a useful supplementary mechanism to ease structural imbalances.

Finally, many of these challenges transcend national borders, making unilateral responses insufficient. Stronger international coordination will be essential—whether through improved communication and forward guidance among major economies or through more binding multilateral arrangements in financial regulation, capital-flow management, and standards for green and digital technologies. Enhancing data sharing, strengthening "safety-valve" mechanisms, and improving global crisis-response toolkits can help build a more resilient international economic and financial system—one capable of remaining "strained but unbroken" under sustained global pressures, and of gradually identifying new foundations for stability and growth in an age marked by uncertainty.

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