Berkeley
UNIVERSITY OF CALIFORNIA
BERKELEY ROUNDTABLE ON
THE INTERNATIONAL ECONOMY

BRIE Working Paper
2023-01

Preparing for a Volatile Global Economy: As the Interconnections Reconfigure

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This essay is forthcoming as part of an Omidyar Group series on the future of the global economy.

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Prepared for Omidyar Future of the Global Economy Project[1]

November 28, 2022

For the foreseeable future the global economy will be volatile.[i] Indeed, some would say that the only certainty in the global economy in the coming years is uncertainty. [ii] The challenge -- for governments, for businesses, for non-profits and for individuals -- will be to prepare for and adapt to enduring volatility and uncertainty. Agreed that there are many certainties: an accelerating climate crisis; demographic changes that will slow growth in the West and China; the increasing digitization of everything with pervasive platforms and the ever-greater capabilities of AI; and the growing economic and geopolitical power of China are salient examples.

But within these certainties are a vast array of uncertainties. There are uncertainties of both time and scale: how fast will climate change disrupt societies and transform economies; how broadly will AI affect the organization of production and work; how much and how rapidly will China's economic power expand and how will it be exercised; and how will economic and geopolitical competition between the US and China affect cross-border flows of goods, capital and people. Not only are there uncertainties within seeming certainties, but the sequence of disruptions or crises–what economists euphemistically call "exogenous" shocks -is likely to affect the final outcomes. As an example, geo-political conflicts, such as the Ukraine war, which could not be predicted, will influence policy and outcomes in climate, energy security, global supply systems, national policy, and international alliances.

Should we, then, anticipate a long epoch of volatility that will define options for a generation? Or will this volatility prove an interregnum, a prelude to a new era? That era, an emergent global economy "regime", will not be set by the neoliberal policy preferences of the US. The post-WW2 era was shaped by the US, then the single dominant economy and polity in the West. Rather the emergent order will reflect multi-polar competition, about economic position, about goals, and about international rules. Economic interconnections will persist and expand, but both the existing geo-political and geo-economic orders will be reconfigured.

This period of volatility, of uncertainty, is a time in which projections are difficult, and indeed may be fools' gold. We can at best hope for insight into the predictable structural drivers, the certainties within which there are numerous uncertainties, and the implications for the choices we make. Faced with fundamental uncertainty, that is uncertainty that cannot be resolved by more information and analysis, what do we do? *First*, long term plans will need to be continuously monitored, updated and revised. *Second*, resources will have to be structured so that they can be deployed quickly to address the unexpected. *Overall*, confronting volatility requires resilience –the ability and the resources to recover quickly from unexpected difficulties.

This essay considers three certainties, each with its accompanying uncertainties.

- *The interconnected global economy will be reconfigured:* As an ever more interconnected geo-economy reconfigures there will be dislocations and challenges and winners and losers among nations, communities, sectors, and people. The "global" economy is moving away from the neoliberal vision and

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structure shaped by American economic and geopolitical power to a different structure, shaped by the expanding influence of China, India and the global South.[iii]

- *The digital revolution* will continue to unfold, become ever more pervasive and fundamental, with both clearly transformative developments such as AI and perhaps fanciful developments such as Crypto.
- *Climate changes resulting from global warming will accelerate.* Even if the most drastic outcomes are averted, ongoing climate change will be disruptive to economies and societies around the world. Both mitigation and adaptation will require coordination and cooperation among nations and between the private and public sectors.

The Interconnected "Global" Economy Reconfigured

While the traditional image of globalization fades, the reality of cross border interconnections as measured by capital and trade flows endures, even as these interconnections are reconfigured. References to "de-globalization" surge, but the actual interconnections of which "globalization" consists of are continuing. Indeed, the world was never without borders and boundaries defining economic relations[iv], but now those capital and trade interconnections are being recast.[v] American economic and political power is declining in relative terms and with that decline the "neoliberal" vision of the global economy is fading–a vision that rested on the centrality of markets and corporations, limited regulation, and global rules for trade and capital flows. The rise of new economic powers and the assertion by established economies in Europe and Asia of what is labeled "strategic autonomy" in critical technologies like semiconductors and AI bring new visions and policy strategies. Those visions include geo-political visions within which economic strategies are formulated. The political struggles, moreover, will sometimes be within nation states -- consider only as examples Scotland or Catalonia in Europe as well between nation-states or the regional blocs, such as the EU, of which they are a part.

As the world moves away from the image of twentieth century neoliberal globalization, we must acknowledge its accomplishments, as well as its negative consequences. There have been winners and losers, multiple faces of globalization.[vi] The development of complex interconnected supply chains provided significant development momentum for emerging markets and throughout the global south. "Neo-liberal globalization" of the quarter century pre the 2007 global financial crisis was a period of convergence of national growth rates and low inflation rates around the world. Wealth and income inequality among nations declined, even as wealth and income inequality within nations, both advanced and developing nations, increased. Global growth pulled an unprecedented number of people out of poverty–most dramatically in China which quickly became one of the most globalized economies in the world. Billions of people all over the world entered the middle class. Nonetheless, and with considerable political impact, the share of the middle class in the developed economies declined. The other major winners of neoliberal globalization were global corporations that could use communication and data tools to reduce coordination costs and move to more standardized products and operations.[vii]

When China opened its borders and joined the WTO, millions of low-cost workers entered the global labor market and competed for the jobs held by higher-wage workers in the advanced countries. Middle-income workers, especially in manufacturing and other tradable goods, in the developed countries suffered employment and income losses as companies used

communication, transportation and digital tools to develop low-cost global supply chains and more standardized products and operations. Although global trading rules allowed the advanced industrial countries to slow the pace of globalization–e.g., to prevent import surges from China – and to provide adjustment assistance to their displaced workers, the responses from most governments were anemic, fanning both left and right forms of populism among the losers from globalization. Workers in the advanced countries also suffered from both technological displacement and from the weakening of unions. There is ongoing debate, which we acknowledge but do not try to resolve here, about the relative importance of globalization, technological change, the decline in union power, and the absence of significant adjustment policies in causing the losses suffered and the burgeoning inequality within countries.

At this point it seems likely that the global economy will remain significantly interconnected as measured by trade and capital flows. No region of the world is close to self-reliant in what it needs. Despite the pandemic and interruptions in supply chains, most global cross-border flows continued to grow through 2021, led by growth in trade in intangibles, services and talent, trends that gained momentum during the last decade.[viii] At least to date, neither de-globalization nor the decoupling of the world into trading blocs is apparent in the data.

However, interconnections over the next decade are likely to be different in a variety of ways. Supply chains may become shorter and more regional to boost resilience and competition. Services' supply chains and trade in intangibles–knowhow, data, patents–may deepen and expand, resulting in new global hubs and rules. Carbon border taxes and tariffs may be imposed by some nations. Multilateral rules may be eclipsed by regional and bilateral trade agreements and deals. RCEP, crafted by China and other Asian nations, includes 15 countries accounting for about one-third of global GDP and is currently the largest free trade agreement in the world.[ix]

Efforts by the US and other western nations to decouple technologies and restrict data flows are also likely to affect global flows of trade, capital and talent in sectors deemed essential to national security. For purposes from strategic autonomy to job creation, national industrial policies to create new supply systems within nations or regions, or at least to limit dependence on other places are already underway. As recent examples, the US has imposed unprecedented restrictions on both US and global companies on trade with China in advanced semiconductors. And as President Macron noted in his recent visit to the US, some "made in America" provisions of the CHIPS Act and the Inflation Reduction Act subsidize US companies at the expense of European companies, raising the risk of trade conflict and fragmentation among the western allies.

There is also the danger that points of interconnectedness will be weaponized, that is used by governments for economic or geo-political advantage. One must note that the role of the dollar as reserve currency is likely to endure, though efforts to displace the "exorbitant privilege" it provides the United States, to use deGaulle's now famous phrase, will continue. However, competition is likely to intensify over control of resources and advancing technologies that are significant for both security and economic objectives, such as semiconductors, oil, critical minerals and financial flows. The recent drive, both economic and geo-strategic in origin, toward strategic autonomy encourages technological autarky.

There are also debates among nations about the character of digital society that are contributing to diverging rules and that contribute to emerging fragmentation, what is called a process of splinternet. Indeed, in the digital economy conflicts over values and competition over market position are already reflected in issues of data privacy and in the regulation of digital

platform firms. There are clearly distinct policies defining the broader digital economy emerging in Europe, the United States, and China, with India and others also establishing approaches that will give them a voice. In the case of data there are fundamental questions and disagreements about the relation of the individual to the community, about the rights of individuals and privacy, and about the rights of the polity to control the community, of surveillance. In the case of global digital platforms with substantial market power, the debate is whether competition policy, in the form of "after the fact post-hoc" control is sufficient, or whether ex-ante regulation is required, as expressed in Europe in its new legislation (DMA/DSA) and in the US by the appointment of Lina Khan– committed to tough antitrust measures in tech industries–to lead the FTC. Different strategies reflect different concerns over the power of digital firms with China moving directly to contain their power, Europe trying to restrain their excesses, and the United States still debating the pros and cons of regulating them and how to do so.

In sum, the geo-economy will be reconfigured, but the shape it will take is yet to be determined. Will the global economy be defined by economic "regions" with geographic gravity holding the constituent nations together while driving the politics of trade among regions. Or will the shape be set by political "coalitions" generating, demanding, spheres of influence with political purposes driving economic options? A key matter is whether the several groupings, regions, blocks, or spheres of influence, whether generated or defined by politics or economics, will be interoperable or rigidly separated.

<u>The Digitization of Everything: Digital Technology: AI & Platforms</u>:

The long 20th century's growth hinged on accelerated technological progress.[x] The second half of the 20th century laid the foundations for a digital economy, a world of chips and algorithms, data and intangibles, social media, and services. That the digital revolution will continue with pervasive, indeed ubiquitous, influence on infrastructure, products, and services is a certainty. Consider as surrogates for the broad transformation, digital platform firms, the AI tools and the data that they use to operate, and robotics – broadly defined to mean systems automation in physical and service applications.[xi] The trajectory of digital innovation and application will be shaped by technical advances, by business incentives for their deployment, and by regulatory contexts, again by both politics and economics. Technological change feeds productivity gains but at the same time, and as a product of the productivity gains, it causes disruption with winners and losers. The impact, the consequences, on economies and societies, and the political responses to the dislocations as much as the gains from the unfolding digital economy, will shape the emerging global economy

Here we suggest four questions that will help track the consequences of technological change for the global economy over the next decade.

1. How will productivity and growth be affected? The impact of digital innovation will depend on how, how widely and how quickly new tools will be applied.
    - Will these innovations increase the available social and economic "pie"?
    - How will the gains, and losses be distributed among individuals and among nations? Will digitization continue to displace workers in the advanced economies, fueling further income and wealth inequality, while providing new opportunities for workers in developing economies?[xii]
2. Where will work and production be located – both among locations and regions within countries and between countries and regions.

- For developing economies, the evident question is whether the gains that resulted from the entry of low-cost labor into global markets during the last 30 years will continue. Global corporations, motivated by labor arbitrage and nations, particularly China, supplied the capital to employ these workers. But will automation, apart from, although often combined with a drive for what is loosely called strategic autonomy, kick rungs off the development ladder or at least change the development routes? It seems unlikely that China's development model of massive manufacturing serving a global supply chain can be replicated throughout the global south.
- For the richer countries, the impact of technological change on wealth and income equality will affect their political and social stability. Those "left behind" will resist and react through politics and populism.

3. What jobs and work organization will result? The impact of technology on work will differ significantly by place in production systems and level of development. Information and communication technologies (ICT) will have quite different consequences, for example in Bangladesh and in New England. Here we focus on the advanced economies.[xiii]
    - There will be jobs in the rich North. The impact of technological unemployment feared by Keynes is unlikely, but the kinds of jobs and the way work is organized are uncertain. Will there be enough good jobs that are the foundation of political and social stability? What policies will be needed to create enough good jobs to support stable middle classes?
4. How will geo-strategic competition affect supply systems and networks in digital technologies that are central to strategic position and military possibilities. The competition for technological leadership will contribute to the reconfiguration of the global economy. As an example, American restrictions on semiconductor technology flows to China will alter supply networks throughout the digital economy.
    - We must emphasize that technologies will diffuse widely.[xiv] Basic scientific knowledge is often widely available, and indeed purists of science emphasize that recognition of what can be done is the fundamental step toward what will be done. The precise arrangements follow. Consider the development of radically different cases of MRNA vaccine technology and nuclear weapons based on widely available scientific knowledge. Technology struggles are about primacy and control which are of both security and economic significance.

Finally, it is important to note that digital technologies will not be the only technologies influencing the global economy over the next decade. From quantum computing to biotechnology and bioengineering, products and production will be redefined. It is certain that technological progress will continue but within this certainty there are deep uncertainties about the pace of technological breakthroughs and about the pace and location of their deployment.

<u>Addressing the Global Climate Challenge:</u>

That global warming and climate change are baked into our future is certain. Rising temperatures, droughts, floods and frequent "once in a century" extreme weather events around the world are already part of our present. Cross-border flows of goods and services, capital and people and the rules that govern them, will be affected. How extreme and how fast are uncertain. The implications differ by location and by social economic resources. And the implications and the choices vary radically by the time interval we select, whether it is 15 years or 30 years or toward the end of the century.

The impact on the global economy can be examined through three lenses: mitigation, adaptation, and competition.

Mitigation, that is action to reduce carbon emissions, is essential to avert real catastrophe. The transformation, the recreation, of the global energy system will be essential to reach the global target of net zero needed to keep the global temperature rise below the 1.5 centigrade target. That goal may already, we must note, be impossible. Any new target has implications for the adaptations that must be made.

Fundamentally, the carbon-intensive low efficiency energy systems and the economic activities they fueled throughout the 20th century will need to become low carbon high efficiency. Clean renewable alternatives will be at the center, but an entire array of products and processes, for example in forestry, regenerative agriculture, and buildings, will have to be redesigned and reconceived as well. Succinctly put, although much too simply to capture the scale and difficulty of the transition, we might say that the energy transition requires electrifying everything and decarbonizing electricity.[xv] Realizing the carbon mitigation goal will require both significant investments and coordination and collaboration among nations and between public and private sectors around the world. The McKinsey Global Institute estimates that $275 trillion or $9.2 trillion per year in new capital spending is required to transition physical assets in energy and land use to achieve net zero by 2050.[xvi] To date the world is falling woefully short.

Adaptation, adjustment, to an altered climate reality will in any case be required. But where: the adaptation challenge differs from country to country, region to region, place to place. Importantly, the more fine grained the analysis, the higher the uncertainty about consequences. What floods where? What droughts where?

And adaptation to what: what will be sustainable adaptations? We highlight the impact of adaptation on the global economy in two broad categories: migration -the movements of people - and relocation—the shifting locale of economic activity.

People will move. Developing countries and disadvantaged populations are at the greatest risk from climate change. They are seeking aid and compensation funds from the developed countries that remain the largest sources of carbon emissions. Even if compensation or aid is forthcoming, climate change will trigger significant cross-border migration flows. As people move there are challenges both for the communities they leave and the societies into which they must be integrated. Certainly, the well-being of the displaced is a priority. The stability of the "receiving" communities, however, is also essential; their absorptive capacity is not a technical economic matter, but one with risks of political pushback, risks of authoritarian leaders and resistance to policies to mitigate and to adapt, including risks to the migrants themselves.

Economic activity itself will relocate. The list is endless. The dramatic examples in the press include, of course, the opening of the arctic to mining and expanding wine production in northern climes. As important, climate change will alter agriculture and the world food systems. Supply chains will need to be reconfigured as production moves and as some sectors

decline while others prosper. How will the nations that depend on oil, coal and other carbon-intensive products for their jobs, income and wealth adapt?

There will be *market and technological competition* driven by efforts to dominate new sources of "green energy" essential for climate mitigation–competition to develop new products and services and to acquire the critical materials and other inputs on which they depend. There will be market and national competition in the vast array of sectors from electric vehicles to new agricultural techniques, and competition over new sources of resources such as lithium.

Adaptation and mitigation require political strategies within countries and internationally. Domestically the challenge is to develop broad support for the adjustments required. As Emmanuel Macron discovered in France with the rebellion of the Yellow Vests that contributed to his losing a parliamentary majority, policy strategies that disrupt lives and impose significant increases in the prices of energy will spark resistance. In contrast, California demonstrates that building coalitions with policies that address distinct needs can be the foundation for a broader strategy for green growth. [xvii]

Certainly, there will be winners and losers as the global energy system is transformed and economies strive to adapt. There will inevitably be a struggle over new rules and market arrangements as nations and firms seek to capture position and profit. The emerging trade fight in December 2022 between Europe and the United States, sparked most immediately by subsidies in the Inflation Reduction Act for American firms producing green products may be just the beginning. Regional or sectoral trade and cross-border investment agreements to set the rules for such competition and for these markets are likely to develop. Frameworks for global carbon credit markets and for compulsory disclosure of carbon emissions by multinational corporations are already being developed. Europe is already phasing in a border carbon tax. And as the recent COP27 loss and damages fund indicates, there will be ongoing debate and struggles between rich and poor countries about climate justice–how to help poor communities, disadvantaged populations and poorer countries fund the adaptation investments required. Indeed, climate justice will be a theme both within nations and between them.

<u>Conclusions</u>

The volatility and uncertainty are likely to endure for some time. As a new epoch emerges, the interconnections will be reconfigured, the "globalization" of the 21st century will look very different from the past. Multipolar competition will replace American dominance. Rules will be rewritten to take into account, if not reflect, the goals of China and other rising powers in the global south. "Global" agreements and institutions will likely give way in importance to regional or bilateral ones. Climate change will affect the geography of production and the patterns of migration. And technological change will spark new products and services and new ways of doing things. In the long run technological advancement has been the major driver of improving living standards around the world. But such advancement always comes with disruption, dislocation and winners and losers and is most often associated with rising income and wealth inequality.

Faced with fundamental uncertainty, that is uncertainty that cannot be resolved by more information and analysis, what do we do? The political foundations of social and political stability in the United States will certainly require sharing the benefits broadly to ensure a strong middle class that is the foundation of its democratic and market system. There are the three lessons with which we began: *First*, long term plans will need to be continuously monitored, updated and revised. *Second*, resources will need to be structured so that they can be deployed

quickly to address the unexpected. *Overall*, confronting volatility requires resilience –the ability and the resources to recover quickly from unexpected difficulties. It will be a bumpy ride.

[i] An alternative label is VUCA: VUCA is increasingly used in military discussion: Volatility, uncertainty, complexity, and ambiguity. That is precisely what we have here.
https://en.wikipedia.org/wiki/Volatility,_uncertainty,_complexity_and_ambiguity
[ii] The Combient Group" of Nordic Companies states simply that "Uncertainty is the only certainty".
https://combient.com/ . This states the challenges simply and clearly.
[iii] Indeed one might argue that the very phrase "global" implicitly expresses the neo-liberal agenda.
[iv] Michael Borrus and John Zysman. "Globalization with Borders: Michael Borrus & John Zysman (1997) "Globalization With Borders", in Industry and Innovation, 4:2, 141-
[v] Jeffrey Kleintop of Charles Schwab in "*Advisor Perspectives* 4/12/22. This article charts references to globalization and increased trade flows on the same time line.
https://www.advisorperspectives.com/commentaries/2022/04/12/deglobalization-is-political-not-economic
[vi] Anthea Roberts and Nicolas Lamp present this effectively. See: Six Faces of Globalization: Who Wins, Who Loses; Harvard University Press 2021. Cambridge, Mass.
[vii] For a useful discussion of these issues see Steven Weber, Bloc By Bloc: How to Build a Global Enterprise for the New Regional Order; Harvard University Press, 2019, Cambridge Mass.
[viii] See: Jeongmin Seong, Olivia White, Jonathan Woetzel et al. "Global glows: The ties that bind in an interconnected world" (New York: McKinsey Global Institute, 2022).
https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/global-flows-the-ties-that-bind-in-an-interconnected-world and Anthea Roberts and Nicolas Lamp, *Six Faces of Globalization* (Harvard University Press, 2022).
[ix] This is well presented in Peterson Institute publications. See for example, https://www.piie.com/research/piie-charts/which-countries-are-cptpp-and-rcep-trade-agreements-and-which-want
[x] Thanks to Brad de Long. Slouching toward Utopia; AN Economic History of the 20th Century. Basic Books New York 2022
[xi] Our background work on these technologies, and the political economy of their development can be found at www.brie.berkeley.edu
[xii]Laura D. Tyson, John Zysman; Automation, AI & Work. *Daedalus* 2022; 151 (2): 256–271. doi: https://doi.org/10.1162/daed_a_01914

[xiii] Laura D. Tyson and Michael Spence, "Exploring the Effects of Technology on Income and Wealth Inequality," in *After Piketty: The Agenda for Economics and Inequality*, ed. Heather Boushey, J. Bradford DeLong, and Marshall Steinbaum (Cambridge, Mass.: Harvard University Press, 2017), 170–208.
[xiv] The American technology story highlights that a country can begin as a technology borrower, or technology thief; become an innovator in production, and finally a leading edge high-tech innovator. Slater Mill in Pawtucket Rhode Island implemented the Arkwright cotton spinning innovations developed in England, but takes as its catch phrase – "Where Innovation Starts". Fordist production systems in the American auto industry was a fundamental innovation that built on the interchangeable parts revolution. Then of course, American innovation in advanced technology surged with the immigration of European scientists as a result of, during and after, World War II, and the threat of the Soviet Union.
[xv] Some of these issues are argued out in John Zysman and Mark Huberty, eds. Can Green Sustain Growth: From the Religion to the Reality of Sustainable Prosperity, Stanford University Press, Stanford California 2014
[xvi] Mekala Krishnan, Hamid Samandari, Jonathan Woetzel, et al, " The net-zero transition: What it would cost, what it could bring" (New York: McKinsey Global Institute, 2021).
https://www.mckinsey.com/capabilities/sustainability/our-insights/the-net-zero-transition-what-it-would-cost-what-it-could-bring
[xvii] The California story is presented in "*The Green Spiral*" by Nina Kelsey with John Zysman, and *"The United States: Local Green Spirals and National Ambiguity"* by Nina Kelsey and Alice Madden with Julianna Mandel and Sean Randolph in Can Green Sustain Growth, Op. Cit:,
More general arguments about the importance of sequencing policy are in: "*Winning Coalitions for Climate Policy"* by Jonas Meckling, Nina Kelsey, Eric Biber, John Zysman in Science, September 11, 2015