Looking Ahead Ten Years, What Outside-the-Box Economic Development Could Shock the World?

In the Summer 2016 issue of this magazine, we asked fifty distinguished experts to look ahead ten years and identify what outside-the-box economic developments could shock the world. We acknowledged that the uncertainty of human behavior, where people don't always act logically, makes certainty in this type of forecasting impossible. The results of the survey were fascinating. Many forecasters hit bullseyes. Others offered provocative forecasts that failed to materialize but were nonetheless interesting.

For example, a senior Japanese banker suggested the Bank of Japan would go bankrupt and the yen would lose its status as legal tender.

One foreign policy expert predicted the fall of the Kingdom of Saudi Arabia.

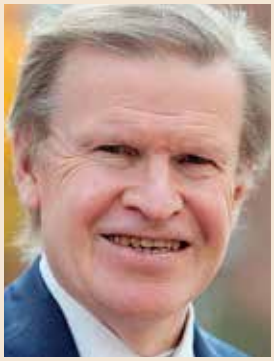
Many predicted the breakup of the European Union. One predicted the millennial generation will have reformed Europe.

A former Chinese official predicted his country in ten years will have become very religious.

A Democratic policy strategist predicted the possibility that a decade from now, a President Paul Ryan will have struck a Grand Bargain—a bipartisan deal—that fixes America's fiscal problems. Oh well.

For this issue, *TIE* once again asked a broad range of experts to highlight a shocking development that could unexpectedly materialize by 2035. Remember, this was not a forecasting exercise, but an outside-the-box speculation on matters that today seem improbable, if not impossible.

More than two dozen distinguished experts offer plenty to ponder.



A new kind of democracy will have emerged.

HAROLD JAMES

Professor of History and International Affairs, Princeton, and author,* Seven Crashes: The Economic Crises That Shaped Globalization *(Yale University Press, 2023)

We are currently living with technical change at a pace unprecedented in human history, producing transformative effects for every aspect of society. Artificial intelligence is altering the way people think, and in the course transforming communications, government, education, law, medicine, and care. Revolutions in living will require new techniques of management and governance. There will in consequence be experiments with a new kind of democracy.

Instead of the classic model of electing representatives who are delegated to make choices on behalf of citizens, some countries will start experiments with much more extensive e-governance: voters selecting algorithms that will set levels of taxation, expenditure, even foreign policy choices. Disappointed with conventional politicians, who make promises that they cannot fulfill, and are in consequence thought of as deceptive and untrustworthy, voters will turn to forms of political avatar whose response function is locked in at the beginning. They will reject erratic and error-prone politics in favor perhaps at first of humans who commit to follow a predetermined course but also a range of preset responses to a range of eventualities. They may later move to electing algorithms.

The trigger for the governmental revolution may be crises arising out of impossible debt burdens, produced by incompatibilities between demand for government services and expectations about tax cuts and efficiency gains. Those tensions are at the core of the problem of increasingly erratic and disappointing political styles, and disenchantment with conventional parties and politicians. The consequence is a kind of debt slavery, in which taxpayers have to pay an increasing amount simply to service government debt, a process which has been a driver of increased inequality, and voters are sentenced in consequence to ever-reduced public services. The governance revolution may also be the product of revulsion against so-called populism, where the tendency to over-promise lies at the core of the political vision.

The main attractions of the new style of government will lie in a superior delivery of a wide range of services, especially in health and education, an ability to break entrenched interests that stand in the way of the realization of technical change, and an increased credibility of government debt in a world of increasing strains and debt crises.

There are parallels to the way in which in the late seventeenth century fiscal strains produced by wars combined with new techniques of probabilistic calculation led to the English fiscal revolution, which produced a form of governance so successful that over the course of the next two centuries it became a standard model.

It is easier to imagine the new forms of government, e-democracy in the fuller true meaning of the term, being adopted by smaller countries at the start. That process may be a repetition of the way that Estonia leveraged cybernetic research from the Soviet era into a bold, successful, and eventually widely imitated model of e-governance and e-democracy. E-democracy will be seen as a We-democracy.

The rich will stop aging.

HENRY J. AARON

Bruce and Virginia MacLaury Senior Fellow, Brookings Institution, and editor, with William B. Schwartz,* Coping with Methuselah: The Impact of Molecular Biology on Medicine and Society *(Brookings, 2004)

Dateline: September 2035—Peking, Berlin, and Oxford:

The Chinese Academy of Sciences, the Max Planck Institute in Germany, and Oxford University today jointly announced that they have identified how, using advanced microbiology, to arrest the aging of most cells in the human body. Delay of aging has a long history in imaginative fiction and has been the subject of contemporary research in animal models. Previous increases in income and medical advances have led only to gradually rising life-expectancies. But today's announcement trumpets a breakthrough showing that aging of most human cells can be slowed by at least 50 percent and possibly

more if therapy is begun soon after people reach maturity, around aged twenty. People aged sixty would retain most of the capacities untreated people have at aged forty, and people aged one hundred would retain most of the capacities of untreated sixty-year-olds.

Under questioning, the scientists acknowledged uncertainty on whether aging will be slowed equally in all parts of the human body, whether the intervention will pierce the blood/brain barrier to slow normal senescence, and how much normal wear-and-tear to joints will be slowed.

The statement thanked the United States, rather backhandedly, observing that the mass emigration to laboratories in Europe and China of senior U.S. scientists and top graduate students triggered by U.S. policies introduced in 2025 had greatly accelerated their progress. "By defunding advanced biological research and imposing stifling regulatory policies starting in 2025, the United States enabled us to move forward faster than we dreamed possible," the statement said, continuing, "Without invaluable help from U.S. emigres we would have taken decades longer to reach our goals."

The statement did not explore, or even raise, numerous other economic and social challenges that this epochal discovery forces upon us.

The obvious first question is cost. The statement indicated that the annual cost of universal treatment in the United States or the European Union would equal roughly 15 percent of annual GDP and much more than half of Chinese GDP. Thus, all but the richest nations will face the divisive political challenge of determining which of its citizens can receive the treatment and which cannot, and whether to pay for treatment collectively or through private markets.

In addition to the inescapable macroeconomic challenge of how to pay for the service, each nation will face a host of other daunting issues.

■ How will people divide their doubled adult lives between work and retirement?

■ If time spent in gainful economic activity increases, what will happen to career ladders as senior workers remain active and thereby block promotion opportunities for the young?

■ As lengthened lives drain social insurance and private retirement systems crafted when death routinely truncated pension obligations, what will be done to preserve public and private "safety nets"? Will life insurance companies be allowed to retain the trillions in windfall gains arising from the delay of deaths?

■ How should the standard educational sequence, beginning with kindergarten and ending with college/graduate training, be modified to enable adult workers to keep current with technological advances over greatly extended working years?

■ Will monogamy, the eroded but still-prevailing living arrangement of most prime-age adults, survive when partners live together not fifty-plus years but one hundred-plus years? And, if not how will it evolve?

Perhaps the most portentous question arises from the remaining uncertainty on whether people's various body systems will age at uneven rates. Still unknown answers to this question will determine whether future eighty- and one hundred-year-olds will be both physically and mentally competent or, perhaps, physically robust but mentally senescent—in short, whether the scientific advance announced today will extend life or prolong dying?

State capitalism will occupy the commanding heights in the Great Economic Powers.

GARY CLYDE HUFBAUER
Nonresident Senior Fellow, Peterson Institute for International Economics

State capitalism will not invade the vast domain of small firms, nor will it be embraced by the likes of Singapore and Switzerland. But state capitalism will occupy the commanding heights in the Great Economic Powers—China, the United States, and Europe.

Ten years hence, few observers may be shocked, since state capitalism will have prevailed through incremental tactics, not political revolution—like boiling the frog. Today's billionaires fear not: emerging forms of state capitalism will protect, not plunder, your wealth.

By 2035, bankruptcy will become a rare event among dominant firms while the spread of guaranteed employment will obstruct corporate downsizing. The key features of a market economy—reallocation of capital and labor between sunset and sunrise industries—will no longer serve as economic norms. Instead, state regulatory, budget, and trade policies will insulate dominant firms from market forces while ensuring their response to political demands.

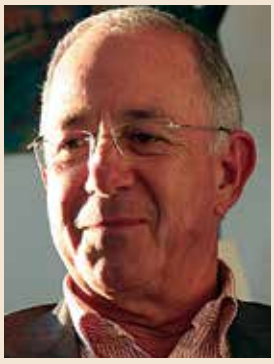
Successive leaders from Chairman Deng Xiaoping to President Hu Jintao moved China towards a market economy, but President Xi Jinping dramatically reversed course. State capitalism is now the state religion. Massive subsidies and restricted market entry ensure smooth sailing for

state-owned firms. Economic efficiency suffers, but political control is its own reward.

China's geopolitical threat provoked American leaders to question whether a market economy is the wrong model. President Barack Obama launched the shift by bailing out Wall Street finance and Detroit auto firms. President Joe Biden opened the tap to semiconductor and green energy subsidies. President Donald Trump then enlisted tariffs to protect the entire manufacturing sector. The distinction between economic security and national security vanished. Following the Nippon Steel deal, future U.S. subsidies and bailouts will include a golden share that presidents can vote to shape corporate goals and preclude significant layoffs.

State capitalism appeals to European leaders as the answer to superior U.S. economic performance. The success of Airbus in competition with Boeing became the rationale for public ventures in computers, semiconductors, electric vehicles, artificial intelligence, and more. Meanwhile, European icons such as British Steel, Thyssenkrupp, and Monte Dei Paschi di Siena can draw on life support from the state.

Economist Joseph Schumpeter not only revealed the power of creative destruction to drive efficiency and economic growth. He also foresaw the inevitable opposition to change in tandem with economic prosperity. Eighty years after the publication of his book *Capitalism, Socialism and Democracy,* the ascendancy of state capitalism exemplifies Schumpeter's genius.



The ECB ties the euro to gold. Japan effectively defaults.

PHILIPPE RIÈS
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On August 15, 2031—a date deliberately chosen—the board of governors of the European Central Bank decided to establish the convertibility of the euro into … gold.

This shocking, if not entirely unexpected, decision turned back the monetary history clock for some seventy advanced and middle-income countries: all thirty-two members of an enlarged eurozone, plus those whose currencies had been pegged to the euro—sometimes for decades, or just a couple of years in the case of the British pound.

Unsurprisingly, the ECB's announcement sparked a flurry of reactions across the globe. The People's Bank of China, which had been steadily building up its gold reserves for a decade, was particularly enthusiastic, adding that it would immediately begin a process to join the bandwagon, with the aim of completing the renminbi's long journey toward full convertibility.

The starkest rebuttal came from the United States, where President J.D. Vance denounced the move as stabbing the ailing dollar in the back—calling it another attempt by the Europeans to "screw America," echoing the colorful language of his mentor and predecessor, Donald J. Trump.

Since its inception on August 15, 1971, the monetary non-system of floating exchange rates had proven to be little more than a license for reckless governments to borrow their way out of any geopolitical or economic difficulty. In the case of Richard Nixon, the original sinner, America had financed the war in Vietnam without paying the price domestically.

Among practitioners of the dismal science, there was no shortage of apologists—particularly among the dominant herd of neo-Keynesians, who retroactively crafted all sorts of theoretical justifications for what was, at its core, a cynical and selfish decision made under duress.

Over time, the result was a debt-based global economy, marked by mediocre growth in advanced countries, massive imbalances, recurrent financial implosions, and soaring social inequalities. Slowly but relentlessly, the process eroded the heart of Western democracies, fueling populism and undermining the rule of law.

The very institutions that should have sounded the alarm and pushed for change did the opposite. Following the "innovative" Bank of Japan, major central banks embarked on experiments—zero interest-rate policies, quantitative easing, and so forth—that repeatedly provided the suffocating non-system with a breath of oxygen. These so-called asymmetric monetary policies led to a massive debasement of major currencies, especially the U.S. dollar, as reflected in the inflation that truly mattered: asset prices. Never before in peacetime had public debt and social inequalities reached such heights. Something had to give—and it would be the monetary non-system.

In retrospect, 2025 proved to be the turning point. That year, thanks to massive buying by central banks—notably China, India, and others in the Global South—soaring prices allowed gold to overtake the euro as the second-most important official reserve asset after the dollar: 20 percent against a declining 46 percent. From then on, the process accelerated dramatically, fueled by

growing skepticism about the sustainability of global public debt. Then, Japan effectively defaulted by canceling 90 percent of its long-term government bonds—held by the Bank of Japan, whose balance sheet had ballooned to 150 percent of GDP. The worldwide rush for gold, both public and private, became unstoppable.

By the day of the ECB's historic decision, a troy ounce of gold was worth €9,230, and what economist John Maynard Keynes once derided as a "barbarous relic" accounted for 65 percent of global official reserves. For clarity, the ECB pegged the convertibility rate at €10,000 per ounce. Now, the painful work of restoring order to the world economy could begin in earnest. It would last way beyond 2035.

Privacy will be our most valuable resource.

LYRIC HUGHES HALE
Editor-in-Chief,* EconVue, *Host, The Hale Report podcast, and Director of Research, Hale Strategic

We have many unconscious assumptions about the future. We assume that it will be an extension of the present—today with tomorrow's characteristics. But as we have all felt recently, the pace of change has quickened. If we continue at this rate, we could be living in a radically different time in ten years, pushed forward, rather rudely and with a lurch, by technology. But I think we are in for a twist.

The most valuable resource in 2036 will not be oil, or gold. It will be privacy.

We have pooled our most private information, baby photos, health data, DNA, and financial details into something called the cloud, which is not cloudlike at all, but a network of physical data centers owned by megafirms and powered by a great deal of electricity. Although most of the data is permissioned, access can be gained, rather easily it seems, by bad agents for money or for geopolitical gain. This data can be duplicated, edited, or deleted by others at almost no cost. If you do not already regularly back up your laptop to an external device that you alone control, I urge you to do so today.

Beyond security, a generational change is on the way. Not that long ago, people were able to reinvent themselves, to vanish. But today, many young people say they no longer have that right. After years of having their most embarrassing moments shared online, they are beginning to rebel. You can see the beginnings of this trend in the adoption of cryptocurrencies by the under-forty-year-olds. But the trend towards decentralization will not be limited to money. It will extend to data, identity, and memory.

Hyper-digitalization and centralization represent points of failure—attack surfaces that will be tested again and again in the coming decade. The new technologies we use today without protection have emerged, like infants from the womb, naked and exposed. Next comes the age of the wrapper, which will cloak our digital interactions using encryption, blockchain, and consent protocols. These wrappers will also make technology more invisible and ambient. In ten years, we will no longer have phones glued to our hands.

The shift will be structural, centralized to decentralized. Your photos and emails will no longer live in the cloud. They will be stored locally on your own personal server. Pieces of your identity will no longer be strewn across platforms. Instead, you will have a personal DNS, a unique digital address that you own. Yes, you will have robots and artificial intelligence assistants, but they will be controlled from your private node, not outside companies. For those concerned about the privacy of their queries, it is already possible to run large language models and other AI tools locally on your own hardware. Hillary Clinton, who was criticized for using a private server, was not wrong—she was ahead of her time.

AI will need a native currency, and some are betting that this will be stablecoins. In ten years, could they provide the financial architecture these systems will require, automated, programmable, and resistant to centralized control? In any case, companies that can provide the zipper between traditional and digital finance are assured a place in 2036.

The implications for current business models of data-driven firms—that is to say almost all companies today—are profound. Fortunately, the value of data is not really captured on current balance sheets. But in a decentralized world where users own their own information, data-driven revenue streams will vanish. People will pay for privacy, and companies that build this core feature into their hardware and software will thrive. Technology will make the interface that allows this simple to use, serving mankind instead of the other way around.

In 2036, your digital footprint will no longer be permanent, your data will no longer be owned or mined by platforms, and the self will no longer be outsourced. We will have escaped what Shoshana Zuboff called the age of surveillance capitalism.

Those first to join the AI club will have had deep regrets.

ADAM GARFINKLE
Senior Fellow, Niskanen Center

The accelerating transformation of the information science revolution from analog to digital to the near advent of general artificial intelligence will catalyze the headlong collapse of social orders and even fragment many of the states that embrace these technologies without significant reservations or effective regulation. One consequence will be that those societies in the upper tier of global wealth and power today will decline relative to currently poorer societies that cannot now produce advanced cyber technologies, but, with cautionary examples arrayed before them, may learn to manage information science tools wisely as their institutional capacities mature.

The United States will be affected sooner and more thoroughly than other advanced societies because its peerless scientific-technical infrastructure is held within fiercely competitive private hands. Meanwhile, the inherent tendency of the technology to reward giant-scale operations will favor oligarchical forms of political economy and thus further reify *laissez-faire* attitudes toward the effective regulation of cybertech. Indeed, it is already doing so with alacrity these past five months.

That condition will be reinforced as American business and government elites remain locked into their narrow IBG-YBG flip-it short-term mental habits, rendering them mostly blind to the potentially radical negative sociopolitical and ultimately economic effects of digital-cyber and especially artificial intelligence technologies. The same optimistic myopia that greeted the dawn of the internet age is repeating itself on the portal of the AI era. Evidence: In a recent (Winter 2024) *TIE* symposium on AI, every participant saw it as the next productivity boost savior, with none uttering so much as a word of caution.

Unconstrained and compounding revolutionary cybernetic information-science advances will seed social division, violence, and ultimately collapse. One route to oblivion is that the hell-bent race to infuse AI into great- and medium-power military organizations will produce highly crisis-unstable postures that could trigger a weapons-of-mass-destruction holocaust.

Another more likely and less suddenly dramatic route is that the pervasive degradation of what macroeconomists euphemistically call "human capital" at the hands of digital/AI addictions and other cognitive derangements will render most American adults into economic externalities, creating a labor profile massively out of whack with a changing education value-added job market. That will generate stark social divisions that will sire twinned social trust and political stability diseconomies at scale.

An unconstrained AI-driven hyper-plutocracy that exacerbates both income and status inequality in a time of normative egalitarian pretense will melt the socio-ideational infrastructural glue that holds American society together. The nation will convulse and fracture and the consequences, while unpredictable with specificity, will be nasty, brutish, and altogether unpleasant for the vast majority.

Other nations, with value hierarchies standing athwart traditional Western sorts, will then rule the global roost. "The first one now will later be last," sang a folksinger in 1964. He will be proven correct by 2035.

The Bank of Japan will have been replaced.

TAKESHI FUJIMAKI
Former Member, House of Councillors, Japan, and former Tokyo Branch Manager, Morgan Guaranty Trust Company of New York

In the summer 2016 issue of *TIE,* I wrote that "the Bank of Japan would go bankrupt and the yen would lose its status as legal tender."

Fortunately, this prediction has proven incorrect thus far. However, the Bank of Japan's financial condition has not improved. On the contrary, it continues to deteriorate. At this point, we have moved beyond the question of whether the Bank of Japan will collapse and into the stage of when it will happen.

Of course, the Bank of Japan, which has the authority to issue its own currency, will not suffer a liquidity-induced bankruptcy. However, if the excessive issuance of currency leads to a loss of value and the inability to contain inflation, the Bank of Japan will inevitably need to be replaced

by a new central bank with sound financial foundations. I continue to predict such a scenario. Naturally, the yen issued by a defunct Bank of Japan would no longer function as legal tender and would lose all value.

At the end of 2023, the Bank of Japan governorship transitioned from Haruhiko Kuroda to Kazuo Ueda. This position has traditionally been a coveted appointment for alumni of the Bank of Japan and the Ministry of Finance, who have historically taken turns filling the role.

However, in 2023, neither Bank of Japan nor Ministry of Finance alumni were willing to accept the post. As a result, for the first time in the postwar period, an academic—Professor Ueda—assumed the position.

The refusal of those familiar with the inner workings of the Bank of Japan to take on such a politically perilous responsibility reflects the dire state of the institution.

The Bank of Japan has strayed far from the core principles we in the financial industry were taught a central bank must never violate. Given the extreme measures it has undertaken, it is only natural that the Bank of Japan would face an extreme outcome.

The first violation is the purchase of highly volatile financial instruments, which undermines trust in the currency. This is a fundamental principle that a central bank should observe to preserve monetary stability.

Were former Bank of Japan governors to return and examine the current balance sheet, they would likely faint and wish to return to their graves immediately. The Bank of Japan not only holds equities—which major central banks, with the exception of the Swiss National Bank, do not hold—but has also become the largest holder of Japanese equity exchange-traded funds. Given the potential for adverse market impacts, there appears to be no viable exit strategy.

The second fundamental breach is the execution of fiscal financing—that is, the central bank monetizing government spending through currency issuance. The Bank of Japan currently holds more than half of all outstanding Japanese government bonds.

Both Governor Ueda and former Governor Kuroda have insisted that these actions were taken to escape deflation and do not constitute fiscal financing. However, whether a house fire results from arson or an accident, a fire is still a fire. The Bank of Japan's claim that it is not engaged in fiscal financing—despite holding over half of all JGBs, a practice historically linked to hyperinflation—is simply sophistry.

Whereas other central banks act like carp in their respective bond markets, the Bank of Japan has become a whale in the pond. As with equities, reducing its holdings without triggering market chaos is an extraordinarily difficult challenge.

Japan's Consumer Price Index currently stands at 3.6 percent (Tokyo metropolitan area, overall), exceeding levels in Western economies. Yet, with a policy rate of only 0.5 percent, the real interest rate is -3.1 percent, an extremely negative figure. Even after crises such as Black Monday or the global financial crisis, such deeply negative real interest rates were not observed. The current situation evokes the image of a nation mired in a depression.

At the September 2023 meeting of the Japan Society of Monetary Economics, Governor Ueda noted that there are academic arguments both for and against the idea that a central bank's insolvency poses a problem. He ultimately concluded that over the long term, positive seigniorage would occur, so insolvency was not a concern.

However, if the Bank of Japan were to raise policy rates above 0.5 percent, negative seigniorage would begin to accumulate—and in massive volumes. The Bank of Japan is already facing unrealized losses of roughly ¥29 trillion (approximately $200 billion) on its JGB holdings, and these losses would grow even further.

By contrast, the Federal Reserve earned $159 billion in interest income in 2024 and could remedy insolvency simply by lowering interest rates. The Bank of Japan earns only about ¥2.1 trillion (approximately $14.4 billion) annually.

Thus, even if the already-low policy rate were lowered further, recovering accumulated losses would take an extraordinarily long time. The Bank of Japan's state of insolvency would persist for years. Furthermore, since most of the interest income comes from long-term fixed-rate bonds, annual interest income is unlikely to change significantly in the near future.

I believe the notion that "central banks that face no problem even when technically insolvent," as mentioned by Governor Ueda, refers only to those institutions that continue to uphold the fundamental principles of central banking.

The Bank of Japan, already concerned about its own balance sheet, is in no position to raise rates or withdraw liquidity. With no exit strategy in sight, the only option left to restore the credibility of Japan's monetary authority is to dissolve the current Bank of Japan and establish a new central bank with sound financial footing.

Despite the government's earnest efforts to combat inflation, the Bank of Japan continues to maintain abnormally negative real interest rates, reminiscent of a great depression. This behavior appears to reflect the very concern raised by Governor Ueda in his 2023 speech: that the Bank of Japan may be formulating policy to avoid further deterioration of its capital position.

Japan's likely transition to a new central bank is also a consequence of the Bank of Japan's past decisions to silence fiscal warnings by purchasing vast quantities of long-term government bonds. The resulting failure to signal rising long-term interest rates—a natural warning sign of fiscal distress—will be remembered as a costly mistake.

Let this serve as a stern lesson: when a central bank becomes a tool for the government's unchecked spending

and abandoning fiscal discipline, the burden will inevitably fall on the public in the form of economic hardship.

Nonetheless, I believe in the diligence, sincerity, and intelligence of the Japanese people. I am confident that we will overcome the impending difficulties and ultimately reclaim our status as a first-class nation.

By 2035, the U.S. government will aggressively manage the markets and many business decisions and actively support the living standards for most Americans.

ROBERT SHAPIRO
Chairman, Sonecon, and former U.S. Under Secretary of Commerce for Economic Affairs

Over the next decade, America's historic economic model—a privately managed market economy based on individual work and watched over by the government—could shift decisively to new government guarantees for most people's living standards based on a publicly managed market economy. Ideology will play little if any role. This major change in the government's role in the economy will follow, as have several shifts in the past, from the impact of the broad adoption of new technologies on the opportunities and incomes of most Americans.

The seeds of this eclipse of the longstanding economic model were sown by the far-reaching failures by America's markets and successive governments over the past quarter-century to meaningfully help tens of millions of Americans manage the impact of the broad adoption of new information and internet technologies on their livelihoods. Now, we must consider carefully the economic and political effects likely to follow over the next decade from advances in artificial intelligence and its capacity to power the adoption of other disruptive emerging technologies, including biotechnologies, nanotechnologies, and advanced robotics.

When the broad adoption of computer and internet technologies forced businesses to reorganize their operations and workforces, the main winners were highly educated Americans adept at working in technology-dense workplaces and the founders and early investors in new technology enterprises who claimed historic jackpots based on network effects and a lax antitrust regime. The economy-wide applications of these technologies also led to millions of job losses by Americans with little access to new positions paying nearly as much and twenty years of lackluster income gains for a majority of the country.

The result has been the effective end to upward mobility for most people and extreme levels of economic inequality. IRS data show that the top 1 percent of Americans claimed 22 percent of all income in 2024, and the top 10 percent took home nearly 50 percent, compared to the bottom half of the country with less than 12 percent of all income. Today's disparities in wealth are even worse: The Federal Reserve reports that the top 1 percent of Americans held 31 percent of all private assets in 2024 and the top 10 percent owned 67 percent of the country's wealth, compared to the 2.5 percent of all private assets owned by the bottom 50 percent.

It's unsurprising that such intense inequality and people's attendant economic disappointment and anger have propelled a new populism on both the right and left. And in its wake, both political parties have walked away decisively from the traditional view that the American government should play a modest role in the economy.

This is the context in which the quartet of next-generation artificial intelligence, biotechnologies, advanced robotics, and nanotechnologies will further disrupt jobs and incomes over the coming ten years and worsen the distress and frustration a majority of people already feel.

These emerging technologies will inevitably render many current technologies and the employees trained to use them outdated and inefficient. New biotechnologies supported by fast-developing AI will offer new treatments and processes that will disrupt medical care industries, agriculture, and production of many chemicals, materials, and fabrics. Flexible robotics that adapt to changing environments, again backed by advancing AI, will disrupt scores of industries with new forms of automation in manufacturing, transportation, and many business services. And new nanotechnologies powered by AI will dramatically enhance the strength and durability of hundreds of industrial and commercial materials, sharply expand battery storage capacity, and produce new and more precise components for aerospace, construction, automobiles, and consumer electronics.

As this quartet of emerging technologies takes hold and displaces thousands of existing products and processes and many of the companies and employees that produce and operate them, and the returns on decades of existing business investments fall sharply, businesses will have to downsize or close down, new job losses will steadily mount, and incomes across the economy will slow further or decline.

As millions of professional and white-collar Americans face unemployment, along with blue-collar

employees, the reigning populists from the left and right will turn to new ways to prop up businesses and support most people's living standards, for example with direct income payments, housing subsidies for the middle class, and free or low-cost childcare and higher education. And as medical advances in AI-supported biotechnologies move towards curing common diseases from cancer to diabetes, or at least managing them much more effectively, and many of those treatments remain out of reach for many millions of income-strapped patients, the right- or left-wing populists in charge will expand Medicaid and Medicare and cap insurance premiums for everyone else or put in place a one-payer system with cost controls.

The governing populists will turn to the simplest and most popular ways to pay for all this, a combination of price regulation, trillions of dollars in new revenues from investors, high-income people and their estates, and global companies, and massive additional deficits and debt. By 2035, the United States government will aggressively manage the country's markets and many business decisions and actively support the living standards for most Americans, for as long as global markets tolerate the costs.

While U.S. influence shrinks, a new free trade zone will emerge.

DANIEL SNEIDER
Lecturer in East Asian Studies, Stanford University

Looking back, the retreat of the United States into hemispheric isolationism, which began under President Donald Trump and continued under his successors, prompted a surprising reconfiguration of East Asia, and with it the global economy.

Traditional American allies faced the challenge of American abandonment—a rapid downsizing of the U.S. overseas military presence and lack of confidence in guarantees of extended deterrence (the "nuclear umbrella"). In East Asia, the shared fear of abandonment led South Korea and Japan to overcome their historical animosity and negotiate a treaty creating a bilateral security alliance.

The Korea-Japan Pact, as it became known, went beyond pledges of mutual defense, economic integration, and security cooperation. Senior officials, meeting in secret, forged a nuclear partnership. Korea moved rapidly to design and build both fission and thermonuclear warheads, drawing on extensive scientific work, with short- and medium-range missiles and air-launched delivery systems. Japan supplied the missing ingredients—it opened up its huge storehouse of plutonium, allowing the nuclear capability to be built in a matter of months. And it added its H-3 rockets as a long-range delivery system.

The Korea-Japan Pact created a new nuclear deterrent designed to balance the ongoing threat from China, still bound in its uneasy partnership with a diminished Russia, and North Korea. The Korea-Japan Pact also potentially offered extended deterrence to Australia, Vietnam, and others in the region.

In parallel, as the United States abandoned the global trading system and opted to pursue a closed, delinked economy, the drivers of world trade in East Asia were compelled to find other markets and to insulate themselves from the disruption of global supply chains. At the kernel was the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (the CPTPP), the twelve-nation Pacific grouping that had already grown to include the United Kingdom. Within a short span, the CPTPP added South Korea, Thailand, the Philippines, and Indonesia, with Taiwan granted an associative status.

The crucial step beyond expansion was the partnership agreement reached with the European Union. In total, this formed what became known as the Free Trade Zone. In effect, this zone was a reconstitution of the GATT/WTO structure, without the complication of dealing with the America First regimes.

China held serious negotiations with the TPP, led by Japan and Australia, but ultimately refused to accept the rigorous conditions governing the role of the state sector, the protection of intellectual property, and freedom of digital services. India opted out as well, for similar reasons. Still, trade and investment ties with China grew, under the umbrella of the looser structure of the Regional Comprehensive Economic Partnership (RCEP).

As the U.S. market shrank in importance, and trade shifted heavily toward the FTZ, especially with the rest of the Global South, two large economic and business developments took place. International confidence in the U.S. dollar plummeted and investors moved away from U.S. assets, replaced in part by a growing role of the euro and the yen as reserve currencies and for global trade.

Equally consequential, the most innovative U.S. technology firms, such as Apple, Nvidia, Google, Microsoft, and others, moved significant assets and design and R&D work to the FTZ, mostly in partnership with Japanese, Korean, and European firms. Within the politically fractured, conflict-ridden United States, the Pacific Rim-facing states of Washington, Oregon, and California, along with

Hawaii, the centers of innovation and globalization in the U.S. economy, began to delink and join the FTZ.

By 2035, a new, truly multilateral world had emerged.

There will be no reserve currency.

DEREK SCISSORS
Senior Fellow, American Enterprise Institute

Ten years from now will see international finance well down the path to currency blocs, shocking the world of October 2024, at least.

Yes, proclamations of the dollar's fall from reserve currency grace are old news, certainly since the global financial crisis. To now, they have not been well grounded. At the end of December, the dollar was used in 49 percent of global payments, according to SWIFT. It was 48 percent in 2012. Dollar claims constituted 58 percent of allocated foreign exchange reserves at the end of last year. It was 59 percent as recently as 2020.

Nonetheless, "if something cannot go on forever, it will stop." And sooner when the responsible authority no longer likes the *status quo*. On top of long-term, large central government deficits, the United States has added unstable and at least temporarily nonsensical trade policy. The former constitutes less reason to hold dollars, the latter connotes less use for dollars. Ugly fiscal policy is one thing with American commitment to a dollar system, it's quite different if the United States may be zigzagging toward fundamental reordering.

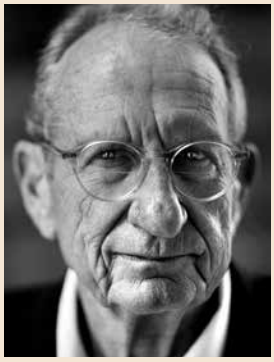
Perhaps an auxiliary surprise: if the dollar falls, it will not be replaced. From one reserve currency to none. The euro's share of allocated reserves was 19 percent in 2016 and 20 percent last year. Its payment share dropped from a temporary high of 33 percent in 2012 to 22 percent in 2024. Gold may have become more popular as a reserve asset.

The much-discussed Chinese renminbi is of course much farther behind, at 3.8 percent of payments and 2.2 percent of allocated reserves at the end of 2024. After so many pronouncements of the end of its peg to the dollar, the renminbi has remained between 7 and 7.35 to the dollar for more than two years, officially, about half the dollar index fluctuation (the latter should be more stable).

Moreover, while the renminbi has short-term potential, China's medium-term debt problems are even worse than America's. Bank for International Settlements data show 2024 outstanding credit to the non-financial sector at 249 percent for America and 286 percent from China, the latter doubling since 2008. Long term, there's an upper bound on the net national wealth ultimately backing a currency, with China's population forecast to drop by six million annually for the next quarter century, accelerating after that.

It's difficult to see the United States being responsible under this administration. If the next one is similar, the dollar will have a different status end-2032 than end-2024. There would be no global replacement. Dollar, euro, and renminbi blocs thus become more likely. Unaffiliated countries would hold more gold and stable currencies such as the yen or Swiss franc as reserves, and increase transaction use of cryptocurrencies.

Blocs would be based more on trade patterns and needs than geography. Supply chain resilience, starting with commodities, could be the single biggest factor. Perhaps this is less shocking for the world than it is scary.



The existential threat of climate change will no longer be present.

JOHN M. DEUTCH
Emeritus Institute Professor, Massachusetts Institute of Technology, and former Director, Central Intelligence Agency, former Deputy Secretary of Defense, and former Undersecretary of the U.S. Department of Energy

A decade from now, the existential threat of climate change will no longer be present. Three simultaneous unexpected developments are responsible for this favorable outcome. First, several major, inexpensive, low- or zero-emission technologies have appeared, such as desktop fusion, effective atmospheric carbon dioxide removal, and practical recovery of deep ocean minerals.

Second, as part of the United Nations Framework Convention on Climate Change, the world's rich nations,

mostly in the northern hemisphere, have transferred a significant portion of their wealth to emerging economies to finance their successful transition to clean energy economies.

Third, natural climate variability has taken an unexpected turn, shifting the radiation balance slightly at the top of the earth's atmosphere, reducing anticipated global average warming.

However, several unexpected adverse global risks will also emerge during the next decade. First, bugs will beat biologists, and fearsome pandemics will sweep the world, killing millions much as influenza virus did in the past, and more virulent covid strains will appear. Water availability leading to migration becomes an increasing problem in Africa and parts of Asia. A remarkably destructive war occurs between Israelis and Palestinians.

The key variables that describe the state of the globe's economy, geopolitics, and climate are always in a state of meta-equilibrium. Unexpected dramatic changes can occur to these variables during the ten-year interval from 2025 to 2035. *TIE* should not be asking experts to predict what economic developments could shock the world, but to identify which meta-equilibrium variables are likely to remain stable and which are not. My experience leads me to believe key instabilities will involve military conflict, perhaps China seizing Taiwan, war with Iran, or India and Pakistan fighting over Kashmir spreading throughout the subcontinent.

A major copper crisis.

ANDREW DEWIT
Professor, School of Economic Policy Studies, Rikkyo University

The year 2035 will see supply shortages and massive price spikes for copper. To be sure, S&P Global and the International Energy Agency have been warning about looming copper shortages for years. Yet current investment and consumption suggest we collectively regard a supply crisis as unlikely. That is why it merits inclusion as a seemingly improbable outcome.

Let's look at the math. There are four Ds—decarbonization, digitization, development, and defense—driving climbing demand for copper. As to the first D of decarbonization, the IEA expects spending on clean tech to reach $2.2 trillion this year. Solar alone comprises $450 billion, followed by power grids at $400 billion. Both are very copper-intensive.

A second D is the diffusion of data centers and other digital tech, whose current assessments suggest they will add at least 2 percent new demand by 2030.

The third D of development is, as Veriten partner Arjun Murti puts it, centered in the so-called 1.4 billion-people clubs of South East Asia, India, Africa, and China. Those countries and regions have comparatively low per capita stocks of copper in their urban and industrial economies. Compare the 160 kilogram average per capita copper stock in the high-income countries with the mere 0.5 kilogram average in India. No one reliably forecasts how rapidly the 1.4 billion-people clubs will raise their per-capita copper stocks over the next decade. But reaching parity with the rich countries would require over one billion tons of copper, representing five decades of current annual mined supply of about twenty-four million tons. So even minimal movement in the big D of development implies possibly unprecedented demand growth.

The fourth D is defense. Here too, we find a known unknown. Current estimates suggest that defense demand for copper is about 1.5 percent (500,000 tonnes) of the global total, but increasing apace in the midst of escalating weapons production. For example, a 155mm artillery shell requires about one kilogram of copper, and the United States and European Union alone seek to match current Russian production of three million per year. It is thus quite understandable that S&P Global is now trying to scope defense demand for copper.

Copper's supply numbers are equally concerning. The global average lead time to develop a new copper mine has increased to 17.9 years. Equally worrisome, the ore grade of projects has declined by more than 40 percent over the past three decades. The consequent need to extract and refine more ore to produce a unit of copper output has helped raise capital costs from roughly $15 million per kilotonne to $25 million per kilotonne. The mining major BHP estimates that between 2025 and 2034, the necessary new copper mining investment is roughly $250 billion (2024 dollars), a huge increase over the $150 billion invested between 2015–2024.

But global mining firms are quite risk-averse. Thus the International Energy Agency—which generally lowballs the three Ds of digital, defense, and development—warns that by 2035, copper supply from ongoing and announced projects is a sobering 30 percent short of expected demand. So it seems wise to expect a future of very painful tradeoffs in allocating copper among the four Ds.

A world of open borders.

J. W. MASON
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A world of open borders is not far in the past. If you are an adult in the United States, the United Kingdom, or many other countries, your grandparents could have entered the country at a time when there were essentially no restrictions on immigration. A decade from now, restrictions on migration may once again be far looser than they are today.

In today's debates over migration, it's easy to forget that for much of history, open borders were the norm. The United States banned immigration from China in the late nineteenth century, but there were no numerical limits on immigration from the rest of the world until the Immigration Acts of 1921 and 1924. The same goes for much of Europe—immigration was essentially unrestricted until after the First World War.

The economic case for immigration restrictions has always been weak.

Since Nobel Prize-winning economist David Card's pioneering work on the Mariel boat lift forty years ago, careful studies have generally found that migrants have little if any effect on native wages—which should not be surprising, since migrants are a source of demand as well as labor supply. Claims that migrants will overstrain welfare systems overlook the fact that our most generous provision is for old age. Working-age migrants pay in more than they take out for many years, leaving social insurance systems stronger, not weaker.

Domestically, we all recognize that cities and regions that lose population are in trouble; a growing population is a sign of economic success. Around the world, the most dynamic cities and regions are filled with immigrants—either from abroad, or rural areas from which the social distance is often just as great.

I am typing this in Bangalore, center of India's high tech industry—and not coincidentally, a magnet for immigrants. Half the city's residents have moved here from elsewhere. Many come from states elsewhere in India that are as far off economically and linguistically as the other side of an international border. Average income in Karnataka, where Bangalore is located, is six times greater than in Bihar—a difference double that between the United States and Mexico.

Of course there is friction like anywhere else, and an expectation that immigrants—or at least their children—learn the local language. Yet no one here seriously suggests that migration within India could or should be legally restricted. Perhaps, in a generation, a world of tight limits on movement across international borders will seem equally absurd.

It is true that anti-immigrant sentiment is strong in much of the world today, stoked by demagogic politicians. But public opinion can change, often faster than we expect. As recently as 2020, a plurality of Americans told pollsters that immigration was too low, rather than too high. We could soon see a swing back in that direction, especially as the full costs of anti-immigrant policies become clear.

At a time when immigration rules are being enforced more aggressively than ever, it may seem strange to suggest that a world of open borders is just around the corner. But if we look at history, we often find that the strongest rules are the ones based on consent; rules enforced by violence are brittle and vulnerable. This may be true of migration. A decade from now, we might look back at raids by masked immigration agents the same way we look at, say, the suppression of protests in Nicolae Ceausescu's Romania—as a final outburst by a regime that was about to give way to something very different.

A demise of the globalization paradigm.

MANSOOR DAILAMI
Former Manager, Emerging Trends Team, World Bank Group

With the fourth industrial revolution and AI technologies steering the human lifeform to previously unknown domains, the future will cease to be within the realm of our lived experience. In the absence of any power of divination and prophecy, we are compelled

to read patterns, separate facts from fads, and establish causal connections. Accordingly, the scenario that I foresee for 2035 is a post-global era that speaks of the demise of the globalization paradigm as we have known it. The post-global label alluded here attests to more than being a "post-something" phenomenon. It marks a historical rupture—a retreat from the liberal globalist project of the post-Cold War era within which capitalism claimed its ultimate triumph over communism and the United States exercised its power within the rules-based liberal international order. Both are now under assault and will give way within the next ten years to new configurations that are difficult to fathom in detail but visible in broad outlines.

It is the cunning of history that both the U.S. leadership of liberal international order and liberal capitalism have come to be questioned and indeed resisted by a constellation of radical conservative forces at home and illiberal powers abroad. The convergence of these forces at this moment of history is more than an accident. Apart from the common anti-liberal stance of both, there is today the structural insecurity created by accelerating change and increased mobility that is fueling social resentment at home and intensified competition abroad. There is a sense of detachment from the traditional moorings of social and cultural life, which is translated into a vocal challenge to the elitist management of economic globalization on the one hand and increasing resistance to American unilateralism on the other.

Yet this is more than a passing moment: it will have economic implications of consequence. The economic growth model premised on open markets and free trade operating in a rules-based international system, that had served as the economic anchor of Western modernity since the end of the Second World War, is now losing face and there is no viable alternative on the table. There is a flurry of laments over the crisis of the liberal international order in the United States, soul-searching in Europe (the Letta and Draghi reports), catastrophe in the Middle East, and desperate responses in the rest of the world to the Trump administration's affinity for restrictive tariffs both as a tool of trade policy and as a bargaining strategy. Taken together, three messages stand out: a significant reallocation of economic resources to boost defense and deterrence capabilities (for instance the ReArm Europe plan); a renewed emphasis on active industrial policy, particularly in defense and technology sectors; and an increasing reliance on economic coercion and sanction. With these developments in play, a delusion is setting loose that capitalism at its current phase of advanced technological prowess could survive domestically without the helping hand of a welfare state and externally without the architecture of multilateral governance. All of these are pushing the world economy towards greater geoeconomic fragmentation.

The economy is often held up as one domain of human affairs that has most benefited from technological innovation. While a lively debate about economic integration of digital technologies is currently underway, fears around the uncertain trajectory of AI development and its potential to automate and replace a wide range of human skills and jobs are fueling social anxiety and worry. To be sure, unemployment has always been a fact of life in capitalist market economies. But the labor market adjustment and economic dislocation associated with AI are potentially of a different scale and magnitude. Take the recent International Monetary Fund estimates: about 60 percent of jobs in advanced, 40 percent in emerging markets, and 26 percent in low-income countries could be affected by AI. A growing army of people left behind and an "underclass" will be a potent catalyst for populism to gain strength both on the right and the left.

At the time when the pace of change is accelerating in virtually every domain of human life, time loses its classical (clock-time) meaning and needs to be viewed as registering a different temporal order: the temporal category of the "not-yet." The contingency inherent in the notion of time is a potent source of uncertainty and risk. It is also a source of utopia and possibilities. Taking a cue from Shakespeare whom we encounter as an "ultimately hopeful" author, we can allow a role for utopian thinking. For Shakespeare, whose iconic tragedies have constituted the core of the Elizabethan and Jacobean drama, hope emerges from his aestheticized version of utopian thinking. For us, hope arises from the proper application of scientific knowledge alongside the moral authority of shared values of universal human rights and human dignity.

The weaponization of the U.S. dollar to interdict trade between third countries will prove to have been the pebble that causes an avalanche.

BRIGITTE GRANVILLE
Professor of International Economics and Economic Policy, Queen Mary University of London

My forecast has a firm inside-the-box foundation in that it starts from an existing, if embryonic, development in global payments. This is the use of central bank digital currencies (CBDCs) for settling cross-border trade invoices. I speculate on outside-the-box

ramifications of this development for money and financial intermediation. As often with radical change, this would be a story of unintended consequences.

Debates about the future of the U.S. dollar as the world's reserve currency traditionally circle around plausible alternatives (or lack thereof). But what if the United States itself forced the pace of replacing the dollar by making it impossible for one or more large open economies to use the greenback? This is what has just happened to Russia. The most visible consequence for now has been many central banks around the world reducing the share of their reserves held in U.S. dollars in favor of gold. Less well remarked on for now than the resulting gold price surge is another consequence of Russia's enforced de-dollarization.

This is the preferred workaround for delayed or blocked international payments caused by banks' fears of secondary U.S. sanctions being imposed on them for dealing with Russian counterparties. The solution now being discreetly piloted replaces banks with the use of CBDCs transmitted, thanks to blockchain technology, through ledgers invisible to the hitherto omnipotent U.S. Treasury.

One objection to this development leading anywhere radical is that CBDCs are still national currencies. That is, this scheme will leave companies and countries holding larger amounts of some other countries' currencies than they want or need.

The answer to this is that the alternative—of increasing trade frictions and payments delays—is worse. As the CBDC settlement system for cross-border trade snowballs, currency clearing mechanisms will develop to fill this profitable new business opportunity. But another type of business will cease to thrive—one that has long seemed an indestructible cornerstone of finance. This is deposit-taking utility banking services—and with that, the whole model of fractional reserve banking creating money through maturity transformation of liabilities ultimately insured by the taxpayer.

As more and more firms use CBDC wallets, bringing their employees (households) along behind them, vast and attractive new vistas will open up for monetary authorities. These include much more granular regulation of money and credit as lending intermediaries come to rely on wholesale funding markets while private credit markets increasingly operate entirely at lenders' risk like the partnership banks of old. Attuned to the new back-to-the-future *zeitgeist* may be the removal of fiscal risks caused by periodic banking crises—an attractive bonus in the coming years of ever-greater pressure on the public finances.

It will be objected finally that authorities will balk at such risks of destabilizing their financial systems. But I predict that they will just have to ride this new wave, mitigating risks along the way. In short, the weaponization of the U.S. dollar to interdict trade between third countries will prove to have been the pebble that causes an avalanche.

Russia will be at the edge of disintegration.

STAN VEUGER
Senior Fellow, American Enterprise Institute

Looking back, it was somewhat ironic that once Europe got serious about (re-)building its defenses, the main threat disappeared. For a few years, Russian President Vladimir Putin's revisionist ambitions had combined with American wobbles to fuel dramatic increases in European military spending and production. Even Spain had started spending more than 2 percent of its GDP on defense under Prime Minister Moreno Bonilla.

But then, in 2030, with the European Military Community nearing maturity, age caught up with the Russian dictator. Putin's death left behind a hollowed-out state that was at severe risk of disintegration if not collapse. Some very welcome disintegration happened immediately: EU member states Moldova and Ukraine took back control of their territory in Transnistria, Crimea, and eastern Ukraine.

As Russia itself transitioned from the autocracy that it is today to an oligarchic kleptocracy, the new leadership's sole focus became the maximization of short-run state revenue: get it while you can. The dramatic increase in oil and gas production that ensued drove down prices worldwide, and, with that, the profits of other oil and gas producers.

In the United States, this triggered a regional recession widely seen as key to turning Texas blue in the 2032 election. Its forty-two electors were essential to President Spanberger's reelection, as California, New York, Oregon, Illinois, Wisconsin, and Minnesota had lost a combined eleven electors in the 2030 congressional reapportionment, more than her 2028 electoral college margin.

Vice President Ossoff, still only forty-five years old, was widely seen as the president's natural successor, while Republicans were eyeing Florida Governor Matt Gaetz as the best-suited candidate to keep Donald Trump, Jr., from

clinching the 2036 nomination after his two consecutive general-election defeats.

Meanwhile in Europe, as Russia sanctions were gradually lifted, soccer team ownership started shifting back from the Gulf to Moscow. In recent weeks, rumors have started going around that Deputy Prime Minister Abramovich is close to acquiring Chelsea FC once more.

A great sucking sound that will be good for us!

ROBERT E. LITAN
Non-Resident Senior Fellow, Brookings Institution

In the age of Trump, artificial intelligence, and at this writing, a new Middle East in the making, hardly anything seems improbable or really out of the box anymore, especially when thinking ten years out. But I'll try, by hedging my bets with not one, but two out-of-the box projections—both optimistic for a change.

First: a technological breakthrough will make carbon capture at scale economically feasible, in the range of $50 per ton of carbon removed, down from about $600 per ton today. Severe weather events aggravated by climate change are a function of already high ambient carbon dioxide concentrations, which will only get higher even with slower growth of climate emissions (which still add to the carbon dioxide already in the air). Increasingly catastrophic damage caused by climate change can only be avoided, therefore, either by geo-engineering that offsets ambient carbon dioxide concentrations through particles that block sunlight (which even with improved research and development still will seem too risky for governments to implement), or by sucking carbon dioxide out of the atmosphere, either directly or indirectly out of the oceans (which can then absorb more carbon dioxide out of the air). As it has in so many other realms, count on science and technology to rescue the world with the second alternative: a great sucking sound that will be good for us!

Second: a long-awaited major budget deficit reduction deal gets done by 2035, if not before, as a response to a certain future crisis. Major legislation in the past, such as fixing Social Security back in 1983, and even Obamacare, has been driven by real or manufactured crises. The certain future crisis to which I refer will be the insolvencies of the Social Security and Medicare trust funds, which the latest projections show will happen by 2033. The trust funds are something of a fiction, because if it had to, Congress would make up any trust fund shortfalls with general revenues. But the fiction of the funds' impending insolvencies will turn out to be politically useful in creating the crisis that will finally generate some real deficit reduction.

Now, here's the really out-of-box part of the deal I have in mind. Whether prompted by a bipartisan commission (as in 1983) or initiated by Congress or the president, Congress decides that to "save" both trust funds, it makes sense to fund both of them differently and with more economic sense: by replacing the current Social Security and Medicare taxes, which are taxes on labor, with a combination of taxes on consumption (a VAT with rebates for low-income citizens) and carbon taxes, paired with some cost-saving reforms, so that the deal can be sold as a true compromise. Cost-saving ideas will include raising the age eligibility for at least Social Security to seventy (as Denmark has done) over time, gradually and starting at some point in the future, and immediately assessing higher progressive premiums for Medicare recipients.

Government-granted patent and copyright monopolies will have become outdated anachronisms.

DEAN BAKER
Senior Economist, Center for Economic and Policy Research

Making big predictions for a decade out is by definition a risky task. But rising to the occasion, let me suggest that government-granted patent and copyright monopolies will have become outdated anachronisms.

Just to remind everyone, these monopolies are government policies for financing innovation and creative work. The logic is that if someone produces a creative

work of value or a new innovation, the government will give that a person a monopoly on distributing it for a period of time. In the case of the United States, the monopoly on patents is generally twenty years, while it is ninety-five years for copyrights.

While these monopolies do provide incentives, as intended, they also create enormous problems. Copyrights in particular have become extremely difficult to enforce in the era of the internet and artificial intelligence. Copyright law in the United States already can lead to lawsuits involving thousands of dollars in punitive damages and legal fees when actual damages may be no more than a few dollars or even a few cents.

The issues around copyright will become even more difficult with artificial intelligence. How will anyone determine when an AI program has borrowed excessively from a copyrighted work to produce a document, song, or movie? Even an economist should be able to see that copyright protection is leading to more trouble than it is worth.

There is a similar story with patents, most importantly in the case of prescription drugs. Patent monopolies make drugs, which are almost always relatively cheap to manufacture and distribute, extremely expensive. As a result, life-saving drugs that may cost a few hundred dollars for a year's treatment in a free market instead sell for tens or even hundreds of thousands of dollars.

This is terrible both from an ethical standpoint and also an economic standpoint. In the case of prescription drugs, the extra cost from patent monopolies is hundreds of billions of dollars annually in the United States alone.

These monopolies also provide an enormous incentive for corruption, as the huge markups they allow encourage drug companies to mislead doctors and patients about the safety and effectiveness of their drugs. The most extreme example of such corruption is the opioid crisis, where drug companies concealed evidence of the addictiveness of the new generation of opioids in order to maximize sales.

There are other more modern mechanisms for financing creative work and innovation. We can use individual tax credits, modeled on the charitable deduction in the United States, to finance creative work which would not be protected by copyright.

For innovation, we can use direct public funding, along the lines that the United States does now with the National Institutes of Health, to support open-source research. By making research findings fully public, we are likely to see technology advance more quickly and avoid much research whose sole purpose is developing rent-seeking innovations to get around an existing patent.

There are huge special interests that benefit from the current system of patents and copyrights, but this is an area where we could achieve enormous economic and social benefits, if there is the will to bring about change.

A long-lasting productivity slump.

MARCO ANNUNZIATA
Cofounder, Annunziata+Desai Advisors

Expectations for faster productivity growth have been simmering for a long time, and excitement over generative artificial intelligence has brought them to a boil. Technological innovation has made major steps forward over the past couple of decades. AI, long deemed a pipe dream, has become a buzzword backed by hundreds of billions of dollars in investment. Experts confidently predict that within a few years AI will power scientific discovery on an unprecedented scale.

Meanwhile, however, productivity growth across advanced economies has languished. After a golden decade between 1996 and 2005, powered by the first wave of digital innovation, productivity slowed sharply and shows no signs of recovering. In the United States, productivity growth averaged 2.5 percent per year between 1996 and 2005, but halved to 1.3 percent afterwards, according to OECD data. In Germany and Japan, it more than halved from 1.6 percent and 2.0 percent to 0.7 percent and 0.8 percent respectively. France and the United Kingdom suffered an even sharper drop, from 1.7 percent and 2.2 percent to 0.4 percent and 0.5 percent respectively. In Italy, after an average 0.7 percent per year, productivity growth flatlined at zero. For the European Union as a whole, it slowed from 1.8 percent to 0.8 percent.

The most recent years look no better: over 2022–2024 productivity actually declined on average in France (-0.3 percent), Germany (-0.2 percent), Italy (-0.9 percent) and the euro area (-0.4 percent). It stagnated in the European Union (+0.1 percent) and averaged a mere 0.3 percent in the United States over 2022–2023.

Of course, it takes time and investment for new technologies to scale through an economy, as companies adapt their processes and upgrade human capital. Digital-industrial advances have already delivered significant efficiency gains. Innovation could once again boost productivity and living standards.

Stubbornly slow productivity growth, however, warns us that three recent trends are poised to negate the benefits of innovation.

The first is a steady expansion of governments' role in the economy, with a corresponding rise in public expenditures, taxes, regulations, and public debt, fueled by a sustained surge in populism.

The second is a complex and costly green energy transition. This entails major investments just to replace existing levels of power generation, as a recent study by economist Jean Pisani-Ferry shows, and risks making electricity supply both costlier and less reliable.

The third, paradoxically, is the surge in enthusiasm for generative AI and large language models, which risks undermining human capital well before AI can even come close to replacing human intelligence. While AI could become a powerful learning aid, we have mounting evidence that the rush to embrace LLMs such as ChatGPT undermines critical thinking and cognitive ability. This is extremely alarming, especially on the back of a years-long decline in learning standards documented by PISA surveys. Meanwhile, if the skeptics are right, LLMs are in fact incapable of reasoning and incurably prone to hallucinations.

A combination of intrusive government, expensive unreliable energy, and deteriorating human capital might doom us to a lasting productivity slump; after all the innovation enthusiasm, this would come as a major unpleasant shock.

Populist politics will expand to white-collar workers.

HONGYI LAI
Associate Professor, School of Politics and International Relations, University of Nottingham

I am satisfied though not necessarily happy to see that several key trends in my prediction in *TIE* about ten years ago have largely materialized—tension would rise between emerging powers and existing powers; technology associated with automation and implicitly artificial intelligence would change our society (though not yet as widely as I predicted); and populism driven partly by severe inequality would reshape our political world.

Looking into the next decades, most of these trends will continue or even intensify, while others will become apparent. Geopolitical and economic tension and conflict between emerging powers and established ones could occur. Possible areas of severe or even catastrophic fallout from geopolitical conflict include the Taiwan Strait, the Korean Peninsula, the Middle East, the South Asian continent, the South China Sea, and Russia, its neighbors, and Europe. Possible economic tension and conflict could arise among the emerging economic powers, major advanced economies, and even developing economies regarding trade practice.

Populist politics might well be an integral feature of politics in many parts of our world. Its constituents could expand from blue-collar workers to white-collar workers. The latter would possibly be triggered by the economic anxiety caused by AI and the rising number of legal and illegal migrants including those escaping natural, economic, and political catastrophes.

Thanks to our imperfect technologies used in recent centuries, extreme weather and sea level rise will become increasingly common, wreaking havoc on the economy especially agriculture, tourism, trade, infrastructure, and the way of life in a good number of nations. They could drain financial resources of the government, corporate sectors, and individuals there. Climate disruption will also create an exodus of refugees or migrants, leading to populist backlashes in the nations of their destination.

Technology will start to shape our civilization far more profoundly than before. Artificial intelligence will spread in numerous sectors including transport, services-based industries such as health care, home care, legal services, reception, accounting, and education, as well as research and defense including programming and detection of data patterns in natural and social sciences. Humanoids will be introduced into households, initially wealthy ones and then middle-class families, as well as businesses and even defense and security.

However, AI and related products will drastically alter the job markets, creating many winners, such as entrepreneurs, investors, and employees in the new tech sectors and those servicing them, as well as many losers, including the aforementioned and other sectors being eroded by AI. It could also generate high risks and fears regarding job displacement, crimes, deadly weapons, and especially human-defied rogue AI, or AI terrorism, capable of human extinction. Other advanced technologies, possibly quantum computing, nuclear fusion, new agriculture, and virtual reality, might also start to change our economy.

In sum, these forces will transform and disrupt our world as we know it. We will need to be ready for both the positive and negative changes ahead. Understandably, if the sources of these political, economic, technological, and weather disruptions are duly managed, we will make our world a much better and safer place.

The Asian Century will be in jeopardy.

JOHN LEE
Senior Fellow, Hudson Institute

The common view that the twenty-first century will be defined by the economic rise of Asia is based on the assessment that two-thirds of the world's middle classes will reside in this region by the mid-2030s. It is the region with the most rapidly growing middle classes in the world. Currently, more billionaires are emerging in Asia than anywhere else. It is widely predicted that this century will be known as the Asian Century—a return to the early 1800s when Asia accounted for well over half of global GDP.

The basis for optimism about Asia's economic future is founded on its impressive growth in productivity over several decades An alternative possibility is Asia resembling the economies and societies of South America over the next decade and beyond. These are countries characterized by immense inequality, declining productivity, ongoing problems with managing debt, as well as poor governance, institutions, and high levels of corruption.

At first glance, this seems unlikely. About half of all global manufacturing occurs in Asia. Asian economies are becoming more technologically adept. Citizens are becoming much more educated. Currently at about 55 percent of global GDP, Asia's share is projected to grow to about two-thirds of global economic output by the mid-2030s.

The problem is that there are underappreciated headwinds that place the Asian Century in jeopardy. The most serious is an economic growth model that was pioneered in the 1950s and 1960s is running out of steam. This is based on Asian economies creating political economies that prioritize production over consumption. The problem is that there is now a global structural problem in which consumers in advanced economies, especially in North America and Europe, cannot absorb the excess production that has driven economic growth and the rise of the middle classes in Asia. It is also extremely difficult to change decades-old policies that prioritize production over consumption, as this needs structural adjustments that are not just economic but political and social. Doing so will cause immediate economic, social, and even political turmoil that Asian governments would rather avoid.

Moreover, and apart from high-income Asian economies such as Japan, South Korea, Taiwan, and Singapore, many developing Asian nations have governance practices and institutions that resemble the promising but flawed ones in South America in the previous century. In much of Asia, as in South America, inequality is accelerating because well-connected elites have disproportionate access to economic and career opportunities. Corruption is becoming more rather than less entrenched. These trends are worsening as overall national wealth increases.

The rise of Asia in an absolute sense is likely to occur. But unable to escape the middle-income trap, with institutions becoming less resilient and reliable and societies becoming more divisive and fragile, the future for the region might be troubled rather than thriving in the 2030s and beyond.

The United States will fade in response to a frenzy of new cross-regional trade agreements.

ROBERT A. MANNING
Distinguished Fellow, Stimson Center

Looking to 2035, it is tempting to extrapolate from current trends to imagine catastrophic outcomes from nuclear war, climate-driven economic collapse, and massive refugee flows from the Global South, to a U.S.-triggered 2008-magnitude global financial crisis. None of these would be a surprise.

What might be a shock is a positive if "gray swan" scenario, imagining that current trajectories where much of the world is developing coping mechanisms to insulate themselves from Great Power Competition, U.S. rent-seeking tariffs, and a weaponized dollar evolve into a revised globalized order with a self-marginalized, autarchy-seeking United States.

Thus, the trends. One is a frenzy of new cross-regional trade agreements such as EU-ASEAN, EU-MERCOSUR, UK-India, and more. Another is a gradually diminishing dollar dominance with China already conducting 30

percent of its trade in RMB, its digitized RMB and Cross-Border Interbank Payment System (CIPS) alternative to SWIFT, and Russia's ruble-based stablecoin. Yet another is the European Union forging deeper bond markets to increase the role of the euro. All are the result of economies seeking to shield themselves against U.S. sanctions. Pan Gongsheng, China's central bank governor, in a recent speech projected not an RMB-dominant world, but a pluralistic system based on the International Monetary Fund's SDRs. Even on defense, Europe's surge in military spending and more autonomous defense industrial base and Asia's exponential thickening of intra-Asian defense cooperation point in this direction.

These trends evolve to 2035. There is burgeoning cooperation between the European Union and China, with Beijing licensing electric vehicle, battery, solar, and other tech for joint ventures, and curbing subsidies, also reaching accord on artificial intelligence standards and compatible regulations. The European Union links up with the Pacific trade bloc, CPTPP—together, 30 percent of global GDP. In the 2030s, Japan and Australia accept China into CPTPP (China's President Xi Jinping gradually shifts to more consumer-centered reforms), now nearly 50 percent of global economy.

Europe, China, Japan, the Gulf Cooperation Council states, and emerging market countries collaborate to rewrite the World Trade Organization rules, as the United States freezes its membership, losing its veto power. Working with key Global South middle powers, Brazil, India, Vietnam, and the Gulf states, they reform the WTO supermajority vote, rationalize subsidies and competition policies, and revise the dispute settlement mechanism with a viable process of appointing appellate judges.

As the United States retreats from multilateral institutions, rejecting the idea of global commons, this critical mass of nations has made a strategic choice for growth and development and shared stewardship to address environmental and global health issues. They fill some of the gap in UN institutions—World Food Programme, refugees, peacekeeping, and development aid. U.S. debt, tariffs, and Treasury yields erode faith in the United States as a safe haven. Investment flows shift to Europe, Japan, China, and rising middle powers who fill some of the gap on development aid.

In the process of adaptation and change, global governance gets a second chance, now more accurately reflecting the world distribution of wealth. In their classic work, *Power and Interdependence* (2000), Robert Keohane and Joe Nye offered a theoretical basis for world order absent a hegemon with the idea of "comprehensive interdependence." The 1815 Congress of Vienna is an example of a consensual order after a departed hegemon (Napoleon) that endured for a century. Just don't bet the mortgage on it.

A major economic crisis appears likely.

ANDERS ÅSLUND
Adjunct Professor, Georgetown University, and author,* Russia's Crony Capitalism: The Path from Market Economy to Kleptocracy *(2019)

President Donald Trump appears to be about to single-handedly cause a major economic crisis, leading to the demise of the United States for the next decade or more.

The current moment is reminiscent of 1929. The U.S. economy has developed eminently with *laissez-faire* after the global financial crisis with a growth rate nearly twice as high as that of Europe. U.S. stock prices have become extreme. The U.S. price-per-earnings ratio was twenty-five in early 2025 compared with a more normal fifteen in Europe. Thanks to many years of credible policymaking and economic institutions, the United States thrived on its exorbitant privilege and the credibility of the U.S. dollar and U.S. Treasury bonds. The U.S. stock markets surged to two-thirds of all listed equities in the world. Sixteen of the world's twenty most valuable companies were American. The U.S. economy was never better off than in January 2025. But the inequality was greater than it had been at any time after 1929.

This hype has been coined as "TINA"—there is no alternative—but there are always alternatives. In no time, Trump has demolished TINA. His first big blow was his large unilateral tariffs, which primarily harm the United States. Trump aggravated the situation by changing his policy every day, rendering investment in the United States nearly impossible. He proceeded to undermine the judiciary and thus property and contract rights. In addition, he has stopped U.S. foreign aid and engagement with multilateral organizations, pushing penalty taxation on both remittances to poor countries and on foreign investment in the United States.

The scariest element in the Trump policy portfolio is his fiscal policy. Because of fiscal laxity since 2001 with average budget deficits over 6 percent of GDP, the United States has accumulated a federal debt of 121 percent of GDP. The United States has benefited from low interest rates because of the great global confidence in U.S.

economic policy and thus the dollar and U.S. Treasuries, but Trump has swiftly abolished this trust, and it takes very long time to restore broken trust.

Today, the United States appears to be initiating an emerging market crisis. All power is concentrated by the president, who seems driven by grievances rather than by interest in the people's welfare. Top-level corruption is conspicuous, though largely legalized. Fiscal policy is irresponsible and public debt excessive. The president is trying to undermine the independent central bank to make it slash interest rates. Inflation seems set to rise. Trump tells companies what to do and sets arbitrary tariffs by the day. Meanwhile, the rule of law has been undermined.

This cannot end well. A major economic crisis as in 1929–1933 appears likely. The budget deficit will have to be eliminated once nobody wants to offer credit to the U.S. government any longer. Since U.S. public expenditures are already minimal, taxes must be raised. Just as in 1933, the plutocrats who have led the country into this mismanagement are likely to be blamed and punished with ever higher taxes and stricter regulations.

Innovation will have saved the day.

RICHARD JERRAM
Chief Economist, Top Down Macro

Most futurology is, at heart, an extrapolation of trends that are already evident. Understandably so. But there are moments—the end of the Cold War being the most recent—that herald an era of massive change. It feels like we are at a similar juncture today. Environmental crisis, political upheaval, technological transformation: all suggest that the world will be a very different place by 2035.

Given the popularity of artificial intelligence, what happens if we feed the question into a Large Language Model? The answers read like a sophisticated form of extrapolation. Mass migration driven by climate change. Invasion of Taiwan. Fragmentation of the United States. The technological shifts feel similarly predictable. Democracy undermined and elections corrupted (don't we have that already?). AI replaces humans. Crypto replaces fiat currencies. Ho hum.

Let's be optimistic and talk not of global annihilation. That's an easy case to make and, for these purposes, not productive. Instead, let's think of a world where economic incentives stimulate solutions to environmental degradation. Carbon capture, alternative energy, huge canopies in space to deflect the sun's rays—delve into science fiction fantasies and take your pick. Or more likely, something not yet in view.

War has historically been a powerful driver of technological change and this has to be a source of optimism for tackling the environmental crisis. Humanity is facing a fight for survival, which produces strong incentives for the private sector and governments. Those incentives will increase as the problem worsens. Will we innovate in time? Not quickly enough—that's already evident—but resources will be diverted, sacrifices will be made. Economics and technology will triumph.

What would the world look like if we solve the climate crisis? We'd see fewer famines, less migration, and fewer wars, and perhaps renewed faith in global cooperation and increased respect for the role of government in levying taxes and providing public goods. Survival would be the greatest gift.

AI will collapse wages.

DESMOND LACHMAN
Senior Fellow, American Enterprise Institute

Over the next decade, the artificial intelligence revolution, which is already well under way, will come into full fruition. That will be highly disruptive to the world economic, social, and political order. It will be so in much the same way as was the agricultural and industrial revolutions before it.

The main victims of the AI revolution will be workers in general and white-collar workers in particular. According to the McKinsey Institute, by 2030 between 400 million and 800 million people worldwide might need to change occupations due to automation and AI. According

to Goldman Sachs, in the United States and Europe up to two-thirds of jobs could be partially automated.

Following the fourteenth-century Black Plague, wages rose in relation to the price of capital as a result of the workforce's decimation. The opposite is now likely to occur as a result of the AI revolution. Wages are likely to decline sharply and unemployment particularly amongst the young is bound to soar. That in turn risks exacerbating income inequality and accentuating the worldwide political polarization that is already all too much in evidence today.

On the upside, the AI revolution will increase productivity and world economic growth potential. In principle, that offers world governments the opportunity to address income inequality as well as economic and social dislocation with corrective budget policies. However, in the all-too-likely event that politics across the globe become even more polarized than they are today, the prospects for effective remedial policies do not appear good.

Another victim of the AI revolution is likely to be a globalized world economy. As in the 1930s, pressure to protect jobs at home is likely to create political pressure to erect trade barriers and to engage in beggar-thy-neighbor economic policies. In turn, that could heighten tensions between the United States and China and make the resolution of international conflicts all the more difficult.

Global economic growth will have slowed or stopped.

MAREK DABROWSKI
Non-Resident Fellow, Bruegel, and Fellow, CASE-Center for Social and Economic Research

We live in a dynamic world of increasing uncertainty, and predicting the future is a risky exercise. Let me start from what looks inevitable because it has been determined by the past and current developments.

First, the share of the United States, Europe, and Japan in the world economy will continue shrinking, the result of adverse demographic trends. It will lead to a decrease in their geopolitical importance. For the same reason, China is about to reach its highest share, from which it will start its relative decline. Demographic constraints will also affect several other high- and middle-income economies.

Second, the U.S. dollar will no longer be a dominant global currency, although its international role will not disappear completely. A few years ago, I did not believe it would happen soon. However, a combination of trade protectionism and other inward-oriented policies of the second Trump administration, overuse of the dollar and the U.S. financial system as a sanction tool, and a looming fiscal crisis in the United States will make such a scenario probable.

Third, further climate changes are unavoidable even if the global cooperation on a green agenda intensifies. This means an increasing number and intensity of natural disasters in various parts of the world and increasing climate pressures on the countries and regions most exposed to climate change (for example, the Sahel or Pacific Islands). It will also increase volatility in food production, migration pressures, and the probability of political and military conflicts.

Fourth, the progress in information technologies, artificial intelligence, automation and robotization, biotechnology, medical research, and so forth will continue. Artificial intelligence and automation will not eliminate jobs, but will change their structure. The absorption of innovation and new technologies and the chance to use them for human benefit will depend on economic policies in individual countries and global cooperation in this sphere.

Fifth, regardless of the speed of the green transition, the role of fossil fuels will diminish, and consequently rents of oil and natural gas exporters will be smaller than now.

Other changes depend on the ability to continue international cooperation on providing global public goods and addressing global challenges.

Under the pessimistic scenario (sadly, looking more likely these days), the increasing protectionist and nationalist wave will lead to fragmentation of the global economy which will slow or stop global economic growth, more geopolitical tensions and open conflicts, a new arms race, less progress in addressing climate changes, limited ability to address natural and health emergencies, and more. This wave will be enhanced by further erosion of democratic institutions, especially in young democracies, but not only.

Under the positive scenario, one may expect a consensus on reforming global institutions, further trade liberalization, managing migration flows, climate change, mitigating geopolitical tensions, and the effective mechanism of conflict resolution, that is, a new *détente,* which would offer the global economy a new peace dividend. Democratization in China and Russia (not completely unthinkable ten years from now) would greatly help such a scenario.

A comprehensive mechanism for sovereign debt workouts will have emerged.

GARY KLEIMAN
Senior Partner, Kleiman International Consultants, and author, with Beth Morrissey, **Emerging Economies and Financial Markets: A Career-Tested Approach to Analyzing the Markets *(Palgrave McMillan, 2025)***

An extrapolation from the last chapter on future crystal-ball gazing in our recently published book *Emerging Economies and Financial Markets* sees the positive shock of a comprehensive mechanism for sovereign debt workouts in the next decade after forty years of modern investment era foundering. Creditor powers in the so-called Global South such as China, Saudi Arabia, and Brazil will drive the process as an eventual outgrowth of a BRICS+ common development agenda already focused on policy and technical aspects of cross-border local currency trade settlement, an alternative global payments system to SWIFT, and a universal securities depository to facilitate dealing and settlement in fixed income and equity instruments. The original London/Paris Club/bondholder model dominated by the West has been overcome in the latest iteration by the G20 Common Framework, which has finally produced outcomes after long delay for the few like Ghana and Zambia as poor countries directly under its umbrella, and Sri Lanka as a middle-income one in its shadow. Sweeping efforts such as advocated by senior U.S. Treasury officials twenty years ago to reposition the International Monetary Fund as a bankruptcy court have fallen flat, and the current state of play was described by a Bretton Woods Committee working group as outright "dysfunction."

The Fund blueprint as an insolvency tribunal has been resurrected in pale comparison through its roundtable trying to group today's twenty or so official and commercial creditor representatives at the same venue to tackle issues such as a standard formula for "comparable treatment," while setting a precedent for simultaneous negotiation in individual cases. Emerging market public and private participants, used to being on the debtor side, have been vocal about faster progress that can leave aside decades of customary but not binding practice and U.S. and European legal notions which govern most issuance. They are keen on the new swap possibilities in the environmental, social, and governance space such as debt for nature and climate versions that supplement so-called contingency features like GDP growth warrants in conventional workouts. Their take on credit ratings and debt sustainability breaks from Big Three global and IMF policy department renderings, and they look to a new body to decisively bridge these differences and deliver bottom-line solutions. The structure to handle these crisis episodes once and for all will come from the emerging-developing world itself by 2035, not necessarily in tribunal form with enforcement power, but as an all-purpose analytical and advisory regime to which West and Global South parties can voluntarily submit for quick credible consensus deals that have eluded the field since its late 1980s onset. ◆

THE INTERNATIONAL ECONOMY
THE MAGAZINE OF INTERNATIONAL ECONOMIC POLICY
220 I Street, N.E., Suite 200
Washington, D.C. 20002
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