

F&D

FINANCE & DEVELOPMENT

INTERNATIONAL MONETARY FUND

ECONOMIC THEORY

*Robert Skidelsky
on Keynes*

COMMODITIES

*Critical minerals and
national security*

TRADE POLICY

*Jamieson Greer
on tariffs*

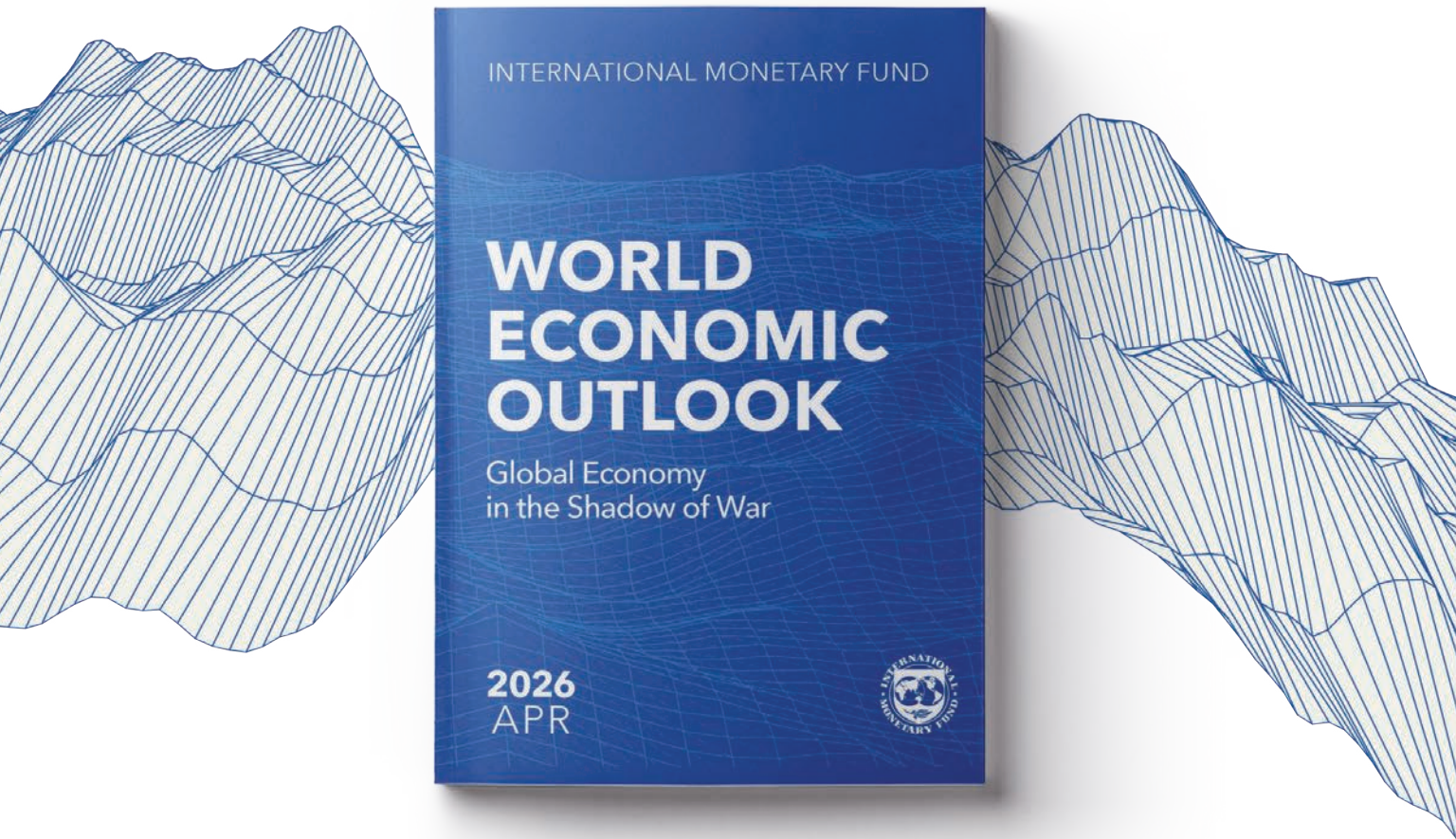
JUNE 2026



GEOECONOMICS

*And the return of
economic statecraft*

World Economic Outlook



Chapter 1: Global Prospects and Policies

The global economy is again disrupted, this time with the outbreak of war in the Middle East. Rising commodity prices, firmer inflation expectations, and tighter financial conditions are testing the recent resilience.

Chapter 2: Defense Spending: Macroeconomic Consequences & Trade-Offs

Defense spending is rising amid intensifying geopolitical tensions. This chapter finds that large defense spending booms have become more frequent, especially in emerging market and developing economies.

Chapter 3: The Macroeconomics of Conflicts and Recovery

Armed conflicts generate profound macroeconomic consequences beyond their devastating human toll. This chapter leverages global data on post-World War II conflicts to assess the economic implications of wars.



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FSC FPO

Editor's Letter

The Geoeconomic Calculus

THE END OF THE COLD WAR promised a more peaceful age of international relations, as most nations professed to follow agreed rules in a positive-sum game designed to benefit all. Today, that vision is under threat as governments increasingly turn to tariffs, sanctions, and export controls to advance national security goals. Around the world, the line between economic and national security policy is blurring. A new era of geoeconomics is taking hold.

How effective is geoeconomic power? Which sectors should be considered strategic? Is geoeconomic power always a zero-sum game, or can it generate global gains? And how can middle powers navigate this transition? This issue of *Finance & Development* explores the economic tools nations are using to shape the new global power dynamic. History offers some valuable guideposts.

Geoeconomics is not, in fact, new. Josh Lipsky reminds us that for most of the world—from Brazil to India to Türkiye—it's simply how international business has always been done. What has changed, he notes, is that the world's largest economy is joining in, with consequences for everyone.

Christopher Clayton, Matteo Maggiori, and Jesse Schreger provide a new analytical framework for understanding geoeconomics. They show how control of choke points—such as financial infrastructure, technology, or critical commodities—can confer immense power. But overuse of this power is self-defeating: It drives other nations to seek alternatives and erodes the very leverage being wielded. The authors call for policy tools that allow limited intervention to enhance economic security while preserving the benefits of globalization.

Jeffrey Frieden weighs economic coercion's costs and benefits, arguing that it takes a toll on efficiency, innovation, credibility, and even domestic cohesion. But Kim Ruhl asserts that enhancing geoeconomic resilience is essential, even if it means reduced efficiency. He argues that the US, in grappling with nonmarket actions by adversaries, must adopt tariffs, sanctions, and industrial strategies as tools of economic statecraft.

The stakes are especially high for those navigating between great powers. Sub-Saharan African countries face declining aid and a crumbling multilateral peace architecture, says Ethiopia's foreign minister, Gedion Timothewos. Yet he sees opportunities for leverage in the global race for Africa's critical minerals. N. K. Singh makes the case that



“Resilience matters—but so does restraint.”

middle powers such as India can shape the emerging order by building issue-based coalitions. And Beatrice Weder di Mauro challenges Europe to stop thinking of itself as a middle power and start acting like a great power in proportion to its economic heft.

Others examine how rivalry reshapes cooperation. Aaditya Mattoo, Michele Ruta, and Robert Staiger argue that geopolitical competition need not end trade cooperation, but it does require rethinking the rules. The multilateral system must make room for geopolitical rivalry while avoiding disruptive trade wars and protecting neutral countries.

A common thread emerges: Resilience matters—but so does restraint. Excessive dependence can be a vulnerability; excessive fragmentation jeopardizes the immense economic benefits that flow from cooperation. The challenge is to strike a balance—diversifying and cooperating where possible, and preserving institutions that make power predictable rather than arbitrary. Ultimately it is a shared commitment to rules that keeps the world economy connected.

Still, geoeconomics is likely not a passing phase. It describes a shift in how nations pursue security, growth, and influence in a more contested world. Economic thinking must evolve with real-world experience and account for these forces as policymakers navigate an increasingly volatile world.

There is much more to explore in these pages—including different perspectives and analysis on some of the most pressing global economic issues. I hope the articles stimulate fresh thinking and reflection and further debate. **F&D**

Gita Bhatt, editor-in-chief

Kaleidoscope

A global view, in brief



THE BIG PICTURE: Every three years the IMF and World Bank hold their annual meetings away from Washington, DC. The 2023 meetings took place in Marrakech, Morocco. Thailand's capital, Bangkok, will host this year's meetings in October. Above, muay Thai martial artists showcase their skills as part of a cultural event during the spring meetings in Washington. IMF Photo/Allison Robbert.

War risks deeper downturn

THE WAR in the Middle East has delivered a global supply shock that is slowing global growth, pushing up inflation, and inflicting more pain on some of the world's poorest countries, according to IMF Managing Director Kristalina Georgieva.

Speaking ahead of the IMF's spring meetings in April, Georgieva said the conflict had cut global oil and gas flows, driving up energy prices and disrupting sup-

ply chains. "A resilient world economy is being tested again by the war in the Middle East," she said. She warned that there would be "no neat and clean return" to the prewar situation.

The comments came as the IMF cut its reference forecast for global growth this year to 3.1 percent, down 0.2 percentage point from its January estimate. The *World Economic Outlook* warned that growth could slow more sharply to 2 percent in a "severe scenario" in which energy supply disruptions extend into next year. Inflation is seen rising to 4.4 percent this year under the reference forecast.

As well as war-hit countries in the Persian Gulf, Georgieva said that sub-Saharan Africa and small island states were among the most exposed, citing heavy reliance on fuel imports and rising food and fertilizer

costs that are worsening poverty and food insecurity. Island economies at the end of global shipping routes also face heightened risks of fuel shortages, she said.

The IMF managing director called on governments to avoid broad energy subsidies and instead target support to vulnerable households and viable businesses, warning that high public debt leaves little room for poorly designed spending.

"Public debt is generally much higher than 20 years ago—including in most G20 countries—reflecting widespread neglect of fiscal consolidation in the periods when conditions permitted it," she said. "All countries must move decisively to rebuild fiscal space after this shock."



Overheard



“The response to fragmentation should not be isolation, but deeper regional integration.”

—Mehmet Şimşek, minister of finance, Türkiye



“Resilience is not built when there is a shock. Resilience is built in good times, and you only see the benefit in bad times.”

—Mohammed Al-Jadaan, minister of finance, Saudi Arabia



“Some might wonder why the Fund is spending time on these issues...but the truth is corruption, money laundering, and other financial crimes are macro-critical.”

—IMF First Deputy Managing Director Dan Katz



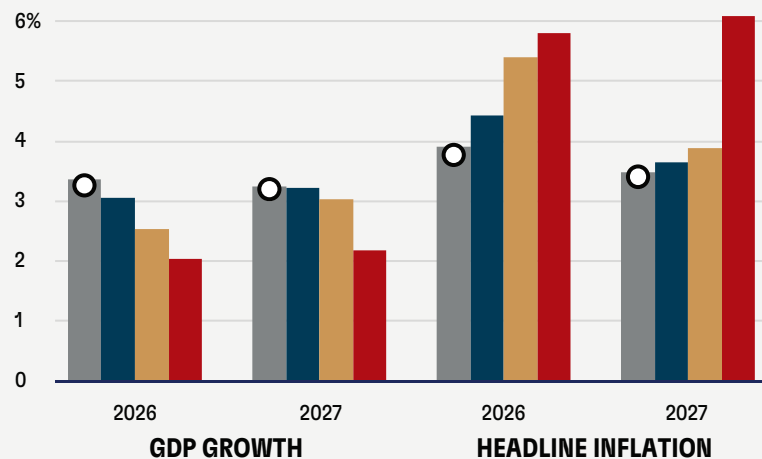
IN THE NEWS: The IMF said on April 16 that it was resuming relations with Venezuela. Kristalina Georgieva told reporters that the Fund was committed to helping the people of the Latin American nation see better days. Venezuela has been a member of the IMF since 1946, but relations were suspended in 2019. Above: A Venezuelan flag flies under a clearing sky. Bloomberg/Carlos Becerra.



By the numbers

The duration and scale of the conflict will shape the global outlook.

- April 2026 (preconflict)
- April 2026 (reference forecast)
- January 2026
- Adverse scenario
- Severe scenario



SOURCES: IMF, April 2026 *World Economic Outlook*; and IMF staff calculations.

Back to Basics



Raw Materials that Rule

Control of commodities shaped the world economy in the past and could decide its future

Jean-Marc Natal

COMMODITIES are the raw material of civilization—the lifeblood of the world economy. But their very name makes them sound far more ordinary than they are. A commodity is, by definition, something without a distinguishing identity. When something has been “commoditized,” it lacks the glamour of branded consumer goods. There’s no luxury logo on a barrel of oil or a ton of copper, no marketing campaign behind a shipment of wheat. And yet it’s precisely this uniform and interchangeable nature that allows commodities to be traded seamlessly on global markets—ensuring that people across the world can access the raw materials they need, regardless of where they live.

Because commodities are essential yet distributed unevenly among countries, they have always been a source of both economic opportunity and geopolitical vulnerability. The first long-distance trade routes emerged to move valuable raw materials across continents: The trans-Saharan caravans

connected West Africa’s goldfields and salt mines to North Africa and Europe; early maritime networks across the Indian Ocean traded spices, ivory, gems, and precious metals between East Africa, Arabia, India, and Southeast Asia. But these same resources also triggered conflicts.

Today, commodities continue to play much the same role—powering daily life while shaping the world’s economic destiny. Their importance is rising again as the world moves toward cleaner energy, expands digital infrastructure, and rebuilds its defense capabilities. And these shifts are creating new geopolitical tensions. Understanding commodities is not just about understanding the past; it’s about making sense of the defining economic and political challenges of our time. But what are commodities? How are they traded in modern markets? What drives their often volatile prices? And why do they sit at the center of modern financial markets and geopolitics?

Hard and soft

At the most basic level, commodities are the things we dig out of the ground, such as oil, copper, iron, or gold (*hard* commodities), and those we raise from the soil, like wheat, coffee, cotton, or cocoa (*soft* commodities). Everything we touch, eat, wear, or build begins with these unassuming substances.

The phone in your hand, for example, contains about 42 different minerals: Congolese cobalt, Peruvian copper, Australian iron ore, and a dizzying number of rare earths, sourced mainly from China. Even the electricity that charges it rests on commodities: oil, gas, coal, and uranium—or the critical minerals embedded in solar panels and wind turbines.

Whether trading hard or soft commodities, producers and buyers have always contended with a common challenge: how to cope with wildly fluctuating prices. A bumper harvest one year and a drought the next could make or break a farmer—and the same volatility threatened millers, merchants, and the banks that financed them.

To bring order to this chaos, the Chicago Board of Trade (CBOT) was founded in 1848, creating the first standardized marketplace where farmers and their customers could lock in prices months ahead. By selling a prospective buyer a *futures* contract—a piece of paper that ensures a certain price for a certain quantity of a specific commodity to be delivered at a specific date—farmers could ensure a given delivery price on their production months ahead. Beyond guaranteeing steady income,

futures markets allowed farmers to easily contract loans for irrigation, seeds, fertilizers, and pesticides, improving their yields and protecting their crops.

Similar institutions soon followed in other major trading hubs: the New York Mercantile Exchange (NYMEX) for energy products and metals, the London Metal Exchange (LME) for base metals, for example. These exchanges freed commodity trade from the constraints of physical and often local markets. The flexibility of global financial contracts allowed producers to hedge risks and buyers to secure stable prices. Crucially, they also allowed traders to scale their operations: By hedging financial risks that once limited their reach, merchants could move ever larger volumes across continents, accelerating the globalization of many commodity markets.

Futures and options

But a striking shift occurred as these markets matured. Trading increasingly revolved not around barrels, bushels, or ingots, but around the contracts tied to them. Futures, options, and other derivatives—originally designed as insurance tools—became assets in their own right. They attracted speculators, hedge funds, and eventually high-frequency traders. Because these instruments require only a fraction of the underlying asset's value as collateral, leveraged positions amplified both risk and reward, pulling commodities deeper into the heart of global finance. Commodity prices may sometimes reflect financial speculation more than physical demand for the underlying goods. The surge and ensuing sharp cor-

rection in gold prices in October–November 2025 illustrate this dynamic vividly.

Commodity prices are notoriously volatile for reasons that go well beyond the actions of speculators. On the supply side, production is usually slow to adjust: Drilling wells, digging mines, and planting crops all take time, capital, and decades of planning. On the demand side, buyers cannot easily substitute one raw material for another. Factories cannot redesign production lines overnight, refineries process only specific grades of crude oil, and global supply chains do not reroute at the flip of a switch. As a result, when global demand shifts or when geopolitical, climatic, or logistical shocks disrupt supply, prices tend to move quickly and by a lot.

Recent history offers countless examples. When China entered the global trading system and began its infrastructure boom in the early 2000s, demand rose so sharply across so many sectors that prices for oil, metals, and agricultural commodities all surged together—producing the so-called *commodity supercycle*. But when shocks are limited to a single input, prices can move in opposite directions, even within the same sector.

During the COVID-19 pandemic, for instance, China's lockdowns caused steel demand to collapse. Yet prices for iron ore, from which steel is made, continued to rise. This was because major mines in Africa and Brazil either shut down or slowed production at the same time, tightening supply just as demand weakened. This is why forecasting commodity prices is so difficult. It's not enough to track the global

economy. Forecasting requires a clear grasp of the distinctive dynamics of each market with all its quirks.

Geopolitical rifts

Commodity markets are deeply intertwined with geopolitics. And this relationship is not new: Empires fought for gold, silver, sugar, and spices; and naval fleets enforced access to rubber, oil, and other strategic supplies. During the colonial era, competition for commodities shaped the map itself: Borders were often carved around resource basins. Many of today's national borders and economic structures still reflect these commodity-driven legacies.

Today, the world's growing dependence on critical commodities—those essential for the defense industry, the energy transition, and the digital technologies to power artificial intelligence—has created a fresh set of geopolitical fault lines. Lithium, cobalt, and rare earths today command the same strategic importance that oil and steel once held. Countries rich in these materials are gaining influence; those without them are racing to secure long-term access through alliances, investment deals, and redesigned supply chains. Export controls, sanctions, and “reshoring” increasingly target the minerals that will define future military, industrial, and technological strength.

Enduring centrality

From ancient caravans to modern derivative exchanges, from colonial conquests to today's scramble for critical minerals, commodities have always sat at the intersection of economics, politics, and technology. They are the oldest building blocks of human activity yet remain indispensable to the global economy's most advanced sectors. As the energy transition accelerates, digitalization deepens, and geopolitical rivalry intensifies, the role of commodities will grow only more central. Their control shaped the global economy of the past, and it might shape the global order of the future. **F&D**

JEAN-MARC NATAL is chief of the IMF's Commodities Unit.

“The world's growing dependence on critical commodities has created a fresh set of geopolitical fault lines.”

Point of View



Rethinking Free Trade

Kim Ruhl



US policymakers are rebalancing economic efficiency with national security amid rising geopolitical risk

When it comes to international trade, countries have always weighed economic efficiency against national security. After World War II, they pursued free international trade through low tariffs in the belief that it was both economically efficient and politically stabilizing. World trade tripled as a share of GDP between 1950 and its peak in 2008, with about half of this trade in intermediate goods, reflecting the importance of cross-border production relationships. Although conflict continued, there were no global-scale wars like those that characterized the first half of the 20th century. Globalization and stability had won out.

The world is now reevaluating the role of economic interconnectedness in global affairs, mindful that more interconnection means more dependencies that adversarial nations can leverage to get their way in other areas of international relations. Resilient economies must be the response. A country must have access to the resources it needs to fight a protracted war. It must have a reliable supply of medicines, microchips, critical minerals, and other vital inputs, regardless of changing global alignment. And it must be able to rapidly increase production in response to an emergency such as COVID-19.

In the United States, President Donald Trump's administration is working to de-risk supply chains and build domestic capacity in key industries to enhance economic resilience. This implies a modification of the policy of near unconditional openness that characterized the past.

These policies will, in some cases, reduce economic efficiency relative to a world in which we ignore geopolitical risk. These are the necessary costs of resilience. Economic modeling that recognizes the trade-off can guide policymakers. The challenge is to minimize the costs and ensure that crude protectionism is not enacted in the guise of national security.

Decades of fragility

For decades, international trade and investment progressed largely unchecked. In search of efficiencies, supply chains—and entire industries—moved abroad to their lowest-cost locations. Trade policy played a role, as did technological advances in communications, transportation, and logistics that made long-distance production relationships feasible. Differences in environmental and labor standards incentivized firms to relocate production to places that valued the environment and workers' rights less.

The US-led international order provided the stability that helped these complex networks flourish. As supply chains stretched and concentrated, fragilities accumulated. These fragilities were always present but often manifested in limited or idiosyncratic ways.

A series of recent events raised awareness of these vulnerabilities and renewed interest in how economics and national security fit together.

COVID-19 supply-chain disruptions made it obvious to all that critical goods—things like pharmaceuticals, semiconductors, and medical supplies—came from a handful of countries and that major disruptions were both possible and painful. Supply-chain vulnerabilities surprised some companies. A Deloitte survey found that only 15 percent of chief procurement officers could see the risks beyond their direct suppliers.

Europe's dependence on Russian energy reminded the world of the long-understood idea that economic integration can bind countries together in mutual restraint, but it produces leverage, too. In 2022 Russia accounted for 27 percent of EU oil imports and 45 percent of gas imports, according to the European Commission. By 2025, Russia accounted for 3 percent of oil and 13 percent of gas imports. Decoupling from Russian energy came at the cost of higher energy prices and slower economic growth. Higher energy bills cut incomes by about €1,000 per person in 2021–22, the Commission estimates.

Chinese export licensing controls imposed in April 2025 led to a shortage of rare earths and derivatives that

“The geopolitical considerations of what we trade, and who we trade with, have become a priority.”

threatened to shutter automotive, defense, electronics, and other production lines in the US and elsewhere. Six months later, China threatened to expand the scope and scale of its export controls in a stark reminder to the US of its vulnerability.

The US must now grapple with the national security risks that accompany key supply chains dominated by their adversaries. The geopolitical considerations of what we trade, and who we trade with, have become a priority.

This does not repudiate comparative advantage and the gains from trade; it is an acknowledgment that free trade is not always appropriate. Free trade in well-functioning markets is still the ideal and should be pursued wherever possible, particularly with allies. Yet many of the problems the US faces are the result of deliberate nonmarket forces, which distort production and consumption despite prevailing low tariff rates.

Dangerous forces

Strategic state direction, subsidies, financial repression, protectionism, and regulatory arbitrage are political forces, not economic fundamentals. These policies are particularly dangerous when deployed by large adversarial countries. Economic thinking must account for more of these forces, and economists can increase their engagement with them.

Policymakers need frameworks to analyze the strategic considerations of their choices. Does a policy build

leverage for the US or vulnerability? How can we identify which goods should be controlled for national security reasons while avoiding unnecessary protectionism? Which goods must be sourced domestically, and which can be imported from allies? How do we restart a domestic industry as efficiently as possible? Perhaps most important is the development of tools that clearly identify the trade-offs between economic efficiency and strategic objectives.

Economists already have many of the analytical tools needed, and these can inform decision-makers about the trade-offs and unintended consequences of policies. Tariffs and sanctions are perhaps the most studied policy levers, but price floors, stockpiles, export restrictions, and investment agreements are just some of the relevant policy instruments available. Tax policy, industrial policy, and regulatory infrastructure may appear to be domestic policy, but they are instruments of economic statecraft as well, and should be studied in that context.

There have always been economists studying geoeconomics, and more work is underway. The flagship conferences of The National Bureau of Economic Research and the American Economic Association regularly feature sessions on geoeconomic topics. The same is happening in academic and policy circles abroad. Economic research tends to lag large, fast-moving events, but it catches up quickly.

A new focus

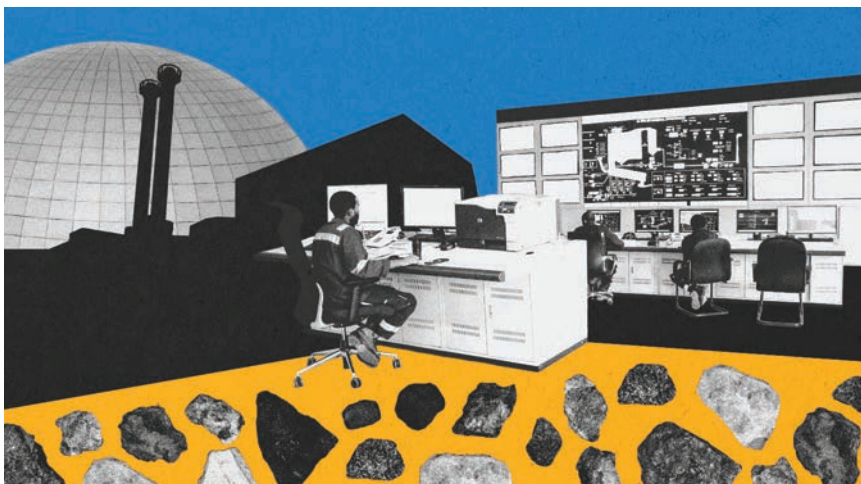
This is the beginning of a long-term, broad-based change in focus for policy-makers and analysts. The field of geoeconomics is all-encompassing, extending beyond international trade and national security. Controlling international payment networks and the dollar are geopolitical strengths for the US, yet nonaligned countries, having learned a lesson from sanctions on Russia, are creating alternative payment networks and finding ways to insulate themselves from a potential loss of access to the US-led financial system.

Countries are racing to lock down critical mineral assets across the world—sometimes competing with allies for resources. Future-defining technologies such as AI, quantum computing, and biotech are up for grabs and will continue to be subject to policy, both good and bad.

The change needed will not happen quickly. Redirecting supply chains and relocating production across countries will take decades. In the short term, changes in policy may cause prices to rise, cause some goods to become scarce, and require costly investments. These short-term costs exist, even if the long-term objective is worthwhile. The structure of US democracy creates further complications. Commitment to a long-term policy is difficult when a future administration can undo the policy of its predecessors, especially when the short-term costs accumulate.

A changing world has brought the trade-offs between economic efficiency and national security back to the forefront of political thought. A clear-eyed reappraisal of national security is welcome, but we must not abandon the economic principles that have made the US economy great, particularly free and competitive markets. Striking the right balance requires a continued effort from policymakers and the researchers who support them. **F&D**

KIM RUHL is the Curt and Sue Culver Chair of Economics at the University of Wisconsin-Madison and was a member of the White House Council of Economic Advisers from February 2025 until February 2026.



Africa in a Fractured World

Gedion Timothewos



Geopolitical rivalry is forcing a rethink of trade, investment, and security

Geopolitics is replacing globalization as the world’s governing philosophy. Economic decisions are increasingly subordinated to geopolitical calculations. Supply chains are rewired to optimize national security rather than economic efficiency. Trade and critical resources are weaponized.

The rules-based system of multilateral political and economic relations underpinned by a single hegemon has given way to fierce power-based rivalry and zero-sum competition. The competition is not just for global dominance among world powers but also among middle powers intent on carving out a sphere of influence that places their economic and security interests at the center of a regional order embedded in a broader and fragmented global order.

This context poses multiple challenges for sub-Saharan African countries. Official development assistance is declining, leaving a huge hole in the resources needed to finance development and social services. The uncertainty and anxiety associated with rising tensions and outright hostilities in various parts of the world are also harming investment and trade prospects.

The global political and economic order under which several Asian economies industrialized through outward-oriented export-led policies is no more. Sub-Saharan African countries that are trying to replicate the successes of the

COURTESY MINISTRY OF FOREIGN AFFAIRS, ETHIOPIA

Asian Tigers face a daunting challenge to attract investment. Even if they get their infrastructure, regulations, and policies right, securing foreign direct investment needed for sustained economic growth looks increasingly out of reach.

Resource competition

There is also a marked resurgence of interest in Africa's mineral resources and competition for critical minerals. A contest for control over logistics hubs and major trade routes is prompting global and middle powers to engage with sub-Saharan African countries aggressively and in a manner that undermines their sovereignty. Such competition between external actors is exacerbating conflicts on the continent.

The paralysis of the established world order also makes it more difficult to forge consensus on how such conflicts should be resolved. The multilateral peace-building playbook that gives the leadership of a singular powerful world hegemon and a host of regional and global multilateral organizations authority to work together to resolve conflict, deploy peacekeepers, and tend to the needs of those affected by conflict does not work anymore.

These days, the UN Security Council does not seem to agree on anything of substance. The global peace and security edifice built around this body is crumbling. The efficacy of the African Peace and Security Architecture, which was supposed to work in tandem with the global system, is coming into question.

The funds needed to finance peace-keeping missions and humanitarian agencies are not there anymore. Sub-Saharan African countries, which are under great economic strain, must therefore now pay for peace-keeping missions in neighboring countries and

for hosting refugees from those countries. These resources should go toward more productive endeavors.

African leverage

The emerging disorder requires and presents an opportunity for Africa to make an earnest effort to reform the existing system. The increased competition among global and rising middle powers also offers sub-Saharan African countries partnership choices. Used properly the resources that sub-Saharan African countries possess give them the leverage to craft partnerships or even temporary arrangements that could yield the capital, investment, and technology they need.

So the challenges we face present opportunities as well. But seizing these opportunities to secure arrangements with long-term benefits demands foresight and discipline. Transactional bilateral relations increasingly take center stage, leaving long-term institutionalized cooperation behind, but countries must pursue long-term strategies focused on core objectives, along with short-term flexibility.

Unless sub-Saharan African countries have a clear vision of what they want to achieve, what their long-term goals are, and what they need from each other and from the rest of the world to achieve them, meaningful long-term growth will be impossible.

Trade and investment

It is important, too, that sub-Saharan African countries boost trade and investment within the continent. With a booming population and rapid urbanization, African economies have huge potential for intra-African trade and investment. Technological advances such as artificial intelligence also offer new opportunities for growth and progress. Both trade under the African Continental Free Trade Area and technological innovations associated with AI require huge investment in infrastructure and energy. Better road, rail, and air links are needed to boost trade. Investment in fiber, connectivity, and energy infrastructure, coupled with a more intentional approach to the value of Africa's data resources, is essential.

African countries with the right policies and long-term perspective will be better positioned to take advantage of some of the opportunities that arise with the new geoeconomic realities. The familiar model that drove Asian prosperity is gone, and developing economies no longer enjoy the advantages it provided. The new development model is not clear and poses obvious challenges and difficulties. Nevertheless, there is hope for those who approach the new reality with agility and pragmatism.

Ethiopia's example

For more than a decade Ethiopia attempted to transform its economy and attain middle-income status by following in the footsteps of the Asian Tigers. Amid domestic and international shocks and upheavals, Ethiopia has adapted its model to emerging and evolving realities, diversified the pivots of economic growth, implemented bold economic reforms, and mobilized domestic resources. The result is clear: Despite multiple shocks and challenges, Ethiopia has sustained its growth momentum. Exports are expanding, agriculture transforming, cities flourishing, and the physical environment healing.

A critical feature of Ethiopia's approach is a focus on key growth pillars for sustainable development centered around renewable energy and emerging technologies. Africa's untapped potential in renewable energy, its young population, and rapid urbanization can unleash a wave of green industrialization if channeled properly with the right policies and investment.

With the right mix of policies, implemented with an experimental and adaptive mindset, Africa can turn this crisis into an opportunity. But it must learn from its modern history of division and substitute damaging competition with mutually beneficial collaboration. Our fates as African nations are intertwined; we suffer or prosper together; we sink or swim together. Division guarantees the former, unity the latter. **F&D**

GEDION TIMOTHEWOS is the foreign affairs minister of Ethiopia.

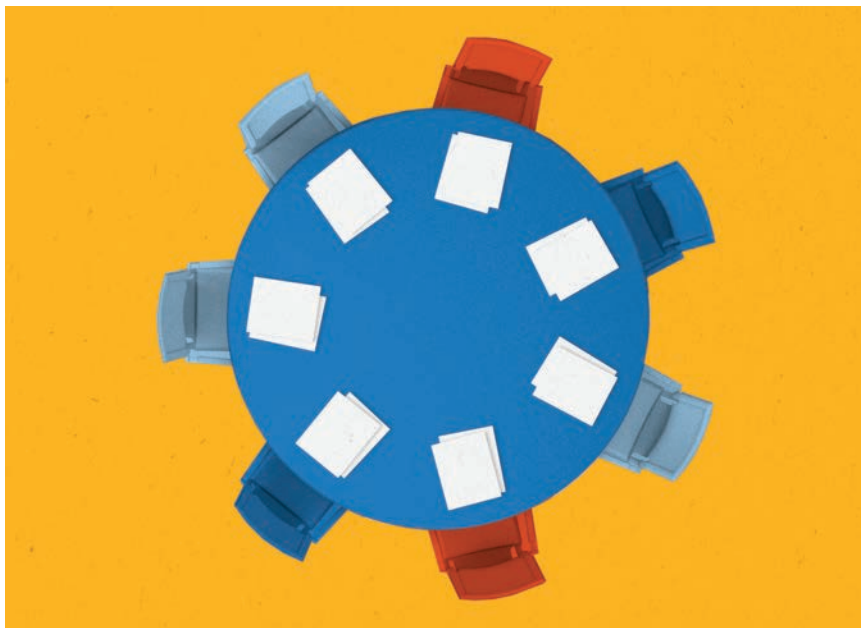
“There is a resurgence of interest in Africa's mineral resources.”

The Middle Power Moment



N. K. Singh

India and other midsize powers can shape the global order through plurilateral coalitions



The global economy is no longer driven by markets alone. It is shaped just as much by geopolitical rivalry. Trade flows are rerouted by political calculus; capital flows are driven by trust rather than efficiency; and technology may have given an unprecedented boost to productivity, but it has become a weapon of war. These forces have left us with an increasingly uncertain and transactional world that neither respects nor pays attention to established rules.

Geopolitics drives economic decisions. As supply chains shift, energy security anchors national resilience. Financial systems and preferred currencies are more segmented, and even multilateral institutions face strategic controversy. The US withdrawal from the United Nations Framework Convention on Climate Change and other global platforms drives home the notion that the old anchors of coordination can no longer be taken for granted.

For middle powers, including India, these disruptions present both risks and opportunity. A plurilateral world is emerging even as established universal frameworks erode.

Coalitions are smaller, issue-specific, and often transient. Influence no longer results merely from economic size or military might but from the ability to convene, bridge divides, and shape agendas. This is the strength that countries such as India must seek to develop creatively.

Reforming multilateralism means recognizing that the old architecture is becoming irrelevant. If the US remains an unruly player in international negotiations, alternative pathways must be strengthened. There are already multilateral development institutions with limited or indirect US influence, such as the Asian Development Bank, the European Bank for Reconstruction and Development, the New Development Bank, and the Asian Infrastructure Investment Bank.

These institutions are a place for more pragmatic and less polarized cooperation. Such cooperation is especially urgent for climate policy, whose transnational risks demand coordination even without full consensus. As Canadian Prime Minister Mark Carney has argued, the old order is effectively over. Middle powers must be at the table, not on the menu.

For India, this means a major responsibility to catalyze new coalitions among emerging market and developing economies. It's a revival in many ways of the spirit of Cold War nonalignment but adapted to a world defined less by conflicting ideological blocs than by overlapping economic interests.

Middle power challenges

India's economic rise intersects this fractured global order. Its transformation into the world's fourth largest economy, averaging 7 percent growth over the past decade, stems from macroeconomic stability and remarkable progress in expanding infrastructure and reducing poverty.

Yet this is not the time to celebrate the past but for strategic reorientation. India's actions in an unpredictable world offer lessons for other middle powers navigating four common challenges that cannot be overcome by any one nation alone.

The first challenge arises from the growing intrusion of geopolitics into economic domains, particularly in energy markets.

“Influence no longer results merely from economic size or military might.”

As the world's third largest oil consumer, India is exposed to external shocks. As a hedge, it is committed to net zero emissions by 2070 and 500 gigawatts of non-fossil energy capacity by 2030. Renewable energy already exceeds 50 percent of installed capacity.

India's latest Nationally Determined Contributions are bold given that some large-emitting nations are retreating from their obligations and that vanishing consensus is complicating climate negotiations. However, the math of the transition remains a fundamental macroeconomic hurdle. Developing economies require at least \$310 billion annually for adaptation, yet current flows are only \$26 billion.

This transition is underway against a backdrop of unprecedented fiscal challenges in advanced economies. The average fiscal deficit of emerging market economies is also high, at about 5.5 percent of GDP. Reaching the next phase of green growth depends on reconciling these imbalances through prudent fiscal policies.

Excess capacity

The second challenge is the changing structure of global production and massive excess capacity. In 2023, China produced 1,019 million metric tons of crude steel. Excess global steel is projected to be 644 million metric tons. Solar photovoltaic manufacturing will soon be twice as high as global demand.

These dynamics are reshaping trade via tariffs, subsidies, and industrial policies. The Indian response seeks to protect domestic industry from unfair competition while remaining integrated in global markets. A calibrated approach will be a

shield against protectionist forces.

Demographic divergence is a third challenge. The median age is less than 20 in Africa and below 30 in India. Labor surpluses in these areas contrast sharply with shrinking populations in parts of East Asia and Europe. Productivity gains can offset labor needs, but a fundamental review of traditional attitudes toward orderly migration is necessary.

The United Nations Global Commission on International Migration strove for rational discussion of the inevitable migration from the Global South to the North. Managing this movement calls for political wisdom and vision, which have sadly been replaced by prejudice. To ensure future stability, these flows must not be framed as a crisis but as an essential orderly response to global labor imbalances. However, a younger demographic profile is a source of strength only if matched by skills and employment opportunities.

The fourth challenge is the advance of technology and digital inequality. Only 1 percent of 14- to 18-year-olds in India have received formal skills training, yet businesses will need 1.25 million professionals in artificial intelligence by 2027. Emerging markets must overcome this digital-era inequality and steer AI toward enhancing productivity and broad-based progress rather than allow it to become an instrument of surveillance and conflict in a world of geopolitical upheaval.

Meeting this challenge means massive sustained investment in human capital and R&D. To secure a greater share of the \$877 billion in global foreign direct investment, developing economies must cultivate a stable and attractive environment—ensuring that the resulting technological progress drives productivity

while preserving macroeconomic sustainability and social equity.

Path forward

These interconnected challenges—and opportunities—are central to the future of the world's middle powers and of India. Sound economics and strategic clarity must lead the way. Political stability and orderly change are essential. This is where India's role in redefining multilateralism is critical. The traditional model of large universal institutions has given way to smaller coalitions that drive action on particular issues. Fortunately, India is well placed to act across and within these layers as it has already done, most recently with its presidency of the Group of 20.

India's experience as a large, diverse democracy gives it heft among developing economies. Its economic scale provides leverage. Its diplomatic tradition emphasizes dialogue and consensus. Continued political stability augurs well.

These attributes can help build bridges across fragmented blocs and shift the focus from confrontation toward conscious cooperation among middle powers and a validation of the old principles of nonalignment. Small and middle powers can play a crucial role in nudging this process forward.

The world is unlikely to return to the coherence of the past. Fragmentation will persist, but it need not imply disorder. In this unfolding story, key middle-income countries are in a good position to play a constructive, meaningful role bilaterally, multilaterally, and through individual initiatives.

India's choices today will shape not only its own trajectory but the contours of middle powers in the emerging global order. In a world where economics and geopolitics are intertwined, its ability to navigate these complexities through inclusivity will redefine the continued relevance of the Global South. This is an opportunity not merely to adapt to change. It is a chance to shape a world that offers all nations a seat at the table. **F&D**

N. K. SINGH is president of India's Institute of Economic Growth and a former member of Parliament.



Europe's Power Paradox

Beatrice Weder di Mauro



*Europe is large enough to be a great power
but has yet to assert itself as a sovereign actor*

Ever since Canadian Prime Minister Mark Carney's Davos speech, Europe is commonly described as a "middle power." This is puzzling. Europe's economy is 10 times larger than Canada's and comparable in size to those of the United States and China. Collectively, European nations are the world's second largest defense spender after the US. Even some Europeans have embraced the "middle power" moniker. Why?

First, Europe has been avoiding the truth. Washington has signaled that the era of US security guarantees is ending. Yet much of Europe behaves as if this were a passing phase. Defense plans are drafted on the assumption that the old normal will return, that America will always be there. This is not strategy, it's wishful thinking. And it postpones the uncomfortable truth that self-reliance cannot be subcontracted.

Calling Europe a middle power is a way of shrinking the problem. It lowers expectations and limits responsibility. It suggests that Europe can stand aside while the real contest unfolds between others. The fantasy of being a "greater Switzerland"—geopolitically peripheral but economically prosperous—is seductive. But Europe isn't peripheral: It's where great-power rivalry plays out.

The second possibility is still more unsettling: *L'Europe n'existe pas*. Europe has never asserted itself as a sovereign political actor. Most political leaders speak to national electorates, not a European public. Security debates are filtered through domestic politics. National reflexes dominate and are reinforced by the rise of openly nationalist movements.

Individually, France, Germany, and the United Kingdom may fit the definition of middle powers. Collectively, they do not. To use the label at the European level is to fragment power. It anticipates and perhaps facilitates Europe's division into spheres of influence. The risk is not that Europe will become a modest power but that it will become the object of power politics—the setting for a renewed scramble for influence by outside powers rather than a player in its own right. This is changing: Europe knows it must become a greater power.

German Question

Germany is central to how Europe can act commensurately with its size because it's the only nation that combines substantial fiscal resources with a large, diversified industrial base. With defense spending now largely exempt from the constitutional debt brake, Berlin has the financial capacity to sustain expenditures exceeding 3 percent of GDP. Germany is set to spend more than €500 billion over the next four years on defense. Its manufacturing networks—particularly in advanced engineering and automotive supply chains—allow it to scale defense production in a way no other European economy can. If Europe is to build credible military might, Germany must serve as one of its industrial pillars.

Yet Germany is not acting with the necessary speed or scale. Production processes remain slow, procurement fragmented, and industrial capacity underutilized. Rearmament is not proceeding at the tempo required by the strategic environment. Germany, according to the historian Niall Ferguson and economist Moritz Schularick, has yet to deliver the industrial acceleration and technological prioritization modern warfare demands.

The danger is that much of Germany's additional spending will be used to fund legacy systems and fail to reduce dependence on the US. The unfortunate consequence of Germany leading financially is that many discussions about European procurement soon descend into squabbles between nations over access to contracts. Debates hinge on industrial policy rather than defense effectiveness. This creates a real danger of capture by vested national champions.

Willing coalitions

Europe's strategic objective is clear: to support Ukraine while building deterrence against Russia. But Europe struggles to translate national commitments into a coherent unified approach. Credible deterrence requires more than the sum of national efforts. It demands coordinated procurement, integrated planning, and shared capabilities. On March 2, President Emmanuel Macron said in a pivotal speech that France's vital interests

“Europe overestimated the power of values and underestimated the value of power.”

could not be confined to its national territory, and that an attack on a European ally might trigger a French nuclear response. This is a significant shift, but a declaration by one leader does not substitute for a common institutional architecture.

To build that architecture, Europe must overcome deep structural obstacles: long-standing national defense traditions and incompatible standards that make switching to common weapons systems costly; industrial nationalism and entrenched special interests; and persistent concerns about fiscal transfers and moral hazard.

One concrete solution is the European Defence Mechanism, a proposed intergovernmental body open to all European democracies, including the UK and Ukraine, with three core functions: joint procurement and financing, ownership of shared strategic enablers such as satellites and air defense systems, and enforcement of a defense single market. Armin Steinbach and coauthors show how this mechanism would sidestep EU rules that preserve national sovereignty over defense and allow greater integration of defense policy and industry.

But credible defense also requires real command authority. For Europe to be capable of conducting high-intensity operations independently of the US, it will need its own command structure—and eventually a European army with unified command, procurement, and doctrine. To get there, Europe must avoid division.

External actors have clear incentives to split the continent into zones of influence and support nationalist movements that weaken cohesion. The difficulty is structural. The European project was conceived as a peace project, designed to reconcile internal differences and institutionalize compromise. It was not built to defend itself against aggression, whether from without or within.

The difficulty of acting collectively within the current EU framework is illus-

trated by the €90 billion Ukraine support package approved by the European Council in December 2025. Although it was structured to prevent opposition, Hungary still found a way of delaying it, at least until April's elections led to a change of government. The episode shows how Europe's institutional architecture remains vulnerable to capture by a single member state despite the political will to act among a large group of members.

In the short term, progress may depend on coalitions of the willing. A core group of member states could create momentum by pressing ahead with defense integration, procurement coordination, and operational planning. Other more cautious members may choose to join later.

A great moderating power

Ultimately, a stronger Europe is good not only for itself, but for the world. In the era of globalization, Europe overestimated the power of values and underestimated the value of power, to borrow Carney's formulation. Europe stands for the former: a level playing field, a multilateral order, and open markets. But values without power are fragile.

Many of the world's nearly 200 nations do not wish to align fully with either of the two rival superpower poles. A Europe that acts as a third pole—capable of projecting strength while serving as a moderating and stabilizing force—would be in the interest of Europe and the broader international system. That role cannot be played by a self-described middle power. Europe must recognize that it is large, capable, and consequential—and act accordingly. **F&D**

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SHOCK ABSORBERS

Energy efficiency and fuel diversification help cushion the oil shock

OIL PRICES have risen sharply with the latest war in the Middle East, reviving memories of the 1970s. The effective closure of the Strait of Hormuz, a route for about a quarter of seaborne oil trade, represents a major global supply shock. The damage will depend largely on how long the disruption lasts. Oil markets were well supplied heading into the disruption, strategic stock releases added barrels, and buoyant financial markets helped limit broader tightening in financial conditions.

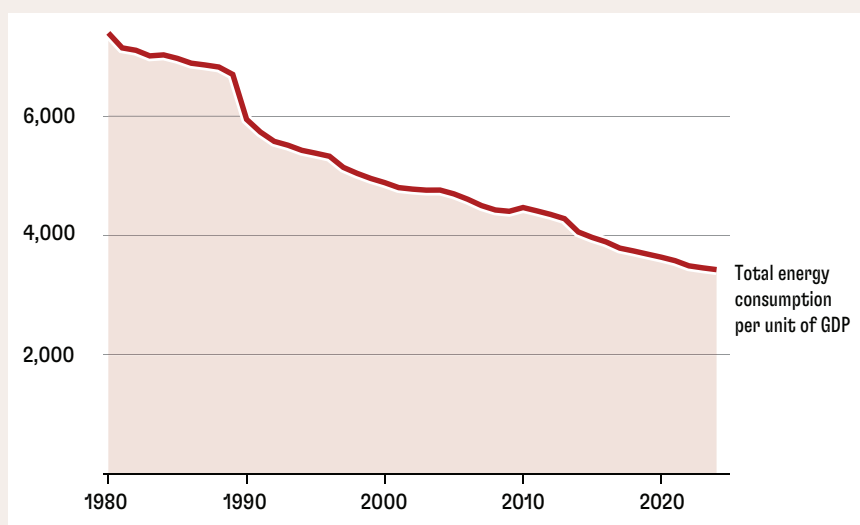
Beyond these immediate buffers, two structural factors have also cushioned the blow. First, the world economy is far more energy efficient than it was 50 years ago. Each dollar of output now requires roughly half as much energy as it did in 1980. Second, the energy system is more diversified. Oil's share of the mix has fallen from about half in 1973 to less than a third today. Oil remains the world's leading fuel, but it no longer dominates.

Even so, these cushions do not protect countries from pain evenly. Ultimately, the severity of the shock at the country level depends on two things: how much oil an economy imports and how much policy space its government has to respond. More than 80 percent of countries are net oil importers, and the most vulnerable entered this episode with limited room in public budgets to shield households and businesses. That is why the same global shock can become a much harsher national one where import dependence is high and policy space is thin. **F&D**

ANDREW STANLEY is on the staff of Finance & Development. This article draws on an April 9, 2026, speech by IMF Managing Director Kristalina Georgieva.

Growth needs less energy

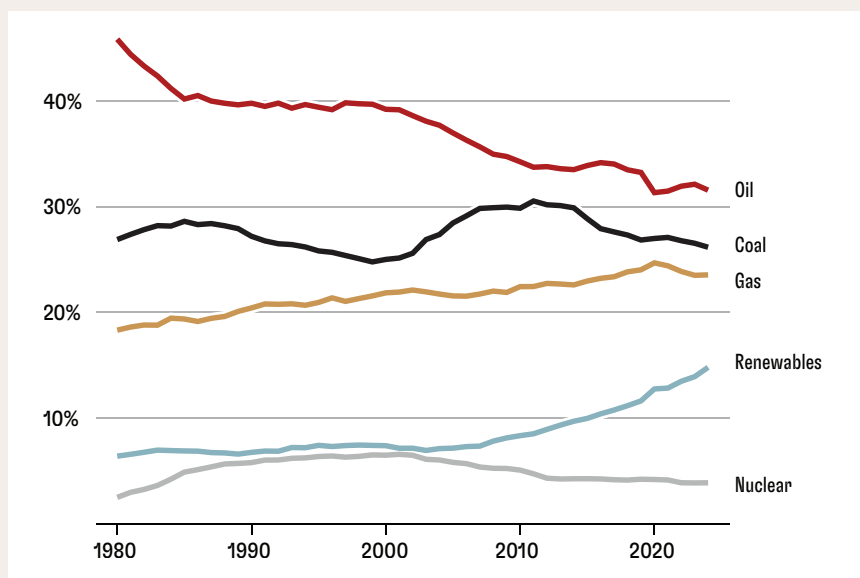
Global energy intensity has roughly halved since 1980.



SOURCES: US Energy Information Administration; and IMF. NOTE: Measured in British thermal units per unit of GDP.

Oil's shrinking share

Oil remains the top fuel but no longer dominates the energy mix.



SOURCE: Energy Institute. NOTE: Global energy consumption by source. Renewables include hydropower, wind, solar, biofuels, geothermal, biomass, and waste energy.

Uneven impact

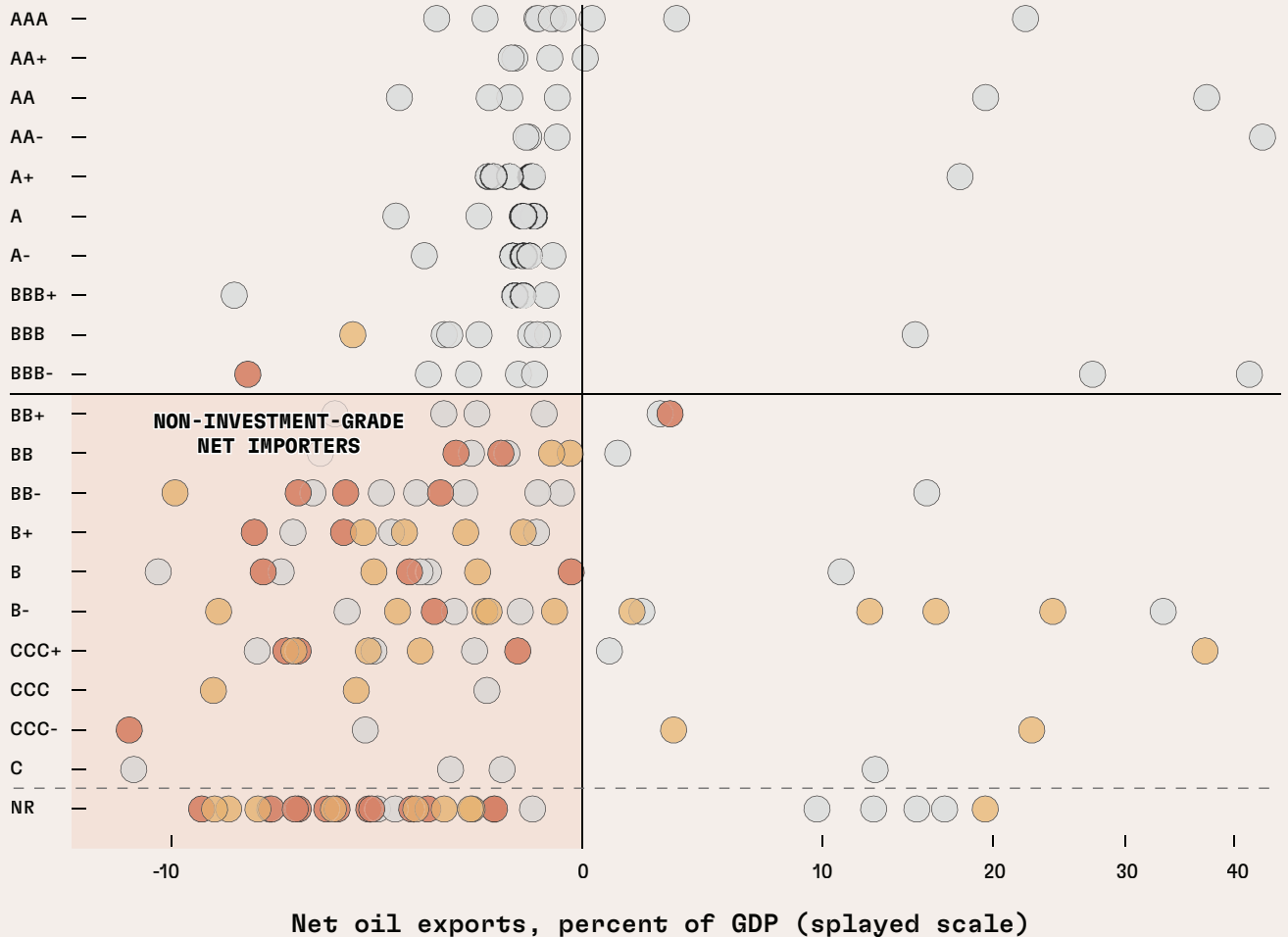
The beeswarm plot on the right separates net oil importers from net oil exporters, with over 80 percent of countries sitting on the import side. Highlighted in red are those directly hit by the war, showing how the damage has fallen disproportionately on major oil exporters. These economies depend heavily on these export flows.

The scatterplot below takes the same data and adds a vertical axis: sovereign credit ratings, used here as a proxy for policy space. The bottom-left quadrant is where the vulnerable oil importers sit, largely filled by sub-Saharan African and small island developing economies.



Average sovereign credit rating

● SUB-SAHARAN AFRICA ● SMALL ISLAND DEVELOPING ECONOMIES



SOURCES: Fitch; IMF; Moody's; and S&P Global. NOTE: Net oil exports are for 2024 (includes crude and refined products). Credit ratings are latest available. Average ratings are the mean of available agency ratings, rounded to the nearest notch. NR = no rating. Sub-Saharan Africa excludes small island developing economies, shown separately.

UNDERSTANDING GEOECONOMICS IN A VOLATILE WORLD

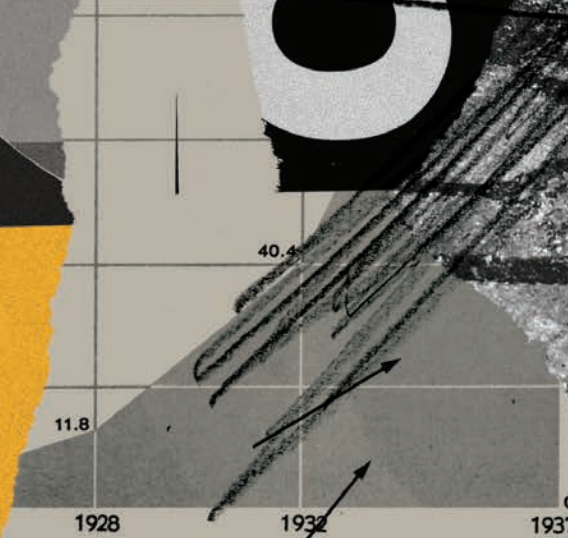
How new economics tools explain global
power dynamics

**Christopher Clayton, Matteo Maggiori,
and Jesse Schreger**

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Throughout history, powerful nations have used economic leverage to bend others to their will. Florence's Medici banking dynasty shaped Renaissance politics with its financial dominance, and imperial Britain used trade dominance to bind its empire together and wield power across the globe. Today, the United States freezes access to financial markets or urges its allies to impose export controls on essential technologies, and China threatens restrictions on rare earths to expand its influence. These are examples of geoeconomics, or the use of financial and trade relationships to achieve geopolitical and economic goals.

With the recent surge in great-power competition and increasing use of tariffs, sanctions, and export controls, understanding geoeconomics has become essential for policymakers navigating an increasingly volatile world. The use of geoeconomic power can increase cooperation and prosperity, but it can also cause fragmentation and disintegration. It is important to understand both its potential and its drawbacks.

The academic study of geoeconomics dates most prominently to 1945, when economist Albert Hirschman published *National Power and the Structure of Foreign Trade*. In it, he examines how Nazi Germany had structured its economy to maximize leverage over its neighbors during the interwar period. He rejected the naive view that because trade is voluntary and mutually beneficial, it is geopolitically harmless. Benefits can be mutual, Hirschman argues, without being symmetrical. And asymmetry is how power builds.

Since Hirschman's time, economists have left the study of global power dynamics largely to political scientists and historians, who have led the development of this area of research. Though almost every economics student encounters the Herfindahl-Hirschman Index, few know it was invented to measure the economic power of nations, not firms. Perhaps there was a sense that the postwar world order made such concerns obsolete.

Now, in the wake of increasing competition

between great powers, geoeconomics has become impossible to ignore, and economists have new tools at their disposal, including network analysis and modern macro, trade, and game theory. Our own research agenda aims to provide an economic modeling framework for geoeconomics. The goal is not only theoretical clarity on the sources and channels of power but also the ability to bring models to the data and discipline policy counterfactuals.

Geoeconomic power

How do countries build geoeconomic power? Suppose Country A supplies intermediate goods to Country B. It could threaten to withhold those goods if Country B does not comply with its demand. If the intermediate goods are sufficiently important, and if it is sufficiently difficult to source them elsewhere, such that Country B would be better off acquiescing to Country A's demand than dealing with the realization of its threat, then Country B would comply.

Threats to withhold only one input can work; however, threats are more powerful when the imposing country controls multiple economic relationships. A country that controls many related inputs, such as intermediate goods and foreign capital, exerts greater power, because it can inflict greater losses on the target country. That is why countries such as the United States and China are often referred to as hegemons. A hegemon uses these joint threats to exert power over firms and governments in its network and ask them to take costly actions. These actions can take the form of monetary transfers, changes in markups on prices, and surcharges on loans but also policy actions such as trade restrictions (for example, tariffs and quotas) or political concessions.

Consider how China has structured its Belt and Road Initiative. Beijing provides developing economies with package deals that combine loans, infrastructure projects, and access to manufactured goods. If a borrowing country defaults, it risks losing all these relationships simultaneously. This bundling increases China's geoeconomic power. In exchange, Beijing might demand political concessions, such as closer alignment over key geopolitical issues.

Adding to the power of hegemons is their ability to sway countries outside their network, reshaping the world equilibrium to consolidate more power. For example, when the United States put pressure on European governments and firms to stop using Huawei's 5G technology, so-called network effects amplified the impact. Because the value of a telecommunications network increases the more widely it is adopted, getting some countries

“In the wake of increasing competition between great powers, goeconomics has become impossible to ignore, and economists have new tools at their disposal.”

to reject Huawei made the technology less attractive for others, including countries the US could not directly pressure.

Choke points and dependencies

Inputs are called choke points, or critical dependencies, if the hegemon controls a dominant market share of the input in the targeted economy and it is difficult to find alternatives to the hegemon's inputs. For example, the US and its allies control an overwhelming share of global financial services, upward of 80 to 90 percent in many countries. Payment systems, settlement infrastructure, and dollar-denominated lending are basic inputs in a functioning economy. The lack of viable alternatives to the US financial infrastructure gives the country considerable goeconomic power. Recently, it has wielded this power by imposing comprehensive financial sanctions on Iran and Russia, putting pressure on HSBC to disclose transactions linked to Huawei, and cutting Russian banks' access to the SWIFT messaging system for international financial transactions.

However, there is a catch. The relationship between control over a sector and goeconomic power is not linear; rather, power increases disproportionately as a hegemon approaches complete control. The difference between controlling 95 percent and 85 percent of an input is disproportionately large. At 95 percent, a target economy has almost no viable alternatives and must accept whatever terms the hegemon demands. At 85 percent, there is enough of an alternative to give the target meaningful options, and the hegemon's leverage dissipates rapidly.

US policymakers often take comfort in the fact that the dollar remains dominant and Chinese alternatives to the Western financial system remain marginal. By standard metrics, China accounts for a small fraction of global financial services. The argument goes that even if China provided 10 percent of world basic financial services, that would pale in comparison to US dominance.

This reasoning is correct about market shares but wrong about power. There is a difference between

macroeconomic relevance and goeconomic relevance. For a medium-sized economy, the existence of an alternative provider with even a 10 percent market share is enough to withstand much of the coercion that a dominant power can exert. A disproportionate part of the losses to US power would come from a Chinese alternative going from 1 percent to 10 percent, with further Chinese market gains causing progressively less power dilution for the US.

Russia's preparation for Western sanctions illustrates this dynamic. After its invasion of Crimea in 2014, Russia moved to reduce its dependence on the US-led coalition, further developing its domestic payment system and connecting to China-based systems. Consequently, the US-led coalition's financial power over Russia greatly diminished. This preparation helps explain the somewhat muted effect of the sweeping financial sanctions imposed after 2022: Russia had already built enough of an alternative to blunt the weapon's edge.

China and India are following Russia's example and building alternative payment and settlement systems. Granted, these are unlikely to replace the dollar-centric architecture. However, the question is not whether an alternative system can rival the dollar across all its uses, but whether it can be viable enough to significantly diminish US influence at the margin. Emerging markets aren't alone. Euro area countries are pushing forward a digital currency in the hope of gaining greater monetary sovereignty and reducing dependence on the US financial infrastructure.

Risks of fragmentation

Our work shows that there is a trade-off between gains from trade and economic security. The same mechanisms that are the classic foundations of the gains from trade—economies of scale and specialization—also generate economic dependence. The domestic alternatives that countries did not build up are poor substitutes for globally dominant inputs, such as Chinese manufacturing or US financial services and technology. This lack of alternatives leaves the countries exposed to coercion. As the global economy increasingly relies on goods and

services that have strategic complementarities and economies of scale, these mechanisms are likely to increase in importance. This applies to payment systems, but also to information technology and artificial intelligence.

As geoeconomic power has risen to the forefront of international relations, hegemonies want to hyperglobalize the system to increase everyone else's dependence on what they control, while countries that are heavily dependent on hegemonies have begun pursuing anti-coercion policies to reduce their vulnerability to pressure. The Chinese alternative financial architecture is one example; another is the European Commission's European Economic Security Strategy, explicitly aimed at countering the weaponization of economic dependencies.

These policies might be individually optimal, and, as demonstrated by the nonlinearity of choke point sectors, are likely to be successful for the countries implementing them appropriately. However, taken together, they can lead to a troubling collective dynamic. When one country reduces its reliance on the global system, the system itself becomes less attractive to others, because its value often depends on the number and size of its participants. This shifts the calculus for other countries in favor of decoupling as well, triggering fur-

ther exits. The result is excessive fragmentation, a world where the gains from trade and financial integration degrade to a degree that leaves everyone, including the hegemon, worse off.

This dynamic leads to a somewhat surprising conclusion: Hegemonic powers can increase their own welfare by voluntarily and credibly constraining their use of coercion. A hegemon that commits to limiting its demands (for example, by submitting to the rules of international organizations) can dissuade other countries from pursuing costly anti-coercion policies. The hegemon gives up some of its flexibility to coerce, but in return it preserves the size and attractiveness of its economic network, which is the source of its power.

Viewed this way, the postwar liberal order, composed of institutions like the IMF, World Bank, and World Trade Organization, can be understood not as the opposite of hegemonic power but as one of its most sophisticated expressions. These institutions serve as commitment devices: By credibly promising not to exploit dominant positions too aggressively, the US and other hegemonies keep other nations within the same economic system. As these rules-based constraints weaken, if hegemonies are perceived as willing to exert their geoeconomic power unpredictably or erode their institutional commitments, other countries rationally



respond by developing their own economic security policies and accelerate disintegration from the hegemon's networks.

Measurement challenges

While theoretical clarity is a necessary foundation, it must lead to testable implications and empirical guidance for policy. As world policymakers confront geoeconomic uncertainty, they must provide guidance driven by facts and data interpreted through the lens of models. There are at least two promising ways to bring existing theory to the data. The first uses advances in trade modeling and bilateral trade data to estimate how much a targeted country would suffer from losing access to hegemon-controlled inputs, measuring the quantitative importance of threats. Most threats are not powerful, and most industries are not strategic, either because the hegemon does not sufficiently control them or because it is easy for the target to find good substitutes. The same logic can be applied to capital flows, in addition to goods trade.

An obvious problem with measurement is that the most powerful geoeconomic threats will not materialize if targets comply. Recent advances in artificial intelligence point to a possible solution. Large language models (LLMs) can be used to analyze the text of analyst reports and earnings calls regarding the multinational corporations that dominate world trade and finance. This approach addresses part of the measurement issue because analysts and company executives discuss geoeconomic actions that have been threatened but not yet taken. It can also measure threats in quite granular detail. The demands of the hegemon might span multiple domains that are hard to specify in advance: Do not buy this, do not sell that, or give me a political concession.

In our work, we show that LLMs can extract signals about geoeconomic pressure down to a specific firm, instrument, and reaction. This can be done in near real time, enhancing the value for policymakers. More specifically, in this paper we applied LLMs to firm earnings calls and analyst reports to see how firms respond to tariffs, sanctions, and export controls. And our results were striking: Geoeconomic pressure indeed acts as a potent force that measurably affects firms' decisions regarding pricing, investment, and supply chains. Chinese firms responded to US export controls on semiconductors by increasing domestic research and development. Western firms largely reported complying with US demands to lower sales to China of specific technologies. US firms report being overall negatively affected by US tariffs and intending to raise sales prices while facing higher input prices.

A path through the storm

In the short term, the world is unlikely to return to the era of globalization that preceded the heightened US-China rivalry. Geoeconomic competition is a defining feature of the current moment and almost certainly of the years ahead. However, the economics also offers a hopeful message. Through strategic and optimally targeted policy, it's possible to avoid total fragmentation.

For countries pursuing anti-coercion policies, targeted diversification in key sectors controlled by the hegemon can dramatically reduce a country's vulnerability without requiring wholesale decoupling. The policy challenge is to identify the true choke points—sectors where dependence is greatest and alternatives are scarcest—and concentrate diversification efforts there while preserving the broader benefits of integration.

For hegemon, maintaining power in a global environment that fears geoeconomic pressure will involve committing to limited use of power in the interest of encouraging smaller countries to remain in a system that benefits everyone. The most effective hegemonic strategy is one that maintains credible commitments to rules-based behavior, keeps the global system attractive to participants, and reserves coercive instruments for clear and limited purposes. This approach increases confidence in the hegemon's commitment to global cooperation and minimizes defensive responses that ultimately diminish the hegemon's power.

Geoeconomic competition will shape the next decades of international relations. Countries that understand the nonlinearity of power, the value of targeted diversification, and the principle of self-restraint will navigate this period more successfully than those that do not. The world does not need to fragment completely to give countries economic security, and hegemon do not need to abandon their leverage entirely to preserve it. It is a difficult balance to strike, but the alternative, a fractured global economy where everyone ends up poorer and less secure, makes the effort worthwhile. **F&D**

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GEOECONOMICS, REDISCOVERED

Josh Lipsky

Around the world, the line between economic policy and national security is disappearing

“**W**hat is geoeconomics?” A senior Brazilian financial official leaned over and asked me that question during a session I was chairing in Rio de Janeiro in 2024, during Brazil’s G20 presidency. An Atlantic Council delegation had come to discuss stablecoins, supply chains, and Russia’s foreign exchange reserves.

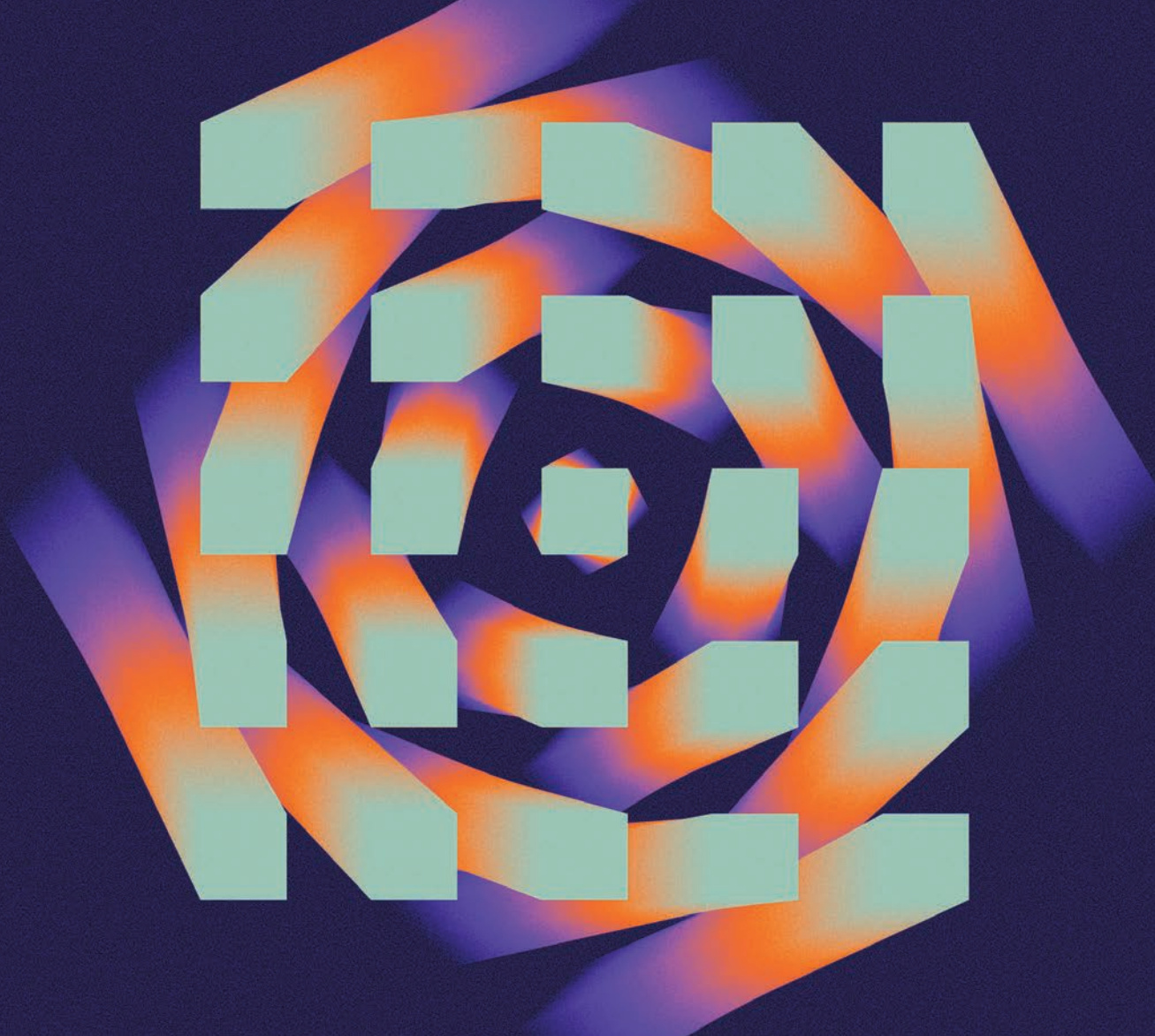
I quickly replied, “It’s this—what we’re doing right here, the combination of finance and national security.” “Oh,” he said and then paused. “Here in Brazil, we just call that policy.”

The truth is that while many in the West, especially in the United States and Europe, are rediscovering the concept of geoeconomics, for most of the world it is simply the way business is done. The idea of separating out national security and economics makes little sense for policymakers in countries like India and Türkiye, and of course Brazil, who every

day wake up and worry about a geopolitical shock that could limit their energy supply or a regional political conflict that would frighten foreign investors and trigger a sudden exodus of capital.

For much of the post-Cold War era—until the pandemic and Russia’s invasion of Ukraine—the US and Europe had the luxury of often separating economic policy from national security. Even after 9/11 and the rise of financial sanctions, Treasury officials in Washington still had to fight for a seat at the table during debates over the wars in Iraq and Afghanistan.

Wall Street and Washington could, and often did, operate on a disconnect. Over the past 15 years, as presidents of both parties and members of Congress continually raised alarms about China’s treatment of intellectual property and industrial overcapacity, US financial firms deepened investment and increased financial flows to Beijing.



Today, the ability to silo economic and national security policymaking is gone. The US is rediscovering geoeconomics and doing so within a system that also serves as the beating heart of global finance. As we've seen over the past five years through the rise of industrial policies, government ownership in private companies, and sweeping sanctions that reorient entire sectors and banks, this evolution is—and will continue to be—a painful and sometimes costly process.

Some will mourn this change, and others will celebrate it, but the reality is that for most of US history, geoeconomics was the norm. The past three decades were the exception.

Geoeconomics has a long and rich academic track record—but those textbook versions of geoeconomics don't fully capture what is happening now.

Today's geoeconomics lies at the intersection of finance, national security, and macroeconomics. It

is about how trade and capital flows are reshaped in real time by strategic rivalry. We at the Atlantic Council divide geoeconomics into three pillars. The first is the future of capitalism and trade—think of the Bretton Woods system and the challenge of inclusive growth. The second is the future of money—which comprises stablecoins, cryptocurrencies, central bank digital currencies, and payment systems. The third is economic statecraft—the tools of geoeconomics, including sanctions, export controls, and tariffs.

Cold War

A prime example of geoeconomics in US history is the Coordinating Committee for Multilateral Export Controls (COCOM)—launched in 1949. At the onset of the Cold War, President Harry Truman's commerce secretary, Averell Harriman, a founder of the famed Wall Street firm Brown Broth-

ers Harriman, argued that the US could not on its own pursue an export control policy to limit Soviet military capacity. He believed Western-aligned nations must coordinate with allies.

And so the US, working with West Germany, France, the United Kingdom, and eventually 17 countries, developed lists—including a dual-use technology list consisting of products such as computers and the processors that powered them. In 1952, the same group launched a sister project, CHINCOM, designed with even stricter controls on advanced computing exports to China. It all sounds eerily familiar.

These efforts were not painless or cost free. Companies tried end runs around the controls. The designation of certain products caused tension between the US and other countries, including the infamous late-1980s Toshiba-Kongsberg scandal, when the Soviets got hold of parts that made their submarines run more quietly.

But the system overall was effective and served its purpose until the early 1990s, when it was sunset.

Of course, as is true today, geoeconomics was not limited to goods—it is and always has been connected to how the money to pay for those goods moves around the world.

Consider the creation of the Society for Worldwide Interbank Financial Telecommunication (SWIFT) in the early 1970s. After President Richard Nixon suspended the convertibility of dollars to gold, cross-border transactions in a range of currencies accelerated. First National City Bank (Citibank's predecessor) developed a new global messaging standard, but the risk of one large US institution dominating payments worried many, especially in Europe.

So a consortium of banks came together, across the United States and Europe, and developed the SWIFT system as a compromise. It would rely heavily on US financial institutions but would be headquartered in Belgium.

Today, a parallel fight is playing out between allies. A 2025 study for the European Parliament warned that “continued dependence on non-EU payment networks, particularly Visa and Mastercard, represents a structural vulnerability for both European banks and the Union’s financial sovereignty.” What do Visa and Mastercard have in common? They are US companies. Swap out Visa and Mastercard for First National City Bank and the same words could have been written in 1971.

Geoeconomics today

What is different today, however, is that the global economy has changed. The world’s largest economy—where finance accounts for about a quarter of corporate profits, whose roughly \$30 trillion Treas-

ury market anchors the global financial system, and whose central bank has repeatedly stepped in to stabilize markets not just for Americans but for the world—is reconsidering its model. Everyone else has taken notice.

In 2020, President Joe Biden’s national economic council director asked to deliver a speech on a “new industrial policy” at the Atlantic Council. It was a surprising request: For years in Washington, industrial policy had been a dirty word. But that speech was an early signal of the shift already underway.

In the years since, officials in several emerging markets have felt some satisfaction that the US is edging closer to something more like their model. In Delhi in 2024, one senior policymaker remarked that all those years of US lectures on free and open markets may have been “a bit of a mistake.” Many of those same countries have spent the past decade building foreign exchange reserves, diversifying suppliers, and signing regional currency swap agreements to weather the kinds of shocks they long assumed would come. Now that resilience is being tested, and the US is paying careful attention to a type of economic policymaking it too long ignored.

It would be a mistake in return, however, for the rest of the world to think the new US version of geoeconomics will match the Cold War version. Back then the US, a manufacturing powerhouse, could outcompete its adversaries on everything from cars to televisions. Throughout the 1960s and 1970s US GDP growth and its global share of manufacturing were consistently double the size of the Soviet Union’s. And even when that advantage waned in the 1980s, it was because Japan, an ally, caught up to the US. That made negotiations over everything from trade to currency easier to manage.

More danger

Today’s geoeconomics era is more complicated and dangerous. The world’s two largest economies, the US and China, are pursuing their own versions of geoeconomics in action. The tables have turned in several ways. China now produces roughly 30 percent of global manufacturing output, compared with about 16 percent for the US. This is not a short-term change, but our models have not yet accepted the new reality of great-power rivalry between the world’s largest economies. For financial policymakers, that means worries about higher risk premiums and more volatile capital flows have to be front and center.

The danger of this new era of geoeconomics is that once governments invoke it, it can become the gloss to justify almost any policy. US Commerce Secretary Howard Lutnick and his predecessor, Gina Raimondo, are both fond of saying, “Economic security is national security.”

“For most of US history, goeconomics was the norm. The past three decades were the exception.”

But another way of framing that concept is, “National security is whatever we say it is.”

In such a world businesses lose the predictability necessary for investment. Corporations change the way they interact with the government, and crony capitalism prevails. Money is wasted. Jobs are lost. Fragmentation, protectionism, and a world in conflict carry a high price tag.

So rediscovering goeconomics the right way—in a way that recognizes the progress of recent decades and alters, rather than abandons, the rules that made progress possible—could not be more critical. The rules-based system, which many now seem so willing to cast aside, delivered the greatest poverty reduction in human history and a dramatic rise in living standards both in the US and abroad—largely through more trade, investment, and technology diffusion.

But the world that produced those gains was not without its faults. Even as overall prosperity advanced at home and abroad, globalization hollowed out opportunity and resilience in too many places. The pandemic—and the supply shocks that accompanied it—laid that reality bare. That is why those who hope to return to an era of unbridled free markets will continue to be disappointed.

No going back

The United States is not going back. It is searching for a new system—or perhaps rediscovering an old one—willing to break the conventions of the recent past on trade and finance.

In 2022, Western policymakers found it.

Four years ago, on a Saturday morning in February, G7 countries decided to block access to the sovereign assets of a G20 country—Russia, which had just launched a full-scale invasion of Ukraine. More than \$300 billion in Russian central bank assets was immobilized, and most of it remains frozen today. It was the single most important goeconomic decision of the decade so far.

There was no playbook to consult. It happened because of individuals who thought creatively and tried to do something that even a few years earlier would have been dismissed as too risky. The groundwork had been laid over decades. From the rise of financial sanctions after 9/11 to the way the

dollar and euro worked together to pressure Iran into a nuclear deal in 2015.

What happened on that Saturday morning in 2022 opened a Pandora’s box the world will live with for a generation. It showed the world that Russia’s strategy of diversifying into euros after the invasion of Crimea in 2014—a rational approach in a pre-goeconomics world—no longer worked. Allies could now jointly weaponize payment systems at a moment’s notice to ensure that finance advanced national security goals. In fact, as Atlantic Council research shows, since the G7 sanctions response there has been a 100 percent increase in the number of pilot cross-border payment system projects (nearly all designed outside the dollar and euro systems).

While the sweeping sanctions came as a surprise to the Russian government and to much of the world, they should not have.

Goeconomics has always been part of US economic and foreign policy. The Bretton Woods system itself is the quintessential goeconomic creation—founded not after war, but during war, six weeks after D-Day.

That leaders from 44 countries would gather in New Hampshire to discuss a new international financial architecture while their fellow citizens were facing down gunfire thousands of miles away seems, on its face, illogical. But as President Franklin Roosevelt said at the start of the conference, “It is fitting that even while the war for liberation is at its peak, [we] should gather to take counsel with one another respecting the shape of the future which we are to win.”

No one had to explain what goeconomics meant back in 1944.

The challenge today is different: to navigate this new era, with all the global financial system’s complexity and interdependence, not to build a new system but to adapt one no longer fit for purpose. To see if the world’s largest economy can shift its economic policymaking without mass disruption at home and abroad. The distance between the world’s financial and political capitals is rapidly shrinking.

The change calls for economists to understand concepts like great-power rivalry and for foreign policy professionals to train in macro- and microeconomics as a prerequisite for their jobs.

And it means all of us in the West must relearn what most of the world never forgot: Goeconomics is simply how the world does business. **F&D**

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THE COST OF GEOECONOMIC COERCION

Jeffrey Frieden

Governments have good reasons to use tariffs or sanctions for geopolitical purposes but should consider the trade-offs

Governments worldwide increasingly are using economic policies, such as export bans, financial sanctions, and trade tariffs, to achieve noneconomic goals. The benefits of these geoeconomic policies can be significant, accomplishing a geopolitical purpose without threatening, or using, military force—and without the high human and economic costs of war. Perhaps the world should welcome this.

Yet coercive policies can be costly for nations that impose them. As appealing as it may be to use economic policies for coercive purposes, sometimes the benefits are not worth the cost.

Close connection

International politics and international economics have always been closely intertwined. The age of mercantilism that prevailed from the 15th to the early 19th centuries was explicitly organized around the interaction of economic and military prowess. In his 1618 work *A Discourse of the Invention of Ships, Anchors, Compasse &c*, the explorer Sir Walter Raleigh, a theorist and practitioner of English mercantilism, opines, “Whosoever commands the

sea commands the trade; whosoever commands the trade of the world commands the riches of the world, and consequently the world itself.”

Mercantilist policies used military control over shipping routes and colonies to extract resources from trading partners and overseas possessions and used those resources to finance additional military spending. For several hundred years, the major powers’ conflicts and alliances were reflected in both their military and economic relations.

As Britain led the rich countries of Europe away from mercantilism and toward freer trade and financial flows in the early 19th century, the European powers increasingly separated economic policymaking from great-power politics. There were still occasional blockades and embargoes, and economic policies were often used as an instrument of colonial control. But the prevailing ideology and practice tended to keep economic and military policies relatively separate. This era of free trade saw very rapid economic growth by historical standards, which seemed to confirm the wisdom of divorcing economic from diplomatic relations.

However, as countries strove to catch up to Brit-

ain in the late 19th and early 20th centuries, geopolitical contention and a race for colonies brought geoeconomics back to the fore. Colonial powers tightened their control over their empires, Germany carved out a sphere of economic and political interest in central Europe, and the United States cemented its predominance in the Western Hemisphere during a period of rising economic nationalism that has parallels today.

The Cold War reinforced the connection between geopolitics and economics: The Western powers largely sealed off the Soviet Union and its allies from international trade and investment even as Western international economic integration grew dramatically. For their part, the Soviets and their allies, along with China, showed little interest in the world economy.

The end of the Soviet Union and the Cold War, along with the onset of full-scale globalization in the late 1980s and early 1990s, led most governments to conduct their international economic relations with little concern for military or other geopolitical considerations. As China and Vietnam, and later the former Soviet republics and their allies, joined the world economy, it seemed that global acceptance of economic integration had overcome the worst features of great-power politics.

Expectations at the start of the new millennium that international politics and international economics would stay separate have turned out to be wrong. Renewed competition among the major powers has encompassed their economic relations—think Western sanctions on Russia and ongoing trade conflicts between China and the United States. The global pandemic highlighted fears that long and complex supply chains could jeopardize countries' access to essential goods. The full-scale Russian invasion of Ukraine has brought major military conflict to Europe in ways that many considered unthinkable. It is hardly surprising that governments are using economic policies to address the rising geopolitical tensions they face.

Benefits of coercion

Governments have good reasons to use economic policies for geopolitical purposes. Sanctions, embargoes, tariffs, and other such measures can coerce adversaries without the threat or use of force. They can impose costs on target countries and governments, induce powerful groups abroad to pressure their own governments to change course, and persuade allies to collaborate in compelling an adversary to make concessions.

The appeal of geoeconomic policies can be clear, although they may be difficult to measure. Many geopolitical goals are hard to quantify, and hard

even to think of in monetary terms. How much is national security worth? What is the value of isolating an adversary, cementing an alliance, staving off a potential attack, avoiding a disastrous war?

While the benefits of geoeconomic policies may be intangible, many of the costs are more directly economic and amenable to analysis. Policymakers, analysts, and constituents should think about the trade-offs involved, about what a country may be giving up when it imposes sanctions or tariffs for geopolitical purposes. This does not mean that such policies should be avoided—only that both their benefits and their costs should be considered.

Coercion's costs

Coercive economic policies typically impose costs on the country that uses them. Those costs come in many varieties: Some examples follow.

Costs to economic efficiency. Almost by definition, geoeconomic policies move a country's economy away from its most productive purposes. Restricting imports limits the country's access to goods more efficiently produced elsewhere; restricting exports limits the country's access to profitable foreign markets. Measures that restrict the movement of goods and capital can compromise a country's comparative advantage and reduce its productive efficiency. This was, after all, the argument of pro-trade economists from Adam Smith to David Ricardo and John Maynard Keynes. As Keynes wrote, "The community as a whole cannot hope to gain by making artificially scarce what the country wants."

Governments pursue geoeconomic policies because they are willing to sacrifice aggregate (economic) welfare for geopolitical purposes. Within this objective, there are specific constraints that highlight the trade-offs geoeconomic policy entails.

Costs to specialization. Specialization is central to productivity and economic growth. The division of labor is central to broader economic efficiency and, as Adam Smith wrote, "The division of labor is limited by the extent of the market." Purposely giving up a broader market limits how much a national economy can usefully specialize.

There is a more explicit trade-off. More specialized economic activities are both particularly valuable and particularly vulnerable. They are valuable because specialized production is especially profitable, given its scarcity and specificity. They are vulnerable because the scarcity and specificity of specialized production also make it harder to replace. The more specialized the productive activity, the greater the challenge in doing without it—and the more dangerous it is to rely on it.

Governments will thus try to avoid dependence on the more specialized products of other nations.

Diversifying economic ties provides some protection against economic and geopolitical shocks and helps limit vulnerability. But it can also limit an economy's efficiency and that of its trading partners.

Costs to innovation. Just as artificially limiting a country's market reduces its ability to specialize, it also reduces its incentives to innovate. Producers invest in research and development to gain advantages in markets, and the larger the market and the fiercer the competition, the greater the reason to do so.

On the other hand, export controls that restrict a target economy's access to technology give the target strong reasons to innovate. Nazi Germany developed synthetic rubber and methadone when faced with an Allied blockade that cut it off from natural supplies of rubber and opium. While this may not have been the most efficient use of German resources, it did counteract the impact of the goeconomic policies. More recent evidence shows that sanctioned countries have invested heavily in innovation: Russia, China, and Iran have all responded to sanctions by ramping up research and development to try to replace goods no longer available.

Costs to credibility. A country's good reputation is valuable: It encourages other countries to commit to potentially risky arrangements in trade, finance, and investment. If goeconomic policies such as sanctions and asset freezes violate implicit or explicit contracts, it causes other countries to question whether they can trust commitments with those imposing such policies. As trust erodes, other governments and private companies are less willing to risk economic commitments that might be violated. This can deprive a country of valuable trade, investment, and financial ties—many of which rely on partners' reputation for reliability.

Costs to domestic politics. The costs and benefits of goeconomic policies may not be evenly distributed within the population, which can lead to domestic political conflict. The negative effects of sanctions or export controls, for example, may be severe for businesses that lose important and profitable economic ties. On the other hand, successful goeconomic policies may create particularly profitable opportunities for companies and industries that gain market access or favorable treatment. Domestic businesses that suffer from the imposition of goeconomic policies may resent those that benefit from their success. Such policies may thus be harder to impose, less credible, or more politically controversial. The last thing national leaders want when they pursue what they regard as key geopolitical policies is domestic political backlash—and so they need to pay close attention to the domestic social costs of these policies.

Complete picture

Governments often adopt coercive economic policies in the midst of an immediate geopolitical struggle. The understandable focus on the near-term geopolitical goal—extracting concessions, forestalling harm—can obscure the longer-term economic costs. It may be difficult, in the heat of geopolitical conflict, for policymakers to keep in mind that sanctions can inflict lasting damage to the financial or commercial reputation of the sanctioner, damage that could outweigh the temporary goeconomic advantage gained.

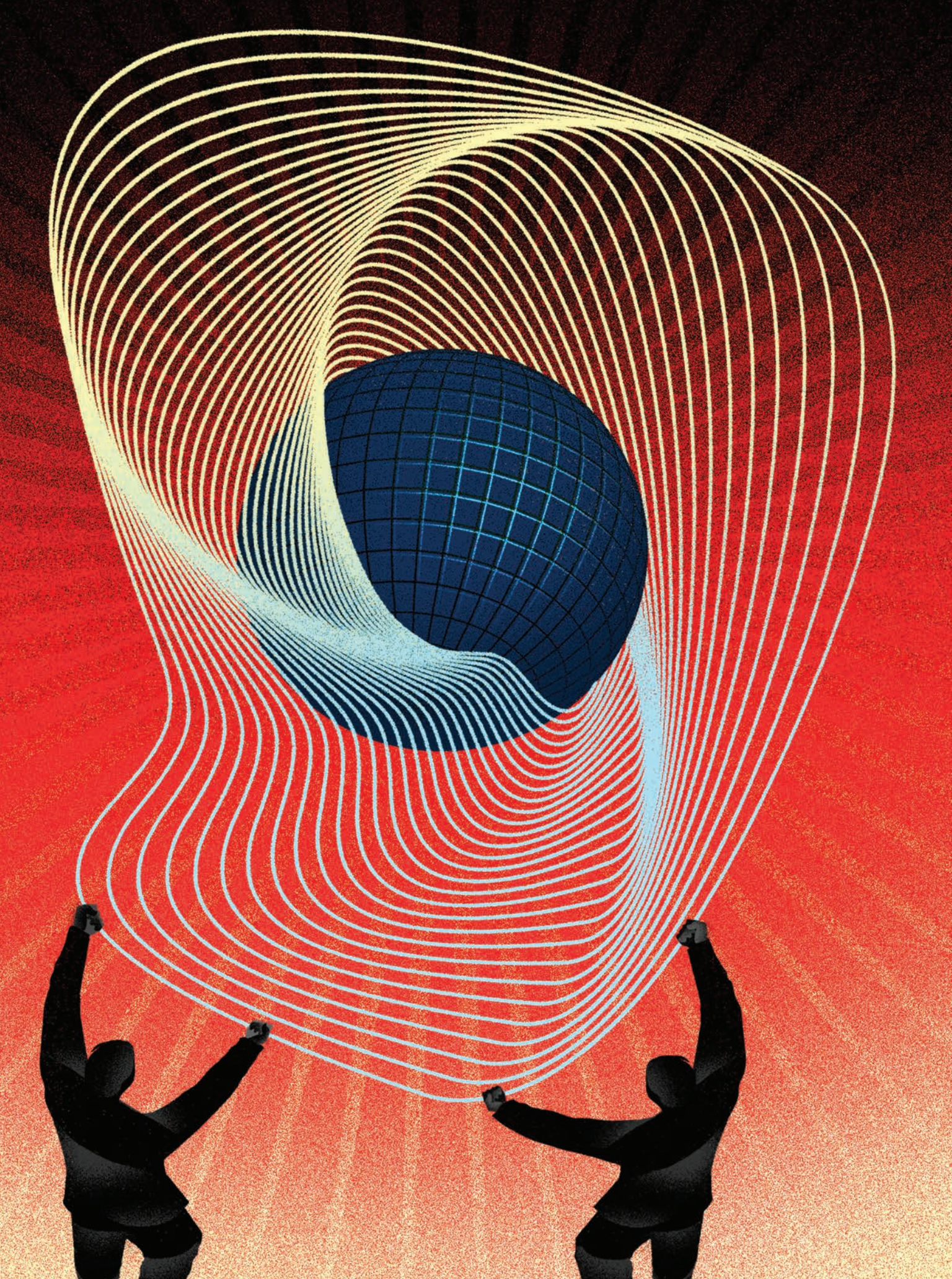
Goeconomic policies may engender desirable behavior in other countries, but they have costs and involve trade-offs. Policymakers, analysts, and citizens need a clear picture of these costs. Goeconomic policies can limit the efficient functioning of the economy, reducing incentives to specialize for maximum national productive efficiency. They can discourage domestic innovation but stimulate such activity by foreign rivals. They limit the activities available to national firms and industries. They can affect a country's reputation for reliability and may damage its long-term economic prospects. And they may harm some industries or groups in the sending nation in favor of others, in ways that may be politically controversial.

Goeconomic policies are a valuable tool of foreign policy whose benefits may be substantial, especially if they help avoid military conflict. There are times, however, when the costs may outweigh the benefits. We need a clear picture of the costs before we can determine whether the net benefits are positive. **F&D**

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TRADE COOPERATION IN AN AGE OF GEOPOLITICS

Aaditya Mattoo, Michele Ruta, and Robert W. Staiger

Geopolitical rivalry does not end the need for trade cooperation, but the multilateral system must adapt

For decades, the global economy rested on the premise that international trade was beneficial despite geopolitical differences. The rules of the multilateral trading system, established with the General Agreement on Tariffs and Trade (GATT) in 1947 and embedded in the World Trade Organization (WTO) in 1995, were crafted for a world where governments rarely used trade to achieve geopolitical goals. That world is now under threat.

The United States and China, whose growing trade integration has shaped the past three decades of globalization, now often refer to each other as geopolitical rivals. They increasingly use trade policy to advance strategic objectives—limiting technology transfers, restricting exports of critical products, pursuing national security goals. Many observers fear that the return of geopolitics will fragment the global economy, unraveling decades of integration.

Yet this pessimistic outcome is not inevitable. Our research shows that even strategic rivals can benefit from trade cooperation. The problem is that the return of geopolitics is at odds with the existing institutional framework, which was designed for a different era. If the trading system is to survive, it must adapt to a world where countries use trade policy to advance geopolitical objectives.

The power problem

Standard economic models assume governments strive to improve the welfare of their citizens. In this setting, a country raises tariffs to increase its real income at the expense of trading partners by improving its terms of trade—the price of its exports relative to imports. Since all countries face the same incentives, uncoordinated tariff policy traps them in a situation of inefficiently high protection and low welfare. Trade agreements exist to escape this trap through coordinated tariff reductions.

Geopolitical rivalry changes the calculation, raising questions about the sustainability of trade cooperation. Drawing on the realist tradition in international relations, we suppose that rival governments care not only about their absolute welfare but also about their relative power—how they stack up against adversaries. Policy decisions are shaped by both economic gain and strategic advantage.

Consider a government seeking dominance in the semiconductor industry. It will design trade policies not only to expand its domestic chip sector but also to shrink its rival's. A tariff becomes attractive because it damages foreign competitors, transforming trade policy from a tool of economic management into an instrument of strategic competition. Manipulation of the terms of trade is no

longer the only reason to use trade policy in a world where countries have geopolitical objectives.

The international relations scholar John Mearsheimer captured this logic in his classic book *The Tragedy of Great Power Politics*. States motivated by relative power concerns, he writes, are likely to forgo large gains in their own power if such gains give rival states even greater power. This logic has significant implications for trade policy: A country might reject a highly beneficial trade deal if it would make its adversary stronger, or it might implement a damaging trade measure because it would be even more damaging to its adversary.

Cooperation amid rivalry

Does this mean trade cooperation is doomed? Not necessarily. Even in a model where governments care about their relative geopolitical power, the results for trade cooperation are more hopeful than many “realists” would expect.

It is true that the emergence of geopolitical rivalry drives up tariffs in a noncooperative setting. If hurting your rival is part of your objective, protectionist measures become more attractive, even if it lowers income. This results in a noncooperative equilibrium (or Nash equilibrium, in game theory), which features higher tariffs and less trade than in a world without rivalry, because both governments use trade policy to harm the other country.

Nevertheless, geopolitical rivalry doesn’t change the fact that economic efficiency still matters. As long as they care at least somewhat about their citizens’ welfare, governments that start from a position of noncooperation could adopt policies that make both countries better off. Unless rivalry becomes so extreme that governments care only about dominating their adversary, they would still negotiate with each other to increase economic efficiency and thus their citizens’ welfare. Enlightened self-interest—the same force that drove postwar trade liberalization—remains a viable foundation for cooperation, even between strategic adversaries.

The adjustment problem

Yet even if cooperation remains possible, the transition from one equilibrium to another poses serious difficulties. It took decades of negotiations under GATT/WTO rules to move from the high-tariff world that emerged during World War II to a new, low-tariff era. Its two key pillars, reciprocity and nondiscrimination, served the trading system well by helping governments move from a noncooperative to a cooperative equilibrium.

What are the consequences for the trading sys-

tem of the eruption of geopolitical rivalry today? Governments that care about relative power threaten to impose higher tariffs to hurt their rivals. The old agreement no longer reflects the new reality. A new cooperative equilibrium is needed. The question is how government can get there.

Two paths are possible. The first is what we call “war and redemption.” Countries allow the old agreement to collapse, triggering a trade war that pushes tariffs higher. Eventually, governments negotiate a new agreement through traditional reciprocal tariff reductions. This path is economically costly and would likely require lengthy negotiations but fits within the existing framework of multilateral trade rules.

The second path is more efficient but requires institutional innovation. Countries negotiate an immediate transition, avoiding economic disruption. But this adjustment involves moving along the frontier of possible efficient outcomes (see box). To sustain cooperation, the country for which the geopolitical shock is less severe must make concessions that reduce its welfare relative to the status quo. This is neither reciprocal nor mutually advantageous in the traditional sense, and the WTO’s foundational principle of reciprocity cannot accommodate it.

The challenge deepens in the multilateral world. Along with reciprocity, the principle of nondiscrimination might not facilitate adjustment, as it requires that any trade benefit extended to one member be extended to all. But when two rivals need to transfer economic benefits between each other, third countries are excluded and face consequences.

The 2020 Phase One agreement between the United States and China illustrates the problem. The deal, intended to ease trade tensions, included Chinese commitments to buy specific quantities of US goods. World Bank research at the time of the agreement predicted that although both countries would have gained relative to continued escalation, exporters in Europe, Latin America, and elsewhere would have been hurt if China had redirected imports from those regions to the US. The fact that the agreement was struck outside multilateral trade rules points to a deeper problem: The current system cannot accommodate the adjustments that geopolitical rivalry demands.

A geopolitical exemption

If the multilateral trading system is to remain relevant, it must create space for geopolitical adjustment while protecting third countries. In our research, we propose a geopolitical exemption to the fundamental principles of reciprocity and nondiscrimination that would allow strategic

rivals to make discriminatory tariff adjustments under strict conditions.

There is a precedent for such an exemption. The trading system already accommodates certain forms of discrimination—for instance, allowing members to form preferential trade agreements, such as through free trade areas. These agreements advance the goal of liberalizing trade as long as they meet strict conditions: They cover “substantially all trade” among members and do not raise barriers against nonmembers. A geopolitical exemption would serve a different purpose: accommodating rivalry between strategic competitors while minimizing damage to the broader multilateral system.

The exemption would require that any discriminatory adjustments between rivals leave world prices between the rivals and third countries unchanged, thus limiting trade diversion. Implementing such a rule would be technically complex. But the alternative is worse: Geopolitical adjustment happens either outside the multilateral framework, undermining existing trade rules and imposing costs on neutral countries, or doesn’t happen at all, leaving the world trapped in destructive trade conflicts.

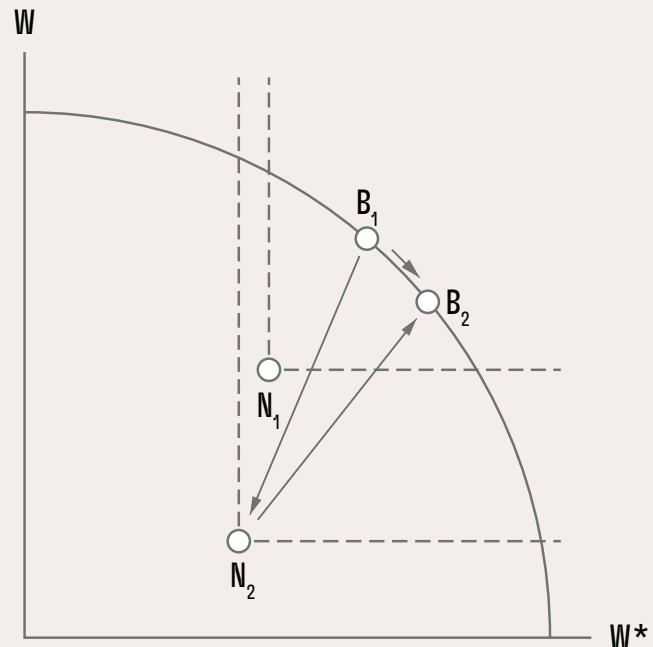
Preserving cooperation

We argue that the return of geopolitics does not eliminate the economic case for cooperation. Even countries engaged in strategic rivalry can benefit from negotiated agreements. The fundamental logic that sustained decades of trade opening remains intact. But new mechanisms are needed if geopolitical rivals are to adjust their trade relationships without engaging in disruptive trade wars or imposing undue costs on third countries.

The trading system has adapted before when circumstances changed—adding new agreements as the global economy evolved during multiple rounds of negotiations. The challenge today is to undertake a similar adaptation for geopolitical realities, preserving the core functions of the system while updating its rules for a changed world. The geopolitical exemption we propose would provide such a mechanism, establishing safeguards that maintain the integrity of the multilateral system while acknowledging the reality of strategic competition. **F&D**

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Two Paths of Adjustment to Geopolitics



The axes represent the welfare levels of two rival countries (home, without *, and foreign, with *); the curved line traces the efficiency frontier. N_1 represents the noncooperative equilibrium that emerged during World War II; B_1 is the lower-tariff equilibrium reached under General Agreement on Tariffs and Trade/World Trade Organization rules. When geopolitical rivalry erupts, the noncooperative equilibrium shifts to N_2 .

Two paths to the new equilibrium at B_2 are possible. The first, from B_1 to N_2 to B_2 , is what we call “war and redemption.” The collapse of the old agreement pushes tariffs up to the new noncooperative level N_2 . This path is long and economically costly but fits within the existing multilateral framework. The second path, directly from B_1 to B_2 , is more efficient but requires institutional innovation as it implies a nonreciprocal exchange. Countries negotiate an immediate transition, avoiding economic disruption.

THE NEW WAVE OF NATIONALIZATION

Nicholas Mulder

Historical patterns reveal why state ownership is expanding again and how this time is different

Governments are taking over private enterprises and resources at the fastest pace in 50 years. Based on the past century's multiple waves of nationalizations, this shift will alter the world's economic landscape.

Since 2020, governments on every continent have nationalized properties held by their own citizens and by foreign investors. France and Germany took over utility and electricity companies. France put the largest shipyard in Europe under government control. The United Kingdom nationalized railways and steelmaking.

Russia has seized more than \$48 billion in ports, factories, and consumer businesses since it invaded Ukraine in 2022. The United States took a dominant ownership stake in the country's only domestic rare earth producer. And a growing list of countries seized foreign-owned resources such as lithium, gold, uranium, nickel, and even palm oil. Although the valuations are disputed, \$239 billion–\$544 billion in assets was nationalized between 2016 and 2026 alone.

Geopolitical instability, commodity market disruptions, and renewable energy development are driving these takeovers. And as more governments embrace interventionist economic policies, the current wave of nationalizations shows no signs of letting up. These takeovers will change but not slow global economic and financial integration. Instead they may rearrange long-term patterns of international trade and investment.

This is the fourth great wave of nationalizations in the past 100 years. The pace and timing of nationalizations generally reflect a combination of political urgency, monetary conditions, and capital mobility (see Table 1).

The first wave came in the 1930s, during the Great Depression. The second began in the late 1940s as many countries built mixed economies in the aftermath of World War II. In the 1970s, decolonization, the end of the Bretton Woods exchange rate system, energy shocks, and inflationary pressures drove a third wave.



There is considerable variety in the form and content of nationalizations. Not all of them are assertions of government ownership. In some cases, the state's role has been to facilitate the transfer of assets from one private owner to another in a forced sale. Some takeovers are outright confiscations, while others are compensated expropriations. All use political and legal instruments to bring private property under national control and to renegotiate the relationship between the state and capital.

What is distinctive about the rising tide of nationalization in the 2020s? Consider the history of the three preceding waves, each bigger than the one before.

First wave: 1930s

The integrated world economy of the 1870s–1930s rested on two pillars: relatively free trade and the international gold standard. These policies smoothed the way for large flows of foreign investment. Rich economies such as France, Germany, and the UK amassed large overseas stocks of cap-

ital that amounted to between 50 and 160 percent of their own GDP.

Although World War I eroded much of this cross-border capital investment, the conflict did not destroy global market integration. Instead, it reoriented the world economy around US growth in the 1920s, when international investment and trade expanded once again under a revived gold standard.

The Great Depression ended free trade and capital flows and triggered the first global wave of nationalizations. Beginning in 1928–29, a cascading series of crises unfolded in commodity prices, then in stock markets and world trade, and finally in the international monetary order.

To fend off financial system collapse, several countries took over all or a portion of their banking systems. Between 1931 and 1935 the United States nationalized about a third of financial capital, and in Germany more than half of bank capital became state owned. Italy nationalized 20 percent of private industrial and financial assets from 1931

Egypt's President Gamal Abdel Nasser announces the nationalization of the Suez Canal Company on July 26, 1956.

to 1933. State ownership expanded in France, which nationalized its aircraft industry and railroads; the UK, which nationalized coal mine deposits; and Bolivia and Mexico, which took over foreign-owned oil companies.

These measures were often in response to an urgent crisis, and some were later reversed. But because they occurred in the most advanced economies of the era, they had a significant enabling effect on developing economies. Moreover, global trade and cross-border lending shrank dramatically, and many governments imposed capital controls. These developments allowed for nationalizations at relatively little cost, without fear of triggering capital flight or a backlash from international markets.

The 1930s wave of nationalizations was a symptom of global economic and financial disintegration. In the short run, it prevented bankruptcies, but it also segmented national markets and reduced international trade and investment. Over time, greater state ownership gave governments more policymaking autonomy and allowed them to contribute to a new international economic order at the end of World War II.

Second wave: Late 1940s

After World War II, a new wave of nationalizations took place across European, Latin American, and Asian economies.

A mixed economic model emerged in which large-scale public investment coexisted with private market mechanisms. The fixed-exchange-rate system established at Bretton Woods in 1944 brought international financial stability, which aided nationalizations by reducing the risk of capital flight. In many countries, high inflation allowed governments to pick the most propitious moment to buy out private shareholders. And because governments financed nationalizations by issuing bonds, inflation also helped lower the real cost of servicing the debt.

In this way, the UK nationalized the Bank of England and the aviation, coal, telephone, transportation, electricity, gas, and iron and steel industries. France took over the Banque de France; private financial institutions holding 80 percent of bank deposits; the coal, electricity, and telephone sectors; and several major industries. Similar nationalizations occurred in Argentina, Austria, Brazil, Czechoslovakia, India, Indonesia, Iran, Italy, Japan, and in socialist states across Eastern Europe.

This second wave of nationalizations was broader in sectoral focus, more systematic in development, and implemented more gradually than the

hurried actions of the 1930s. This allowed private investors to adjust expectations, reduced economic volatility, and kept nationalizations from upsetting the rapid growth of the first three postwar decades.

One element that made a large difference was that European economies mainly took over property owned by their own citizens. This meant they could manage the process through political institutions, ensuring greater stability and democratic legitimacy. By contrast, when developing economies took the property of Western investors, the risks were greater, and diplomatic disputes and even direct conflict were real possibilities.

The postwar wave of nationalizations played an important catalyzing role for the world economy. State-owned enterprises took the lead in mobilizing large sums for investment and helped drive rapid economic growth across advanced economies. Although there were inevitable inefficiencies in the allocation of resources, there was a commensurate gain in political control over investment priorities. Countries with high levels of nationalized property did not underperform economies with greater private sector investment until the 1970s.

TABLE 1

Nationalization waves

Each featured a different combination of monetary regime, pricing environment, trends in trade, and sectoral focus.

	Wave I: 1931-38	Wave II: 1945-52	Wave III: 1970-79	Wave IV: 2020-present
Monetary regime	End of gold standard fixed-rate system	Bretton Woods fixed-rate system	End of Bretton Woods fixed-rate system	Floating-rate system
Global price environment	Deflationary	Inflationary	Inflationary	Inflationary
Dominant trend in global trade	Increased protectionism	Increased liberalization	Increased liberalization	Increased protectionism
Sectoral focus of nationalization	Banking and industry	Industry, utilities, transportation	Energy and commodities	Commodities, utilities, mining

SOURCE: Mulder, Nicholas. Forthcoming. *The Age of Confiscation: Making and Taking Property in the Creation of the Modern World*. London: Allen Lane.

Third wave: 1970s

The first and second nationalization waves took place when Western and North Atlantic nations dominated the world economy. The subsequent dismantling of European empires increased the number of sovereign states: UN membership grew from 51 nations in 1945 to 127 by 1970. These new national economies sought to carve out a niche in the global division of labor. But many Latin American, African, and Asian commodity-exporting nations still relied on foreign capital.

Two shocks spurred a surge in nationalizations. The first was the end of the Bretton Woods system. President Richard Nixon's devaluation of the US currency in August 1971 triggered a shock for commodity producers earning export revenues in dollars. Oil producers increased their ownership of foreign-owned petroleum companies to capture a greater share of revenue in a weakening currency.

The 1973 oil crisis caused a massive spike in the price of energy and minerals, which made countries with natural resources eager to ride the commodity boom. Research by Stephen Kobrin shows that the pace of property takeovers accelerated; it peaked in 1975, when 28 countries carried out 83 expropriations—one every four days, on average. Between 1971 and 1980, developing economies nationalized at least \$26 billion in foreign-owned property, or 11 percent of total foreign direct investment in the developing world in 1980.

The third nationalization wave was broader, longer, and the resources involved were more valuable than any that preceded it. The success of early nationalizations encouraged other economies to engage in similar interventions. And the inflation caused by the monetary and energy shocks made nationalizations easier because payments to owners were cheaper in real terms.

Latin American, African, and Middle Eastern economies could thus nationalize large chunks of their resource bases during the 1970s. But the largest nationalization wave in history was ended by the contractionary monetary policies adopted by the Federal Reserve starting in 1979, which brought down inflation and slowed global growth.

The most significant international economic effect of the 1970s nationalization wave was the overhang of sovereign debt it created. Since most developing economies paid compensation to investors, their foreign obligations grew. When interest rates shot up in the early 1980s, this exposed them to great refinancing risks and triggered debt crises from Jamaica to Zaire. In subsequent years, many nationalized assets were privatized as capital markets became more integrated and governments sought ways to reduce public debt.

Fourth wave: 2020s

The current wave of nationalizations originated in the aftermath of the 2008 global financial crisis and emergency takeovers of several major financial institutions. These moves in most cases were reversed as companies were sold back to the private sector, but there have been more permanent nationalizations since the late 2010s. Some were responses to major global demand and supply shocks, such as the 2020 COVID-19 pandemic and the 2022 commodity price surge set off by Russia's invasion of Ukraine.

Other takeovers aim to address broader challenges, such as climate change. The nationalization of minerals for renewable technologies, for example, can enable exporting nations to reap price benefits. Another strain of takeovers reflects national security considerations and the desire of governments to control resources considered vital to strategic competition.

Geopolitical nationalizations will make foreign direct investment between strategic adversaries riskier. However, this will not necessarily reduce overall global economic and financial integration. More trade, lending, and investment may instead flow within geopolitically aligned blocs, and neutral states can attract foreign capital by positioning themselves as reliable intermediaries and safe destinations for investment.

Nationalizations frequently occur in waves because they respond to broad-based external and internal factors. When commodity prices are rising, the prospect of capturing a larger share of export revenues is appealing. Successful nationalizations signal the ease and desirability of such policies to others. This "demonstration effect" helps explain why nationalizations historically cluster in wave-like, procyclical movements.

Governments can nationalize more easily in times of inflation, when the real costs of compensated buyouts are lower. Greater capital mobility, however, usually keeps nationalizations in check by giving investors more exit options and speeding up market reactions that constrain governments. The rise of nationalizations today despite historically high capital market integration points to strong macroeconomic and geopolitical forces that favor takeovers and growing political conviction that nationalizations are a vital instrument of economic policy in an era of goeonomic fragmentation. **F&D**

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Righting Globalization's Wrongs

Gordon Hanson

PLACE-BASED POLICIES OFFER REGIONS LEFT BEHIND BY GLOBALIZATION A PATH BEYOND ECONOMIC POPULISM

One of the most firmly held beliefs in economics is that free trade is good for humanity. Yet that confidence in the economic virtue of open markets can blind the profession to the complications of deep global economic ties. When in the 1990s the world leapt into frenzied globalization, policymakers touted the potential efficiency gains but gave short shrift to possible painful distributional consequences. Those consequences have now come back to bite.

The United States' embrace of higher import tariffs, China's pursuit of aggressive industrial policies, and the United Kingdom's exit from the European Union—all of which occurred around 2016—heralded a more fractious global economic order, which, according to Canadian Prime Minister Mark Carney, is steering the world toward geographic economic rupture.

It took decades to build the international institutions, negotiate the multilateral agreements, and enact the domestic economic reforms that wrought the modern era of globalization. It could be torn

down quickly and in unpredictable ways that upend economies. To avoid such a rupture calls for a clear-eyed look at why globalization has become unpopular worldwide and a credible alternative to economic nationalism that addresses the dislocations integration has caused.

The accession of China, India, and other newly liberalizing economies to the World Trade Organization (WTO) in the 1990s and 2000s lifted hundreds of millions of people out of poverty in one of the greatest improvements in human well-being. This much standard economic analysis foretold: We expected efficiency gains and we got them. What economists failed to foresee was the profoundly disruptive impacts of rapid globalization on labor markets in high-income countries (and some middle-income ones, too).

To be sure, emerging technologies and the rise of services were also disruptive. In concert, they probably determined more recent changes in high-income-country living standards than international trade did. But it was signature changes



in trade policy—the formation of the EU in 1992, the enactment of the North American Free Trade Agreement in 1994, and China’s accession to the WTO in 2001—that got the public’s attention. Many voters in Europe and the US came to blame these and related policy changes for their economic discontent, which later morphed into support for nationalist and populist political movements that champion economic isolation.

Disruptive globalization

Most economists missed the disruptive impacts of globalization because they misunderstood three things about how labor markets adjust to large shocks. First, they failed to recognize how long-standing industrial specialization patterns exposed manufacturing regions to rising import competition from China and other developing economies.

Since the Industrial Revolution, manufacturing has been highly concentrated geographically, which led Alfred Marshall, the 19th century political economist, to develop his insights on produc-

tivity gains from the spatial agglomeration of economic activity. Concentrated first in major urban centers, manufacturing over the course of the 20th century relocated to smaller and medium-sized industry towns and cities.

When China began its spectacular manufacturing export growth in the 1990s, those industry towns were ground zero for the ensuing trade shock. Import-competing regions of France, Germany, the UK, the US, and other high-income nations bore the brunt of manufacturing job loss caused by deepening import penetration. At the same time, superstar cities in those countries, which specialized in business services, finance, high tech, and other knowledge-intensive industries, saw their exports and incomes boom.

Economic models of the time were tuned to capture national impacts of freer trade. Consequently (and consequentially), they missed the highly uneven regional impacts of globalization. We had not expected winners and losers to be so starkly differentiated by place.

Photomontage of Pittsburgh’s skyline and a steel mill from the 1980s.

Lasting scars

Second, economists did not anticipate the magnitude of the scarring effects from manufacturing job loss. The fetishization of manufacturing by those who espouse economic nationalism is not without reason: The sector has long offered a pay premium relative to what people could earn in other lines of work, especially for those without a college degree. When factories closed or laid off large numbers of employees, as occurred in many high-income countries during the China trade shock, industrial workers lost their pay premium. Most, faced with the alternatives of lower-wage jobs in services or exit from the labor force, never replaced their lost earnings.

Although economists first documented the scarring effects of job loss in the early 1990s, they did not appreciate until later that when job loss is regionally concentrated, individual scarring aggregates into large negative local income shocks. Once displaced, former factory workers spent less on nontraded goods and services, paid less for housing, and contributed less in taxes to support local public services—all of which depressed incomes where manufacturing was declining.

Again, because economic models were tuned to account for national-level adjustment to international trade, they projected that workers displaced in import-competing sectors (manufacturing) would simply shift into sectors in which exports were expanding (knowledge-intensive services). Import displacement and export absorption did occur, but among largely disjointed sets of people.

Lack of mobility

Third, economists overlooked the lack of geographic labor mobility among less-educated and older workers in response to changing economic conditions. Standard economic models posit a spatial equilibrium condition: If real earnings rise or fall in one region, the migration of labor between regions will smoothly arbitrage away spatial differences in pay. In theory, labor mobility transmits localized economic shocks to other regions, dissipating shock impacts and ensuring that regional spikes in joblessness are temporary. In practice, interregional migration works slowly: Spatial equilibration to shocks can take decades.

The slowness of regional migration has been one of the hardest lessons for economists to internalize. Surely, in economies as large as the US and the EU, where millions of jobs are created and millions destroyed each year, job losses in a subset of industrial regions should be easily offset. Such logic is mistaken—first, because it projects frequent job transitions among younger workers to older workers, who are markedly less agile, and

second, because it assumes that upward-sloping job ladders available to more educated workers are equally accessible to the less educated. Modern labor markets are undeniably dynamic. But that dynamism has been least evident among workers most exposed to deindustrialization.

Regional disparities

It has been painful for countries to learn of globalization's dark side, which entails widening regional economic disparities and a tendency for former industry towns to get stuck with high joblessness and few well-paying jobs for less-educated workers. In the moment globalization was causing manufacturing job losses, countries had viable policy options to cope with the disruption, including generous and immediate assistance for displaced workers and safeguard tariffs that would have spread import surges over longer periods of time.

Two decades later, such policies are neither available nor relevant. Countries are left to decide whether and how to address regional economic distress caused by globalization, long after the distress materialized. Selecting the right policies calls for a clear understanding of the economic problems countries are trying to solve.

One option to help left-behind regions is simply to let market forces do their thing. The outmigration of labor and the retirement of displaced workers would ultimately help forsaken regions shrink to a smaller, more efficient size. Businesses would close, downtowns would board up buildings, and young labor force entrants would launch their careers elsewhere. If we believe that there are no economic distortions that impede labor market adjustment to adverse shocks, or if we believe that governments cannot implement effective remedies for such distortions, then laissez-faire may make sense. It is important to recognize, however, that although market forces may alleviate spatial differences in economic well-being, they are likely to do so ever so slowly.

Pittsburgh experience

Consider the experience of Pittsburgh, which many cite as a successful example of adjustment to deindustrialization. Through the first half of the 20th century, the city was a global center for steel manufacturing. After 1970, import competition, technological change, and other forces contributed to a prolonged industrial decline, during which joblessness and economic hardship were endemic. Although Pittsburgh today is home to health care, life sciences, and robotics, its transformation took more than a full generation. During this period the economic opportunity of local people was circumscribed by distress. For every Pittsburgh, there are

“Public opinion has soured on globalization in high-income countries because many middle- and low-wage workers ended up on the losing end of economic openness.”

several other former industry towns that did not find a path back to prosperity. Long-term adjustment meant diminished incomes, housing prices, and urban amenities.

A second option to help left-behind regions is to target affected individuals through means-tested entitlement programs. Unemployment insurance, income support for low-income households, housing and energy subsidies, and subsidized health care are common ways to help people in hard times. If we don't have confidence that insurance and credit markets can insulate people against adverse shocks, then expansive social insurance programs may make sense.

Yet such programs condition assistance on individual or household well-being—not on the state of the local labor market. Social insurance may help people avoid sharp declines in consumption during episodes of hardship, but they do not address the causes of regional economic distress. Such programs may make economic adjustment less painful, but they are unlikely to speed adjustment along.

Trade tariffs

A third option to help left-behind regions is to target the industries whose decline was responsible for economic distress. Recent US import tariffs, for instance, have been justified in part by the claim that they will help bring manufacturing jobs back to communities hollowed out by globalization. On the surface, addressing the negative labor-market consequences of trade by blocking imports may appear sensible. However, the origin of regional distress is not import competition per se but the scarring effects of job loss and regions' inability to adjust to decline in a major industry.

Import tariffs would not prevent job loss from technological change, artificial intelligence, or other shocks that may be disruptive in the future. Trade protection targets economic distress indirectly and therefore poorly. It is not surprising that

US tariffs have done little to restore manufacturing employment or earnings growth in regions harmed by the China trade shock.

A final option is to target left-behind regions through policies that promote local economic development. Place-based policies subsidize investment in human and physical capital with the aim of upgrading labor productivity, earnings, and economic structures in distressed regions. In theory, such policies are justified if the social return on investment is relatively high in communities with elevated joblessness and low wages. In practice, place-based policy has long been controversial among economists, given concerns over rent capture by special interests and informational challenges in program design.

Successful policy

Recent empirical research clarifies where place-based policy works well and where it does not. Less-effective policies—also among the most visible—include the use of tax subsidies to compete for major investment by large firms. Subsidy competitions tend to transfer most of the economic surplus from new investment to the investors themselves, leaving “winning” regions with a winner's curse of high tax expenditure per job created.

More effective place-based policies condition subsidies on local distress, monitor compliance with program objectives, and design programs for specific contexts via ongoing experimentation. Examples include tax incentives for investing in low-income communities (such as enterprise zone programs with rigorous selection and auditing of participating firms) and sectoral worker training initiatives (active labor market programs, which have been applied in many high- and middle-income countries).

Of these four options, only place-based policy directly targets outcomes that alleviate regional distress: moving out-of-work adults into employment, bringing more well-paying jobs where they are scarce, and making regions more attractive for future investment.

Public opinion has soured on globalization in high-income countries because many middle- and low-wage workers ended up on the losing end of economic openness. The prosperous future they were promised did not arrive. To restore faith in global economic integration we must correct the mistakes of the past and offer a credible alternative to economic nationalism. **F&D**

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Keynes for Our Times

Robert Skidelsky

KEYNES'S MORAL PHILOSOPHY AND EMBRACE OF UNCERTAINTY CAN GUIDE ECONOMICS, FINANCE, AND AI-DRIVEN MARKETS TODAY



GETTY IMAGES/BETTMANN

Artificial intelligence has a penchant for pronouncements that are clear, confident...and often wrong. More than a passing technical flaw, this speaks to the difficulty we all—including AI’s human architects—face in dealing with uncertainty.

John Maynard Keynes, in contrast, understood that the future is essentially unknowable, and it is “better to be vaguely right than precisely wrong.” This insight remade economics in the 20th century, and it is but one of his ideas that are even more relevant in our own extremely uncertain times.

To understand Keynes’s importance today, we go back to his original genius, see how observation and philosophy informed his flexible economic models, and then apply his insights to the problems of 2026.

Two philosophical commitments grounded his economics: in ethics, the distinction between “good as a means” and “good as an end”; in epistemology, the existence of ineradicable uncertainty. I shall return to the former. Regarding the latter, it was Keynes’s study of uncertainty that led him to give money its starring role in the economy.

Far from just a passive tool for barter, money, he showed, is a psychological refuge that can push an entire economy toward collapse when people flee to the safety of cash—a phenomenon we’ve seen multiple times this century, and one we may be heading toward again.

This desire for cash was a moral flaw to him—inseparable from what he called the “love of money,” a disease of the mind that drains life from the economy. We will explore how this “vampiric” quality of money creates a power struggle between those who lend and those who build, a conflict that Keynes believed defined much of human history.

Seeing how “machine guns and concentration camps” arose from the mass unemployment of the Great Depression, he writes that “it may be possible by a right analysis of the problem to cure the disease while preserving efficiency and freedom.” Understanding the successes and failures of the post-World War II system he willed into being is critically important today, when that system is arguably

more in flux than at any time since his death.

A “right analysis” of Keynes’s ideas provides clues on how to address today’s trade and external imbalances and financial disruptions without resorting to blunt tools such as global tariffs. His insights can help address ethical questions raised by AI. More broadly, he provides a framework for managing a world that feels increasingly out of control.

Rationally unreasonable

To understand Keynes’s commitment to reckoning with uncertainty, start with his distinctive theory of probability. Earlier neoclassical economists saw the future as predictable. He did not. He described probability as the degree of belief in a conclusion justified by evidence. “One can always cook a formula to fit moderately well a limited range of past facts,” he writes. “But what does this prove?”

In fact, it is rational to be “unreasonable” in hoarding cash when there is no secure basis for making calculations about the future. His astounding realization that money plays “a part of its own” in the economic drama—that it does more than merely lubricate barter, as previous economists believed—developed over a quarter century.

It started with an attack on the gold standard. The problem, he said, was that gold’s scarcity created a deflationary bias, whereas expanding economies require an increasing amount of “lubricating” money. When gold was in short supply the whole economy collapsed, as seen in the Long Depression of the 1880s and 1890s.

Keynes’s initial proposed instrument to emancipate economies from their golden fetters was the Quantity Theory of Money. It promised to restore monetary “neutrality” through a scientifically managed elastic currency to fit the “needs of trade.” But he soon realized that this mechanism didn’t work quickly enough.

The next innovation, elucidated in *A Treatise on Money* (1930), was to consider the implications of money circulating at different speeds. He divided money flows into two types of circulation, one for what is now called the “real” economy, the other a “financial” circulation, which explained how asset

John Maynard Keynes (left) sits at a press conference at the British embassy in Washington, DC.

prices and unemployment can rise simultaneously in the short run. But it didn't explain hoarding.

The Great Depression then led to the liquidity preference theory—the final stage of Keynes's theory of money. "It may still be the case," he said in 1932, "that the lender, with his confidence shattered by his exposure, will continue to ask for new enterprise rates of interest which the borrower cannot expect to earn."

Liquidity premium

A collapse of investment is simultaneously a flight to liquidity. Flight gives money added value, a "liquidity premium" that causes interest rates to rise rather than fall—the exact opposite of what orthodox theory asserts. We see liquidity preference at work today. It explains the global financial crisis of 2008, the early-COVID-era dash for cash, dramatic swings in stock prices known as "flash crashes," and other recent market seizures.

The whole story depends on irreducible uncertainty about future events. "By 'uncertain' knowledge, let me explain, I do not mean merely to distinguish what is known for certain from what is only probable. The game of roulette is not subject, in this sense, to uncertainty...The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention...About these matters there is no scientific basis on which to form any calculable probability whatever."

In such information-poor "we don't know" markets, investors rely on conventional wisdom about future prices. When the conventions break down, as they are periodically bound to do—being so flimsily based—there is a flight from commitment. Money takes control of the economic plot.

A moral flaw

Would Keynes have given money such a starring role had he not found something intrinsically immoral about it? Probably not. There is a strong moral and psychological undercurrent to Keynes's view of money, in which the love of money, far from being a rational response to uncertainty is motivated by avarice, love of power, and love of gold.

In Keynes's monetary drama, the love of money is Janus-faced. Although it pumps blood into static preindustrial economies, excessive love of money sucks the blood out of modern ones. The vampiric quality of money was symbolized for Keynes in the legend of King Midas of Phrygia, whose greed for gold was so intense that (in some versions at least) he starved to death. This is not rational liquidity preference, but a psychological morbidity.

Keynes acknowledged that in the past, "risks and hazards of all kinds" may have played a large part in inducing people to hoard money. He was puzzled, though, by the persistence of this propensity in modern times, when conditions of life are much more secure. Instead of seeing saving as a virtue, Keynes saw it as a brake on enterprise. "[I]t is not thrift but enterprise which builds cities and drains fens."

Keynes saw the struggle for power between creditors and debtors as the economic plot of history. The purpose of his economic reforms was thus to reduce the power of the creditor over economic life. These plans reflected his view that the love of money is a disease of the soul—but also a *felix culpa*, or "fortunate fault"—because it drives the economic growth that will free humanity from toil. To expedite this freedom, government programs should harness "the inordinate desire for getting wealth" to drive productive investment.

Keynes for today

Which aspects of this outstanding thinker's legacy demand our attention today? Let me suggest three.

First, a return to the question of the purpose of economic growth. How much more growth, and what kinds of growth, are needed to secure the material conditions of the good life? Which economic system can best bring about the required conditions?

The initial purpose of economic activity is utilitarian: making a living. But beyond this, says Keynes, economic activity is a means to achieving the good life and should not be extended beyond what is needed for that purpose. This philosophy can help center our discussion of the profound ethical questions about the future of humans in an AI-enabled future.

It can also help fortify us to address the coexistence of unimaginable hoarding of wealth with widespread stagnation and underemployment—these conditions reinvigorate Keynes's argument for public investment. "Vigilant observation" alone should enable consigning to the dustbin such currently fashionable lunacies as the efficient market hypothesis.

Second, a new impulse to put money back in circulation—to disgorge hoarded wealth. It is worth recalling that Keynes's original attack on the gold standard was directed at both the metal's scarcity and the propensity of surplus countries like the United States—the King Midas of Keynes's day—to hoard it. The purpose of his successive plans for global monetary reform, including the International Clearing Union, was to get the US to disgorge its gold holdings and to restore balanced trade.

“Keynes’s legacy calls us to face current dangers by boldly seeking remedies for capitalism’s ills that preserve ‘efficiency and freedom.’”

The US rejection of this approach resulted in the dollar-centered Bretton Woods system, set up in 1944 with the greenback alone convertible to gold. The US then started to suffer from the King Midas problem as the dollar, the world’s leading reserve currency, became progressively overvalued against those of its main competitors, most recently China.

A decline in the value of the dollar was, therefore, necessary to restore US manufacturing and export capacity. President Donald Trump’s tariffs may be seen as a crude attempt to secure the necessary currency realignment, but at the expense of a huge disruption to trade and finance.

Keynes would aim for a less disruptive path to trade balance. The most important step would be to replace the reserve function of the dollar with a new international reserve currency he called the “bancor.” The same result could be achieved through a progressive increase in the special drawing rights of IMF members.

China’s former central bank governor, Zhou Xiaochuan, revived Keynes’s bancor idea in 2009 as a way to provide the liquidity needed for expanding international trade. But that movement for currency reform was quashed by the US.

Facing the future

Third, fearlessly facing dangerous times. This aspect of Keynes’s legacy calls us to face current dangers by boldly seeking remedies for capitalism’s ills that preserve “efficiency and freedom.”

Today we face questions similar to those of a century ago: Does the increasing division of the

world into hostile blocs portend a regression to barbarism? Can democracy tame financial oligarchy? Can it tackle racial and cultural conflict and invest in a way that counters growing inequality within countries and global warming? Or is a retreat of democracy, accompanied by domestic and international violence, inevitable?

In 1939, Keynes looked to war as the grand experiment to prove his case. He was right. It was World War II, not *The General Theory of Employment, Interest, and Money*, that brought about full employment. But however tempting it is to remove surplus capacity through military spending, Keynes’s ideas are independent of any purposes that may make use of them.

The collapse of belief in the possibility of a good future has contributed to the amplification of the world’s troubles—economic, geopolitical, spiritual. The question today is as brutal as the one Keynes posed in 1936: Is an apocalypse needed to jolt politicians out of their intellectual ruts, or can a better analysis of our problems restore to health our diseased civilization in conditions of peace and freedom? **F&D**

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EDITOR’S NOTE: The author died on April 15, aged 86, before editing was complete. Final edits to this article, which draws on his forthcoming book, *Keynes for Our Times*, were agreed to by his assistant, Attila Mesterházy, who worked with him on the book.

How Much Does the World Work?

Amory Gethin and Emmanuel Saez

ECONOMIC DEVELOPMENT DOESN'T SHORTEN THE WORKWEEK, AND SOCIAL POLICIES DETERMINE THE ORGANIZATION OF WORK

As the world grows richer and technology advances, people should have to work less. That's been the conclusion of thinkers ranging from John Maynard Keynes a century ago—when he predicted a 15-hour workweek by now—to AI enthusiasts today.

And it's entirely wrong, according to our research using a new global dataset we developed. We find no evidence that working hours fall for people of prime working age as economic development expands. What does affect hours at work are social choices regarding schooling for the young, pensions for older people, and regulations and income support for everyone else.

These findings have profound implications for economists' understanding of how the world works, and how much. The common view among econo-

mists has been that working hours are an individual decision. In fact, policymakers need to understand that the organization of work reflects a complex interplay of cultural and social choices as encoded in public policies, including labor law, taxation, education, and retirement benefits.

A global portrait

Working time is a fundamental determinant of economic production, well-being, and inequality. Our new global dataset covers nearly the entire world population and provides a clearer view of how working hours vary by age, gender, income level, sector, and institutional context. This database also includes time series spanning several decades in many countries at all levels of development, allowing for a broad understanding of global trends in working time.



Our main data sources are household surveys fielded by statistical institutes and compiled by the International Labour Organization and the World Bank. These surveys record detailed information on hours worked, together with data on age, gender, sector of employment, and earnings.

We supplemented the data with other surveys from various international and country-specific sources. The resulting publicly available database includes almost every labor force survey ever fielded in the world. It covers 160 countries representing 97 percent of the world's population. Our time series span more than 20 years in 86 countries at all levels of development.

In compiling our dataset, we follow international conventions, measuring weekly hours worked in all jobs that contribute to economic production. We

thus include unpaid agricultural work, which produces goods and counts in standard measures of economic output, but we exclude unpaid home services such as cleaning, cooking, and taking care of children or elderly family members.

We find that globally 59 percent of adults ages 15 and older are employed. Those with jobs work 43 hours a week on average. This implies that the average adult worldwide—including those without employment—works about 25 hours each week.

This global figure hides sharp variations by age and gender (see Chart 1). Working hours follow a pronounced life-cycle pattern. They are lowest among teenagers, rise steeply during early adulthood, peak in prime working years, and fall sharply after age 60. Gender differences continue to be striking. Men provide roughly two-thirds of total

worldwide working hours, and women account for just one-third.

These disparities arise primarily from differences in employment rates rather than differences in hours among those already employed. The core divide is not mainly about how long people work, but who participates at all.

Development and working hours

It is often thought that people in richer countries work less. The reality is more nuanced. Hours worked per adult follow a mild bell-shaped relationship with income per capita. They are lowest in poor and rich countries and highest in middle-income economies. Yet income levels explain only a small fraction of global variations in working hours (Chart 2).

Some of the lowest working times are in countries as diverse as France, South Africa, and Afghanistan; some of the highest are in Madagascar, Vietnam, and China. Development alone cannot explain why societies with similar income levels work vastly different hours.

The bell-shaped relationship between hours and development is driven by hours per worker rather than by employment rates. Working time for those with jobs exceeds 45 hours a week in middle-income countries such as India and Pakistan.

Structural transformation plays a key role. In emerging market economies, rapid expansion of manufacturing and services coincides with intense labor demand and long working hours. In high-income countries, stronger regulations, greater formalization of work, and shifting social norms gradually reduce weekly work time, even as employment remains high.

There are major exceptions to this pattern, however, such as the long hours worked in rich countries, including the United States and Singapore. Development expands capacity and productivity, but it does not mechanically dictate how much people work.

Young and old

Working time among young and elderly populations declines sharply as countries develop. This might appear to reflect rising wealth and preferences for leisure. In practice, it has to do primarily with institutional change. For young people, expanding school attendance results in declining work hours. As countries invest in education, adolescents shift from working to studying. For older adults, reduced working time comes with the development of public pension systems, which allow retirement without severe income loss.

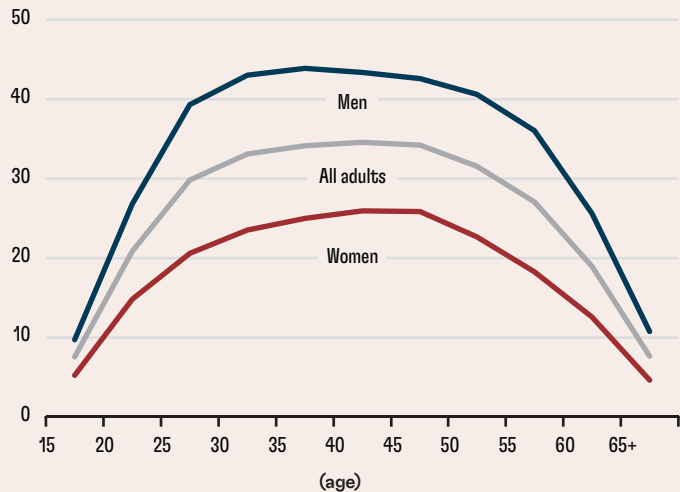
Once we take schooling and pension coverage into account, national income itself no longer pre-

CHART 1

Working lives

Working hours are lowest among the young and older people but with striking differences between men and women.

(global weekly working hours)



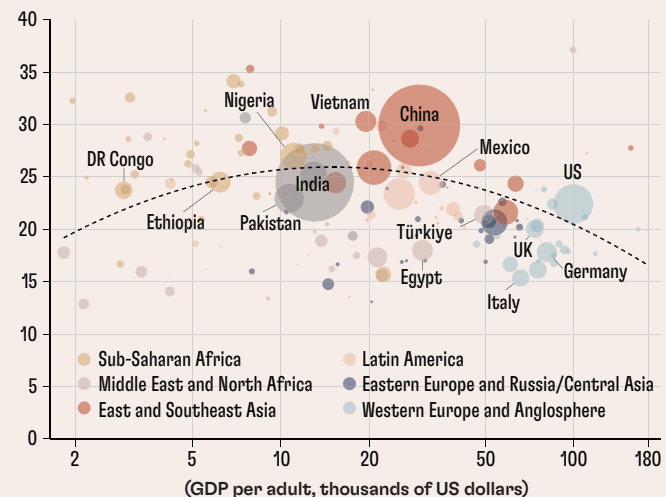
SOURCE: Gethin and Saez 2025.

CHART 2

Work and wealth

Income explains only a small fraction of global variation in working hours between richer and poorer nations.

(weekly hours worked per adult)



SOURCE: Gethin and Saez 2025. NOTE: GDP per adult measured using 2023 purchasing-power-parity exchange rates. Each point is proportional to country population size. DR Congo = Democratic Republic of the Congo.

“Our findings suggest that cultural and social choices encoded in public policy shape hours worked much more than pure economic development.”

dicts working hours at these ages. Young and elderly workers in richer countries work less not because of higher incomes but because governments decide to invest more in education and pensions.

Gender reshuffling

Among prime-age adults (those who are 20–59 years old), total working time has been remarkably stable across development levels and over long historical periods. In the United States, for example, average prime-age hours, including those without jobs, were about 30 a week in 1900—virtually identical to today. A notable exception was a sharp drop in working hours during the Great Depression. The data show similar stability in western Europe, Latin America, sub-Saharan Africa, and many parts of Asia.

However, beneath this stability lies a deep reorganization of work by gender. As countries develop, male working hours decline and female hours in paying jobs increase. In many regions of the world, these two forces exactly offset each other.

For men, this change reflects a decline in hours on the job. For women, it reflects rising employment rates as barriers to participation fall. Development therefore does not reduce total prime-age labor. Rather, it redistributes the work across genders, leading to a long-term reduction in gender inequalities in working time.

Taxes and regulations

We do observe a reduction in working hours in many countries at later stages of economic development. This is often related to the development of welfare states discouraging labor supply, providing an explanation for the higher hours worked in the United States compared with Europe.

Across countries, we find that higher labor taxes correlate with fewer working hours. Countries with low taxation, such as India, tend to record longer

hours, while people in high-tax countries, such as France, work considerably less. At first glance, this appears to confirm the view that taxation discourages labor supply.

A closer look reveals a more complex reality. Once we account for labor regulations and the expansion of formal employment, the direct effect of taxes on working hours disappears. High-tax systems coincide with stronger regulation of working time and broader coverage of formal labor contracts. These appear to play the most important role in explaining the decline in hours at the highest levels of development.

Reduced hours therefore reflect policy choices about how work should be organized, not simply individual responses to incentives. Limits on maximum working hours, overtime rules, paid leave, and retirement systems all shape national patterns of work much more strongly than taxes alone.

These findings suggest that cultural and social choices encoded in public policy shape hours worked much more than pure economic development. The balance between work and leisure is not simply about personal preference. It is a collective negotiation embedded in institutions, labor laws, and social expectations. **F&D**

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REFERENCE

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Revisiting the Wealth of Nations

Michael Spence

ADAM SMITH'S PHILOSOPHY STILL SHEDS LIGHT ON HOW ECONOMIES GROW, TRADE, AND RESPOND TO CHANGE



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When *The Wealth of Nations* was published on March 9, 1776, there was no such thing as an economics profession. Two hundred fifty years on, there is no shortage of economists, and Adam Smith is widely regarded as the godfather of their profession.

If asked, Smith would have probably described himself as a Scot who made a living as a moral philosopher. And as for his famous book, it came to be seen as a true expression of the Enlightenment. This period of cultural and intellectual flourishing helped create an alternative vision for humanity based on reason, science, individual liberty, and human dignity.

Despite detours and missteps, it is a moral frame of reference that resonates to this day. It is why we continue to listen to what Smith had to say.

He illuminated the structural foundations of modern economies. Although he is best known for his idea of the “invisible hand,” Smith gave us an insight that is even more important: Moving from a static, subsistence economy to increasing income and prosperity requires what he called the “division of labor.”

Without this specialization, one cannot achieve dramatic increases in productivity coming from scale economies, learning curves, and improved conditions for innovation. Like all scientific discoveries, it seems obvious after the fact.

Division of labor

For specialization to work, we need two structural elements, which are mutually reinforcing.

One is trade, which is implied by specialized production. Indeed, while the supply side of the economy is specialized, the demand side is not. Hence the need for an “invisible hand” in the form of trade, a market system using prices and currencies. Trade is efficient, unless there are glaring externalities and informational gaps and asymmetries. It is economical by not requiring the collection of vast amounts of centralized information. And as a decentralized resource-allocation system, it allows for diverse preferences and creates incentives for innovation.

Of course, Smith was no stranger to trade. His father served as the customs agent in his hometown and birthplace, Kirkcaldy, and Smith himself served as the commissioner of customs for Scotland from 1778 to 1790. While he is sometimes unfairly accused of codifying a system that glorifies selfishness, he envisioned the opposite: an economy

with moral underpinnings and supporting structures, such as regulations, government revenues, and a stable currency.

The second structural element needed for specialization is a sufficiently large market. In other words, an economy needs to generate enough demand to support the specialized producer. Otherwise, the producing entity will have to reduce its level of specialization. Think of the general store in the American West giving way to specialized shops as the population grew and became richer and urban centers expanded.

This is especially relevant for high-tech industries, where the total addressable market is central to assessing investment returns. The economics are clear: Developing new technology involves up-front investment. And the return on that investment is proportional to the size and scope of the market for the innovation. As an aside, the return on investment is also proportional to the duration of the market opportunity—until it is superseded by the next innovation. This is where the Schumpeterian dynamics enter the model.

All these factors—from specialization and trade to finding ways to access large potential markets—lie at the heart of any successful development model. They are complementary and structural. It is their coevolution that produces the desired result: rising productivity and incomes, economic growth, increasing purchasing power, and the resulting expansion of domestic markets for products and services that, by virtue of growth, become more affordable and desired.

Technology and development

Let’s remember that Smith lived at the very beginning of the British Industrial Revolution. To my mind, it is simply stunning that he understood, and to some extent foresaw, the structural features and dynamics that have driven much of the evolution of the global economy in which we now live.

Time and again, technology has played an essential role in directly driving productivity growth, but also in specialization via a connectivity channel, hence expanding the size of the addressable market. Smith may have seen James Watt’s steam engine (1769), which was more efficient than earlier models; if so, he would have certainly understood its potential in factories and transportation. He did not live to see the first steam locomotive, developed by Richard Trevithick in 1804. Nor did he get to see our modern digital economy, including the latest AI tools.

A statue of Adam Smith stands against the backdrop of St Giles’ Cathedral, Edinburgh, Scotland.

But again, he would have understood the implications of these revolutionary developments: the immense benefits of expanding market size at reasonable cost, the opportunity to foster inclusive growth patterns, and the prospect of another jump discontinuity in specialization and productivity.

The relevance to economic development is hard to overstate. Think of how specialization and trade accelerated in scale and scope after World War II. Over time, specialization moved from being a defining feature of developed economies to being one of the key engines of the entire global economy. It helped generate unprecedented growth rates, productivity expansions, and—over the past three decades—the biggest reduction in extreme poverty in human history.

In countries in the early stages of development, income levels are low and domestic demand is limited, which in turn limits specialization. But if the global economy is accessible, the domestic demand constraint is removed, at least for tradable goods and services. Leveraging this opportunity requires technology, connectivity, and infrastructure. It also requires the removal of barriers to trade that are created by policies. Hence the importance of the General Agreement on Tariffs and Trade and its successor, the World Trade Organization, and the general acceptance that trade can be broadly beneficial to all.

While technology, connectivity, and infrastructure cannot be acquired overnight, they can be built, and then the tradable part of the economy specializes and starts to grow. Employment shifts toward the tradable side, and average incomes grow. This income growth initially produces demand that spills over to nontradable goods and services markets. Relaxing the demand constraint on specialization beyond its tradable part benefits the economy as a whole.

Risk and complexity

The process of development gathers momentum because its underlying dynamics are mutually reinforcing. And yet myriad things can go wrong. These risks are well documented in the literature: macroeconomic mismanagement, instability and crises, insufficient investment in infrastructure and hence poor connectivity, and failure to leverage the opportunity created by global demand, to name just a few risks.

Let me briefly expand on one of them. A specialized economy entails risk for the simple reason that anything that causes a disruption or failure of the trading system is dangerous, the more so the longer it lasts. Perceived risks to market openness, functioning, and access could severely constrain

specialization. We could even restate Smith's fundamental insight as follows: Specialization is limited by the extent of the market and the probability that it will remain accessible.

One way to understand recent developments in the global economy is that, as the risks from multiple sources rise, there is a predictable partial pull-back in specialization.

Moreover, a highly specialized economy is by definition complex. The degree of specialization and complexity can be seen as different sides of the same coin. The market and network connections that underpin a modern economy exceed the capacity of its participants to fully comprehend them. Perhaps advances in AI will give us tools to enhance this comprehension and our ability to adapt. A promising and growing application of AI is precisely in assisting in the management of complex systems, such as global supply chains and smart grids.

Complexity also entails hidden risks, which are often systemic. They are embedded in the complex network of interconnections that are hard to see comprehensively. Unless we get better at managing them, complexity will become an additional major constraint on specialization. More broadly, complexity at this level makes it hard for people to understand the economic system. That creates a vacuum, with all kinds of unsubstantiated theories about how, and in whose interests, it works. Some of these theories risk undermining political and social cohesion.

All this would make for a fascinating conversation with Smith, who saw plenty of economic disruption and dislocation. He lived at a time when the economy went from extremely local—where people probably knew most of those with whom they interacted and transacted—to the beginning of a rapid increase in specialization and the scope of markets.

This journey continues in our lifetimes. We increasingly depend on people and places we have never seen and that are largely unknown to us. We depend on science, technology, media, and expertise that go beyond our capacity to verify directly. How we address these challenges will shape our individual well-being and the wealth of nations in the years ahead. **F&D**

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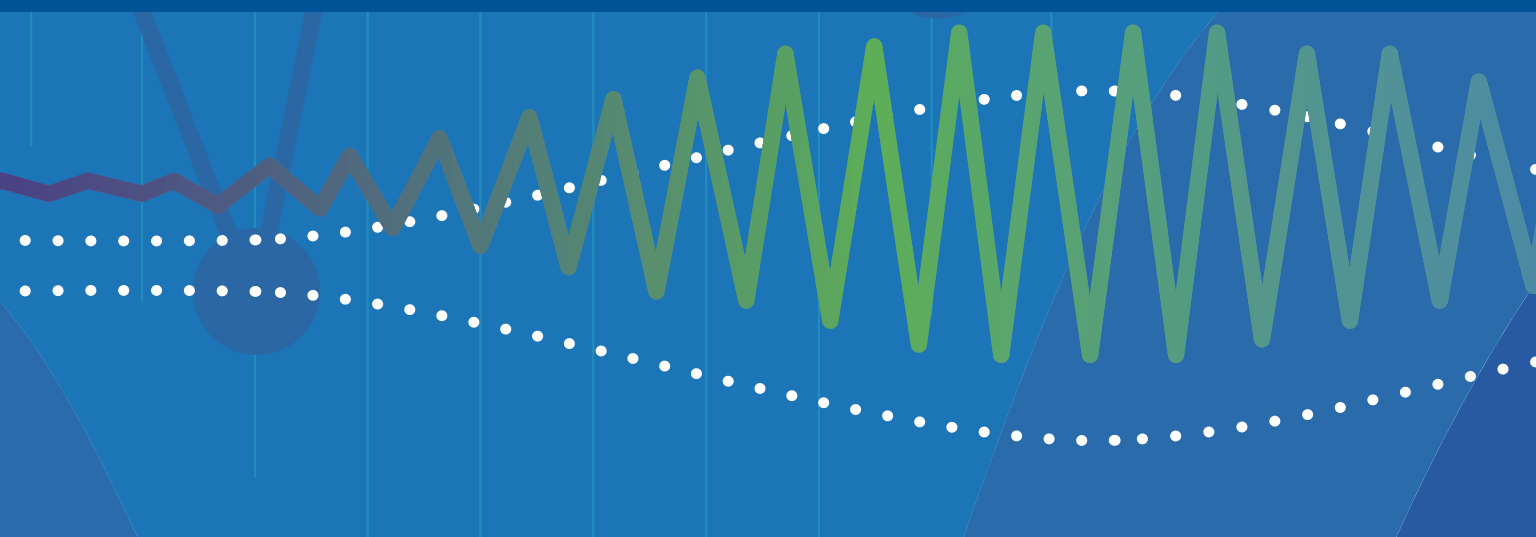
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Straight Talk

Economics for the Real Economy

Jamieson Greer says trade theory must catch up with tariffs, industrial policy, and the costs of globalization

For roughly 30 years, tariffs and import regulation were policy pariahs. To paraphrase English writer G.K. Chesterton's quip about Christianity: Tariffs were not tried and found wanting but rejected by our current economic models and left untried. Policymakers, scared of challenging the elite consensus derived from such models, closed off the universe of options and strategies to solve America's challenges. But President Donald Trump has changed that and, in doing so, given a gift to economists. The return of tariffs and import regulations creates an opportunity to update old assumptions and dated models with the hard evidence of real-world data and experience.

It is interesting that these policies ever became off-limits. The architects of the post-World War II international economic system knew the risks of unrestricted trade, such as significant trade



JAMIESON GREER is the US trade representative.

imbalances or dangerous import dependencies. These architects prioritized national sovereignty and security as equal goals alongside broad-based prosperity. The General Agreement on Tariffs and Trade was deliberately negotiated to allow robust use of tariffs to ensure essential security, prevent damage to domestic industries, respond to unfair competition, foster economic development, and address balance of payments challenges. The Coordinating Committee for Multilateral Export Controls aligned export control policies across the United States and its allies to present a common economic front against the Soviet Union and its satellites. Plurilateral agreements, such

as the International Tin Agreement, actively managed trade in key commodities to safeguard supply chains.

By the 1990s, policymakers, economists, and business leaders had forgotten the nuances and pragmatism of their forebears—failing to realize that there are good reasons for preserving countries' ability to manage their trade relations according to national interests. In the heady days following the fall of the Berlin Wall, there was a rush to adopt the simplicity of hyperglobalization: Would it not be better for all the people of the world to eliminate barriers to trade all together? And so were born the World Trade Organization, the North American Free Trade Agreement (NAFTA), and our present predicament.

It was thought that this approach would bring peace and prosperity, but it really just allowed multinational firms to chase subsidies and weak labor and environmental rules around the world. In the US, voters grew more skeptical as they saw working-class jobs move overseas, and economists responded with highly quantitative methods to calculate, often with false precision, enormous theoretical gains to be achieved by letting in floods of imports. And, at the same time, many other countries retained high tariff rates and nontariff barriers. So much for the post-Cold War optimism.

By the time President Trump first took office, the gulf between theory and practice was too large to ignore. Americans lost millions of high-quality manufacturing jobs, more than 70,000 plants shut down, working-class wages fell behind, the industrial base weakened, innovation slowed, real productivity in manufacturing declined, and communities across the country were harmed. The goods trade deficit exploded to \$1.2 trillion annually, which in turn fed the country's unsustainable current account deficit.

Turning point

Writing with humility in 1933, for it represented a change in his views, John Maynard Keynes expressed doubts about “whether the economic loss of national self-sufficiency is great enough to outweigh the other advan-

tages of gradually bringing the product and the consumer within the ambit of the same national, economic, and financial organization.” This was a turning point for Keynes, who went on to be among the most vocal advocates for stronger trade-regulating mechanisms at the Bretton Woods negotiations. As President Trump is crafting a new international economic order—predicated on balance, reciprocity, fairness, and resilience—it is time for the economics profession to take a cue from Keynes and catch up with the world as it is, rather than how we may wish it to be.

Mistaken assumptions

Nowhere is this catch-up more needed than in economic modeling. The models typically used to predict the effects of trade policy have many blind spots. They often assume full employment and seamless worker transitions between industries and geographies. The models do not reflect the complexity of supply-chain linkages and focus primarily on long-run efficiency gains—defined as the ability to source products at the lowest-possible cost. Such theoretical gains are treated as unalloyed social goods. These models mostly assume away realities that regular people, or trade practitioners like me, experience on a daily basis.

The economy rarely runs at full employment. Labor force participation declines in particular regions or for specific demographic groups, including working-class men, are proof of that. Transition costs are also real and severe. For example, David Autor and others have tracked what happened to the American workers and towns most exposed to the “China Shock.” Geographic mobility declined in trade-exposed places. Cross-sector reallocation of former manufacturing workers was minimal. When jobs eventually returned, they were lower-skill occupations and went to different people. Incumbent manufacturing workers, often Black and White men in midsize or smaller cities, never recovered their earnings. They aged in place and did not, as America's policy elite encouraged, move to Phoenix to become home health workers or

Seattle to code software.

The cost can be measured in human lives—and this is not hyperbole. A recent study by Amy Finkelstein and coauthors found that areas with average exposure to Mexican import competition under NAFTA experienced a sustained 0.68 percent increase in annual age-adjusted mortality. The damage was concentrated among working-age men and was distributed across most major causes of death. The authors found that this mortality impact more than erased the welfare gains identified in a leading economic analysis of NAFTA, making the agreement a deadly net loss for the people it was supposed to help.

Many models also fail to account for the sector-level linkages that influence how trade flows shift under rules of origin in modern trade agreements. We often do not gather the statistics we need to enable more accurate empirical analysis, including on supply-chain dynamics. Furthermore, limitations in statistical or modeling approaches feed false political narratives. For example, research by Susan Houseman has found that oft-touted gains in US manufacturing output were driven by how we measure increasing computing power, not by actually producing more stuff. Accounting for distorted computer industry figures, US real manufacturing output fell 6 percent between 2007 and 2016.

Achieving balance

The traditional case for unrestricted free trade made by economists was grounded in the principle of comparative advantage. It is absolutely true and nontrivial that specialization brings efficiency. However, contemporary economics must account for a world where scale economies and government intervention combine to create structural trade imbalances divorced from comparative advantage. How can it be that the United States, with the most bountiful cropland in the world, runs a trade deficit in *agriculture*? How can it be that South Korea—with limited energy resources, no coal, and no iron ore—became a steelmaking powerhouse? Economic interventions by countries have rigged the global economy in ways that persistently put some

“It is time for the economics profession to take a cue from Keynes and catch up with the world as it is, rather than how we may wish it to be.”

countries in deficit and others in surplus. This is not healthy for the countries in either category.

Recent IMF research found that persistent trade imbalances harm deficit economies and benefit surplus ones by reallocating productivity gains. The Bank of England put a finer point on it: When a country “combines industrial policy with different forms of consumption suppression—such as weak social safety nets, capital controls, or high precautionary saving—subsidies generate persistent trade surpluses and become a beggar-thy-neighbour policy with negative international spillovers.” The Trump administration could not have said it better.

The IMF acknowledged recently that imbalances are “concentrated and persistent” and driven at least in part by surplus country policies. In its most recent Article IV report, the IMF raised the alarm on the US current account deficit (driven primarily by the trade deficit), noting that the resulting negative net international investment position “raises the risk of an eventual disorderly external rebalancing.”

But, to address this problem, the IMF recommends untenable and outrageous solutions: large-scale tax increases (including a 10 percent federal sales

tax) and austerity measures (including deep cuts to popular entitlement programs). They acknowledge this would at best have only a moderate effect while requiring that surplus nations also take action to boost demand. The IMF’s recommendation to achieve that? “Work constructively with trading partners” to address “concerns over the fairness of the global trading system.” The growing imbalances of the past decade demonstrate the ineffectiveness of asking nicely for structural economic changes.

Misguided models

Why does the IMF recommend drastic and unpopular policies while criticizing the Trump administration’s tariff-driven approach? The answer lies, partly, in model assumptions. The IMF’s Global Integrated Monetary and Fiscal (GIMF) model shows that tariffs would have a negligible effect on narrowing current account imbalances. The IMF points to that result in its 2025 *External Sector Report* to dismiss the tool as a solution to what it says is an urgent problem. But the IMF acknowledges that the model does not account for “tariff jumping through the cross-border reallocation of production.”

This minor technical note contains multitudes. Tariff jumping is precisely

the mechanism through which protective tariffs and other trade measures have induced the “reshoring” of production and changed patterns of trade. President Ronald Reagan’s restrictions on Japanese autos in the early 1980s incentivized an onshoring boom that produced over 100,000 new American auto jobs at more than 300 new production facilities by the 1990s. President Trump’s 2018 safeguard tariffs on washing machines triggered a wave of investment, including in large new facilities by Samsung and LG in South Carolina and Tennessee. Mercedes-Benz is investing \$4 billion in its Alabama plant, explicitly citing tariffs as the cause. McKinsey’s research shows how recent tariffs have already caused a large-scale reordering of supply chains around the world. How can we write off tariffs based on a model that assumes away the mechanism through which they work?

There are those who acknowledge the social and economic problems posed by structural trade deficits but recommend tools other than tariffs to address them. Warren Buffett, among others, famously recommended requiring companies that want to import goods to buy a certificate from a domestic exporter of any goods or services of an equal value. While perhaps viable on paper, this

approach would likely present significant implementation challenges. Others have suggested a market access charge on foreign financial inflows to reduce the deficit by gradually depreciating the currency. Such a solution would likely elicit organized insurrection from the financial services sector, could be seen as a tax on incoming investment, and is difficult to explain to the public.

Tariffs that directly target the primary sources of the deficit are the simpler, and more flexible, solution. This was long accepted across party lines before the shift in focus to hyperglobalization, including in the 1980s, when future Democratic House Majority Leader Dick Gephardt's proposal to impose mandatory large-scale tariffs on persistent surplus economies passed the House of Representatives (before ultimately being dropped in favor of the strengthened Section 301 authority my office is currently using). We are already seeing the salutary

effects of President Trump's tariffs. The US trade deficit with China was down 32 percent, year over year, in 2025. The overall trade deficit in goods has decreased, year over year, every month since President Trump began implementing his reciprocal tariff policy in April 2025.

As we move forward, we need models that capture what matters to the real economy. This includes distributional consequences of trade, labor market frictions, network and scale effects in manufacturing, effects of regulatory arbitrage on workers and producers, impacts of detailed rules of origin on global production networks, and—in light of the new NAFTA research—public health outcomes. If we want smarter policy, we need richer empirical tools that study how trade actually works.

New challenges, new tools

We do not have time to wait. The United States is using tariffs and agree-

ments on reciprocal trade to encourage inbound productive investment, increase incentives for domestic production, and open markets for US exports. The IMF concedes that durable rebalancing requires action by both surplus and deficit economies. Without real pressure a surplus economy has no reason to act, but that does not mean that deficit countries must remain inert. Hence, the United States is taking bold action to lay the foundation for an international economic system grounded in balance, reciprocity, fairness, and resilience.

Alfred Marshall once wrote, "Economic conditions are constantly changing, and each generation looks at its own problems in its own way." It is urgent that economists take that advice. As the global economy changes, so too must the economics profession. Economists may be dismal scientists, but they have no reason to live with their heads in the sand. **F&D**

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People in Economics

Micro Maestro

Chris Wellisz profiles Brown's **Şebnem Kalemli-Özcan**, who mines business-level data to explain global capital flows

GROWING UP IN TÜRKİYE in the 1980s, Şebnem Kalemli-Özcan was exposed to some unusual dinner table conversations. Her father, a prominent surgeon, was serving as health minister. One evening, he recounted how politically connected domestic pharmaceutical companies, fearing competition, had blocked his effort to bring in a European vaccine maker as an investor. That company went to India instead.

Kalemli-Özcan, now a professor of economics at Brown University, tells the story to show how rent seeking—where businesses try to increase revenue by influencing public policy—can impede the flow of capital across borders. “I didn’t understand it then, but later when I was doing my PhD I thought, OK, if there are domestic frictions where some group is earning a rent, that group is going to object to reform,” she says.

She made the study of such frictions a foundation of her academic work. Kalemli-Özcan analyzes why, after decades of globalization, capital doesn’t always flow freely across international

borders in search of the highest returns and what this means for economic development and financial stability.

As arcane as that may sound to economics laymen, dislocations associated with globalization and resulting social unrest around the world lie at the heart of today’s upheavals in global trade policies. Kalemli-Özcan’s research is at the forefront of efforts to explain what went wrong and how to better understand the obstacles.

In theory, Kalemli-Özcan explains, investors from rich countries, where capital is abundant and returns are low, should seek opportunities in poor ones, where capital is scarce and returns may be higher. But in practice that’s not always the case. The frictions include political corruption, poor infrastructure, incomplete information about local conditions, and unreliable local partners.

Over the years, economists have built sophisticated theoretical models to explain these barriers, but the models don’t always work, because they are based on aggregate data on capital flows.

Kalemli-Özcan’s research is at the forefront of efforts to explain globalization’s failings.

By contrast, Kalemli-Özcan burrows deeply into corporate profit-and-loss statements, bank balance sheets, and financial transactions to uncover the frictions that others miss.

A fast talker with an impish smile, the 52-year-old economist seems to be everywhere—in YouTube videos, in seminars, on the pages of the *Financial Times*, and on the screens of broadcast news programs. Her curriculum vitae lists 49 published papers, spots on the editorial boards of seven academic journals, numerous fellowships, and stints at the International Monetary Fund and the World Bank. She has served on the advisory panels of the Bank for International Settlements and the Federal Reserve Bank of New York.

“She always stood out as having twice the energy of everybody else, professors and students,” says Bent Sorensen, a frequent collaborator who was one of her doctoral advisors at Brown. “Always full speed ahead.”

‘Look at the data’

In one paper, she and her coauthors built a database encompassing the entire universe of publicly traded nonfinancial companies in Argentina, Brazil, and Mexico over 15 years to pinpoint the hindrances to investment in the aftermath of a financial crisis. They found that a lack of liquidity among domestic banks, rather than insufficient collateral among businesses, was to blame.

In another, she used a decade of loan data from Turkish banks to show how the ebb and flow of global financial cycles—often triggered by changes in US monetary policy—are transmitted to credit markets in Türkiye.

“She’s really an empirical macroeconomist, and you know, there are too few of them,” says Sorensen, now at the University of Houston. “Sometimes the profession is about showing how smart you are and making clever models, but in my mind—and that’s where I really agree with Şebnem—it’s like, ‘No, we must go look at the data.’”

Kalemli-Özcan drew inspiration for her work at the intersection of policy and academia from childhood experiences, she says. After school, she some-

times visited her mother, a college math professor, and marveled at the mysterious equations on the blackboard. She recalls traveling with her father to Germany, where he discussed issues related to Turkish guest workers with Chancellor Helmut Kohl.

After earning a bachelor’s degree in economics at Middle East Technical University in Ankara, she enrolled at Brown, completing her PhD in 2000. She started her teaching career at the University of Houston and later moved to the University of Maryland, before returning to Brown, and has held visiting professorships at Türkiye’s Koç University and Bilkent University. She publishes frequent commentaries on Türkiye’s economy.

Her husband, Emre Özcan, is a civil and environmental engineer by training who is a vice president of a construction development group. The two, who share a love of skiing and mathematics, met as undergraduates in Ankara. He moved to Boston for graduate school, and three years later, she arrived in nearby Providence, Rhode Island. They married in Türkiye in 1997.

One of their two sons is an undergraduate at Brown majoring in mechanical engineering and computer science. The other has a biomedical engineering degree from Brown and is now a medical student at the University of Pennsylvania. The family ski vacation is an important annual ritual.

Kalemli-Özcan’s focus on microdata has helped unravel some economic mysteries. In recent years, economists have struggled to explain upstream flows of capital from fast-growing economies, such as those in East Asia, to stagnant ones. But after excluding public flows—say, China’s purchases of US government bonds—she shows that private capital invested in corporate securities or factories does flow to faster-growing economies, consistent with economic theory.

In some cases, even if capital flows to the right places, it may not be put to good use. In a 2017 paper, she and her coauthors delved into production and financial statistics for thousands of Spanish companies from 1999 to 2012. Their goal was to assess the impact of

investments the companies received from abroad following Spain’s entry into the European Union.

They surprisingly found that the inflows resulted in lower, not higher, productivity. The reason: Spanish banks tended to lend more to larger, wealthier companies because they appeared safer, even when smaller businesses might have used the money more productively.

“This money coming from foreign investors is wasted because it is not allocated in a way that is going to increase the growth of the country,” she says.

Kalemli-Özcan’s work has important policy implications for countries seeking to improve productivity, accelerate growth, and better the lives of citizens. As the Spanish example suggests, inefficient deployment of capital hinders productivity and growth. Allocated correctly, new capital can make businesses more productive through the application of new technology and from greater economies of scale, generating growth and wealth, Kalemli-Özcan says.

Identifying frictions points to solutions. The economist’s research suggests that governments seeking to attract foreign investment should adopt policies to strengthen the protection of property rights, reduce corruption, and improve bureaucratic quality. In a paper on how changes in US monetary policy affect developing economies, she writes that a focus on central bank independence can attract stable, longer-term flows of capital.

A new path

Of course, countries that prematurely open their capital markets sometimes plunge into a financial crisis. That happened in Türkiye in 2000, just as she was finishing her doctorate. Political turbulence triggered an exodus of short-term foreign capital—“hot” money—which forced the country to abandon its fixed currency exchange rate. The lira quickly plunged by as much as 40 percent, inflating the liabilities of domestic banks burdened with excessive foreign borrowing. In 2001, GDP contracted by more than 5 percent, and inflation surged. More than 1 million workers lost their jobs.

“Kalemli-Özcan’s focus on microdata has helped unravel some economic mysteries.”

The crisis in Türkiye was the fifth involving a developing economy since 1995. From her perch in Providence, Kalemli-Özcan says she remembers thinking, “OK, I should do international economics. All these fixed-exchange-rate countries fell like dominoes, and Türkiye is literally the last one.”

Until then, she had focused on growth economics, studying what factors boost a country’s productive capacity, such as advances in technology or increased longevity. Her doctoral thesis examined how declining mortality rates affect fertility and parents’ investment in their children’s education. After Türkiye’s meltdown, she changed course.

One chapter of her thesis formed the basis for a heavily cited 2003 article in the *American Economic Review* cowritten with Sorensen and the late Israeli economist Oved Yosha. For the first time, they used data to confirm the long-accepted theoretical proposition that financial integration allows regions to share risk, making them more willing to specialize in particular industries. The paper has been widely assigned in graduate-level economics courses.

While she has continued to work on issues related to growth, such as the impact of AIDS on fertility in Africa, she has increasingly focused on international macroeconomics, ranging widely across topics. In a paper published in the wake of COVID-19 and in 2021 testimony before Congress, she argued that rich countries would reap benefits for themselves and the rest of the world by investing in a program of global vaccinations. A 2025 paper was among the first to show that prospective changes in US tariff policies were likely to generate higher inflation and produc-

tion losses in the US and among major trading partners.

“Şebnem has become a scholar who speaks to all the big issues of the day,” says one of her collaborators, Gita Gopinath, a Harvard economics professor who is a former IMF chief economist. “And she is fierce in attacking those questions with the best data that can be brought to bear.”

Painstaking work

Kalemli-Özcan’s high energy level has been the key to success in the painstaking work of obtaining, organizing, and making sense of masses of fine-grained data. She describes intense negotiations with a private data provider to gain access to information on the sales, employment, debt, and assets of millions of public and private companies across Europe.

“At one point, I was calling them almost every day for six months,” in addition to in-person meetings in cities from Boston to Brussels, she says. Compiling the data was another daunting task. “We did not have AI in those days, so to be able to crunch numbers, we needed to put the millions of text files into usable form in statistical packages to be used in econometric analysis.”

The result was a guide for scholars explaining how to work with enterprise-level statistics. Sorensen marvels at her persistence. “These things only happen with somebody with Şebnem’s enthusiasm and entrepreneurial skills,” he says.

At the IMF, where Kalemli-Özcan served as a senior policy advisor in 2019–20, she helped shape a new policy framework that countries can use to select the best mix of monetary policy, exchange

rates, and other tools for managing large and volatile capital flows. Multiple financial crises showed that flexible exchange rates could prove risky for developing economies with large foreign-currency debt. Under the new framework, the IMF now counsels countries whose banks tend to borrow excessively in dollars to consider limits on capital inflows.

“With the microdata, we are now learning that as these countries come out of a crisis, it might be a good idea for a certain time to protect them from outside investors,” she says.

Globalization 2.0

At Brown, she launched the Global Linkages Lab, where two dozen researchers in the US, Chile, Spain, and Türkiye are assembling multiple terabytes of data to map the complex web of transactions that link businesses’ supply chains and financial portfolios across 10 sectors and 15 countries. The goal is to expand the data to 45 sectors and 65 countries over next three years.

The researchers are also interviewing corporate executives in advanced and emerging markets to understand how they are adjusting investment and trade decisions in a shifting geopolitical landscape marked by higher tariffs, more extensive application of industrial policy, and efforts to protect strategic assets. How will higher tariffs shape flows of trade and investment? How will companies tweak their supply chains in response to new national security concerns?

Despite the backlash over the loss of manufacturing jobs in developed economies, she argues, globalization brought tremendous benefits, lifting more than a billion people out of poverty in developing economies. She is counting on the Global Linkages Lab to explain what globalization 2.0 is likely to bring.

“Is it going to benefit only certain companies, people of certain countries, or is it still going to have some benefit in terms of global growth, global value?” she asks. “We are going to use microdata together with novel global network models to understand that.” **F&D**

CHRIS WELLISZ is a freelance author focusing on economic issues.

Mine the Gap



Minerals expert and self-proclaimed mining geek **Gracelin Baskaran** tells us why the race for critical minerals is leaving some countries in the dust

If platinum is the Rolls-Royce of minerals, South Africa should be driving in style. When a younger Gracelin Baskaran moved to Rustenburg on a Fulbright scholarship, the South African mining town produced 70 percent of the world's platinum, feeding what seemed an insatiable demand for this key ingredient in catalytic converters. But platinum demand collapsed in the late 2010s as the world started transitioning to electric vehicles. Baskaran, a Michigan native, says her time in South Africa's platinum belt cemented her interest in the boom-and-bust cycles of minerals. "I did a PhD thinking about platinum, and now I think about minerals across the periodic table every day."

Baskaran is the founding director of the Critical Minerals Security Program at the Center for Strategic and International Studies. She is a mining economist, and her PhD

Rare earths are not actually all that rare, unlike the capacity to process them, which will remain concentrated in a single country for years, Baskaran explains.

is from the University of Cambridge. Although Baskaran travels the world devising strategies for critical mineral engagement, she tells F&D's Bruce Edwards that she also spends much of her free time examining minerals—those still buried in the Earth's crust.

F&D: Why the interest in mining?

GB: I love going to mines because there is so much you learn by being at the rock face. What other minerals are there? What are the challenges with extraction? Why do some projects succeed and others fail? Mining is a whole ecosystem. There's an amazing rare earths project out in California. They have a closed-loop water system, and you don't understand how important that is in a desert until you go there. I've spent time at mines all over the world—uranium, copper, cobalt, platinum, rare earths—and it's great.

F&D: You really are a mining geek.

GB: Through and through.

F&D: How critical are these minerals?

GB: Minerals go into everything. They're in your phones, your computers, your defense technologies, your semiconductors, your cars. So they're mission critical to every part of our economic, national, and energy security. Now, we tend to take things for granted, right? And for a long time, we didn't view minerals as being an important policy priority. But about three years ago, China started imposing export restrictions on germanium and gallium, which you need for semiconductors and chips. Then it became graphite, which is needed for electric vehicles. And then it was rare earths.

When those rare earth export restric-

tions went into effect, Ford had to stop manufacturing in Chicago. Japan had to stop manufacturing the Suzuki. Vehicle manufacturing in Europe was disrupted. All of a sudden, we realized it wasn't about US versus China, but that any-time supply chains concentrate in one country's hands, you create a significant economic risk that affects factory floors and households worldwide.

F&D: Hence the race to secure these minerals. How would you compare this with, say, the oil rush in the late 19th century?

GB: The difference with critical minerals—and there are 60 on America's list—is that they're everywhere. Oil is one commodity that's generally concentrated in a handful of countries. That's why OPEC became the force that it is. It's much harder to form a minerals cartel. The geological distribution of minerals has meant that we are engaging with a set of countries we've never really engaged with commercially, particularly in Africa and Latin America. So the race for minerals, although as important as the oil rush, is far more complex. It requires engagement with a far wider set of countries.

F&D: You've written about industrial policy in relation to a US initiative called Project Vault. What's it about?

GB: Industrial policy was an icky word for a long time, right? It's the antithesis of a free market. And a lot of us are free market people in our bones. The thing we forget is that, historically, a lot of countries have used industrial policy. Japan subsidized Honda for a long time before it became profitable. Finland subsidized Nokia for a long time before it was commercially viable. So when we look at minerals and the supply chain outside of China, it's still nascent. And when you have a nascent industry, it often requires support to become economically competitive, which is exactly what industrial policy does.

Support can take various forms, such as subsidies, grants to build processing facilities, or equity investments. But hopefully the industry will only need this support until it can compete on its

“Mineral security is not just a national security imperative, it's an economic security imperative.”

own. One of the things we've realized is that mining is not an overnight industry. Here in the US, for example, it takes 29 years for a mine to start producing after a deposit is first identified.

Project Vault, one of the US's flagship initiatives, is an economic security stockpile. Historically, a lot of our industrial policy for minerals was for defense-related needs during wartime. We have stockpiled for defense since 1939. But what we've not had before is an economic security stockpile for civilian technologies so that auto manufacturers, semiconductor companies, and energy manufacturers can continue making critical products even if a country cuts off access or there's a Strait of Hormuz disruption. Project Vault shows that mineral security is not just a national security imperative, it's an economic security imperative.

F&D: The world has been mining for a long time, but how much do we know about extracting rare earth minerals?

GB: Mining rare earths is not the hard part. The hard part is processing. Rare earths are not actually rare. That's a bit of a misnomer. The difficulty is finding them in concentrations that are dense enough and then separating them in a process of more than 50 steps to get them to the necessary purity. And that technological know-how has been concentrated in China. So when those rare earth export restrictions went into effect, China was processing 99.5 percent of heavy rare earths. And like I said, it's not an overnight industry. So processing will remain concentrated in the hands of a single country for some time.

F&D: Africa has huge mineral wealth, but Africans generally have not gained much from it. What are the chances that the continent will benefit this time around?

GB: The mineral scramble of the last few years has seen the world take a very different approach to Africa. Africa has historically been an aid recipient. All of a sudden, the world is looking at the continent through a commercial diplomacy lens, and that could be a game changer.

Everybody wants Africa's resources. And when there's competition, countries get to decide the best value proposition for their resources. It creates a real opportunity. In recent years countries such as Ghana, Namibia, and Zimbabwe have introduced restrictions on mineral exports to capture more in-country value addition, saying, “If you're not processing here, minerals aren't leaving the country.”

But at the same time this opportunity is dependent on stable investment environments, including consistent policies, particularly around taxation, and a commitment to reinvest resource revenues in physical infrastructure, human capital, and sustainable resource management. That's how you develop an investible market where the benefits are shared. But reaching that level of stability remains a struggle.

F&D: So if world powers manage to parse out all the concessions and realize the full potential for critical mineral mining, could it actually wean us off fossil fuels?

GB: The biggest drivers of mineral demand are clean-energy technologies. The average internal combustion engine uses 32 kilograms of critical minerals. The average electric vehicle uses 210 kilograms—a sixfold increase. Clean energy presents significant opportunities for access to low-cost energy, but it also requires a substantial expansion of mining and processing capacity beyond current levels. **F&D**



This interview has been edited for length and clarity. Visit www.imf.org/podcasts to hear the full interview.

Book Reviews

Why the Global Order Failed

Meg Rithmire

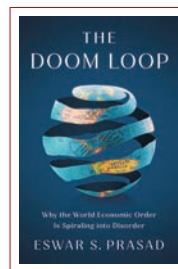
“UNCERTAINTY” IS THE THEME du jour in global business and was the primary concern of US CEOs, according to a January 2026 survey, even before the Iran war plunged global energy markets into crisis. Eswar Prasad tackles the uncertainty head-on. A leading voice on China’s role in the global economy and financial system, he probes the seismic changes of our times. *The Doom Loop: Why the World Economic Order Is Spiraling into Disorder* doesn’t just make vague declarations about uncertainty and wistfully lament the decaying economic order, it identifies what went wrong and paints a picture of what comes next.

The system imploded because it could not adapt to its own contradictions and deficiencies, Prasad says. It was based on tenets beloved by economists and liberal thinkers: Democracy is self-correcting, markets know how to allocate resources and impose discipline, the rules ensure fair play. Many who hold to these beliefs blame the destruction of the economic order on outside forces, including the rise of China, populist leaders, and technology that has reshaped public discourse and caused a concentration of power. Their solution is better democracy, freer markets, and more rules about how we should live with technology.

Prasad’s creative and provocative book tells another story. He says that China’s successes demand that we rethink which political institutions work best, he blames climate and technology challenges on the hubris and irresponsibility of dominant countries, and he argues that market forces generate more debt and fragility than discipline.

Together, these failures form a set of negative feedback loops in a global system that has fallen short on prosperity, security, and the fair distribution of power. As Prasad puts it, “The feedback loop between economics, domestic politics, and geopolitics is spiraling out of control and becoming destructive on every front, turning into a doom loop.”

Today’s policy tools and novel technology offer no promise of stability, he argues. Central bank digital currencies, artificial intelligence, great-power competition, and industrial policy are problems, not solutions. It’s time to reinvent the structure of domestic and international societies and let go of attachment to empty liberal commitments.



THE DOOM LOOP:
Why the World
Economic Order
Is Spiraling
into Disorder

Eswar S. Prasad
Hachette

New York, NY,
2026, 368 pp., \$32

“The feedback loop between economics, domestic politics, and geopolitics is spiraling out of control.”

What comes next? And what does *The Doom Loop* tell us that we haven’t already heard from the heralds of economic rupture? Prasad offers a frank, if frustrating, answer. A world that is stable and free from disorder depends on new and better institutions; repairing the ones we already have is not enough.

International institutions such as the IMF and World Bank must apply their rules more fairly and embark on reform; middle powers must choose long-term responsibility over quick fixes; chief executives must put social responsibilities above short-term profits and pressure politicians to pursue equitable policies and build bridges with other countries. Above all, voters must elect visionary leaders. As Prasad writes, “We must strive to put in power leaders committed to long-term improvements in people’s lives and capable of managing the difficult transition away from economic, political, and legal systems that have outlived their usefulness.” A future leader who picks up this book will understand what failed, why it failed, and the scale of the challenge ahead. **F&D**

MEG RITHMIRE is a professor at Harvard Business School.

Dirty Money and Policy Gaps

Chady El Khoury

OLIVER BULLOUGH'S *Everybody Loves Our Dollars: How Money Laundering Won* is a timely and unsettling contribution to the literature on money laundering and the global fight against it. The book challenges not only the effectiveness of the global anti-money laundering (AML) framework but also the way we conceptualize the problem itself.

Bullough argues that despite decades of global effort, money laundering has not been meaningfully curtailed. The scale remains broadly consistent with long-standing estimates—of roughly 2 to 5 percent of global GDP—suggesting that as the world economy has expanded, so too has criminal finance. This persistence is not for lack of laws, institutions, or resources. Governments and the private sector have invested heavily in AML systems, yet the results remain limited.

Where the book excels is in reframing the problem. Bullough, an investigative journalist and author of *Moneyland*, a 2018 best-seller on global kleptocrats, shifts attention away from individual crimes and toward the systems that allow illicit proceeds to circulate, expand, and ultimately blend into the legitimate economy. His examples, from fraud schemes to sanctions evasion, illustrate how financial systems continue to absorb illicit funds. This resonates with a broader policy shift: Financial integrity is not a niche compliance issue but a macro-critical concern.

Bullough also challenges the analytical foundations of AML. Traditional reliance on suspicious activity reporting by financial institutions as the backbone of AML frameworks is shown to be increasingly disconnected from reality. Through concrete cases, including trade-based schemes and informal value transfer mechanisms, he demonstrates that laundering often bypasses the formal financial system. This is a critical insight. Much of today's AML architecture is designed to monitor regulated institutions, yet significant illicit activity operates in informal or semiformal channels beyond its reach.

This focus on informality is particularly important. As the author describes, these are not new techniques but rather the most ancient ways of laundering—rooted in barter, trade, and trusted networks that predate modern finance. Yet current AML frameworks remain overwhelmingly oriented toward the formal sector. The result is a structural blind spot: Vulnerabilities in cash-based economies, trade networks, and



EVERYBODY LOVES OUR DOLLARS:
How Money Laundering Won

Oliver Bullough

Orion

London, 2026,
336 pp., £25

“Money laundering continuously adapts, often faster than the systems designed to contain it.”

informal intermediaries remain largely unaddressed. There is therefore a clear mismatch between where risks lie and where controls are applied.

At the same time, Bullough points to emerging risks, including crypto assets and stablecoins, which further complicate the landscape by enabling faster, more opaque cross-border transfers. These developments reinforce the central message of the book: Money laundering continuously adapts, often faster than the systems designed to contain it.

The book also highlights systemic contradictions. Efforts to combat illicit finance coexist with policies that attract capital—often with limited scrutiny—into real estate, luxury goods, and financial markets. Professional enablers are not portrayed as conspirators but as actors responding to incentives embedded in the global financial system.

The book is less convincing on solutions. While Bullough is highly effective in diagnosing the problem and exposing blind spots, the policy discussion is relatively high level. There is a call to rethink the system but limited guidance on how to operationalize that shift, particularly in addressing informality and cross-border complexities.

Bullough ultimately leaves us with a sobering reflection: A meaningful share of global efforts may still be directed at the wrong targets, using tools that no longer match the realities of money laundering today. **F&D**

CHADY EL KHOURY is assistant general counsel in the IMF's Legal Department.

Inside a Trade War

Elizabeth Van Heuvelen

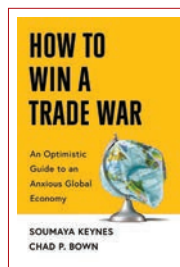
HOW TO WIN A TRADE WAR is not a playbook for victory. Soumaya Keynes, a columnist at the *Financial Times*, and Chad Bown, a former chief economist at the US State Department, instead describe how trade wars—particularly the current one—actually unfold by examining changes in the global economy, policy choices of key players, and the trade-offs of various strategies to respond to these shifts. It's an entertaining book full of humorous analogies that bring abstruse economic concepts to life.

Humor aside, the authors present a thoughtful reflection on how we got to where we are. Subsidies and structural imbalances between surplus and deficit economies generated long-running frictions that multilateral rules were never designed to fully address. The pandemic exposed the fragility of global supply chains, prompting governments to rethink the trade-off between efficiency and resilience. At the same time, the rise of industrial policy and trade intervention in the name of national security has fundamentally altered the terms of the debate, shifting it away from market access and toward strategic competition.

Armed with their diagnosis of the problem, the authors turn to the practical question of what countries can actually do about it. Their proposed defensive tool kit hinges on managing supply-chain resilience and tweaking subsidies. The authors acknowledge the difficulty of balancing resilience and efficiency. They compare calibrating supply chains to deciphering a teenager's mood: intuitive in theory, but maddeningly inadequate in practice.

Stockpiling may seem an obvious way to ease pressure on supply chains, but the authors urge caution. They take a detour into the online world of “preppers”—people making plans for survival of a major disaster—to show that identifying a true crisis and knowing when to draw down reserves is harder than it sounds. It's the same with subsidies. “Mastering subsidies is like baking a cake,” they suggest, cautioning policymakers not to “over-cater” and warning that spillovers—like a food fight at a chaotic dinner—can leave bystanders worse off.

On the offensive side, the authors examine tariffs and export controls with equal nuance. Import restrictions are likened to pharmaceuticals: Policymakers may have a “drug



HOW TO WIN A TRADE WAR
An Optimistic
Guide to an
Anxious Global
Economy

Soumaya Keynes
and Chad P. Bown

Simon & Schuster
New York, NY,
2026, 288 pp., \$30

“The book explains both the logic and the limits of tariffs.”

of choice” but are urged to “use responsibly.” The book explains both the logic and the limits of tariffs, including why retaliation does not always follow expected patterns. Yet the authors candidly concede that “being mean can pay off,” that tariffs can be an effective, if blunt, negotiating tool.

Once optimistic that multilateral rules and international cooperation would keep these tools in check, the authors are no longer so confident. The multilateral rules they advocated in the past, the authors lament, no longer enjoy the necessary backing and rigor to prevent conflict and are helpless in the face of current tensions.

In the end, *How to Win a Trade War* does not promise easy answers but does offer something more useful: an honest reckoning of policy trade-offs and a rigorous, accessible map of the terrain. For anyone trying to make sense of the conflicts reshaping the global trading system, this is an essential guide. **F&D**

ELIZABETH VAN HEUVELEN is a senior economist in the IMF's Strategy, Policy, and Review Department.



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Franc Democracy

Andreas Adriano

Swiss people helped choose the design of their next banknotes

BESIDES THE ALPS, pristine lakes, and a reputation for quiet precision, Switzerland is also known for its direct democracy. Its 9 million citizens are consulted about four times a year on federal issues (including changing the Constitution) and have up to 100 cantonal (provincial) referendums. Last year, people were asked to help decide what their money, the Swiss franc, will look like in the future.

About 100,000 people voted online on 12 sets of designs for banknotes of 10, 20, 50, 100, 200, and 1,000 francs. The proposed topic, “Switzerland and its altitudes,” highlighted the small country’s geographic diversity: the Jura region, a mid-altitude mountain range shared with France; the Swiss Plateau, the country’s central area; the lowlands, comprising valleys and cities such as Geneva and Basel; the Alpine foothills; the Alps; and the High Alps. The online poll was combined with analysis by an expert advisory board.

The Swiss National Bank (SNB) announced the winner in March. The designs by Emphase, a Lausanne-based studio, feature scale drawings of native plants found at different altitudes on one side and on the other striking landscapes and “civilizational achievements”: Alpine vistas, cable cars, famously punctual trains, the CERN research center, and the hi-tech Monte Rosa Hut atop a 4,634-meter massif. “With its precision and craftsmanship, this concept impressively articulates the diversity and quality of Switzerland,” said Sébastien Kraenzlin, alternate member of the central bank board.

The new notes will not circulate until after 2030, following more development and incorporation of security features. “The security elements and manufacturing processes are becoming more complex,” the central bank told F&D. Developing a new series “offers more opportunities to improve banknotes, whether in terms of security, functionality, or graphic design.”

Meanwhile, a recent referendum enshrined access to cash in the Swiss Constitution, reinforcing the central bank’s mandate to always ensure an adequate supply of coins and notes. While proud of their money, one of the world’s safest currencies, the Swiss are following the global trend of dwindling cash usage. About 1 in 3 in-person transactions are made in cash, down from 70 percent in 2017. Many prefer the popular fast payment app TWINT.

Switzerland replaces its banknotes every 15–20 years. The



A glacier buttercup appears on the front of the draft 1,000 franc note.

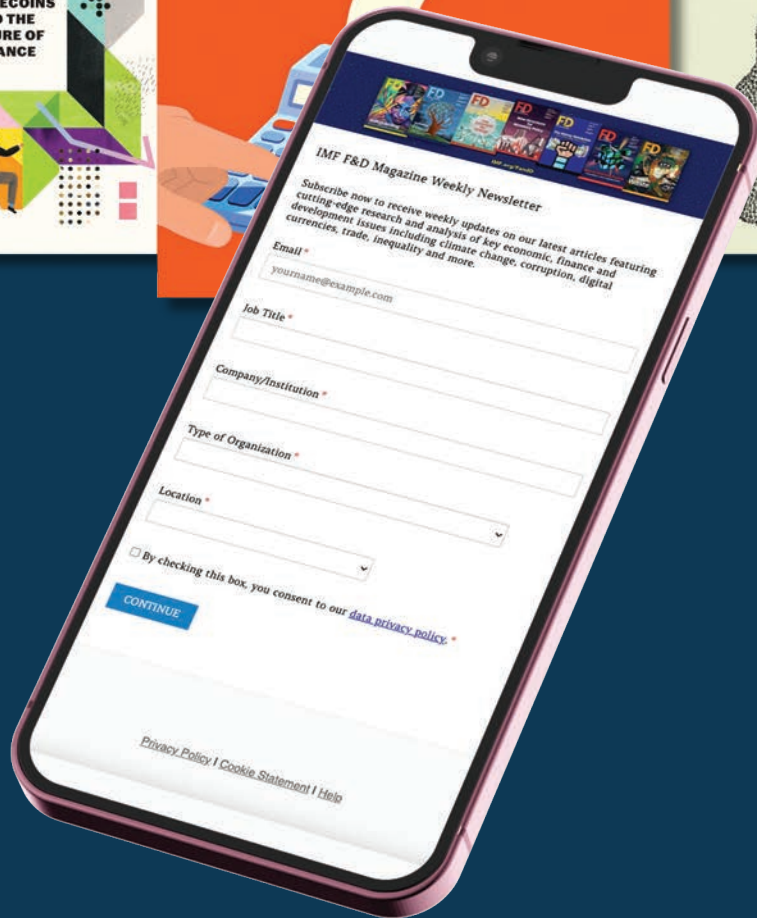
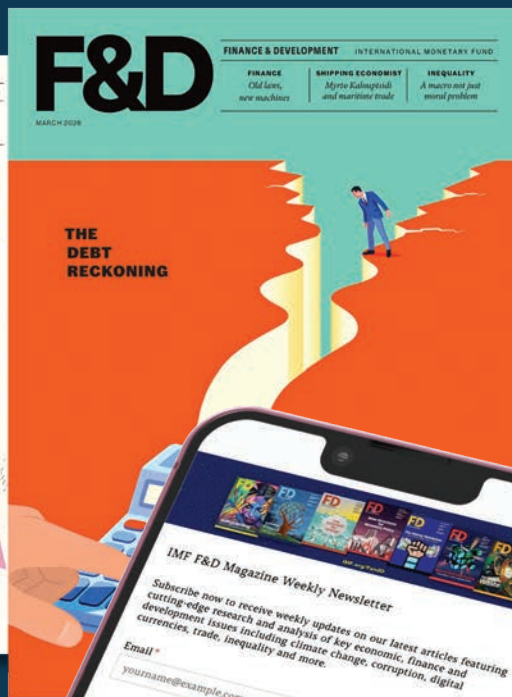
forthcoming series—the bank’s 10th—preserves another Swiss peculiarity, the 1,000 franc bill (about \$1,250), the world’s largest denomination in active circulation.

Most countries have discontinued large bills, which are seen as mostly facilitating money laundering and tax evasion. The European Central Bank stopped issuing new €500 notes in 2019. But, according to an SNB payment methods survey, about a quarter of respondents reported owning 1,000 franc bills in the past two years, using them mostly for payments, not to store value. “The current denominations have proven themselves reliable and, from today’s perspective, should therefore be retained,” the SNB said. **F&D**

ANDREAS ADRIANO is on the staff of Finance & Development.

On the reverse the draft notes feature Swiss landscapes and achievements.





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