



ATLANTIC COUNCIL

ENVISIONING 2030:

US Strategy for a Post-Western World



A report of the Strategic Foresight Initiative
at the Brent Scowcroft Center on International Security

Robert A. Manning, principal drafter

Foreword

US President Barack Obama's second term is likely to be one of outsized historic importance, given that it coincides with shifts in global economic and political influence. These shifts will require a dramatic change in US strategy if Americans are to safeguard their global leadership position and interests.

These changes are at the same time influenced by the accelerating impact of several mega-trends: technological advancements and individual empowerment; the diffusion of power and rise of non-state networks; demographic change that will drive 60 percent of the world's population to mega-cities by 2030; and competition for food, water, and energy resources that could increase the possibilities of violent conflict.

With all that in mind, and in an effort to help prepare the Obama Administration and its global partners for unprecedented change, the Atlantic Council has produced *Envisioning 2030: US Leadership in a Post-Western World*. This document is intended to compliment the National Intelligence Council (NIC)'s much-anticipated quadrennial report *Global Trends 2030: Alternative Worlds*.

For the past six years, the Atlantic Council has worked alongside the NIC, the US intelligence community's mid- and long-term analysis body. This collaboration has allowed American experts and policymakers to think together strategically with our most important global partners and the world's most brilliant minds. We have convened in Bangalore and Berlin, Singapore and Silicon Valley, Beijing and Istanbul, Brazil and Brussels. Our hope is that by thinking more deeply together about the future with friends and allies, we may produce better outcomes.

The NIC global trends reports have established themselves as the gold standard, and they have been much copied and emulated around the world. Their utility to policymakers is unmatched in providing an analytical framework, but the NIC's mandate forbids it from making policy prescriptions. That's where we come in.

This paper outlines a strategy for the Obama Administration, based on the scenarios in the NIC's report. The *Global Trends 2030* report describes multiple futures, from a collaborative world order that successfully integrates emerging powers to a world where globalization retreats, leaving all nations less prosperous and less secure. Our report complements these scenarios by offering recommendations for achieving the NIC's optimal future and averting a zero-sum, fragmented world.

The United States has something rare among history's great powers—a second chance. Though US relative influence will inevitably decline, no other nation is willing or ready to replace the United States as the world's pivotal power. But to shape tomorrow's global system, the United States must urgently address its domestic economic and political dysfunctions, even as it fundamentally alters the way it leads globally. This flagship product of the Atlantic Council's new Brent Scowcroft Center on International Security endeavors to help the Obama Administration think through how best to embrace these historic challenges.

I would like to salute the ground-breaking work of the US National Intelligence Council, and in particular the architect of its global trends work, Mathew J. Burrows, counselor to the NIC. Many members of the larger Atlantic Council family reviewed the draft, though they do not subscribe to all its views. Thanks in particular to Brent Scowcroft, Jean-David Levitte, Wolfgang Ischinger, Tom Enders, Anne-Marie Slaughter, Alexander Mirtchev, and Ratislav Kacer—a powerful braintrust. The directors of the Atlantic Council's nine programs and centers all shaped and improved the final product, underscoring again the wide reach of the Council's capabilities.

This is not meant to be the final word, but rather the beginning of a discussion about how the United States and its allies and partners can best contribute to a positive global future. We would appreciate your feedback at www.acus.org or on Twitter at @AtlanticCouncil, where we will host an ongoing, online discussion.



Frederick Kempe
President & CEO, Atlantic Council

The Strategic Foresight Initiative

The Strategic Foresight Initiative is a practice area within the Atlantic Council's Brent Scowcroft Center on International Security that seeks to enhance understanding of the potential impact and the policy implications of long-term global trends, disruptive change, and strategic shocks. The Initiative provides a hub for an expanding international community of global trends experts that seeks to enhance public policy making in the United States and other key countries. The Strategic Foresight Initiative is particularly focused on forging collaboration among experts from the United States, Europe and other developed countries as well as from emerging powers such as China, India, and Brazil, and the next wave of emerging nations, from Indonesia and South Africa, to Egypt, Nigeria, and Turkey. For more information about the Strategic Foresight Initiative, please visit www.acus.org.

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Executive Summary

The National Intelligence Council in its new report, Global Trends 2030: Alternative Worlds, argues that the historic moment the Obama Administration now confronts “recalls past transition points—such as 1815, 1919, 1945, and 1989—when the path forward was not clear-cut and the world faced the possibility of different global futures.”

The Atlantic Council report that follows, Envisioning 2030: US Strategy for a Post-Western World, agrees with the NIC’s premise that the period we are entering is of a historic significance that has not yet been widely recognized nor acted upon. However, this report also goes a step further, given the NIC’s mandate that limits it from making policy recommendations. It outlines a US leadership strategy for the period ahead and offers policy approaches in key subject areas to ensure a more positive outcome.

We are approaching an inflection point that could lead to a future of vast economic and political volatility, environmental catastrophe, and conflicting, inward-looking nationalisms that would be unlike any period that the United States has seen before. Alternatively, we could create a more cooperative, rules-based world of reduced poverty and human advancement. More likely, we may face countless variations in between. As has been the case at such historic moments previously, it will be human agency—how key actors, and most importantly the United States—adapt and respond to dynamic global trends that will determine whether we can avoid the worst and achieve the best.

What’s required is a shift in US strategy and a new “mental map.” The United States—unlike other great powers in history—has a second chance at molding the international system to secure its long-term interests.

No other nation is likely to have as much impact in influencing the global future. Yet in a more complex and competitive world, the US margin of error is smaller, while the opportunity to lead remains due to the country’s unique assets and the lack of any power or set of powers that is able and willing to replace it.

Considering the host of challenges the Obama Administration currently faces, this report surveys the emerging economic and geopolitical landscape; it describes the unprecedented policy challenges that landscape presents; and it outlines a US strategy to avoid a zero-sum, conflictual future and move toward a more cooperative and prosperous 2030. What

emerges from this report are the following six elements of strategy for President Obama:

1. Frame second-term policies from a more strategic and long-term perspective, recognizing the magnitude of the moment and the likelihood that the United States’ actions now will have generational consequences.

- President Obama should map directions that recognize that the scale and rapidity of change the world will face over the next two decades may be without historic precedent. Thus, policy actions should reflect longer-term goals, and not just be aimed at achievements within the next four years, as President Obama will be setting the tone and direction for “US policy in a post-Western world.”
- The context will be a new and growing array of global challenges, which include further integrating China and other emerging powers into the global order as wealth shifts from west to east; environmental threats and the need to ensure energy, water, and food resources; and demographic patterns that will double the size of

the global middle class, offering potential support for Western values, but at the same time greatly increasing political and resource demands.

- The United States is entering not only into a post-Western world but also, in many respects, a post-Westphalian global system in which the nation state will play a less dominant role among a host of new non-state actors, networks and super-empowered individuals.

2. Continue to emphasize what has been called “nation-building at home” as the first foreign policy priority, without neglecting its global context.

- President Obama has been right to emphasize “nation-building at home,” for the revitalization of US economic strength and innovation will be the irreplaceable foundation of any sustainable international strategy. This will not only increase US confidence and capabilities in managing global issues, but it could help restore as a model the American democratic and free market system.

A redefined, active, and agile US leadership will be required to bolster traditional partnership and fashion new ones with emerging powers...

- The most immediate, fundamental requirement to ensure US global influence must be a reversal of the current trajectory of rising deficits and debt, and addressing the political factors that have contributed to it.
- If this can be achieved, the United States is positioned for a significant rebound due to: the improved health of financial institutions; reduced household debt, increased individual savings, undervalued housing prices; the wide-ranging benefits of a domestic shale gas and oil extraction revolution; increased investments in advanced manufacturing; and the potential impact, if unleashed by removing economic uncertainties, of \$2 trillion in available corporate cash.

3. Recognize that the United States must energetically act to shape dynamic, uncertain global trends, or it will be shaped unfavorably by them.

- The status quo or “stability” approach is not viable. The United States must lead, and it must do so actively, vigorously, and strategically.
- If the United States does not do so—if it holds back, withdraws, or remains “status quo” oriented—then it is more likely that the negative outcomes portrayed in the NIC report will come to fruition, with severe consequences for the world more broadly but for the United States in particular. The United States will be damaged greatly if it does not act now to renew its leadership in the international arena for the long term.

4. The United States must pursue more collaborative forms of leadership through deepening current alliances and interacting more effectively with a diverse set of actors to meet the challenges and opportunities of the dramatically changing times.

- Amidst a growing diffusion of power, mobilizing cooperative action tailored to each problem or situation will be crucial. In order to do so effectively, however, US strategy must begin with better leveraging and anchoring existing alliances and partnerships.
- The United States and the European Union remain the world’s two largest economies, and NATO is a unique multilateral institution and proven security actor. Thus the United States should seek ways to reinvigorate both relationships through expanded economic agreements with Europe and the widening and deepening of NATO’s global partnerships.
- At the same time, US alliances with Japan, South Korea, and Australia, and its partnership with Singapore, will be crucial in maintaining an Asian balance of power over the coming generation.
- The United States must develop new arrangements with emerging partners, including a wide range of newly emergent non-state actors.

5. US strategy to 2030 must deepen cooperation with China as the most crucial single factor that will shape the international system in 2030.

- On a broad array of global issues—the shape of multilateral institutions, the global financial system, the nuclear future, cyber security, outer space, climate change, global resource scarcities, and Asian security—the US-China relationship will be a major driver of solutions or of failure.
- Interdependence gives the United States and China a compelling and direct interest in the economic success of the other, but the two countries must more assertively work to avoid the historic pattern of a rising power posing a strategic threat to the status quo. Such conflict would be catastrophic for the world, as zero-sum behavior and conflict would be difficult to avoid.
- The myriad issues fueling recently increased mutual distrust suggests that achieving a modus vivendi will be a difficult and protracted process.

6. US leaders must more creatively address the locus of instability in the 21st century—the greater Middle East from North Africa to Pakistan—a major threat to US strategy and world order.

- If efforts in the Middle East and North Africa fail, the threats posed to international order—from nuclear-armed regional powers, failed nuclear states, and terrorists armed with weapons of mass destruction—could lead to unprecedented destruction and vast instability across a broad swath of the earth.
- The Arab awakening will, in most cases, result in volatile, Islamist-oriented governments over the rest of this decade. Their futures will depend largely on whether elected governments demonstrate work toward good governance and economic growth.
- US strategy can help catalyze the right outcome—Arab efforts to realize economic modernization and stable political pluralism—by understanding that this is fundamentally an internally-driven process of change and being aware of its limits as well as its opportunities.

- A coordinated US, EU, and Gulf Cooperation Council (GCC) approach to work with international financial institutions could develop an incentive structure mixing aid, debt relief, and conditioned grants or loans to help foster market-oriented reforms. The GCC and Turkey could play a catalytic role in encouraging a MENA customs union and perhaps adoption of a common currency.

The United States in 2012 is still accustomed to being the world's dominant superpower. Since the end of the Cold War, even as relative US power has declined, the United States still has fared extraordinarily well in reaping the benefits of an international order that was largely designed in the immediate aftermath of World War II.

In light of the vast changes sweeping the world between now and 2030, the United States must redesign and renew its approach to the world along the lines outlined above. If US leaders fail to do so, both the United States and the world will pay a heavy price. The stakes are high for getting US strategy right for a post-Western world.

Prologue: The Strategic Landscape

The world is in the midst of an unparalleled, technology-enabled transformation, unprecedented in breadth, pace, scope, and complexity. In the generation ahead to 2030 there may be more profound change than seen in the two decades after World War II or since the end of the Cold War. As Zbigniew Brzezinski points out, it is “a world where the problems of human survival have begun to overshadow more traditional international conflicts.”¹ We are approaching an inflection point, which, as the National Intelligence Council’s *Global Trends 2030* report suggests, could lead to a future of economic and political volatility and conflicting inward-looking nationalisms; a more cooperative, rules-based world; or something in between.

None of the possible future worlds are pre-ordained. The trajectory of the world’s economic, technological, and political future will be in no small measure the result of human agency, of how key actors—most importantly, the United States of America—adapt and respond to unfolding dynamic global trends: demographic changes; the diffusion of power; and the nexus of energy, water, and food stresses. The United States—unlike other great powers in history—has a second chance at molding an international system in transition to secure its long-term interests.

The United States will not be as singularly dominant in fashioning the world order of 2030 as it was in crafting the market-centered, rules-based system of multilateral institutions after World War II. While the balance of wealth and power is rapidly shifting eastward, no other

nation is likely to have as much impact as the United States in influencing toward which future the world gravitates. **A redefined, but active and agile US leadership and vision will be required to meet the global challenges ahead and avoid a disastrous zero-sum, conflictual future in 2030.**

A prerequisite for the United States to play an active role in shaping a benign future rather than risk being shaped by it is to break out of our current political inertia and move onto a path that will: steadily diminish the unsustainable US deficit and long-term debt; end corrosive social and economic patterns; and renew US economic dynamism. **The keystone of national power remains US economic strength and innovation.** Absent that, any notion of strategy is illusory.

The United States—unlike other great powers in history—has a second chance at molding an international system in transition to secure its long-term interests.

The US-driven global economy has enabled the international system to flourish since 1945: from the post-World War II rebuilding of Europe and Japan; to the demise of the Soviet bloc and its absorption into the globalized system; to the Chinese opening and integration into the global economy and international institutions. It is the rules, norms, and shared stake in the success of that system that produced the current \$70 trillion world GDP.

The system of globalization has absorbed the unfolding transformation thus far—ubiquitous smartphones and satellite television; the World Wide Web; the rise of social networks including Facebook and Twitter—all emerging since the end of the Cold War. This instant, 24/7 access to information has sparked what has been rightly described as a “global awakening” in expectations—dramatically seen across the Middle

¹ See Zbigniew Brzezinski, *Strategic Vision: America and the Crisis of Global Power*; Basic Books, New York, 2012, p.1.

GLOBAL TRENDS 2030: An Overview from the US National Intelligence Council

MEGA-TRENDS

Individual Empowerment	Individual empowerment will accelerate due to poverty reduction, growth of the global middle class, greater educational attainment, widespread use of new communications and other manufacturing technologies, and health-care advances.
Diffusion of Power	There will not be any hegemonic power. Power will shift to networks and coalitions in a multipolar world.
Demographic Patterns	The demographic arc of instability will narrow. Economic growth might decline in “aging” countries. Sixty percent of the world’s population will live in urbanized areas; migration will increase.
Food, Water, Energy Nexus	Demand for these resources will grow substantially owing to an increase in the global population. Tackling problems pertaining to one commodity will be linked to supply and demand for the others.

GAME-CHANGERS

Crisis-Prone Global Economy	Will global volatility and imbalances among players with different economic interests result in collapse? Or will greater multipolarity lead to increased resiliency in the global economic order?
Governance Gap	Will governments and institutions be able to adapt fast enough to harness change instead of being overwhelmed by it?
Potential Increased Conflict	Will rapid changes and shifts in power lead to more intrastate and interstate conflicts?
Wider Scope of Regional Instability	Will regional instability, especially in the Middle East and South Asia, spill over and create global insecurity?
Impact of New Technologies	Will technological breakthroughs be developed in time to boost economic productivity and solve the problems caused by a growing world population, rapid urbanization, and climate change?
Role of the United States	Will the US be able to work with new partners to reinvent the international system?

POTENTIAL WORLDS

Stalled Engines	In the most plausible worst-case scenario, the risks of interstate conflict increase. The US draws inward, and globalization stalls.
Fusion	In the most plausible, best-case outcome, China and the US collaborate on a range of issues, leading to broader global cooperation.
Gini-Out-of-the-Bottle	Inequalities explode as some countries become big winners and others fail. Inequalities within countries increase social tensions. Without completely disengaging, the US is no longer the “global policeman.”
Non-state World	Driven by new technologies, non-state actors take the lead in confronting global challenges.

East—even as local, traditional sources of identity retain a strong hold. It is also evident in the explosion of mobile phones in Africa, the world’s fastest growing market with over 550 million users.² The post-Westphalian nation-state system is challenged from above by globalization and from below by ethno-nationalism and individual empowerment, which will remain very potent forces to 2030. Forces of fragmentation are evident worldwide in secessionist efforts from Scotland and Catalonia in Europe to South Sudan in East Africa.

US strategy is centered on continuing to expand this virtuous circle to those now with increased economic and political weight and to new entrants on its periphery. **A key challenge is how to preserve the successful operating principles of the international system while revising the status quo to reflect new economic and political realities, new concerns about the efficacy of the system, new actors with divergent views, and new global pressures.** Meeting the multiplicity of challenges outlined in the *Global Trends 2030* report—from reforming the global financial system to climate change and potential resource scarcity—will require new levels and patterns of international cooperation. A critical determinant of global stability to 2030 will be whether the pace of technological breakthroughs and widespread commercial use in key areas (e.g., energy, water, food) is rapid enough to meet burgeoning needs.

As its pace and scope have expanded, the character of globalization has changed, and some of its consequences have come into sharp relief. Unlike what journalist Gideon Rachman has dubbed “The Age of Optimism,” the period from 1991 to 2008 when globalization was generally viewed by political and intellectual elites as an unadulterated good, it is now seen as a more complex, non-US-driven process, fostering a two-tier economy and growing inequality within and perhaps among nations. The 2008 global financial meltdown illustrated how globalization has outpaced institutions and mechanisms to manage it. Effective global governance will be next to impossible

2 See BBC report, November 9, 2011 (<http://www.bbc.co.uk/news/world-africa-15659983>)..

to achieve if the political will and leadership to reform existing international institutions and fashion new problem-solving mechanisms remains in doubt.

America's transatlantic allies will continue to be central to its foreign and economic policy, but in some cases those in the Asia-Pacific or Middle East will be most crucial.

The cornerstone of a US strategy to protect and advance common interests on the central challenges—the global economy, the energy-water-food nexus, international security threats, and climate change—will be catalyzing partnerships. The United States will need to vigorously mobilize cooperative action tailored to each particular situation or problem through its network of alliances while forging new or enhanced ones with emerging powers, especially China, as well as non-state actors and networks. America’s transatlantic allies will continue to be central to its foreign and economic policy, but in some cases those in the Asia-Pacific or Middle East will be most crucial. In other areas, notably cyber and health, public-private partnerships domestically and transnationally will be key.

Many of the challenges ahead are dilemmas produced by the success of the post-World War II international system: in the two decades since the end of the Cold War, globalization—the transborder flow of information, money, goods, and people—has woven together economies, people, and nations and led to the massive ongoing shift of wealth and population from west to east and north to south. This is fostering a new political geography, and a new global middle class of nearly two billion people in burgeoning urban concentrations, with over 600 million in China, India, Turkey, Brazil, and other emerging economies, and projected to reach 5 billion by 2030.³ This is the first time in history when world economic and technological development is truly global in its reach.

3 There is debate on metrics, but \$3,500-\$4,000 annual GDP is a benchmark for a “consuming class”—\$10 per day disposable income. See: http://www.foreignpolicy.com/articles/2012/05/16/the_global_middle_class_is_bigger_than_we_thought?page=full. See also: World Bank assessment: <http://siteresources.worldbank.org/>.

Geopolitical Uncertainty

Geopolitical uncertainty will be a feature of the coming two decades. The post-9/11 era has yielded to a low-level, but persistent terrorist threat, more focused to date on US interests abroad than on the homeland, which is likely to persist to 2030. Whether US relations with China, and to a lesser degree, Russia, move in a more cooperative or confrontational direction is no small part of the cloudy picture. The fate of Europe—whether the European Union strengthens, muddles through, or moves toward renationalization—is also a question.

The Middle East and South Asia are the regions of most profound transformation as they try to grapple with modernity. These interconnected regions will be turbulent over the coming decade: the Arab awakening will result in volatile, weak, Islamic-oriented governments over the near- to mid-term. Over the longer term, a key question will be whether Islamist ideology trumps a learning curve in regard to governance and economic growth. Whether the demographic youth bulge in North Africa and Southwest Asia becomes an asset fueling economic growth or a liability fueling conflict is a key question that will likely be settled by the quality of governance and the pace and inclusiveness of economic growth.

Iran's nuclear program is emblematic of a broader uncertain nuclear future. Toward 2030, the world faces both a threat of new cascades of nuclear proliferation in the Middle East and the possibility of failed nuclear states (North Korea, Pakistan, and potentially Iran itself). Pakistan is on a trajectory to become the third largest nuclear weapons state, yet its stability as a nation-state is at risk. The specter of nuclear weapons use looms larger, even as conflict between any of the major nuclear weapons states on the UN Security Council remains remote.

Weakness around the globe is more likely to threaten US security to 2030 than the strength of any peer competitor: the fault lines of the international system continue to center on weak and failing states on the periphery of the global system. Yet history suggests

that on all these fronts, strategic surprise is likely. The world will face growing and potentially destabilizing strains from rapid urbanization, especially exploding mega-cities exacerbating these pressures: By 2030, 60 percent of humanity will be living in cities, up from 50 percent now. In China alone, the urban population is expected to expand by 300 million out of a projected 1.5 billion new urbanites in 2030. Many of the major global challenges—from energy security to potential food and water shortages to governance and technological innovation—will be determined by how the world manages these urban regions.

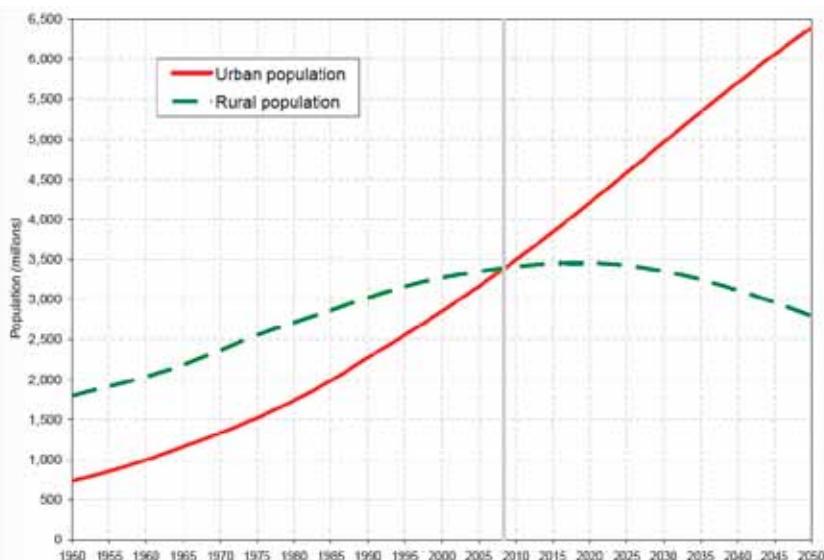
Even major emerging economies such as China and India are approaching inflection points as they seek to sustain their economic dynamism and avoid the “middle income trap” of stagnation—unable to compete with low-income, low-wage nations yet also unable to compete with advanced, innovative economies. This fate is a central concern of the Asian Development Bank’s *Asia 2050* report, which outlines stark alternative futures for Asia if major regional economies escape rather than succumb to the middle income trap. The report projects that if Asia sustains its economic success, the region’s GDP would increase from \$16 trillion in 2010 to \$148 trillion in 2050, or half of global GDP, while its middle income trap worst-case scenario would result in a \$61 trillion Asian GDP by 2050—a staggering \$87 trillion income difference.⁴ A key factor determining Asia’s ability to sustain its successful path, according to the report, will be Asian nations’ willingness to cooperate with each other—something that currently seems at risk amidst rising nationalisms, unresolved territorial disputes, lingering suspicions, and historical antagonisms.

⁴ See discussion of the middle income trap in *Asia 2050: Realizing the Asian Century*, Asian Development Bank, Manila, 2011.

Urbanization

Figure 1. Urban and Rural Population of the World, 1950-2050

Sources: United Nations 2007



For the first time in history, the majority of the human race lives in cities (Figure 1). Both the pace and scale of this transformation is unprecedented. By 2030, 60 percent of humanity will live in cities, and by 2050, 70 percent will do so. Most of this growth will occur in Africa, Asia (Figures 2 and 3 below), and Latin America. By 2035, every continent on earth will be majority urban, with billions of new urbanites living as members of either the global middle class or the impoverished underclass.

Figure 2. Urban and Rural Population of Asia 1950-2050

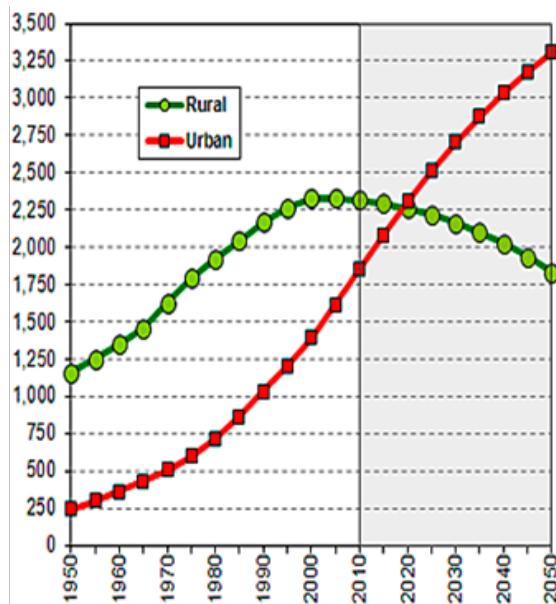
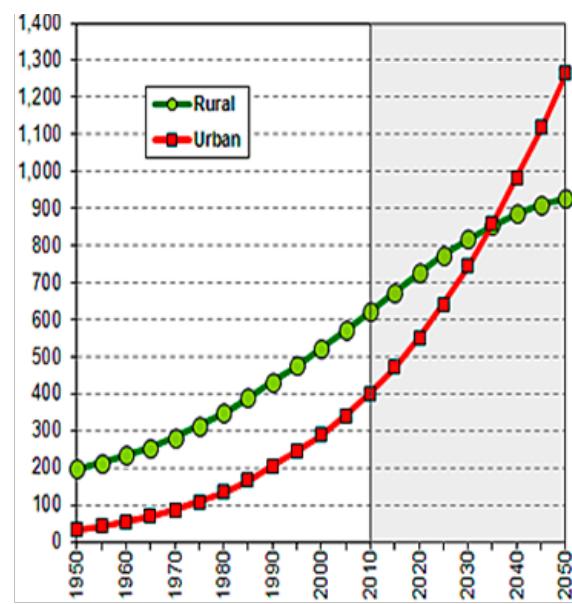


Figure 3. Urban and Rural Population of Africa 1950-2050



Global Challenges: This massive global urbanization process will be critical to the future of nation states as well as global prosperity and security over the next two decades and beyond. Urban regions and urban development, including a growing number of mega-cities of more than 10 million inhabitants, will be major focal points of key global trends, stresses, and challenges facing policymakers—from resource scarcity, food and water shortages, and climate change mitigation to promoting innovation, sustainable economic growth, and achieving effective national and global governance. Cities are increasingly foreign policy actors in their own right. Even though they are critical to a nation's success in the international arena as anchors of globalization, they often are not on policymakers' foreign policy radar. For national leaders, it is imperative to recognize that building successful cities will be key to building successful countries and preventing failed states. The world will meet—or fail to meet—these challenges largely through how urban areas are developed and managed.

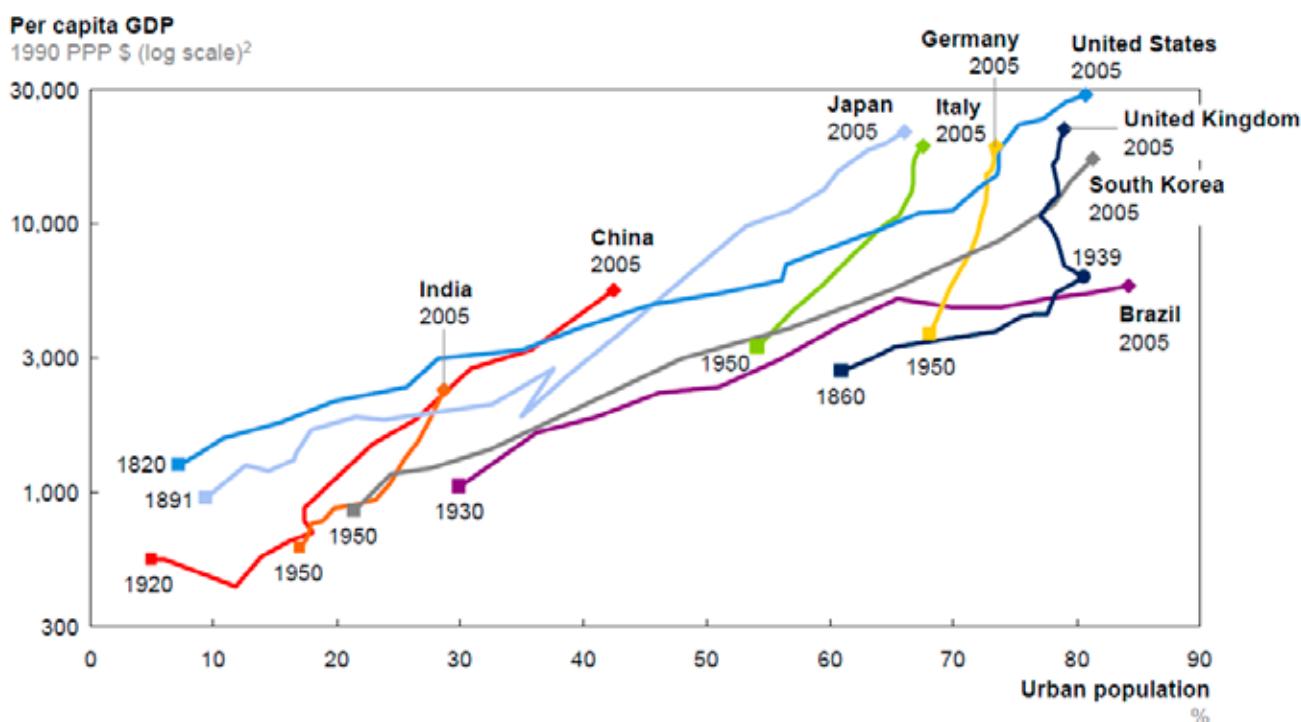
Benefits. The urbanization of our species could have enormous economic, political, demographic, social, public health, and ecological benefits. Cities and urban regions are by far the largest sources of GDP, taxes, and per capita income in virtually all states and thus a *sine qua non* of national prosperity and security. In the modern era, no country has gotten rich unless it has urbanized (Figure 4). The relationship between urbanization and wealth accumulation will continue into the future. To 2025, McKinsey Global Institute projects 47 percent of growth in global GDP will occur in 440 emerging nation cities. Over the same timeframe, more than a billion new people are projected to enter the ranks of the global middle class thanks in large part to the economic benefits of urbanization. These gains will be greatest if the bulk of the world's cities are made more secure, economically productive, socially inclusive, and environmentally sustainable and resilient.

Risks. By contrast, dysfunctional cities will contribute greatly to political instability and violence; poor national and global economic performance; regional and global ecosystem stresses; ever-increasing energy demand; and food and water supply problems. For example, while urbanization will create a billion or more new middle-class consumers, the same process is likely to add as many or more people to the global slum population. Failing to improve the lives of the people living in slums could lead to failed cities and even failed states. Slum expansion is likely to worsen chronic crime and violence problems; increase the illicit trafficking of weapons, drugs, and people; and create the conditions in which pandemic diseases can form and spread. The losses from urbanization will be greatest if the bulk of the world's cities are constructed and governed without adequate regard for social inclusion, political participation, economic productivity, and environmental sustainability.

Figure 4. Per Capita GDP and Urbanization

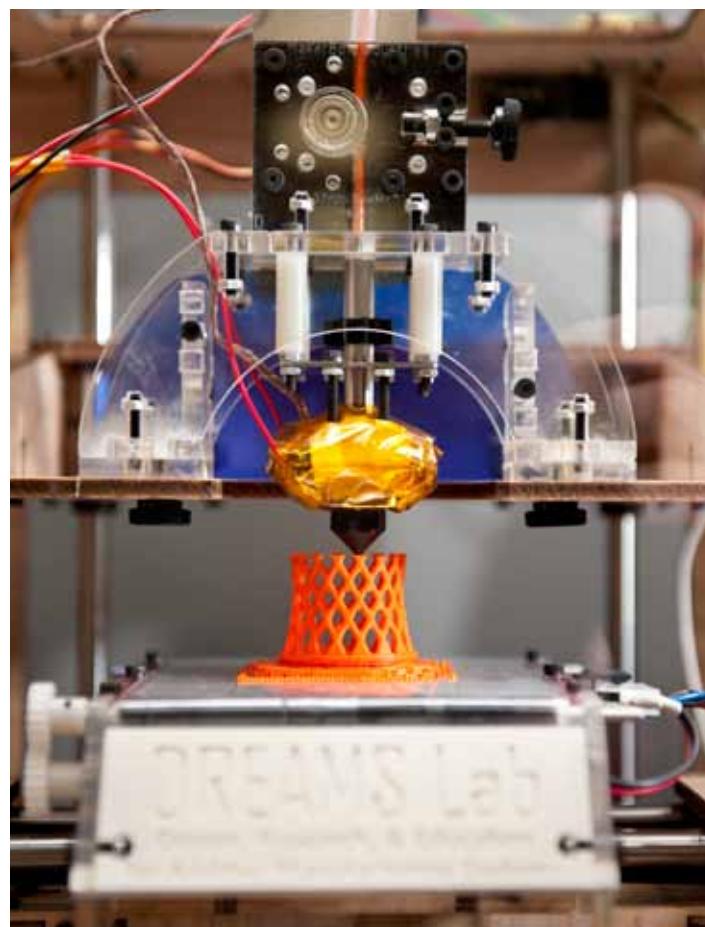
Per capita GDP has risen in tandem with increases in the urbanization rate.

Source: McKinsey Global Institute 2012



Game-Changing Technologies

A potentially decisive factor shaping future scenarios in 2030 is the Malthusian race between ever-growing demand for energy, water, and food and development and adoption of transformative technologies that may help meet this demand. These technologies are converging: the internet and nanotechnology will enable design and materials for 3D printing; nanotechnology may enable breakthroughs in energy storage technologies, solar cells or biofuels, GMO foods, and more efficient filters for water reuse or desalination. Below are examples of transformational technologies that could be commercially viable and at various stages of adoption worldwide by 2030:



3D printing is revolutionizing design and could reduce significantly the use of global supply chains and allow local industry to flourish anywhere. Virginia Tech's four "Dream Vendor machines" are available for student use. Photo credit: Logan Wallace

Third Industrial Revolution

- The convergence of 3D printing (additive manufacturing), the internet, nanotechnology, bioengineering, new materials, and robotics are leading to what Jeremy Rifkin dubbed "A Third Industrial Revolution." 3D printing—building products layer-by-layer, from digital designs—is already a niche technology producing airplane and auto components, iPhone cases, custom orthodontics, architectural models, and gadgets for hobbyists. Scientists are trying to use human cells and tissue to print human organs. 3D printing is now at the stage of development where computers were in the mid-1980s. As the range of materials used grows, particularly with new nanoscale materials, 3D printing will have much wider applications. It is revolutionizing design and could reduce significantly the use of global supply chains and allow local industry to flourish anywhere.
- Traditional manufacturing is also being revolutionized by robotics, which are growing cheaper and more sophisticated: "There will be millions of small and medium-sized firms that will benefit from new materials, better robots, smarter software, and abundance of online services, and 3D printers that can produce things in small numbers," is a probable future scenario, sketched by the *Economist*.

Energy

- The electrification of transport, driven by advances in battery storage and competitive, clean, solar energy, is among the synergistic breakthroughs likely to impact life by 2030. Battery storage breakthroughs can solve the problem of intermittency (when there is no sun or wind) for solar and wind energy as well as allow electric and hybrid electric cars to be cost-competitive.

- Battery technology is advancing incrementally, as are wind and solar energy (solar prices have declined 7 percent annually since 1980). Batteries have been expensive, non-durable, and low in energy density relative to fossil fuels. But recent research using nanoscience and lower-cost materials such as sodium and potassium promises a range of low-cost, highly durable, and high-energy density batteries. Big but inexpensive batteries that can be recharged tens of thousands of times might enable utilities to store renewable-generated electricity at large scale. Simultaneously, small, high-energy density batteries will enable the electric vehicle revolution by providing much greater range, faster recharging times, and increased battery pack durability. A *McKinsey Quarterly* report projects that cheaper, lighter, more efficient batteries could lower the price of lithium battery packs from over \$500 to \$160 per kilowatt hour by 2025. This would make them price-competitive with internal combustion engines at \$3.50 per gallon gasoline and accelerate the transition to a post-petroleum economy (70 percent of fuel is consumed by transport).

- **Food**

- The genetic engineering of crops is already a vital innovation in food production and will further increase the amount of food produced even under more difficult environmental conditions (e.g., climate change and water shortages). Genetically modified (GM) organisms have had their genetic structures altered to improve performance, for instance by making them toxic to insects or drought-resistant. GM crops, though still somewhat controversial, have become increasingly common in global agriculture: thirty genetically engineered crops were grown on 300 million acres of farmland worldwide in 2008; by 2015, about 120 crop varieties are expected to be under cultivation. Advocates argue that GM technologies are still in their infancy and project a world in which GM crops produce consistently higher yields under harsher environmental conditions.
- The greatest potential for disruptive change in food production likely will occur via innovation clusters rather than isolated technical breakthroughs. The single most significant innovation cluster might prove to be the vertical farm. Vertical farming promises to solve fundamental problems that have beset agriculture since its invention. Vertical farming entails stacking greenhouses on top of one other in order to grow food year-round in skyscraper fashion. Because growing occurs in controlled environments, vertical farms are far less susceptible to adverse weather (e.g., droughts, floods, heat, and cold spells) and invasive pests, and require far fewer resource inputs, including water and energy. Perhaps most importantly, with 60 percent of humanity living in cities by 2030, vertical farming could reduce farm-to-consumer distance to near zero, while relieving pressures on rural agriculture and saving water and energy.

Water

- “Slingshot,” a device the size of a small dorm refrigerator, can purify 250 gallons of water a day using no more energy than is needed to run a hair dryer. As detailed in the recent book, *Abundance*, when scaled up commercially, the water reuse device could sell for \$2500 and produce clean water for \$0.002 per liter.
- A firm called NanoH2O developed nanoscale filters for desalination that use 20 percent less energy and produces 70 percent more water than current desalination plants.
- Seventy percent of water is used for agriculture. Efficiency gains and an array of emerging technologies like those above promise to ameliorate feared water shortages in 2030.

1. The America Factor

The direction the United States decides to take will be a critical factor for this strategic landscape, yet **the United States' margin for error is greatly reduced in a complex operating environment of rising powers, critical uncertainties, and fiscal constraints.** As the *Global Trends 2030* report points out, how the United States responds to the historic forces at play in the world over the coming generation “will be among the most important variables in the future shape of the international order.” In the aftermath of two expensive, harrowing, yet inconclusive wars in Iraq and Afghanistan, the deepest economic downturn since the 1930s, and record national debt and deficits, US strategists have their work cut out for them.⁵

Grand strategy entails employing all the elements of national power to meet a set of desired objectives. Successful strategy starts with an assessment of the world, global trends, and possible scenarios to be avoided or hedged against. It defines and prioritizes American interests, the real and prospective threats to them, and then aligns resources and capabilities with those priorities and long-term objectives. Strategy is not an abstraction. It provides a framework to help policymakers distinguish the necessary from the merely desirable, to limit the tendency of day-to-day events piling up in the in-box from crowding out the important.

The sinews of US leadership and global primacy have been the multiple dimensions of unparalleled US assets—economic and financial strength, technology, and entrepreneurial innovation, military and diplomatic capabilities, natural resources, and cultural appeal. In

5 Congress has appropriated more than \$1.4 trillion since September 2001 for the Iraq and Afghan wars according to the Department of Defense. Estimates for the total costs of both wars range from the Congressional Budget Office (through 2017 including financing and related medical costs) \$2.4 billion-\$3.2 trillion (<http://www.reuters.com/article/2007/10/24/us-iraq-usa-funding-idUSN2450753720071024>) to \$3.2 trillion-\$4 trillion by the Eisenhower Research Project at Brown University (<http://news.brown.edu/pressreleases/2011/06/warcosts>).

this sense, domestic and foreign policies are deeply and inexorably intertwined. Current domestic problems notwithstanding, no other nation has the panoply of components of national power possessed by the United States nor is likely to by 2030. Yet addressing most of the current and emerging global problems cannot be achieved unilaterally by the United States or any other power.

Defining US interests

Beyond its critical role as architect and major guarantor of the multilateral institutions and the international rules-based system that was created in after World War II, the United States has provided a disproportionate amount of the public goods vital to the system’s success. What strategy the United States adopts and what global role it chooses to play over the coming generation will be shaped by the circumstances it faces, buffeted by the mega-trends identified in the *Global Trends 2030* report: demographic changes; the diffusion of power; burgeoning individual empowerment; and new challenges to adequate supplies of energy, water, and food.

One large strategic question facing the United States in the generation ahead is how to avoid a negative future of drift, an eroding international system dissolving into inward-looking nationalisms, and zero-sum behavior and mindsets on the part of major powers. Sustaining America’s will and capacity for leadership will be necessary but not sufficient to maintain and adapt the current international economic, political, and security arrangements robustly enough to meet current and emerging challenges. **At this historic juncture when no nation is singularly dominant, the questions of how norms and rules are shaped and enforced and who will supply what public goods to sustain a buoyant global polity are key to the viability of the evolving global order.**



A redefined, active, and agile US leadership will be required to fashion new partnerships with emerging powers and non-state actors in order to preserve and update the successful rules and norms of the international system. *Photo credit: Getty Images*

The starting point in determining US strategy is defining US interests and strategic objectives. The historic core of US interests has not changed markedly over the past several generations:

- Preventing and reducing the threat of direct terrorist attacks including against the homeland;
- Freedom of navigation;
- Freedom of commerce;
- Political freedom; and
- Opposition to any hegemon or hegemonic coalition dominating the Eurasian landmass, now updated to include unimpeded access to and stewardship of the global commons (air, sea, outer space, and cyberspace).

The September 11, 2001 terrorist attacks tragically dramatized the dark side of globalization, underscoring the priority of such threats to the homeland. This intersects with another prominent US interest: halting the spread of weapons of mass destruction. As President Obama's 2010 National Security Strategy says, "The American people face no greater or more urgent danger than a terrorist attack with a nuclear weapon." One great contemporary irony is that while nuclear weapons have been and continue to be an important factor in minimizing the risk of war between major powers, nuclear risk in regard to both terrorism and regional conflict continues to increase.

The United States' fundamental operating principles and tools designed to advance US interests in the aftermath of World War II also appear durable. A strong, credible defense; a market-based open trade and financial system; multilateral economic, financial, and political institutions with agreed rules and norms; and not least, a network of alliances and partnerships will remain essential ingredients for sustaining security and prosperity. **But all these things require updating to adapt to the contours of change, whether in the governance of the world financial system, distribution of global power, or the implications of emerging technologies.**

As a maritime nation, geography dictates that a forward military presence remains a vital component of the US

defense posture. As the Obama administration's 2012 *Defense Strategic Guidance* declared, "the United States must maintain its ability to project power in areas in which our access and freedom to operate are challenged." Looking to 2030, the means to effectively sustain that ability will entail a shift to a reduced permanent overseas presence and more reliance on access and partners with a transition to more of an "offshore balancer" role and a growing role for new technologies.

The United States' ability to project power and deter security threats has been dependent on security cooperation reflected in our system of alliances, including: NATO; bilateral alliances with Japan, South Korea, Australia, and others; and access arrangements with Singapore, the United Arab Emirates, and other countries in East Asia and Southwest Asia. Absent a US security guarantor role in Eurasia, regional and ethnic tensions and competitions would likely rise to the surface and foster instability, chains of nuclear proliferation, and local conflict.

US military preponderance has enabled the market-based system that, despite its flaws, has facilitated global prosperity unprecedented in human history. The increasingly integrated world economy has expanded more than fivefold in constant dollars over the past six decades, and world trade has grown twenty-seven fold in volume since 1950.⁶ In 2011, the dollar value of world merchandise trade advanced 19 percent to \$18.2 trillion, surpassing the previous peak of \$16.1 trillion from 2008 in constant dollars.⁷

Sustaining and expanding global free trade remains a *sine qua non* of US strategic interests. So does the framework provided by post-World War II multilateral institutions, the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO). Updating the rules and institutions of free trade will be essential if we are to avoid a future of drift toward protectionism or a failure to expand trade liberalization, especially as emerging technologies such

⁶ See the WTO website: http://www.wto.org/english/res_e/booksp_e/anrep_e/wtr08-2b_e.pdf.

⁷ WTO website, previously cited: http://www.wto.org/english/news_e/pres12_e/pr658_e.htm.

The GATT Trade Rounds

Source: World Trade Organization, 2011

Year	Place/Name	Subjects Covered	Countries
1947	Geneva	Tariffs	23
1949	Annecy	Tariffs	13
1951	Torquay	Tariffs	38
1956	Geneva	Tariffs	26
1960-61	Geneva (Dillon Round)	Tariffs	26
1964-67	Geneva (Kennedy Round)	Tariffs and anti-dumping measures	62
1973-79	Geneva (Tokyo Round)	Tariffs, non-tariff measures, "framework" agreements	102
1986-94	Geneva (Uruguay Round)	Tariffs, non-tariff measures, rules, services, intellectual property, dispute settlement, textiles, agriculture, creation of WTO, etc.	123

as additive manufacturing and nanotechnology give rise to whole new industries in the period to 2030.

Yet within the United States, the historic bipartisan free trade consensus has frayed. The president lacks Trade Promotion Authority even as innovative new trade arrangements such as the Trans-Pacific Partnership are being pursued. Globally, the WTO's current Doha Round of trade liberalization negotiations is moribund in its eleventh year. As the chart above shows, each round with additional nations has proven more difficult and taken longer to negotiate.

One cause of the difficulty to conclude the Doha Round is a growing sense that globalization is not a simple “win-win” proposition, but a source of growing inequality with uneven benefits. Another is emerging economies such as Brazil and India exercising their weight in rejecting proposals and focusing on regional trade agreements. In any case, future global trade liberalization efforts likely will be limited to specific sectors such as clean energy technologies or biotechnology.

The economic hardship resulting from the post-2008 financial meltdown has led to an increase in protectionist measures being adopted around the world. The WTO reports that countries have applied 182 trade restricting measures since 2011, and more than 600 since the global recession and financial meltdown in 2008. Such developments may be a harbinger of trends leading to a future drift and erosion scenario, though to date, these measures have not

led to cascading protectionism that many feared in response to the Great Recession of 2008.

The Fallacy of the Decline Debate

The 2008 Western financial meltdown, slow-motion recovery, and a dysfunctional polity have cast doubt at home and abroad on the future US role in the world. This US predicament has spawned a veritable cottage industry of “decline” books debating whether or not the US is a fading star, its role eclipsed by China, India, and other emerging powers.

Worry about decline has a time-honored place in American history.⁸ This is but the most recent of cycles of national angst and collective self-doubt in the post-World War II era that stretches back to the late 1950s. First, it was the 1957 surprise launch of the *Sputnik* satellite by the Soviet Union that sparked fears of an America falling behind. Then there was the aftermath of the Vietnam debacle, the oil crisis, and hyperinflation of the 1970s. That bout of malaise was followed in the late 1980s by fears that the US was being overtaken by Japan, underscored by book titles like *Japan as Number One* and even *The Coming War With Japan*. It was argued by a “revisionist” school of thinkers that a “Japanese model” of state-guided industrial policy would surpass the United States economically. Even as books such as journalist James Fallows’ *Looking at*

⁸ For a thoughtful analytical survey of decline thinking in American history and assessment of our current malaise, see James Fallows, *The Atlantic*, Jan/Feb 2010 (<http://www.theatlantic.com/magazine/archive/2010/01/how-america-can-rise-again/7839/3/>).

the Sun were being published in the early 1990s, Japan had entered a “lost decade” of flat economic growth.

The current genre of books on decline is centered on “the rise of the rest,” non-Western economies, with a heavy emphasis on China. Robert Kagan, a prominent critic of the decline notion, wrote in a book-length rebuttal, *The World America Made*, “The perception of decline today is certainly understandable, given the dismal economic situation since 2008 and the nation’s large fiscal deficits, which, combined with the continuing growth of the Chinese, Indian, Brazilian, Turkish and other economies, seem to portend a significant and irreversible shift in global economic power.” Kagan makes a case, though, that history and broader measures of power suggest that such arguments are exaggerated at best, and that China remains far from displacing the United States. But his emphasis is on the importance of American power and values in fostering and sustaining the post-World War II international system.

As *Global Trends 2030* outlines, China, India, and other emerging economies have become engines of global economic growth in a two-tiered global economy, with wealth spreading from West to East and South. Yet the United States remains disproportionately the leading steward of the current global system. On most occasions when the world dials 9-1-1, it is the United States on the other end. The post-World War II system of institutions, standards, and norms of behavior has worked because by and large it also built in a modicum of self-restraint on all actors—including (at least in principle) the United States. This has been part of the attraction of US leadership.

Looking at the unfolding diffusion of power, many analysts pose questions about whether emerging powers will challenge the current system. One school, of which Kagan is perhaps the exemplar, fears that absent US leadership the entire system is at risk.⁹ A contrary school of thought, “liberal institutionalism,” perhaps best represented by John Ikenberry, argues that integrating rising powers like China into global

⁹ See Robert Kagan, *The World America Made*, Alfred A. Knopf, 2012.

institutions will give them a stake in preserving them. The force of the institutions would constrain the behavior of emerging powers offsetting a diminution of US power and thus, sustain the system.¹⁰

The truth lies somewhere in between. International Institutions do help to foster norms and patterns of behavior. But they are not self-sustaining mechanisms. They work to the degree major actors are invested in them. The UN Security Council is a good example of that principle. Rising powers like China and India have benefited hugely from the international economic system and pose no alternative. They have been largely content to be free riders. But, like great powers historically (including the United States) they can and will use their power to bend or change rules to serve their interests. China’s efforts to shape interpretations of the Law of The Sea Treaty in regard to naval passage through 200-mile economic zones and India’s opposition to agreements at the Doha trade talks are classic examples. The challenge approaching 2030 is how to forge consensus for cooperation to shape institutions and mechanisms to adapt the system to address emerging needs and common global problems from water shortages and disease to climate change.

The fallacy of the current decline debate is that the rise of China and “the rest” is not necessarily a negative trend nor does it portend an inevitable US downward spiral. In fact, US strategy and policies since World War II have, in effect, been designed to foster relative rise, to encourage and enlarge a virtuous circle of economic growth, development and burgeoning middle class societies with a stake in the system. That is why most of the current dilemmas are those borne of success.

At the end of World War II, the United States accounted for some 50 percent of a devastated world’s GDP. The United States’ undertaking to help rebuild Europe and Japan was not, as is sometimes depicted, simply a Cold War enterprise to create a bulwark against the Soviet Union. It was also a conscious effort to create a dynamic global economy and a burgeoning global

¹⁰ See, for example, John Ikenberry, *Liberal Leviathan: The Origins, Crisis, and Transformation of the American System*, Princeton University Press, 2011.

middle class with new markets to buy US goods and a system of rules and institutions that constrained all and reinforced the values and norms of open markets and political pluralism. By the 1970s the US share of global GDP was about 25 percent (it is now 21 to 23 percent depending on how it is measured and the value of the dollar), but a dynamic economic system and stable global political and security system in Western Europe and parts of Asia were firmly in place. The end of the Cold War began the integration and absorption of the Warsaw Pact states and the former Soviet republics.

Viewed against that historic backdrop, once it began to integrate itself into the international economic system in 1979, China pursued a path that made it a principal beneficiary of the system of globalization, one still led by the United States and its key partners. Similarly, when it launched still uncompleted economic reforms in 1991, India also became more deeply integrated into the global economy. The challenge to 2030 is to update the current system while deepening integration of the greater Middle East, Africa, and parts of Latin America, which have been on the periphery of the globalized world.

The Pogo Problem



Source: *Pogo: We Have Met the Enemy and He Is Us*, Walt Kelly, Simon & Schuster, 1987.

The challenge to the United States is not necessarily the relative economic strength of China or other emerging economies. As seen with the closing of the gap by Western Europe and Japan in the 1960s, which was not only desired but facilitated by the United States, relative decline can be a positive development. What is problematic is absolute decline, or perhaps

more accurately, domestic corrosion.

The metrics of US deterioration are unassailable, beginning with a \$15 trillion national debt and a budget deficit amounting to about 7 percent of GDP in 2012. This is in no small measure a result of unfunded tax cuts, waging two very expensive, unfunded wars, and an expensive and unfunded increase in Medicare drug benefits that turned a budget surplus in 2001 into a mushrooming deficit. This fiscal irresponsibility was compounded by the 2008 financial meltdown and ensuing great recession. A number of US cities, three in California alone, have declared or are facing bankruptcy.¹¹ This is simply unsustainable, as the bipartisan National Commission on Fiscal Responsibility and Reform (popularly known, after its co-chairs, as Simpson-Bowles) emphasized.¹² Indeed, as then-chairman of the Joint Chiefs of Staff Admiral Michael Mullen declared in 2010, "The most significant threat to our national security is our debt."

But the list of dubious achievements, from a national infrastructure graded as a "D" by the American Society of Civil Engineers; to the reality of nearly 30 percent of high school students failing to graduate; to the highest rate of incarceration in the world, with 2.3 million (756 per 100,000) in jail; all pose questions about the social and economic fabric of American society and about US competitiveness in a global economy.¹³

The 2010 update of the National Academy of Sciences report *The Gathering Storm* details efforts to address the deficiencies identified in its initial report necessary for the United States to "prosper in

11 See map of cities and municipalities bankrupt in *Governing* magazine, August 2012 (<http://www.governing.com/gov-data/municipal-cities-counties-bankruptcies-and-defaults.html>).

12 The bipartisan commission appointed by the president offered an agenda to fix national problems, but neither the White House nor the Congress enacted it. For their report and recommendations see: http://www.fiscalcommission.gov/sites/fiscalcommission.gov/files/documents/TheMomentofTruth12_1_2010.pdf. For a similar assessment see the Dominici-Rivlin report published by the Bipartisan Policy Center: <http://bipartisanpolicy.org/projects/debt-initiative/about>.

13 See the *New York Times*, April 23, 2008 (<http://www.nytimes.com/2008/04/23/world/americas/23ih-23prison.12253738.html?pagewanted=all>).

the global community of the 21st century.”¹⁴ While it points to modest improvements, the shortcomings remain troubling. The United States ranks 27th among developed nations in the proportion of college students receiving undergraduate degrees in science or engineering. There are more foreign students studying physical sciences in US graduate schools than Americans: 36 percent of physics PhDs and 63 percent of engineering PhDs are awarded to foreign students. In an OECD report on global education standards, Americans were not near the top in any category, ranking twelfth in science and twenty-sixth in math. Clearly, it is time for another *Sputnik* moment to instill a sense of urgency and to refocus priorities.

There are similar metrics in regard to life expectancy (US ranks 24th), R&D funding, and even technological innovation (in 2009, 51 percent of US patents went to non-US companies). The point here is not to harp on American imperfections. Rather, it is to underscore that the most fundamental challenges to the United States in the generation ahead are internal. If China disappeared tomorrow, the United States would still be at a major competitive disadvantage. This is why the so-called decline debate is largely a distraction.

Foundation of Power

Economic strength and technological innovation have been and remain the decisive foundation and wellspring of US national power. No national strategy based on US global leadership is viable absent that underpinning. This is particularly true in a world where emerging powers are increasingly more capable relative to the United States and at a historic moment when economic strength is an important element of national power. Revitalizing the US economy and strengthening the social fabric is thus a *sine qua non* for renewing American leadership in the generation to 2030. A revitalized US would be a force multiplier driving toward a positive future, as the world’s largest market and the leading source of technology innovation.

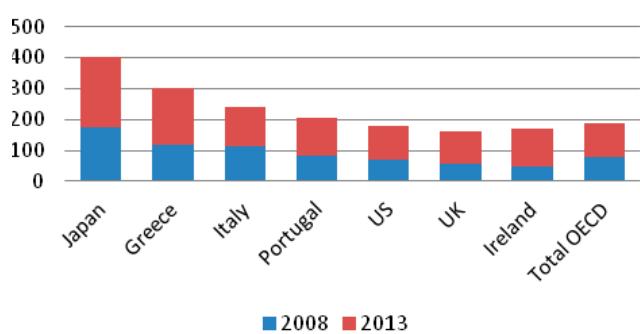
¹⁴ See *Rising Above the Gather Storm*, Report to the Presidents of the National Academy of Sciences, National Academy of Engineering and the Institute of Medicine, 2010.

In 1943, Walter Lippmann famously argued that a successful foreign policy “consists in bringing into balance, with a comfortable surplus of power in reserve, the nation’s commitments and the nation’s power.” Solvency eluded US foreign policy in the aftermath of the Vietnam War. It was arguably the case at the end of the 1990s. But the enormous toll in blood and treasure of the long Iraq and Afghan wars has contributed to even greater US deficits than in the 1970s, distorted our priorities, and entailed large opportunity costs in diverting resources from preparing for the future.

Absent a reversal of US fiscal fortunes, it is difficult to see how the path to 2030 can be one of collaborative efforts to solve global problems rather than a scenario of drift, eroding globalization, inward-looking nationalisms, and regional conflicts sparked by ethnic tensions, territorial disputes and resource scarcity. In other words, the most important factor for pursuing a more prosperous, secure 2030 is the revitalization of the domestic sources of US strength. Historically, the United States has repeatedly demonstrated great resilience in the face of crisis.

Government Gross Financial Liabilities as % of GDP

Sources: Organization for Economic Cooperation and Development, 2012



The Comeback Kid

Neither the fragility of the world financial system nor that of the United States’ recovery should be underestimated. That said, however, by most measures the United States is the best positioned of any of the major powers to revitalize its economy in the generation ahead to 2030.

For starters, while the US national debt burden as a portion of GDP is unsustainable, it is nonetheless significantly less than most EU countries (**see chart at left**). More importantly, in the fourth year since the Great Recession, both private debt and personal debt have been dramatically reduced. The bank bailout forced some of the largest US banks to write down nearly \$500 billion in bad loans and then to raise \$318 billion in new capital to meet new minimum standards. As a result, their equity ratios are at pre-crisis levels.

Housing, a sector which tends to drive recoveries, is still undervalued as a result of the collapse. The mortgage crisis led consumers to shed debt and increase savings. According to a recent McKinsey Global Institute report, “Debt in the United States financial sector relative to GDP has fallen back to levels last seen in 2000, before the credit bubble. US households have reduced their debt relative to disposable income by 15 percentage points, more than in any other country; at this rate, they could reach sustainable debt levels in two years or so.”¹⁵

Another unanticipated post-2008 development that has not only bolstered the United States' economy, but also transformed US energy security and the geopolitics of energy, is the shale revolution. The technology of hydraulic fracturing (known as fracking) combined with three-dimensional seismic imaging and horizontal drilling allows the extraction of natural gas and oil trapped in shale rock. This year, production of shale gas reached 37 percent of total US gas production. US oil imports have fallen from 65 percent of total consumption to 40 percent. A recent International Energy Agency (IEA) report, *World Energy Outlook 2012*, forecasts that the United States will surpass Saudi Arabia in oil production by around 2020 and that North America will become a net energy exporter by 2030.¹⁶ This technology, a US innovation, has not only given a major boost to the economy but has altered the US energy picture, doubling the size of gas reserves

and increasing recoverable oil reserves. There are additional downstream benefits, as cheap gas has led to “insourcing” on the part of US companies, particularly in petrochemical, manufacturing, and other energy-intensive industries, creating a surge in high skilled jobs at home. While there are substantial shale deposits in Europe, Australia, Venezuela, and China (the world’s largest), no other nation has yet developed substantial shale gas production.

A combination of increased productivity and macroeconomic factors (including rising commodity prices and a weak dollar) and perhaps the stimulus program has put the United States on track to realize President Obama’s 2010 goal of doubling US exports, with exports growing about 16 percent a year. Looking ahead, US traditional exports (aircraft, machine equipment, pharmaceuticals, and entertainment); high-end services like architecture and engineering; and advantages and innovation in the high tech sector are all likely to benefit from growing demand in emerging economies. Moreover, US companies are currently sitting on nearly \$2 trillion in cash available for new investment.

Then there is the relatively favorable US demographic profile: the United States’ median age is currently 37, and the United Nations projects that by 2030 it will increase only to 39.1, significantly lower than other OECD nations (e.g., German median age in 2030 is projected to be 48.8; Japan’s 51.4). That bodes well for future productivity as well as the future tax base.

Clearly, the foundation for renewed economic growth, dynamism, and global competitiveness already exists, despite government gridlock that must be overcome. There is no shortage of well-conceived ideas of how to put the United States on a path to sustainable fiscal health and solvency. One need not embrace every single recommendation of the bipartisan Simpson-Bowles commission to see the wisdom in the broader agenda, which includes a mix of spending reductions and reform of taxes, health care, and Social Security that would achieve nearly \$4 trillion in deficit reduction by 2020 and reduce the debt to 40 percent of GDP by 2035.

15 See “Debt and Deleveraging,” McKinsey Global Institute, 2012.

16 See *World Energy Outlook 2012*, International Energy Agency, Paris, France, November 2012. The IEA projection is based on current trends in shale gas and tight oil production and exploration.

The contrast between the economic buoyancy outlined above and US political dysfunction led Australian Foreign Minister Bob Carr to comment, “The United States is one budget deal away from restoring its global preeminence.” But he cautioned, “There are powers in the Asia-Pacific that are whispering that this time the United States will not get its act together, so others had best attend to them.”

2. Power, Partnerships, and Governance

How does a revitalized United States define and employ its modified primacy amidst the strategic landscape discussed above to avoid the negative future scenarios depicted in *Global Trends 2030*?

Globalization has wrought a diffusion of power among nation-states and increased tech-driven empowerment of individuals, non-state actors, and networks. This is redistributing and redefining power. Solving problems like poverty, disease, or climate change may lie more in public-private partnerships than just arrangements among states. It is a fragmented, messy, but not a classically multipolar world.

The redistribution of clout, combined with ongoing technological innovation, is changing the nature of power in the 21st century. Power is the ability to obtain desired outcomes. This will be much more difficult and more complicated than ever. As former National Security Advisor Brent Scowcroft has argued, “the very nature of power is being transformed. It is not based to the same extent on how many people are under arms or the strength of the national economy, but instead on more subtle attributes and levers of influence.”

There is a burgeoning strata of pivotal states, dynamic rising middle powers (most prominently, Turkey, Brazil, South Korea, Indonesia, Saudi Arabia, and South Africa) likely to play an increasingly important role in regional security and global rule-shaping. Modernization does not necessarily mean Westernization, but rather is occurring on the terms of various cultures as wealth and technology spreads to the east and the south. Some of these emerging states—democracies as well as authoritarian regimes—harbor resentments against US/Western-imposed policies of the past that may surface in unexpected ways. We saw a glimpse of this in 2010

when Brazil and Turkey tried to launch their own diplomatic effort to solve the Iranian nuclear issue.

At the same time, it is important to understand that no major power seeks an alternative to the current interdependent global system. There appears to be a broad concurrence on the desirability of a rules-based system. But as is displayed at annual BRICS (Brazil-Russia-India-China-South Africa) nation summits, many emerging powers seek to bend rules to serve favored interests, have differing values and priorities, and do not necessarily accept the legitimacy of US rule-making. Key definitions in regard to regulations, standards, and norms are increasingly contested as emerging powers press for a larger role in global institutions such as the World Bank, IMF, and UN Security Council. As evidenced by the failures of the Doha Round of global trade talks, the Fissile Material Cut-Off Treaty, and the Kyoto Treaty on climate change, effective global governance is increasingly difficult to achieve.

These emerging powers have a seat at the table in the G-20. The unwieldiness of that process offers a window into the future of global problem-solving. Yet the G-20 is an important shift from the G-8, reflecting the diffusion of global power. It represents some 80 percent of the world’s population and 85 percent of the global economy. Despite its somewhat disappointing performance to date, it is probably as good a mechanism as we will get for building consensus on global governance. The degree to which the G-20 nations evolve as stewards of the international system will impact which future scenario prevails. US strategy will require a greater investment of intensive public and private diplomacy to foster a greater sense of both empowerment and responsibility among G-20 actors.



G-20 Mexico Summit, 2012: The degree to which the G-20 nations evolve as stewards of the international system will impact which future scenario prevails. Photo credit: Chuck Kennedy

Regionalized Globalization

Within the G-20, the dynamics of globalization have shifted. Whatever the next phase of the European project, the EU is emblematic, if not a trailblazer of an ongoing trend toward region-centric patterns of trade and investment that is reshaping the international system. The engines of economic growth have become the emerging nations of the G-20 in a two-tier global economy. This is reflected in patterns of trade and investment in the major economic clusters: Europe (EU), Asia, North America (NAFTA), and Latin America.

Nearly two-thirds of European trade is within the EU; NAFTA represents more than 40 percent of total US trade; East Asian intra-regional trade is 53 percent; and excluding Mexico, Latin American intra-regional trade is roughly 35 percent and growing rapidly. It should not be surprising that however aspirational, Latin countries are pursuing an EU-type regional body, the Union of Latin American Nations (UNISUR) or that Asian states are trying to build their own regional economic and political architecture.

One consequence of this economic pattern is a more fragmented globalization and also greater “South-South” economic activity. Most dramatic is the growing “energy nexus” with two-thirds of Middle East oil exported to East Asia—and for China, Japan, South Korea, and Taiwan, the Gulf oil states supply

upwards of 70 percent of their oil imports. This has generated growing commercial and cross-investment interdependence between the two regions and may increasingly impact their geopolitical calculus. This is a trend likely to impact US influence in the Middle East over time. China and India are likely to become more deeply involved in the geopolitics of the Middle East over time. Both China and India will have the naval capacity to contribute to the security of the sea lanes and the ability to collaborate in facilitating the transformation of the Middle East. The degree to which they act as stakeholders, assuming some of the burden—and the United States’ ability to share power—will be an indicator of which future lies ahead.

Similarly, we see growing economic links between Asia and Latin America and between China and Africa. In real terms, the diffusion of power means China and Brazil using the RMB as a unit of exchange in bilateral trade. By 2030, China’s Yuan may compete with the United States dollar as a reserve currency. China has also become a major source of capital flows to non-OECD nations, signing loans of more than \$110 billion to governments and companies since 2009, an amount rivaling the World Bank.¹⁷ In addition, Beijing has provided grants (roughly \$15 billion) and foreign aid (roughly \$10 billion).

¹⁷ See “China’s lending hits new heights,” Financial Times January 17, 2011; see also China White Paper on Foreign Aid, Beijing, 2011.

Other emerging G-20 countries will also have a growing role in the IMF and World Bank. Moreover, China, India, Brazil, Turkey, and South Korea also have growing foreign aid programs and thus competing interests with the West, as well as with each other in Africa, in Central Asia. These patterns are altering the dynamics of globalization.

New power realities are further complicated by regional tensions and rivalries: between China and India, China and Japan, Sunni Arabs and Shia Islam, Turkey and Iran. Beyond resentment of US dominance, how much do the BRICS agree on?

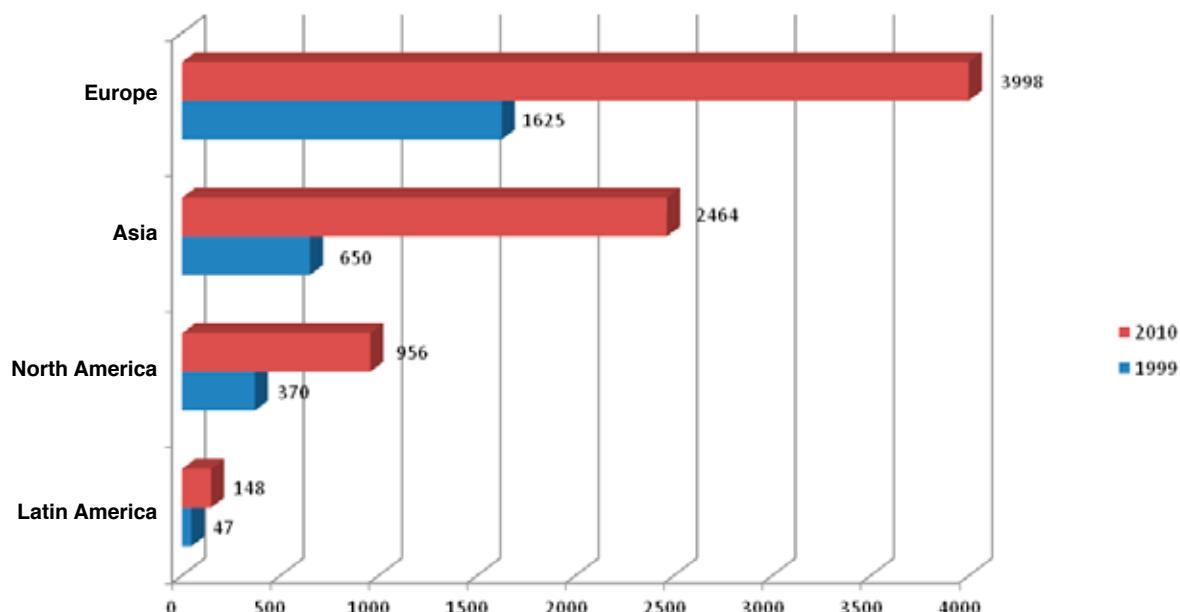
Global Governance Deficit

Such economic, financial, and political patterns will undoubtedly be a factor impacting the geopolitical calculus of major and middle tier actors as they define and pursue their interests. This trend both reflects and is a driver of the diffusion of power and will likely persist to 2030. It has led some observers to conclude that we are in a “G-Zero world,” defined as “one in which no single country or bloc of countries has the political and economic leverage—or the will—to drive a truly international agenda.”¹⁸

¹⁸ Ian Bremmer and Nouriel Roubini, *Foreign Affairs*, March/April 2011.

Intraregional Trade in 1999 and 2010 (\$ billion)

Source: World Trade Organization 2010



This is rather exaggerated: on issues such as countering terrorism; combating maritime piracy; myriad regional free trade agreements; imposing and enforcing sanctions on nuclear proliferators such as North Korea and Iran; and even initial G-20 financial cooperation in 2008, we have seen demonstrable leadership and cooperation.

But for illustrative purposes, the “G-Zero” concept highlights a substantial underlying cause of what is widely considered a global governance deficit. It is worth recalling that the UN had fifty-one members at its founding in 1945; it now has 193 member states. It would be considerably more difficult to write, much less achieve consensus on, the UN Charter today.

Global institutions like the UN Security Council, the World Bank, and the IMF still largely reflect the power realities of the post-World War II world, nearly seven decades later. The International Energy Agency (IEA) created by OECD consumer nations in response to the 1974 oil crisis, even now does not count two of the world’s largest energy consumers—China and India—as members. Both are free-riding on the Strategic Petroleum Reserves of the twenty-seven IEA members. Many countries call for “democratizing” the international system, even though some, like China, refuse to do so at home.

The lag between the diffusion of power and the distribution of power in multilateral institutions fosters resentment in emerging economies, thus complicating efforts at global problem solving. Thus, it is relatively easy for nations to block global outcomes whether the Kyoto accord on climate change, the Doha global trade round, or UN efforts to reach a treaty to cutoff production of fissile material. But it also increases the difficulty on forging cooperation for effective action to address global problems.

Nonetheless, the governance deficit concept is something of a misnomer. The world is not in a state of anarchy. There are dozens of obscure mechanisms such as the International Civil Aviation Organization (ICAO) whose rules allow world airline flights, the internet, international mail, global use of credit cards, patent and copyright protection, nuclear safety, and myriad other transnational activities that we take for granted. This “plumbing” for the international system enables globalization day-to-day. (See box at right for a sampling.)

The notion of a governance deficit most properly refers to global problem-solving. Avoiding the worst-case 2030 scenarios requires adjusting the global order in ways that more accurately reflect actual influence of emerging G-20 powers and regional groupings. It will be a test of US leadership to navigate a sharing of power in global institutions; and a test of ambitions for

emerging powers more comfortable free-riding. It would be a world where emerging states and non-state actors become responsible stakeholders and stewards of the global system.

One key problem in updating institutions is that there is a tradeoff and a constant tension between political legitimacy and effectiveness. There have been efforts for a generation to reform the UN Security Council.

However logical to include India, Japan, Brazil, or Germany may appear, would adding more veto-wielding UNSC members make the Security Council more effective?

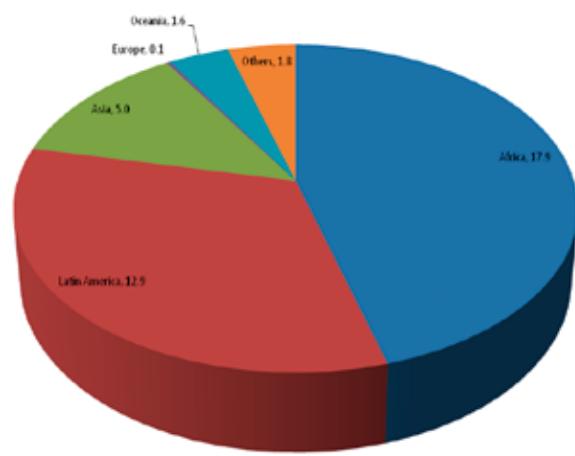
Similarly, post-2008 efforts to reform the international financial system, much of it centered in the G-20, has seen limited success. Much of the accommodation to the “rise of the rest” will come at expense of Europe, which is in many instances (e.g. two EU members on the UNSC) over-represented in post World War II institutions. In the IMF, an 85 percent supermajority is required for major decisions. But what happens when the US vote in IMF—currently 16.75 percent—falls below the 15 percent required for a veto?

Power Realities

Globalization, the dispersal of economic strength beyond the West, and not least, the growing role of

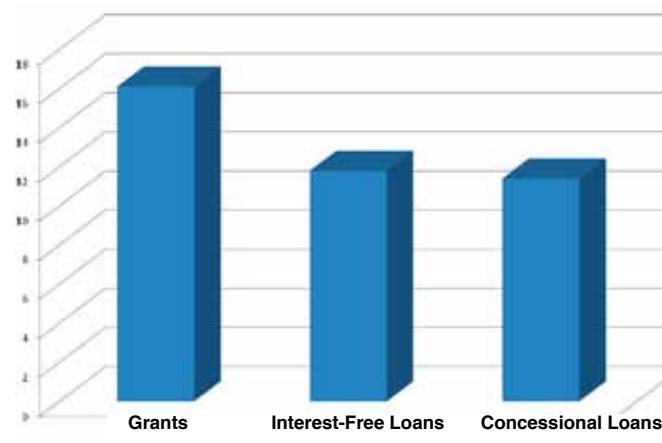
Distribution of Chinese Foreign Aid by Region, 2009 (\$billion)

Source: UNICEF 2011



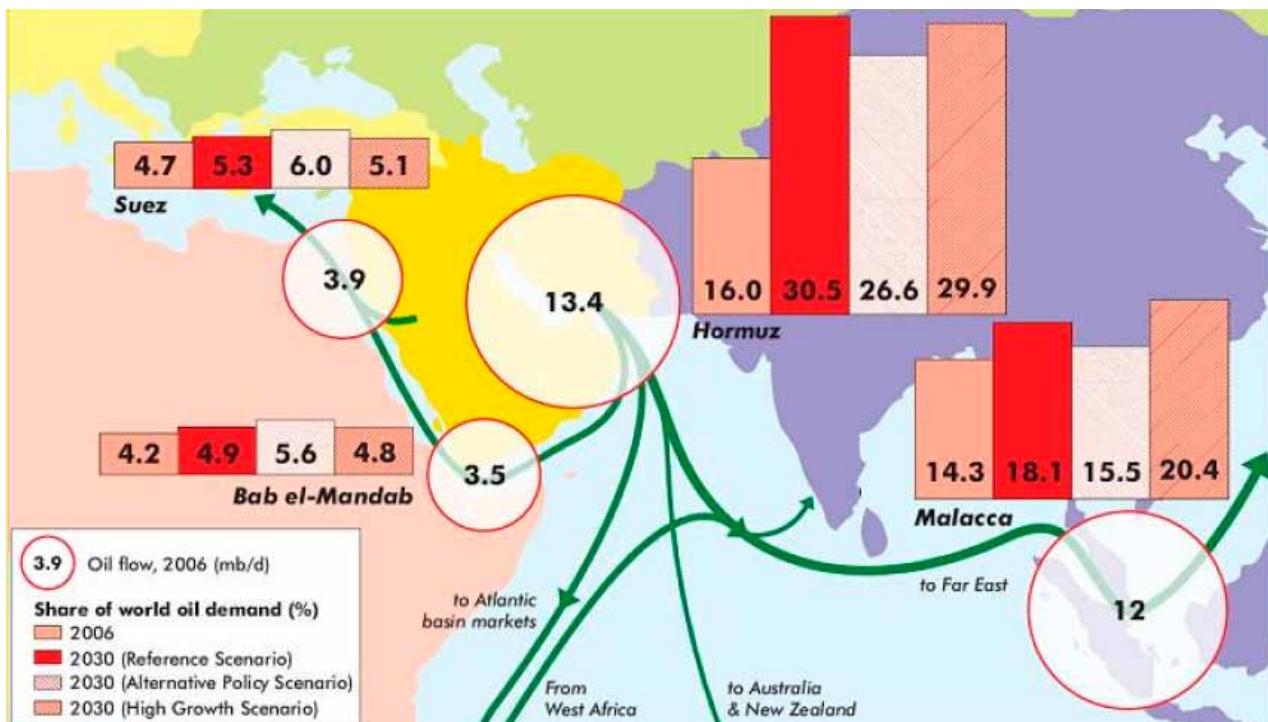
Distribution of Chinese Foreign Aid by Type, 2009 (\$billion)

Source: UNICEF 2011



Oil Export Flows from the Middle East

Source: International Energy Agency 2007



NGOs and empowered individuals have changed the nature of power – the ability to obtain desired outcomes. Rather than a G-Zero world, US strategy will increasingly have to navigate a world of what might be called “situational power.” While the United States will continue to have overwhelming military pre-eminence in state-on-state scenarios to 2030, recent history has shown that military preponderance does not necessarily translate into determining many outcomes. Just because you have a hammer does not mean that every problem is a nail.

That is to say, different issues and problems will require different tools and different constellations of actors to obtain results. The operative principle should be form follows function: who has a seat at the table depends on what they bring to the table on a given issue. The test of leadership will be the ability to mobilize partners to solve problems. For example, in addressing the conflict in Syria and removing Bashar al Assad from power, Turkey, Saudi Arabia, and Qatar may be more

important partners than Europe. The now failed Six-Party talks on denuclearization of North Korea involved the major powers in Northeast Asia (US, China, Russia, Japan) and the two Koreas. Adding other players would have only complicated already difficult negotiations. On some issues such as combating diseases like malaria, global healthcare or pandemics, private actors such as the Gates Foundation may be more important partners than many individual nations.

Global Governance: the “plumbing” of day-to-day globalization (illustrative)

Arctic Council, European Union, World Health Organization (WHO)
 World Intellectual Property Organization (WIPO)
 World Trade Organization (WTO)
 International Atomic Energy Agency (IAEA)
 International Maritime Organization
 International Civil Aviation Organization (ICAO)
 International Telecommunications Satellite Organization (INTELSAT)
 International Committee of the Red Cross (ICRC),
 International Maritime Satellite Organization
 Internet Corporation for Assigned Names and Numbers (ICANN)
 European Bank for Reconstruction and Development
 International Court of Justice (ICJ)

While efforts to update the UN system remain an important challenge, and the UN umbrella is often an important source of legitimacy, its utility is limited. UN specialized agencies monitoring nuclear weapons, helping refugees providing food aid, and fighting disease will remain important institutions that should be strengthened. But since the end of the Cold War, ad hoc multilateral cooperation has frequently been the most effective mechanism for global problem-solving. It was evident in the East Timor Crisis in the 1990s, the coalition of naval powers cooperating in the 2004 Tsunami relief effort, the 2001 SARS pandemic, the 2007 H1N1 virus pandemic threat, and fighting maritime piracy in the Gulf of Aden, just to name a few. The coordinated effort of sixty nations combating piracy off the coast of East Africa is facilitated by several UN Security Council resolutions. Many such exercises can be conducted under Chapter VIII of the UN Charter, which authorizes regional groups to take action and can thus offer UN sanction as an important source of legitimacy.

Applying the ad hoc multilateral principle more broadly, it made sense to form a Major Emitters Group: sixteen of the largest emitters account for 85 percent of GHG emissions. Given the unwieldy nature of the Kyoto climate change process involving 191 UN members, agreement among the key players would be a predicate to success in reducing the accumulation of GHG emissions. On the other hand, success on some issues can better be ensured by expanding the participation of nations. The United States launched the Proliferation Security Initiative in 2003, a network of countries willing to cooperate to halt the trafficking in WMD technologies. From an initial ten members, the network has expanded 98 countries.

American primacy will remain, but on an increasing array of issues the operational meaning of US leadership will be a *primus inter pares* relationship with partners, state and non-state actors and networks. Regardless of the degree to which some partners may be much less than equal, reaching consensus for cooperative action will often require them having a sense of enfranchisement.

Even under the best of circumstances, achieving US objectives will require a more agile exercise of leadership with a keen sense of both possibilities and limits. The painful lessons and opportunity costs of Iraq and Afghanistan suggest that in regard to wars of choice and exercises in nation-building, distinguishing between the desirable and the necessary is critical. It will require balancing interests and values and a difficult psychological adjustment to sharing power. It will also require clever, redefined leadership to revamp the international economic political and security system. **This means reinforcing—and in some cases rethinking—traditional and new allies and partners, identifying new actors (e.g., mega-cities and NGOs), and cultivating a modus vivendi with emerging major and middle tier actors whose interests may not be congruent with the United States on many issues.**

In regard to defining US leadership in this political milieu, it will vary based on circumstances. Rather than considering itself a hegemon, it would be wise for the United States to think more like chairman of the board, convener in chief, catalyzer, and 911 first responder (decreasingly so). Operationalizing *primus inter pares* is an art, not a science. Discreet engagement, humility and knowing where your leverage starts and stops will be critical to a prudent, strategy-driven, priority-focused policy. It will mean distinguishing between the necessary and the merely desirable. **There will be a tension between shedding the habit of “Global Nanny” and sustaining domestic consensus for an internationalist foreign policy.** And not least, changing the institutions of global governance will be a difficult, incremental process often energized in response to crises.

Partners: Transatlantic Pillar

In a world of diffused power it may seem counter-intuitive, but the transatlantic partnership US Pacific and Middle East alliances remain key pillars of US strategy toward the Eurasian landmass and more broadly, in shaping the international system. The transatlantic economy accounts for 54 percent of global GDP, Europe is the largest investor in the

United States and Japan is the world's third largest economy. The European Union is a historic experiment in post-Westphalian meta-sovereignty and NATO, its manifold problems notwithstanding, remains the unique multilateral institution capable of rapid military action and a demonstrated global security actor.

Serious questions hang over the future of Europe and of NATO partners' political will and capacities in a time of sustained defense austerity.

Nonetheless, shared democratic values and habits of military cooperation underscore the continued importance of the transatlantic partnership as force multiplier for US foreign policy. This is evidenced in European participation in Afghanistan, in EU strong advocacy for tough sanctions against Iran and pressure on the Assad regime in Syria.

American primacy will remain, but on an increasing array of issues the operational meaning of US leadership will be a primus inter pares relationship with partners...

The EU-proposed Code of Conduct for Outer Space is an important contribution to managing the global commons. And US-EU and NATO collaboration will be critical to defining new rules for a stable and open cyberspace. The EU can play a role in East Asia: it has an ongoing dialogue with Beijing and is China's largest trading partner, with more than \$500 billion in two-way trade in 2011. The EU also seeks to enhance its ties with Asia writ large, and has an annual high-level dialogue with Asian nations, the Asia-Europe Meeting (ASEM). This EU engagement with Asia reflects the reality that challenges to global security and prosperity in the generation ahead lie beyond geography and more often than not, outside the realm of military force. It is the case although the EU and the United States differ on a range of global issues such as climate change and GMO agriculture; and although NATO, as Former Defense Secretary Robert Gates warned, has become a two-tier organization.

But this partnership may weaken in the period to 2030. Even before its debilitating debt crisis, Europe tended to punch below its weight in the international system. And now, EU soft power as an exemplar of prosperous multilateralism is diminishing as the future of the Euro is questioned amid signs of renationalization and a nascent North-South European divide.

Europe is undergoing a generational crisis, as the cost of social welfare in aging societies takes its toll. The European banking crisis, with many banks financially stretched and disagreement over how the ECB should respond reflects a political crisis within the EU, as austerity measures and spending cuts foster unrest in the most affected countries.

Whether or not all seventeen members stay in the Eurozone or not, for much of the rest of this decade Europe will be internally-focused, enmeshed in this predicament. The optimistic scenario would be a strengthened Europe after a period of a painful structural economic reforms in the weaker countries (Greece, Portugal, Spain, Italy) enabling a deepening of EU financial integration. That would reinforce the EU as a global political actor as well.

A less optimistic scenario would see a fragmenting EU, with what remains of the eurozone divided between its prosperous northern members led by Germany, and its poorer south, with France, perhaps sitting in the middle, and the UK increasingly peripheral to European decision-making. The result would be a fragile global economy pushed into recession and a diminishing European role on the world stage. A failing Europe also would reshape the transatlantic relationship: in all probability, the United States geostrategic tilt toward Asia and the Middle East would become more pronounced.¹⁹ Whatever happens, the EU will continue to be one of the largest world economies and a key trade and financial partner. But a reinvigorated EU would offer new opportunities to create an integrated US-EU single market and for growing transatlantic competitiveness in the new global economy.

¹⁹ For a thoughtful assessment of the impact of a failed Europe, see Thomas Wright, "What if Europe Fails?" *The Washington Quarterly*, Summer 2012, pp 23-41.

For NATO, the question appears to be only one of the degree of austerity driven by the Eurozone crisis. As a recent analysis by RAND researchers concludes, “planned defense cuts to the armed forces of the UK, France, Germany, Italy, Spain Netherlands and Poland (who together comprise 80 percent of NATO Europe’s defense spending)...will have a serious impact on NATO Europe’s ability to deploy and sustain power over long distances.”²⁰ The UK capacity to project air and naval forces will be significantly constrained.

In his farewell address in Brussels, former Defense Secretary Robert Gates warned NATO allies of “the very real possibility of collective military irrelevance,” if Europe did not assume its share of the burden. Though Europe’s defense spending at some \$300 billion is collectively the 2nd largest in the world, as noted above the total is far less than the sum of its parts. Gates and others have urged Europe to become more operationally effective by better integration and allocation of the resources they have. Growing UK-France defense cooperation may bridge some capability gaps, and as France is one of the few NATO Europe members able to project force outside the region, **Paris’ continued integration in NATO’s command structure grows in importance.** Despite its limitations, when viewed in contrast to US allies in Asia, where there is a dearth of multilateral coordination (e.g., Japan-South Korea intelligence sharing blocked by bilateral disputes) NATO’s continued importance is evident. NATO has demonstrated its utility as a global security institution and even if scaled back will continue to be an important actor, particularly vis-à-vis the greater Middle East in the coming decade and beyond.

Often overlooked, is the role of Turkey, one transatlantic partner not hobbled by the Eurocrisis, and an increasingly dynamic middle power. Turkey will be a key actor in the greater Middle East and to a lesser extent in Central Asia. Ankara has created new opportunities for itself, though it is less likely to attain or seek EU membership. As Nicholas Burns has argued, “If NATO hopes to maintain a central role in

20 See John Gordon, Stuart Johnson, F. Stephen Larrabee & Peter A. Wilson, “NATO and the Challenge of Austerity. *Survival*: vol.54 no.4, August-September 2012, pp 121-142.

shaping its strategic neighborhood, it will need Turkey to take on a position of leadership within the Alliance.”²¹ **Whether within a NATO context, coordinating or acting in parallel with the United States, or as an autonomous actor, Turkey’s importance to US strategy will continue to grow to 2030.**

A reinvigorated EU would offer new opportunities to create an integrated US-EU single market and for growing transatlantic competitiveness in the new global economy.

The Russia Question

One big uncertainty is the future role and status of Russia. That may turn on how the longstanding question of whether Russia seeks to become more integrated into Europe and the global system or whether it chooses a Eurasian future.

As highlighted by mushrooming social networking and periodic protests, “Putin 2.0” faces a very different Russia than that which he presided over in his first twelve years. There is a new middle class that has more than doubled in size since 2000, and now by some estimates consists of some 25 percent of Russia’s dwindling population. This is reflected in per capita GDP doubling since 2000 to roughly \$16,000, in large measure a result of booming oil and commodity prices.²² Since 2000, there has been a 300 percent increase in new auto registration, nearly 50 percent of Russians are internet users (a 500 percent increase), and the number of tourists traveling abroad has more than doubled.²³

However, the economy has yet to truly diversify. One indicator of the answer to the question which direction Russia takes will be the impact of its recent ascension to the WTO last August. Russia was the only G-20 nation not in the WTO. Russia’s entry into the WTO coincides with ambitious economic goals and a range

21 See R. Nicholas Burns, et al. *Anchoring the Alliance*, Atlantic Council, May 2012, p.9.

22 See *The Economist*, Daily Chart, June 18, 2012.

23 Ibid.



Russian President Vladimir Putin and US President Barack Obama, US strategy will need to focus on working with our transatlantic partners to create an environment conducive for Russia to move in a direction of modernization. Photo credit: Pete Souza

of political promises by Putin. Russia's president has proclaimed large salary increases for teachers, civil servants, and engineers; promised to create 25 million highly skilled jobs; to increase investment from 20 to 27 percent of GDP by 2018; to move up to 20th from 120th on the World Bank ease of doing business index; and to move away from dependence on oil and gas.

According to the World Bank, the share of oil and gas in Russia's exports has risen from less than one-half of total exports in 2000 to two-thirds in recent years. More than 60 percent of Russian GDP is based on oil, gas, and other extractive industries.²⁴ However, Russia's oil output is projected to reach a plateau from the middle of this decade onwards.²⁵ Moscow's budget is pegged to oil at \$115/barrel to avoid deficits, but many analysts project a soft oil market with very low US and EU growth and slower growth in BRIC economies.

Whether Russia remains a declining petro-state or uses the WTO as an opportunity to catalyze reform

and diversify its economy will shape its economic and political evolution. But with charges of rigged Duma elections, new laws to penalize protestors, requirements of NGOs receiving foreign funds to register as foreign agents, and censorship of the internet, Moscow's behavior and failure to implement key reforms has deepened skepticism about its ability to change.

Absent a trajectory toward economic modernization, an independent judiciary and reform of its business environment, it is difficult to envision Russia becoming more than an eclectic, issue-specific partner in a future that would have elements of cooperation and competition. One factor that may impact Moscow's mindset and attitudes toward the West is an increasingly powerful China along its borders. **US strategy will need to focus on working with our transatlantic partners to create an environment conducive for Russia to move in a direction of modernization, greater integration with the EU and NATO, and cooperation on global issues.**

24 See Kathy Lally, *Washington Post*, p.A16, July 22, 2012.

25 See World Bank <http://www.worldbank.org/en/country/russia/overview>.

3. The China Challenge: An Approach Beyond Hedging

The transatlantic relationship will continue to be important to US strategy. **But more than any other single factor (except for the role of the United States), the global role China chooses to play and the character of US-China relations will shape the contours of the international system in 2030.** The United States and China are the world's two largest national economies (totaling roughly 35 percent of global GDP), two largest energy consumers, two largest CO₂ emitters and soon the two most capable military powers. China holds \$1.2 trillion in US treasuries, US-China trade reached \$460 billion in 2011, and US companies have more than \$115 billion in direct investment in China. This interdependence gives both the United States and China a compelling and direct interest in the economic success of the other.

On a broad array of global issues—including the future of multilateral institutions, the global financial system, the nuclear future, cyber security, outer space, climate change, global resource scarcities, and Asian security—the United States-China relationship will be a major driver of solutions or of failure. Quite simply, if the United States-China relationship becomes more competitive than cooperative, if the historic pattern of a rising power posing a strategic threat to the status quo becomes reality, then this could be catastrophic for the world: a future of inward-looking nationalisms, zero-sum behavior and conflict will be difficult to avoid.

China is unique as a 3,000-year old civilization, as a state at once a developing country and a major power, as a country developing from a \$200 billion GDP in 1980 to a \$7 trillion GDP in 2011 and lifting 300 million out of poverty in the process. China is also unique in

that its demographics indicate it is likely to be the first nation in history that will grow old before it grows rich. And while outside the focus is on China's remarkable success, inside China there is keen awareness that its investment-heavy, export-led growth model is outmoded. As outlined in its Twelfth Five Year plan, China's incoming leadership led by Xi Jinping faces difficult challenges in the decade ahead shifting from an investment to consumption-driven economy, absorbing 300 million people migrating into cities, cleaning up horrendous environmental damage, reforming pervasive corruption, advancing political reform, and moving from state-centric growth

to markets and innovation. China may well fall into the middle income trap discussed above. Well before 2030, we may be more concerned about a weak and unstable China than a rising China, a reality that would present an entirely different set of problems for the United States and the world.

Eight presidents from Richard Nixon to Barack Obama have pursued a policy that has included elements of cooperation and competition with China: building economic ties; facilitating China's integration into the international system; cooperating diplomatically where interests are congruent; but sustaining US military predominance and the United States regional guarantor role. This duality reflects differences in values, culture and the limits of overlapping interests. Yet every public statement issued by each side waxes eloquent about mutually benign intentions with mind-numbing redundancy.

The reality is more complex, reflecting ambiguities and suspicions on both sides. In a somewhat idealized



Deputy Chief of General Staff of the Chinese Army Gen. Ma Xiaotian, right, and US Secretary of Defense Leon E. Panetta, Beijing, 2012. The global role China chooses to play and the character of US-China relations will shape the contours of the international system in 2030. Photo credit: US Department of Defense

depiction earlier this year, Secretary of State Hillary Clinton outlined what has been US strategy toward China since the end of the Cold War:

"The United States is attempting to work with a rising power to foster its rise as an active contributor to global security, stability and prosperity while also sustaining and securing American leadership in a changing world. And we are trying to do this without entering into unhealthy competition, rivalry, or conflict; without scoring points at each other's expense and thereby souring the relationship; and without falling short on our responsibilities to the international community. We are, together, building a model in which we strike a stable and mutually acceptable balance between cooperation and competition. This is uncharted territory. And we have to get it right, because so much depends on it."²⁶

However problematic the success of this aspirational policy design, it is difficult to envision an alternative approach more likely to yield a cooperative outcome toward 2030. China has benefited enormously from this policy, with three decades of over 9 percent annual GDP growth, with the United States its largest market. **Yet as the gap between US and Chinese power has narrowed, competition has become more prominent. In both Washington and Beijing, strategic distrust and mutual recrimination has grown to troubling proportions.**

The United States list of grievances includes, in the economic sphere: undervaluing its currency; cyber theft; Intellectual Property violations; and jobs being “outsourced.” In the strategic sphere, US concerns include: China’s military build-up (12 percent annual increase in defense spending since 2000) and lack of transparency; diplomatic differences (e.g., Syria, Iran, North Korea); and China defining its “core interests” in East Asia with an “anti-access, area denial” (A2AD) strategy that would conflict with US freedom of navigation and over time, displace the United States in

²⁶ Hillary Clinton, speech to the United States Institute for Peace, March 12, 2012.

East Asia. Moreover, China’s human rights violations and American antipathy to China’s authoritarian one-party rule go to the core of differences over values that have long been a source of tension in the bilateral relationship.

China’s economic grievances include blaming the United States for the 2007 to 2008 financial meltdown and restrictive US export control policies. In the political/diplomatic sphere, China’s concerns center on: US arms sales to Taiwan despite dramatic improvement in cross-strait relations; and US “interference” in Tibet, mainly in the form of meetings with the Dalai Lama and Congressional attitudes toward Tibet. The perceived US posture on these issues feeds into China’s biggest strategic fears of US containment. US surveillance activities off China’s coast are a near-term irritant as underscored in the 2001 P-3 Orion force-down near Hainan island. US missile defense activities and plans in the region also are strongly opposed by Beijing.

More broadly, the security establishment in China now tends to view the United States alliances with Japan, South Korea, and Australia and its network of security partnerships, such as that with Singapore and other ASEAN states, as part of an encirclement to contain China, if not to counter its re-emergence. Until recently, China saw virtue in the United States-Japan alliance as constraining Japan as well as stabilizing the region while facilitating China’s modernization over the past three decades.

"The United States is attempting to work with a rising power to foster its rise as an active contributor to global security..." -Secretary Clinton

Strategy Towards A Cooperative Future

To find a path to a US-China relationship that achieves a balance of interests tilted toward a cooperative future, **US strategy will need to accommodate legitimate, essential Chinese interests. At the same, China will need to make reciprocal adjustments in regard to**

US essential interests. However, the myriad issues fueling mutual distrust suggests that achieving a *modus vivendi* promises to be a difficult and protracted process at best.

China has clearly chosen life support to preserve stability in North Korea over concern about a few presumed North Korean nuclear weapons.

Critical to how Washington and Beijing define their core interests is the broad acceptance of both to act as “responsible stakeholders” within the framework of global rules and norms. Accepting that in a rules-based world, China will have a larger role in shaping the rules is an aspect of power-sharing that the United States will need to adjust to; accepting more responsibility commensurate with its increased economic and political weight is China’s challenge. Whether China chooses to act primarily within the system to alter rules in its favor, as great powers are wont to do, or to simply assert power unilaterally to achieve narrow self-interests will determine whether a cooperative future proves elusive.

However, what other actors, particularly the United States and its regional partners do, will likely influence China’s cost-benefit calculus over time. Clear incentives and disincentives can make a difference. Since 2008, several factors have led to assertive Chinese behavior. Many in China read the 2008 financial meltdown as a discrediting of free market principles, a sign of US decline, and of China’s rapid rise. Globally, Beijing began to call for a new reserve currency based on IMF Special Drawing Rights to replace the dollar. In 2009, the PLA harassed the United States Navy ship *Impeccable* in international waters, signaling its opposition to surveillance activities.

One bellwether issue was a strategic shift in regard to North Korea. Beijing had been instrumental in initiating Six-Party (US, China, Russia, Japan, North and South Korea) talks focused on denuclearizing North Korea. China was cooperative in trying to influence Pyongyang

and in supporting UN resolutions against North Korean transgressions, which eventually led to the demise of the process.

But in 2009, after North Korea conducted long-range missile and nuclear tests, rather than condemn Pyongyang, China, fearing instability in North Korea, made a strategic choice to strengthen ties to North Korea. China now provides the bulk of North Korea’s food and oil and is Pyongyang’s largest trading partner. What this reveals is that even when the United States and China have overlapping interests (e.g., denuclearizing North Korea), they may have different priorities. China has clearly chosen life support to preserve stability in North Korea over concern about a few presumed North Korean nuclear weapons.

More recently China has been boldly assertive in regard to territorial disputes over the Paracel islands (with Vietnam) and the Spratly islands in the South China Sea (with Vietnam, Philippines, Malaysia) and has asserted itself militarily and politically in ways that has sparked concern throughout East Asia. In 2010, China suggested that these disputed South China Sea territories were part of its “core interests” in the same non-negotiable, sovereign territory category as Taiwan and Tibet. It remains unclear whether this is China’s official stance. Beijing has long asserted that all territory within what are known as the “nine dash lines,” some 80 percent of the South China Sea, is sovereign Chinese territory. This claim contradicts the Law of the Sea (LOS) Treaty, which limits economic zones to within 200 miles of a nation’s continental shelf. Moreover, Beijing is seeking to reinterpret the LOS Treaty to challenge the right of free navigation within 200 mile economic zones, a vital US interest.

A predicate for building a more cooperative relationship is a stable military balance that tends to foster mutual restraint. China’s growing strength and assertiveness has in effect, helped the United States galvanize a potential coalition of allies and partners including Japan, the South Korea, Australia, Vietnam, the Philippines, Indonesia, and India to check Chinese power. While there is no active “containment” of China, burgeoning security cooperation among these countries

is a critical hedge against uncertainty that will certainly impact China's still opaque decision-making.

Mutual Vulnerability

As is the case in the United States-China economic relationship, in regard to regional and global security and the global commons, both the United States and China face growing mutual vulnerability. In East Asia, both need to move beyond the cycle of action-reaction and reach understandings on what is a US role that China can accept and vice-versa. Absent an entente, the risks of miscalculation triggering confrontation will only increase.

This mutual vulnerability is true more broadly on major and emerging strategic issues: nuclear weapons, cyber security and activities in space. Though China has only a small nuclear weapons arsenal of roughly 240 warheads, albeit one being rapidly modernized to assure a second strike capability, there is an understood state of deterrence between the United States and China. The United States military has long been dependent on digital warfare. As China has modernized its military it has increasingly become dependent on computer networks and space satellite links. Both have the ability to disable their respective military forces in the event of tensions leading to confrontation.

In a thoughtful book, *The Paradox of Power: Sino-American Strategic Restraint in an Age of Vulnerability*, David C. Gompert and Phillip C. Saunders make a persuasive case: whatever their intentions, the United States and China have the capabilities to cause each other great harm, and this interdependent vulnerability suggests the interests of both are best served by strategic restraint.²⁷ Examining nuclear weapons, cyberspace, and space, they see mutual restraint as the best course:

...Whatever their intentions, the United States and China have the capabilities to cause each other great harm...

²⁷ *The Paradox of Power: Sino-American Strategic Restraint in an Age of Vulnerability*, David C. Gompert and Phillip C. Saunders, National Defense University Press, Washington, DC, 2011.

*"All three strategic domains are 'offense-dominant'—technologically, economically and operationally. Defenses against nuclear, ASAT and cyber weapons are difficult and yield diminishing results against the offensive capabilities of large, advanced and determined states such as the United States and China."*²⁸

Such an approach, they argue, would include reciprocal understandings and pledge of no-first-use of nuclear or anti-satellite weapons or strategic cyber networks (distinguished from commercial hacking, etc.). Clearly, reaching such accord would entail a process of ongoing high-level dialogue about capabilities, doctrine and plans—now absent in the United States-China military-to-military relationship.

Moving in this direction on strategic issues, while deepening the United States-China economic relationship, and enhancing already substantial cooperation on global issues such as energy security, global health, climate change, and regional issues

where interests overlap (e.g., Afghanistan, the Middle East, Central Asia) may offer hope of gradually undoing distrust and tipping the balance of the complex relationship toward cooperation. To the extent that cooperation builds on these issues, the ongoing strategic competition towards no clear objective beyond mutual deterrence may begin to be rethought in the period ahead. Another critical factor that may reinforce trends of cooperation will be the fate of internal economic and political reform in China over the coming decade.

As discussed, both transatlantic and Asia-Pacific regional partners can play a critical role in reinforcing China's cost-benefit calculus. The EU, for example has long supported an arms embargo against China, and with its Euro 428 trade relationship it has pressed China's trade practices in the WTO. In addition, the transatlantic partnership can play an important role on global issues such as trade, energy security, the environment, health, space, and cybersecurity.

²⁸ Ibid.



Whether China chooses to act primarily within the system to alter rules in its favor or to simply assert power unilaterally to achieve narrow self-interests will determine whether a cooperative future proves elusive. *Photo credit: Banning Garrett.*

4. Damage Control in the Arc of Crisis

The arc of crisis, aka, greater Middle East (broadly defined as stretching from North Africa to Pakistan), is a major vulnerability and challenge to US long-term strategy and the future world order writ large. It is a region whose political and economic transformation will be a measure of the ability of this wave of individual empowerment to modernize. The transition from repressive, authoritarian regimes to accountable government and rule of law will be turbulent and uneven over the coming decade and likely beyond. The Arab awakening will, in most cases, result in volatile, Islamist-oriented governments over the rest of this decade. Their respective success or failure will largely depend on whether elected governments, most Islamist-oriented, demonstrate a learning curve in regard to governance and economic growth.

The US needs to move beyond what are thus far improvisational efforts to adapt to these changes after four decades of policies and assumptions that sought to reinforce the status quo. US strategy needs to be designed to facilitate the dynamic changes unfolding in the region. Since World War II the Middle East has been through cycles dominated by secular nationalism, monarchism, and political Islam. The one thing not seriously pursued in the region is market economics and until recently, political pluralism. The period to 2030 will be the demographic window of opportunity for the youth bulge (majority of population under 35) in North Africa (except Tunisia) and much of the Arab world. Whether that demographic reality becomes a liability fueling violence or an asset fueling economic growth will be largely a function of the policies governments pursue. For major powers, the challenge will be to facilitate internally-driven efforts to achieve economic growth and good governance, and broader integration into the international economic, political, and security order.

The Real Revolution

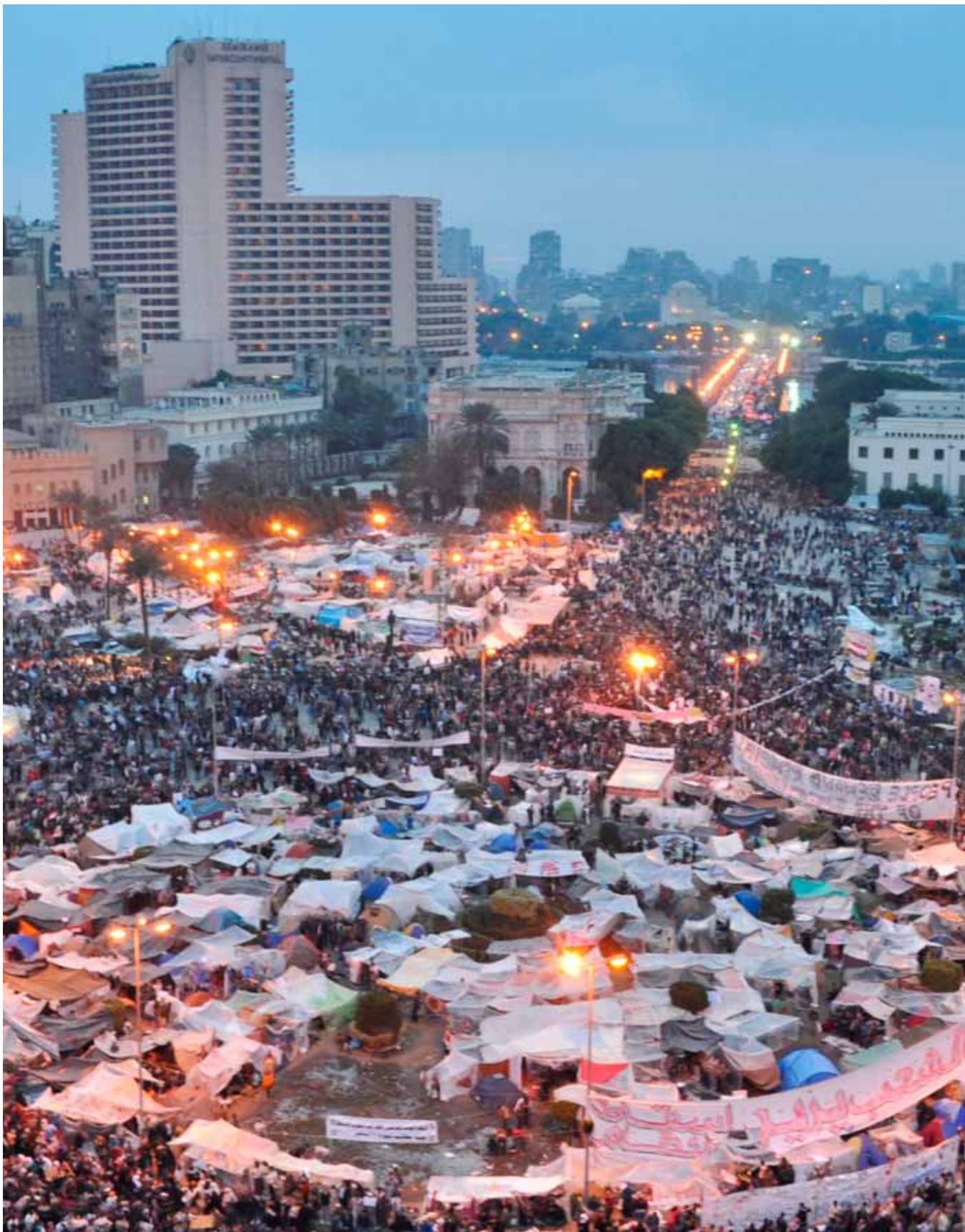
The violent playing-out of identity politics in the region, a residual cultural and historical legacy, will persist in the near-term. **But US strategy requires a laser-like focus on the longer-term opportunity.** That is the fundamental psycho-political transformation, the core meaning of the Arab awakening captured well by prominent Islamic scholar Olivier Roy:

“Unlike any Arab revolutionary movements of the past sixty years, they were concerned with individual citizenship and not with some holistic entity such as “the people,” the Muslim umma, or the Arab nation. The demonstrators referred to no Middle Eastern geopolitical conflicts, burned no US or Israeli flags, offered no chants in favor of the main (that is to say, Islamist) opposition parties, and expressed no wish for the establishment of an Islamic state or the implementation of shari'a.”²⁹

This information-age phenomenon of newly empowered individuals emerging from traditional, tribal, communal societies, Roy argues, is the new mentality, the driver of the region's transformation, and a source of long-term optimism. The ascension of Islamist parties should not be a surprise: the only political space available under authoritarian Arab regimes—many US-backed—was in the mosque.

Despite the political successes of Islamist parties in Egypt, Tunisia and elsewhere, and whatever their “hidden” agendas, “something irreversible did happen in the Arab Spring,” argues Roy. He explains that, “whatever the ups and downs may follow, we are witnessing *the beginning of a process* (my emphasis)

²⁹ Olivier Roy, “The Transformation of the Arab World,” *Journal of Democracy*, July 2012, Vol. 23, Number 3.



Tahrir Square, 2011: US strategy can help catalyze Arab efforts to realize economic modernization and stable political pluralism.
Photo credit: Jonathan Rashad

by which democratization is becoming rooted in Arab societies.” Apart from the periphery of the Islamic world—Somalia, Yemen, the Sahel—this logic suggests that the Arab awakening ultimately supersedes political Islam, and whatever Islamist-based parties attain power will have to adapt to this reality, not vice-versa.

Achieving a solution to the Israel-Palestinian conflict would enhance US strategy and interests in the region.

US strategy can help catalyze Arab efforts to realize economic modernization and stable political pluralism. To do so, Washington will need to understand that this is fundamentally an internally-driven process of change and be keenly aware of its limits, the historical baggage of four decades of US policies, as well as its opportunities.

Achieving a solution to the Israel-Palestinian conflict would enhance US strategy and interests in the region. It would also help Israel accommodate to the new realities. The emergence of populist, Islamist-oriented governments in Arab transitioning states will give the Palestine issue greater resonance among an increasingly politicized and empowered Arab public. The current Palestinian reality—division between West Bank and Gaza, a moderate secular Palestinian leadership that has been discredited by the failure of negotiations, and a weak economy dependent on Israeli facilitation—is unsustainable.

The US will need to persuade its Israeli ally to recognize that the changing strategic calculus in the region will require Tel Aviv to make peace with its Arab neighbors to have a secure future as a democratic, Jewish state. **However, the United States would be wise to also develop a contingency strategy that takes into account a possible scenario where the Israel-Palestinian issue remains unresolved to 2030 and the impact of such a reality on the US role in the region.**

US strategy will require working with transatlantic and other key partners—Turkey, the EU, the Gulf Cooperation Council (GCC), Japan, and to the extent possible, China and India, over the next two decades. This approach will have to navigate a Sunni-Shia proxy war that may persist to some degree as long as the Mullahs rule Iran. Collaborating with GCC partners will require a dual approach of subtle prodding for reform in these states while coordinating efforts to facilitate the transformations in North Africa, Egypt, Syria and elsewhere. This agenda includes managing the threat of a revolutionary Shia Islamic state in Iran with nuclear ambitions and capabilities, redefining its relationship with Pakistan and, in regard to Afghanistan, fostering stability and Afghan integration into Central Asia over the coming decade.

The broad approach will accord a high priority to the hardware and software of economic transformation, particularly building capacity for administrative, independent judiciaries, and education. Building on the Euro-Mediterranean Partnership Initiative, new efforts to create the legal, regulatory and financial environment for a free trade area within North Africa and the Arab world as well as with the \$16 trillion EU economy are important transatlantic priorities. The US has a unique relationship with Egypt, and renewing efforts abandoned in 2005 for a US-Egypt FTA, and perhaps a bilateral investment treaty would be an important part of such a strategy.

A coordinated US, EU and GCC approach to work with international financial institutions (particularly the European Bank for Reconstruction and Development) to develop an incentive structure mixing aid, debt relief and conditioned grants or loans would help foster market-oriented reforms. The GCC and Turkey might also play a catalytic role in encouraging a MENA customs union, and perhaps adoption of a common currency.

For NATO strategy, the Middle East and North Africa (MENA) should be a top priority in parallel with US/EU efforts on the economic and political side. NATO, with Turkey playing a prominent role, could help to modernize and reform regional military

and police forces, instilling a culture of civilian control in new democracies, and if necessary, deploying peacekeeping forces in transition situations. **Given recent difficulties in NATO efforts to build partnerships in the region to date, bilateral approaches by the US and NATO allies may prove a more productive course in this transition period.**

Southwest Asia: Iran and Pakistan/Afghanistan

A trajectory of success for the suggested US strategy toward the Arab transformation likely will have wider reverberations. To the degree the Arab transformation unfolds to 2030, and the Middle East political landscape has evolved to the point where Egypt, Tunisia and other Arab states bear more resemblance to Turkey or Indonesia than to Yemen, they will be a powerful force of example and almost certainly will have a broader impact throughout the Islamic world.

It is difficult to see the Shia regime in Iran not being contained or perhaps rolled back in such a political environment. Opportunities for Iran's Shia expansionism in the region would be extremely low. And it is difficult to envision an already globalized Iranian public not being inspired by regional examples of popular democratic governance. **For US strategy, Iran should be viewed as a potential natural partner in the region, as it was until 1979.** A post-Mullah dominated government shedding Shia political ideology could easily return to being a net contributor to stability by 2030.

Similarly, Pakistan whose ability to avoid becoming a failing state—the first failing nuclear state—will depend on its ability restore democracy, civilian control of the military, its judiciary and economic reform, may be inspired by MENA developments. US strategy for the next two decades will need to focus efforts on reinventing the United States-Pakistan relationship from its current “frenemy” masquerading as an ally to a more modest one of mutual helpful partners in both the bilateral and regional context with more limited mutual expectations. This will require a renewed focus on economic ties, opening US markets, working with

the key partners discussed above to expand incentives for economic reform, investment in hardly governed areas like Waziristan, and encouraging India-Pakistan reconciliation and broader economic ties.

In regard to Afghanistan's future to 2030, in addition to sustaining interest and support, US strategy needs to mobilize frontline states (Pakistan, India, China, Russia, Turkmenistan, Uzbekistan, and Tajikistan) into a loose contact/consultative group aimed at forging economic integration (e.g., the new Silk Road), minimizing strategic competition, and working also with MENA partners, continuing the protracted efforts to build Afghan governance capacity. **Avoiding destructive Indo-Pakistani competition in Afghanistan over the coming decade will be a major challenge and an important factor for stability. Afghanistan and Central Asia should be an area of US-China cooperation, as there is significant overlap of interests.**

5. The Periphery

Beyond the Middle East, another looming challenge to US strategy to 2030 is that of expanding integration of the international system to regions on its periphery. Most prominently, this means Africa, though it also includes parts of Central America and many of the former Soviet republics of central Asia. With some 850 million people, 40 percent of which are under 25, and projections for a billion population by 2030, sub-Saharan Africa is a paradox: at once rapidly growing (5 percent in 2011) and at the same time, facing poverty, food, and water crises. Fifteen of the top twenty states on the *Foreign Policy* weak and failing states index are in Africa.³⁰ The Africa challenge was summed up well by General Carter Ham, commander of the United States Africa Command:

A prosperous and stable Africa is strategically important to the United States. An Africa that can generate and sustain broad based economic development will contribute to global growth, which is a long-standing American interest. However, poverty in many parts of Africa contributes to an insidious cycle of instability, conflict, environmental degradation, and disease that erodes confidence in national institutions and governing capacity. This in turn often creates the conditions for the emergence of a wide-range of transnational security threats that can threaten the American homeland and our regional interests.

With the exception of the Greater Middle East, nowhere does it seem more likely than Africa that poor governance, lack of economic opportunity, political marginalization, and ethnic and religious tensions will lead to failed states, humanitarian disasters, and ungoverned areas that can become safe havens for terrorists. Violent extremism, especially of the militant Islamist variety, appears to be on the rise, particularly in

the Islamic Sahel of northwest Africa, in Somalia, and in the Islamic north of Nigeria.

However, sections of Africa characterized by weak governance and high unemployment provide al-Qaeda linked terrorist groups with a fertile environment to recruit for and reenergize its movement. The increasing flow of narcotics through West Africa is also a growing risk factor, as the region has become the preferred transit hub for South American cocaine destined for the European market.

Economic Promise

At the same time, parts of Africa are growing impressively, absorbing digital technology (over 550 million mobile phones!) and attracting investment as emerging markets. Industrialized South Africa accounts for roughly one-third of Africa's GDP and is pivotal to US strategy. Several African states such as Ghana and Senegal in West Africa, Rwanda, Uganda, Tanzania, Kenya, and Ethiopia in East Africa, and Morocco and Tunisia in North Africa are making significant economic progress. The biggest story out of Africa last year was noted by *The Economist* at the end of 2011: "Over the past decade six of the world's ten fastest-growing countries were African."³¹ Africa's demographic "youth bulge" in the generation to 2030 reinforces the opportunity for economic growth that is gaining attention and foreign investment—a reality that other emerging regional and global powers, including China, India, Brazil, and Turkey have already begun to seize. Countries like China and Brazil also have foreign aid programs and are competing with the United States and EU in the region. China has become a major actor whose capital flows to Africa rival those of the World Bank—much in the form of concessional loans, grants and foreign aid often tied to resource extraction.

30 See *Foreign Policy* magazine website: http://www.foreign-policy.com/failed_states_index_2012_interactive.

31 "Africa Rising," *The Economist*, December 3, 2011, <http://www.economist.com/node/21541015>.

US strategy toward these peripheral states, particularly those who are becoming emerging markets, can facilitate their efforts to overcome poverty, disease and poor and abusive governance and successfully modernize. Partnerships, beginning with our

transatlantic allies, multilateral institutions, NGOs such as the Gates Foundation, and with the other major aid donors and investors, particularly Japan and China, Brazil and India will be critical to catalyzing Africa's deeper integration.



Addis Ababa, 2012: Sub-Saharan Africa is a paradox, at once rapidly growing and at the same time, facing poverty, food, and water crises.
Photo credit: Banning Garrett

6. The Nuclear Future

One indicator of which alternative future takes hold in 2030 will be the fate of nuclear weapons. As in other realms, the United States-China relationship will be a major factor driving the nuclear future. In the four years since President Obama's 2009 Prague speech adopting a declared goal of eliminating nuclear weapons, the nuclear predicament has become more complex and more precarious with little sign of movement toward abolition.

Nuclear weapons have indeed helped keep the peace among major powers over the past six decades. There is no hint or likelihood of conflict among the five major power nuclear weapons states on the UN Security Council. As outlined in the 2010 Nuclear Posture Review, it is nuclear terrorism and proliferation that are urgent nuclear priorities and could lead to nuclear use.

US nuclear strategy over the period to 2030 will need to bound the problem in regard to the safety of nuclear materials, sustaining the credibility of extended deterrence, institutionalizing the CTBT, capping global production of fissile material, and more broadly, devaluing the role of nuclear weapons in global security –all goals outlined in the DOD 2010 Nuclear Posture Review (NPR). We are approaching inflection points regarding the nuclear weapons programs in Iran and North Korea, which could trigger respective regional chains of proliferation, particularly in the Iranian case. Pakistan is on a trajectory to become one of the top four nuclear weapons states, and Russia seems to be increasingly dependent on nuclear weapons, reviving a Cold War “balance of terror” mindset.

The idea of “global zero” has arguably been overtaken by countervailing nuclear realities. Iran’s nuclear ambitions are proving to be a difficult test for the already fraying nuclear non-proliferation regime. North Korea has twice tested nuclear weapons and is believed to have enough plutonium and enriched uranium, according to an IISS study, for up to 10

weapons. There is no indication Pyongyang has any intention of denuclearizing. India and Pakistan continue to modernize their missile and nuclear arsenals, with Pakistan obtaining a new generation of battlefield nuclear weapons that appear to increase the risk of nuclear use in a conflict with India.

Ronald Reagan addressed the core question about why we had nuclear weapons during the Cold War: “We do not mistrust each other because we are armed, we are armed because we mistrust each other.” That logic explained why the United States and USSR shed more than 90 percent of their respective nuclear arsenals and whole categories of weapons systems (e.g., Intermediate Nuclear Forces) at the end of the Cold War. Yet even after such wholesale reductions, and even after the implementation of the New START agreement, the United States and Russia will still account for over 90 percent of the nuclear weapons in the world. The United States and Russia will be limited to 1550 strategic deployed warheads as well as several thousands in reserve. China has made major efforts to modernize its modest nuclear forces to assure a “second strike” survivability (e.g., nuclear submarines, MIRVing missiles). But there is no indication that Beijing plans to substantially increase numbers of deployed warheads.

The goal of eventually eradicating nuclear weapons is not a new idea. Abolishing nuclear weapons over time is enshrined in Article 6 of the 1967 Non-Proliferation Treaty (NPT). The fundamental flaw of the “global zero” concept is not its desirability, but its enforceability. Nuclear weapons cannot be uninvented. Indeed, it has gotten progressively easier to build nuclear weapons. A nuclear physics PhD with ample fissile material can find instructions on the internet.

Nor can basic security dilemmas prevalent in international affairs be abolished. When a state increases its military capability with the intention of

Composition of Nuclear Weapon Stockpiles

Source: Federation of American Scientists 2012;

* All numbers are estimates and further described at <http://www.fas.org/programs/ssp/nukes/nuclearweapons/nukestatus.html>.

Country	Operational Strategic	Operational Nonstrategic	Reserve /Nondeployed	Military Stockpile	Total Inventory
Russia	1,800	0	3,700	5,500	10,000
United States	1,950	200	2,850	5,000	8,000
France	290	n.a.	? ⁱ	300	300
China	0	?	180	240	240
United Kingdom	160	n.a.	65	225	225
Israel	0	n.a.	80	80	80 ^j
Pakistan	0	n.a.	90-110	90-110	90-110m
India	0	n.a.	80-100	80-100	80-100n
North Korea	0	n.a.	<10	<10	<10
TOTAL	~4,200	~200	~7,000	~11,500	~19,000

increasing its security it often leads other states to take steps in response—even though the original state may have no intent to threaten it. This is what political scientists call a “security dilemma.” It is a frequent fact of life in international affairs, a mainstay of a zero-sum world, and is driving current strategic competition between the United States and China. This dynamic is one reason why the United States’ nuclear guarantee has been one of the most effective deterrents against nuclear proliferation. Germany, Japan, and South Korea might all have a different approach to security were they not under the US nuclear umbrella. In several instances attempts by US-allied governments, particularly South Korea and Taiwan, were ended by US diplomacy underpinned by the nuclear guarantee. Conversely, it helps explain why Pakistan continues to build a nuclear arsenal with an apparent “first strike” doctrine due to fears about Indian intentions.³²

The 2010 NPR concluded, “The fundamental role of US nuclear weapons, which will continue as long as nuclear weapons exist, is to deter nuclear attack on the United States, our allies, and partners.” Would the world be more secure from a prospective nuclear cheater if the five nuclear weapons states and the three de facto nuclear weapons states eliminated their weapons and Iran was tempted to make itself

³² For a discussion on Pakistani nuclear doctrine, see comment by the Institute for Defense and Security Analysis (New Delhi): http://www.idsa.in/idsacomments/PakistansFirstUseinPerspective_aahmed_120511.

a superpower by building nuclear weapons? What international agency would be able to assure a real-time, effective response to a cheater?

How Many Are Enough?

All this begs the question of how many are enough.³³ Though relations among major nuclear powers are not adversarial, there is a dearth of thought regarding the new calculus of arms reductions. New conventional precision-guided weapons and other cutting-edge technologies have dramatically altered the role of nuclear weapons in US and Alliance defense strategy. US strategy is to continue to bolster conventional deterrence.

Given the core purpose of preserving strategic stability, what would define a credible minimal deterrence posture? In a thoughtful, out-of-the-box study, a group of Air Force analysts concluded the magic number is a vastly scaled down triad of 311 deployed weapons.³⁴ In light of US security commitments—and the importance of credible extended deterrence—such numbers may be unrealistic. The nuclear posture must reflect a

³³ For an effort to assess what numbers of nuclear weapons are needed, see James Wood Forsyth, Jr., Col. Chance Saltzman, USAF, and Gary Schaub Jr., “Remembrance of Things Past: The Enduring Value of Nuclear Weapons,” *Strategic Studies Quarterly*, Spring 2010, Vol.4, No.1. Their conclusion is that the United States needs 311 deployed weapons.

³⁴ Ibid.

clearly defined mission. To deter and if necessary to defeat micro-nuclear powers such as North Korea, or Iran if it does cross the nuclear threshold, numbers substantially lower than those of the current US nuclear arsenal may be possible. But any such reductions must not undercut strategic stability with more established nuclear powers.

If the raison d'être of nuclear weapons is to deter their use by others, and a growing component of strategic deterrence is non-nuclear, there remain other considerations, most prominently, the credibility of extended deterrence. While there is little nuclear threat to Europe from state powers, there is an obvious tension between US extended deterrence for US Asian treaty allies Japan and South Korea and the goal of global zero. The credibility of the US nuclear umbrella does not rest on numbers or locations of nuclear weapons. It ultimately depends on the credibility of the United States' guarantee. While there is little likelihood that US forces will dwindle to parity with those of China in the foreseeable future, sustaining a regular consultation process with Tokyo and Seoul on extended deterrence should be a component of US security strategy.

The logic of any deep nuclear reductions looking out to 2030 rests in large measure on the evolution of US-China relations. The military-industrial bureaucracies in both Washington and Beijing appear to be reinforcing classic "security dilemma" strategic competition. If such a dynamic persists, it is difficult to envision new arms control initiatives seeking deep nuclear cuts. But if the relationship evolves in a more cooperative direction, new possibilities might arise.

It is not clear that more than minor reductions would occur if arms control talks remain between the two major nuclear powers. For a more cooperative 2030 future, the next phase in arms reductions will require deep cuts by the United States and Russia, but only as the initial stage of a multilateral US-Russia-China-

UK-France-India-Pakistan process with the explicit objective of linking the floor of US and Russian reductions to the ceiling of what China, India, and Pakistan commit to as their definition of minimal credible deterrence.

Nuclear Control

No less important to US strategy are the other components of the US nuclear agenda:

- *Securing Nuclear Material:* The Nuclear Security Initiative begun by the Obama administration is another successful example of ad hoc multilateralism, now involving fifty-three nations and key international organizations that met in Seoul earlier this year. This process of voluntary cooperation to enhance the security of fissile material is vital to countering the threat of nuclear terrorism and should be viewed as a long-term process;
- *Fissile Material Cutoff Treaty:* This nearly stillborn effort to negotiate an international treaty to cap the production of weapons-grade fissile material needs to be rethought. It is an important step toward curbing the nuclear threat. But talks have occurred within the UN Conference on Disarmament with some 120 countries involved. There are only eight countries that really are relevant. The United States and Russia should initiate a process of these nations to gain consensus on a fissile material production cutoff and a mechanism for tighter international control of fissile material. If the key actors reach consensus the possibility of a successful treaty would be greatly increased;
- *International Control of the Back End of the Fuel Cycle:* The most glaring gap in the non-proliferation regime is the fuel cycle—the reprocessing of plutonium and the enrichment of uranium. As civil nuclear power expands, proliferation risks expand too. New initiatives to gain international control

or enhanced supervision and monitoring would ameliorate this problem. The idea of regional fuel banks under IAEA supervision may be one useful step in this direction;

- *Comprehensive Test Ban Treaty (CTBT)*: The United States was the first nation to sign the CTBT in 1996, and continues to abide by a self-imposed moratorium on testing, though the United States Senate has not ratified the treaty. Like the Law of the Sea treaty, which the United States adheres to but has not ratified, we get the worst of both worlds. In the case of the CTBT, the two previous concerns: maintaining the reliability of our nuclear stockpile and verification monitoring have both improved substantially as discussed in recent National Academy of Science studies. To date thirty-six of the forty-four parties required for the CTBT to come into force have ratified. The CTBT ought to be part of US strategy over the coming decade.³⁵

Lastly, it must be said that however fragile the NPT appears, if the five declared nuclear states renounced nuclear weapons tomorrow, it would have precious little impact on North Korea, Iran, and other would-be proliferators. The motivations of proliferators are a mix of perceived security threats, national vanity and status seeking, and national ambitions. That said, progress in the areas outlined above over the coming two decades would strengthen nuclear security writ large.

Sustaining unimpeded access to, and the stability of, the global commons will be a central element in any US strategy designed to shape a future more cooperative than zero-sum competitive to 2030.

³⁵ See <http://www.thebulletin.org/web-edition/columnists/kingston-reif/the-case-the-ctbt-stronger-ever>.

7. The Global Commons

The term global commons is defined as the universal public goods—air, sea, outer space and cyberspace—which no one person or state may own or control and which is central to life. They comprise the ecosystem of globalization, epitomizing the interdependence and mutual interests of the international system.³⁶

The billions of dollars in international trade daily shipped across the oceans and flown over national territories, the trillions in daily finance electronically zapped through cyberspace across the globe, the GPS signals bouncing off satellites and guiding air, sea and land transport, all highlight the vital importance of the commons. The commons are vital enablers of global security and the international flow of trade, finance, people, and ideas.

The United States has been the largest beneficiary as well as chief provider of public goods to the global commons, arguably inventing the domain of cyberspace.

US predominance in all spheres of the commons has underpinned our security guarantor role over the past six decades and with it, open access to all of the commons. But this role faces a number of challenges due to the diffusion of power, political inertia and technology-enabled non-state actors and individuals. And the environmental problems from climate change to sustainable oceans also pose a collective challenge.

Not surprisingly, the degree and type of vulnerabilities facing the air, maritime, space and cyberspace commons vary in direct proportion to the thoroughness of rules and norms (or absence thereof) governing

³⁶ For a detailed, thoughtful assessment of the global commons see *Contested Commons: The Future of American Power in a Multipolar World*, edited by Abraham M. Denmark and Dr. James Mulvenon, Center for a New American Security, January 2010.

each respective domain. The more recently emerging commons, outer space, and most urgently, cyberspace, face key challenges in defining and enforcing new rules and norms that will be key to US strategy over the coming two decades.

Air is the least contested of the commons. A rich, integrated network of multilateral and bilateral agreements govern civil aviation, a vital part of the connecting tissue of globalization. The International Civil Aviation Organization (ICAO) was created by governments in 1944, followed by the International Air Transport Association (IATA) created by private business. The universally accepted standards propounded by the ICAO manage thousands of daily flights to and from more than 40,000 airports around the world. The United States successfully liberalized air transport further, creating open skies agreements – now with ninety nations. On the military dimension, the

US ability to project airpower anywhere and establish air superiority is unlikely to be challenged to 2030 by any other air force (except, under certain scenarios, China). But US air power faces asymmetric threats from increasingly capable surface-to-air missile technologies.

The commons are vital enablers of global security and the international flow of trade, finance, people, and ideas.

Maritime Challenges

The oldest and most well established of the commons, the maritime domain, has a well defined set of traditions and norms, much codified by international law that enable freedom of navigation. This will continue to be essential to the United States' ability to project power globally and serve as the leading steward of sea lane security. Maintaining US force projection capabilities with 11 carrier strike groups, a forward-deployed carrier in Japan, and partners and access arrangements along the Eurasian rim are a smart baseline for US strategy.



Mars Rover Curiosity, 2012: While the vast majority of assets in space are civilian-oriented, the strategic dimension of space is vital to the United States. *Photo credit: NASA*

There are a number of growing naval forces that will impact the future of free access to the maritime commons. Russia still has capable naval forces and plans to improve them. China is still in the early stages of building what by 2030 is likely to approach blue water capabilities, and is developing anti-ship missile and other anti-access capabilities of some concern. India has put more priority on its navy (already with two carriers) and is focused on being the dominant force in the Indian Ocean as well as a naval actor in the Pacific. Japan has an under-appreciated naval capacity which no Japanese admiral would trade for China's navy. South Korea has a navy that has been active in anti-piracy and will be a significant regional actor.

As has been evident in the impressive, coordinated, multilateral anti-piracy efforts in the Horn of Africa, many of these naval forces are likely to be net providers of security for the maritime commons in some cases, including China. But out to 2030, the United States likely will continue to be the predominant actor in regard to the security of sea lanes in which all trading nations have a stake, with various degrees of free riding on the part of other major actors. US strategy could seek to build on current anti-piracy cooperation to foster broader cooperative partnerships among other naval actors to shift some of the burden to regional actors for security of the sea lanes.

As discussed above, one threat to freedom of navigation is China's efforts to challenge the right of innocent passage within 200 mile Exclusive Economic Zones (EEZs). Beijing seeks to alter the protocol and require ships to request permission to pass through EEZs. The LOS treaty clearly delineates this right, and distinguishes such passage from military activities. This is one instance where the United States is, unfortunately, an outlier. While Washington adheres to LOS provisions, despite the efforts of the past four Joint Chiefs of Staff, strong backing from the United States Navy and four US Presidents, Congress has refused to ratify the treaty. Misplaced concerns over "sovereignty" appear to be the principal objection. This precludes the United States from participating in LOS bodies defining and managing the implementation of the LOS treaty.

The Arctic

Over the coming two decades, new global shipping routes are likely to emerge, and the United States Geological Survey estimates new recoverable oil and gas resources in the Arctic at 90 billion barrels of oil and 1669 trillion cu. ft of natural gas, significant portions of global undiscovered reserves. This poses a test of US leadership as new understandings and agreements to manage shipping routes and resource extraction will be necessary. A 2011 DoD report to Congress outlined the military challenges – including the reality that the United States has only two ice-capable ships.³⁷

There has been much speculation about a coming scramble for arctic riches. Russia has sought to claim the entire arctic – symbolized by an expedition to plant a Russian flag at the North Pole in 2007 – but was flatly rejected by the UN. In fact, the risks of Arctic conflict appear exaggerated. Roughly 95 percent of prospective Arctic resources fall within agreed boundaries. As an Economist report pointed out, "The biggest of the half-dozen remaining territorial disputes is between the United States and Canada over whether the northwest passage is international or Canadian waters."³⁸ Nonetheless, whether in the eight-nation Arctic Council which is focused on conservation (and was not envisioned as a negotiating body), or a new mechanism, there is a need to build on, clarify, and set new rules for managing the Arctic in the coming two decades.

Space

Reliance on satellite-based communications, imagery and data is and will continue to be essential for modern commercial life, for science and not least for military activities. The United States, Russia, China, India, and the EU are the leading space powers, and among only eight countries (and the EU) capable of launching satellites into orbit, though other emerging powers seek to obtain that capability. In any case, any nation

³⁷ See the report to Congress: http://www.defense.gov/pubs/pdfs/Tab_A_Arctic_Report_Public.pdf.

³⁸ *The Economist*, special report, "The Melting North," June 12, 2012.

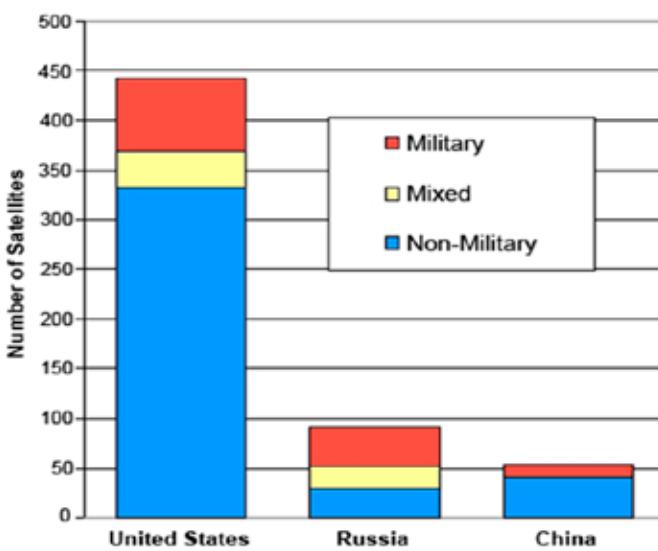
or business can use commercial launch facilities to place one in orbit, and empowered individuals can buy time on one of some 900 satellites orbiting the earth. Roughly half the satellites in space are US owned (see chart below), and US firms produce roughly 50 percent of commercial geosynchronous satellites.

The importance of space to the environment was underscored by the Earth monitoring partnership established after the 2002 World Summit on Sustainable Development. The United States led an effort to create the Group on Earth Observation (GEO) that now involves eighty-eight governments, the EC and several dozen global and regional NGOs. They have created the Global Earth Observation System of Systems (GEOSS) to collectively monitor and provide warning on natural and human-induced disasters, energy and water resources, and climate change impacts, and to improve weather forecasts, manage ecosystems, and protect biodiversity.³⁹ This is an exemplary case of ad hoc multilateral cooperation that may be a useful precedent for the future.

While the vast majority of assets in space are civilian-oriented, the strategic dimension of space is vital to the United States. As the leading space power, for the United States and its digitized forces, military strategy and operations are highly dependent on US use of space for intelligence, command and control of forces,

Estimates of Space Assets

Source: Union of Concerned Scientists 2011



³⁹ For more detail on this cooperative enterprise see: <http://www.earthobservations.org/index.shtml>.

real-time battlefield awareness, etc. This reliance on space for the functioning of the US military is a vulnerability of which policymakers are keenly aware. As discussed above, dependence on space for an increasingly digitized military is increasingly becoming the case for China as well.

The governance of space, indeed—its definition as a common—rests largely on the forty-five-year-old Outer Space Treaty, which states that the “exploration and use of outer space, including the moon and other celestial bodies, shall be carried out...in the interests of all countries... and shall be the province of all mankind.” The treaty, which ninety-nine nations have ratified, also banned the use of space for military bases, exercises, weapons testing or military use or the stationing of nuclear weapons or other WMD. Further rules were agreed to governing the allocation of orbital slots for communication satellites, and in 1986 the UN General Assembly adopted rules on remote sensing underscoring the right to imagery being obtained from space.

Space Policy Challenges

When China conducted an anti-satellite test (ASAT) test in 2007, destroying one of its own aging satellites with a ballistic missile, it highlighted both the vulnerability of space assets and the growing problem of space debris – some 14,000 pieces of it created by the shattered Chinese satellite. The Chinese ASAT test also underscored the need for new contemporary mechanisms governing space. The deficit of adequate rules in space also was highlighted when a decaying Russian satellite collided with an active US communications satellite in 2009.

There are conflicting proposed approaches to strengthening governance of space. In the UN, China and Russia have been pursuing a UN treaty banning weapons in space broader in scope than even the Cold War Anti-ballistic Missile (ABM) Treaty from which the Bush administration withdrew. But the proposed treaty does not mention ground-based ASATs, which both Russia and China are developing. The United States has opposed any restrictions on freedom of action

in space, but as new vulnerabilities and new space powers emerge, US leadership to help craft a sensible contemporary space regime may be important to preserving the space commons.

A full-blown treaty is overly ambitious and impractical, as Michael Krepon wrote recently in the Washington Post, "because 'space weapons' can't be properly defined and verified: too many multipurpose technologies and military capabilities can be redirected at satellites."⁴⁰ Instead, **US strategy over the coming decade should focus on developing a code of conduct, fashioning new rules to deal with managing crowded orbital paths, preventing interference of satellites, and a cooperative approach to disposing of space debris.** The EU has proposed such a code of conduct that addresses these issues, calls for adoption of best practices, increasing space safety and minimizing accidents in space.

Clearly, updating rules and accepted norms for space will be an important element in any future scenario that is more cooperative than competitive. While the United States has not endorsed the EU proposal, it could serve as the basis for a policy dialogue aimed at drafting new rules of the road for space. Key provisions such as a commitment to no first use of kinetic destruction of orbiting satellites, no interference with satellites outside conflict (e.g., jamming, hacking, degrading) and either cooperative mechanisms or coordination of parallel efforts to mitigate space debris are core elements that address mutual vulnerability and offer mutual benefit. In regard to process, an ad hoc forum including all space powers, and perhaps representatives or observers from regional groupings, would be more likely to reach a consensus which could then be endorsed by the UN Security Council or General Assembly.

The Cyber Challenge

The creation of the internet as an outgrowth of a DOD experiment is a historic transformational technology that is part of the nervous system of globalization.

40 See Michael Krepon, "The time is Right for 'Rules of the Road' in the Cosmos," *Washington Post*, August 17, 2012.

It has become an essential ingredient of daily life everywhere. A recent study by the Cyber Conflict Studies Association succinctly summed up the two core policy problems of cyberspace:

- "The underlying architecture was never designed with security in mind...the priorities were, and generally remain, openness, ease of interconnection, and facilitating technical innovation";
- "The evolution of the technological architecture has vastly outpaced the corresponding set of conceptual doctrinal, organizational and legal structures..."⁴¹

Cyberspace has some distinctive characteristics that make it unique among the commons. Most importantly, it is a created domain, largely paid for and operated by the private sector. It is also the only domain with such a low barrier to entry that billions of people enter it and experience it in very personal ways every day. By 2030, millions more in Africa, the Middle East and other developing regions will have access. For national security purposes, this makes it extraordinarily different from other domains where governments are typically the most powerful and influential actors. Another unique feature is that US firms dominate cyberspace and very large portions of global internet traffic pass through the United States.

For US strategy, there are two sets of cyber issues. At the strategic level, there is the specter first raised in 1991 of a "cyber Pearl Harbor" that so far has not occurred, in which all the electronics upon which national security so heavily depends are disrupted. Like space, cyberspace is offense-dominant, rendering it particularly vulnerable to attack. That DoD felt compelled to create a cyber command and the White House appointment of a "cyberczar" underscore the gravity of the cybersecurity issue. At the same time, China has reportedly set up information warfare units under its military and ignores or encourages its patriotic hackers to lash out at other nations during disputes. Apparently, Russia similarly has embraced this kind of

41 See Dr. James C. Mulvenon and Dr. Gregory J. Ratray (editors), *Addressing Cyber Instability*, Cyber Conflict Studies Association, 2012.

cyber conflict, hitting websites of the Estonian Parliament and companies in 2007, while Georgia faced far worse attacks during its brief conflict with Russia in 2008.⁴²

While not unrelated, the second set of cyber issues is in the realm of criminal hacking, IPR theft, financial theft and disruption and political/intelligence hacking intrusions. Both sets of problems stem from similar vulnerabilities. But at the strategic level, the biggest risk in cyberspace may be what is known as Advanced Persistent Threats (APT), cyber espionage focused on political, military or intelligence data that can have a substantial impact on national security. We have witnessed almost daily attempts by private or freelance hackers to penetrate US government websites. It is the equivalent in the security sphere of economic cyberattacks that can undermine industry. A 2009 cyber attack on Google, seeking to obtain basic computer codes and apparently key passwords underscores both vulnerability and prospective damage.⁴³

That the internet is not controlled by any central actor or force and is highly decentralized complicates strategies to protect the cyber commons. Internet Service Providers (ISPs) route internet traffic, and the non-governmental Internet Corporation for Assigned Names and Numbers (ICANN) manages the addresses and domain names on which web browsing is based. The lack of overall governance enhances the security challenges, but arguably helps ensure cyberspace continues to rapidly grow in line with demand and technological change, relatively unimpeded by government bureaucrats and industrial or national security policy.

42 See John Markoff, "Before the Gunfire, Cyberattacks," *New York Times*, August 12, 2008.

43 See John Markoff, "Cyber Attack on Google Said to Hit Passwords, *New York Times*, April 19, 2010.



The US has adopted a wide range of inter-agency policies and detection initiatives to defend US cyberspace, both public and private. Photo credit: US Department of Defense

The US government has adopted a wide range of inter-agency policies and detection initiatives to defend US cyberspace, both public and private.⁴⁴ The Pentagon alone has some 15,000 networks to safeguard.⁴⁵

To minimize vulnerabilities of cyberspace, US strategy will need to build on current efforts toward an inventive approach that uses public/private partnerships as well as state-to-state diplomacy at the level of prospective cyber conflict:

- In regard to cyber crime, building on the Convention on Cybercrime introduced by the Council of Europe in 2001 and now with 29 signatories is one avenue to be pursued;
- The public/private level requires working with global stakeholders such as ICANN and the Internet Engineering Task Force, perhaps in a G-20 context.
- Fostering a culture of information sharing and networks for early warning in regard to malware, bots, and attacks is another component of a cooperative strategy on cyberspace.

At the strategic level, cyber conflict has emerged as a new dimension of inter-state war. Efforts to counter and prepare for such confrontation are embedded in

44 Notably, the Comprehensive National Cybersecurity Initiative, White House, 2010, which built on 2008 Presidential Directives.

45 See <http://killerapps.foreignpolicy.com/>.

US Cyber Command and the White House National Security Council. While an imperfect analogy, the strategic cyber threat has a number of important similarities to nuclear threats. Both are offense-dominant, both can cause enormous destruction, disabling a nation's critical infrastructure, and degrading or blinding military forces dependent on electronics such that it could be disabled.

However, there are some important differences, not least the easy accessibility to the means for cyber attacks and the greater difficulty in attributing the source of the attack. Governments can "rent" freelance hackers to complicate the challenge of attribution. While abilities to attribute malicious cyber activities are continuing to improve, as is the case with terrorism, locating the specific technical source of attack may be less urgent than the geographic source of attack. For US strategy, conceptually equating strategically threatening cyber activities at the policy level with nuclear and space suggests a policy path. US strategy to 2030 needs to weigh the advantage of US cyber offensive action (e.g., Stuxnet-type attacks) and the risk of setting precedents that may lend legitimacy to similar retaliatory attacks against the need for cyberstability.

As suggested above in regard to space, it is worth initiating a dialogue, perhaps within the US-China military-to-military dialogue, or on a track 1.5 (involving officials in an unofficial capacity and the private sector) basis initially on a possible code of conduct for cyberwar. This would undoubtedly be a protracted process, but there is an urgency to deepen US-China dialogue in the cyber realm. This might also be widened to include major powers, perhaps in the UN Security Council or in a subgroup within the G-20. Mutual vulnerabilities suggest that a strategic objective of no first use in peacetime might be considered.

Over the long term, developing technologies to change the cyber domain, which has overwhelmingly favored offense—the ability to attack—over the ability to defend, is key to a more stable and secure cyberspace. Developing such cost-effective defensive technologies—the cyber equivalent of ballistic missile defenses—would transform the issue.

Climate Change

While a full treatment of the issue of climate change is beyond the scope of this report, it is a phenomenon that is shaping the policy environment that US strategy will operate in over the coming two decades and requires at least a brief discussion. While there may be debate over the degree to which human activity is responsible and over the most effective means of mitigating and adapting to climate change, the physical evidence—from melting glaciers and polar ice to extreme weather patterns, droughts, and floods—is overwhelming: climate, as it has done for millennia, is changing. These developments are likely to exacerbate the problems of the growing energy-water-food nexus.

Many of the policies that would mitigate warming are also steps that enhance energy security, bolster national security, reduce pollution, and increase economic efficiency. Most would make policy sense even if climate change were not a concern. Thus, a "no regrets" approach—policies the US would pursue even if climate change were not a problem—may be a prudent path:

- **Enhancing energy efficiency.** Buildings consume 70 percent of electricity; smart buildings, building a smart grid, increase fuel efficiency in transport, etc., make solid economic sense;
- **A carbon tax as part of broader tax reform** would send clear market signals to investors and accelerate the transition to a post-petroleum economy;
- **Incentives for innovation**, particularly for technologies that have proof of concept and the ability to scale up commercially. Emphasizing technologies that impact the energy-water-food nexus, such as reusing and desalinating water, energy storage, and food productivity; cleaner coal and policies that promote capturing methane before release into the atmosphere (and recycling for energy) also make sense;
- Facilitating international efforts to help **developing countries cope with adaption** (droughts, floods, rising water levels).

Conclusion: The Path to a Virtuous Circle World

President Obama will begin his second term challenged by a world in transition, but offered an historic opportunity. History has given the United States a unique chance to remake the international order to its benefit for a second time since 1945. As the Obama Administration considers its policy priorities, it would do well to consider the impact its policies will have in shaping the world to 2030.

To understand the possible consequences of its action or inaction, the administration need look no further than the National Intelligence Council's *Global Trends 2030: Alternative Worlds* report. The report's worst-case scenario, called 'Stalled Engines,' should focus the minds. This scenario features the withdrawal of the United States and Europe from a role of international leadership amidst economic stagnation; the emergence of a great power rivalry and interstate conflict among nations, particularly in Asia; and the general fragmentation of globalization to the detriment of all.

The report contrasts this gloomy scenario with a positive outlook, which should serve as the goal of a new US strategy. Under this "fusion" scenario, China becomes a responsible and fully-integrated stakeholder in the global order, collaborating with the United States and Europe to address global challenges; global GDP doubles to 2030 in real terms; and major shortcomings in global governance are successfully resolved.

Many factors will determine which of these outcomes is most probable. Indeed, the most likely outcome is that the world of 2030 will lie somewhere in between these two bookend scenarios. Nevertheless, the sheer disparity between the two futures should serve as sufficient motivation for political leaders in the United States to take whatever steps are possible to achieve "fusion" and avoid a "stalled engines" scenario. Washington alone will not determine which of these two scenarios is most likely. But more than any other state or non-state actor, its actions and policies will have the greatest impact in determining the world's outlook to 2030.

The Atlantic Council has produced this strategy to offer US political leaders a guide for how it can best shape the future toward a 'fusion' scenario by following these six fundamental principles:

1. Act strategically in a second term, recognizing that actions taken now will have generational consequences.
2. Continue "nation building at home" while considering the global context.
3. Actively shape dynamic international trends, or be unfavorably shaped by them.
4. Provide collaborative leadership by deepening traditional alliances while forging new partnerships with both state and non-state actors. Above all, the United States should seek to reinvigorate its transatlantic economic and security relations through NATO, the EU, and bilateral ties.
5. Deepen collaboration with China to 2030, the most important strategic priority of the next two decades.
6. Act more creatively in addressing the turmoil in the greatest spoiler to a better future—the greater Middle East.

Whatever strategic principles the Obama Administration chooses to adopt, the US government needs to integrate strategic foresight more effectively into its policymaking process. That requires political commitment at the top, and an effective National Security Council structure to drive inter-agency efforts. None of this assures a more prosperous and secure world in 2030 that avoids zero-sum competition and conflict. But following this course of action would offer the United States and its allies the best chance of ensuring that a 'post-western' world does not mean a future hostile to western interests and values.



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