

The Future, Declassified

MEGATRENDS THAT
WILL UNDO THE WORLD
UNLESS WE TAKE ACTION

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INTRODUCTION

Don't Kill the Messenger

WE'VE HAD A BAD DECADE OR TWO IN THE UNITED STATES, IF NOT AROUND THE WORLD, FULL of nasty surprises and shocks. First 9/11, then the wars in Iraq and Afghanistan that did not work out the way we anticipated. In the 1990s we were told there could be no more financial crises, which was reassuring until the Great Recession happened in 2008. The impact of the financial crisis was worse in Europe, all the more as it was imported from America. The Arab Spring—though welcomed at first—was largely a surprise; no one anticipated that the Ben Ali or Mubarak regimes would fold so fast or that authoritarianism could come back so quickly in the case of Egypt. Equally, two big natural disasters—Hurricanes Katrina and Sandy—showed us just how vulnerable we are. And how much we have failed to heed the warnings about extreme weather. Finally, more recently, Russian aggression against Crimea seems to have come out of the blue, rattling our assumptions about Cold War divisions having been overcome.

You could look on this in a couple of ways. It's a bad patch that everybody—countries down to individuals—goes through from time to time. Our luck will return. It always has. America is bound to bounce back. That's how most of us see it or would like to see it.

Another way is to see shocks and surprises as the new normal. There are multiple reasons: globalization, greater interconnectedness, new extreme weather patterns, and dynamic new technologies that are reaching tipping points. There is more than enough evidence from what we feel in our daily lives that change is ever increasing, making the future seem more unpredictable.

This book takes the second tack. I'm a firm believer in America bouncing back, even if the United States and other countries are seeing the old status quo crumble away, but all of us will need more than luck to succeed and excel in this new, faster-paced world. I believe we are in a new era that we are only just beginning to understand. Unlike in the past, the United States doesn't

have much margin for error. We do have to be smarter.

In truth the future doesn't have to be bad. But it could be if we don't watch out. We're at one of those junctures in which it could go different ways. But many of us don't seem to care, or maybe believe we can't do anything about it. In my view, that's not so. We have so many ways to ensure it does go in a direction that benefits us all.

This book grew out of ten years working at the US National Intelligence Council (NIC)—a privilege and an honor in the truest sense. My job was an analyst's dream, working the really big topics: Which way is the Middle East headed? Will we live in a nuclear-proliferated world? What are the key threats facing the United States? Are we winning the global war on terrorism?

Indeed, for the ten years I was on the NIC, I was actively engaged in thinking about and authoring many studies about the big challenges facing the United States and the world, but most of that work remains classified. One study the NIC produces every four years for each new US administration is not classified, however, and that one is about the longer-range future. That is the basis of this book. Of the five *Global Trends* editions so far produced by the NIC, I was the principal author of the last three.

The *Global Trends* works are increasingly influential within and outside government circles. I briefed Presidents George W. Bush and Barack Obama on them. They are used in strategic planning by the White House, State Department, Pentagon, and others. Within the intelligence community they are used to think about how to position intelligence operations for the future. Outside, they are widely used by other governments as well as in university courses everywhere. They have been translated into seven languages.

I am not a pessimist, but I'm also not a starry-eyed optimist. I was raised with the notion that God helps those who help themselves, and I believe it applies to nations and civilizations, not just individuals. We can and should plan for our future.

I have grown more and more concerned that we Americans are not planning for the future. Part of that may be ignorance about the sheer magnitude of the developments unfolding. Never has humankind stood at the threshold of so much technological change, for example, where the ground is moving under our feet. As I'll address in this work, human nature is being transformed. The old limitations—whether in mental or physical capabilities—are being lifted. For billions of people in the developing world, it is not a cliché to say that a new and more prosperous era is dawning that was unimaginable even two or three decades ago.

As Americans, we should revel in those changes. The liberal world order we established after 1945 allowed other nations and societies to prosper and rise. Today's more multipolar world is part of the US dream, and we should glory in it.

Unfortunately, we seem to feel increasingly threatened by it. *Multipolar* was not a word in the official government lexicon until recently, and many in the

Washington foreign policy establishment are still loath to acknowledge the less US-dominated order. The insertion of the word in the second edition of *Global Trends* I worked on was a hard-fought victory. Some of my colleagues opposed it. In the end, then NIC chairman Tom Fingar supported its inclusion. We should not have had to argue about what was reality. We should have been proud and not threatened by it.

The United States' *relative decline* was another term I used that was highly controversial in the last two editions. Some US critics thought I was undercutting the United States by using it in an official government document. Ironically, senior Chinese officials puzzled over why it was used in an official document but concluded it showed that the United States was indeed so confident about itself that it could be open about its weaknesses. I don't think relative decline represents a weakness, just a fact that the rest of the world is getting richer. But I think the Chinese are right that we have nothing to be embarrassed about. And the fact that we can be frank about ourselves gives the document an enormous amount of credibility in others' eyes.

It's a shame we spend so much time on the decline issue because the world ahead offers so many opportunities for the United States. It's still the case that much of the world—though not all—wants basic elements of our way of living—the traditional middle-class lifestyle that obviously involves materialism like cars and houses but also the freedoms that Americans have and the ability to plan for their children's future. So much of the rest of the world until relatively recently could not hope for a better future for their children. If it happened, it was either by fluke or by birthright. The growth of the middle class—a big theme you'll see—is tailor-made for America as it engages others in this more multipolar world. Part of the reason I wrote this book is to get that positive and uplifting story out.

For me, while a lot about the trends is worth celebrating, there is justification for worry. You could say there's a lot of treacherous driving ahead as we navigate slippery pavement, dangerous hairpin turns, and a lot of sheer drops along the side of the road. Having our wits about us is key. The problem is that there are so many different kinds of dangerous threats to keep our eyes on. It would be far easier if there were just a couple threats that we knew were definitely out there. A theme in the book is that individuals and small groups have the ability to do harm on a level formerly reserved for states. In government, we've had almost five centuries of experience—at least in the West—of navigating our way in the state-run international order. But this is a new world in which you have to worry about terrorists blowing up iconic buildings in Manhattan or Washington. The British in the heyday of the Empire also had their worries about Afghan jihadism, but it never threatened London. Irish terrorists did explode bombs in the imperial capital, but there was no hijacking of airplanes and ramming them into buildings, causing massive casualties. Sadly for the future, the kind of destruction witnessed on 9/11 is the tip of the iceberg of what terrorists, insurgents, and states can do.

I can't tell you how many times US government officials—particularly when they are frustrated by the nebulousness of terrorist or insurgent threats—have leaned back in their chairs and gazed out wistfully, murmuring that it was so much easier in the Cold War. In the Cold War, we knew who the enemy was (the Soviets and Communism) and what they wanted (world domination). And even when the liberation struggles were waged in Central America or Africa, at least we thought we knew who the real enemy was behind it all. We're again seeing rising tensions with Russia over its aggression in Ukraine, but I don't believe we're going back to a bipolar world of two superpowers trying to stare down each other. Unfortunately, it's going to be a lot messier if the world is both globalized at one level and also fragmented as multipolarity increases.

We've gone from a black-and-white to a gray world, and at an intellectual level we know this change to be true. However, in our hearts we are still searching for that clean and simple explanation for the new era that is unfolding. We all want to be a latter-day George Kennan, who invented the concept of Soviet containment. It was a clean and concise concept that gave meaning and direction for all our actions in the Cold War.

I wish it were that easy. The best definition I've found of the era that we're in comes from the opening lines of Charles Dickens's A Tale of Two Cities that entrancing and enduring novel about the French Revolution that began in 1789: "It was the best of times, it was the worst of times ... it was the spring of hope, it was the winter of despair...." Dickens wrote that at a time of immense change when the outcome was not apparent. We're in a similar period. Besides 1789, I would compare this time to other pivotal historic moments like 1815, 1919, 1945, or 1989, when existing political, social, and economic systems were upended. Either we take charge and direct the needed changes or change will take charge of us. Although profiled once in Foreign Policy as "the Fatalist," I am far from it. 1 The whole purpose of this book is to help us shape the future. As an American, I think the stakes are particularly high for the country's standing in the world and for ordinary Americans who want to maintain their quality of life, but the stakes are high for everyone, everywhere. The justifiable inclination after being at war for over a decade is that Americans want to turn to problems at home. And there are urgent challenges that have been ignored for too long. However, without staying engaged and shaping the global environment, there won't be a bright future either. So we must do both, which won't be easy.

CAN WE PREDICT THE FUTURE? I get the question all the time. Of course, the answer is no. No one has a crystal ball. But we can know enough about the future that we can plan. There is a difference between prediction and foresight. Prediction is trying to divine the precise future—an impossible task. Foresight is understanding the factors or variables that can or may produce the future. Inevitably, foresight talks about alternative futures—because how

we shape those trends can lead to different futures. President Dwight D. Eisenhower's famous saying that "plans are worthless, but planning is everything" is good advice here.² Thinking systematically about the future—even if we can't exactly foretell it—helps us prepare for it.

The *Global Trends* works have had a good track record in identifying the key trends shaping the future. Before undertaking the last edition, I commissioned a report from two academics to examine the earlier findings. We got good marks on identifying key trends and scenarios, less so on the rate of change. The rate of change has been much faster than anyone anticipated.

More than any weaknesses in the analysis, the government planning falls short. It's better than before. The White House re-created a strategic advisor's office when Stephen Hadley took over as national security advisor during President George W. Bush's second term, and that office was retained in President Obama's national security staff. It increasingly coordinates interagency strategic reviews and produces the National Security Strategy. However, crisis management still crowds out longer-range strategizing. The Pentagon does best at systematic planning for the future, but US strategy needs more than just a military component. I am not the only one who has plugged for a more strategic approach. So far the US government is not alone in trying to get ahead of the curve. Everybody else is equally swamped. The country that finally develops a way to operate strategically will have a huge advantage over the others.

This is the big challenge facing us—how to reform government so it can keep up with the drumbeat of new events but not be swamped by them. Since 1945 the United States has reformed our national security apparatus as the US global role increased. The changes needed may not require a full-scale overhaul, but we have not begun the discussion. All we do is decry the reactive nature of what government is doing.

What makes this book different from the NIC report? For one thing, I can be franker about what needs to be done. The NIC study is an intelligence community document and can't flag the policy gaps or point the blame at policy failures. This volume can be more forthright about the risks of weak US leadership. More than the NIC report could, this volume updates and zeroes in on the key global issues. I can't escape being an American, but hopefully the perspective here is global and integrates the views of others. The NIC reports triggered a veritable avalanche of interest from across the world, and this volume utilizes those reactions in gauging possible global pathways going forward.

This volume seeks to forge a comprehensive look on the future. Too many books on the future deal just with one or two strands, providing a distorted view. Many play up the bleaker or scarier aspects, which is easy to do. It is important, though, to put all the changes into context, because what we are looking at is a systems change. Just as the French Revolution and advent of mass manufacturing portrayed by Dickens in his novels ushered in a new era

of nationalism, class conflict, and budding democratic politics, we are witnessing profound structural changes that will lead to a wholly different world. Or, as an American Indian proverb puts it, "For new music, a new dance is needed."

This is also a different kind of book. A good chunk is fiction, telling a story about the future through invented characters shaping the new world, sometimes in unintended ways. I did not want this book to be another wonkish policy document pretending to be a trade book. We all need to think about what kind of future we want for ourselves and our families. The book tries to capture what is at stake for the individual, not just governments or international businesses or institutions, which are the usual customers for futures analysis. A big theme in the book is that, more than ever, individuals matter. The losers in many ways are governments and other established institutions. The future won't necessarily be kind to them, for a variety of reasons. But individuals can also lose out if they don't have an understanding of what is happening.

I don't believe the future will be like many science fiction novels, where everything is so unfamiliar and strange. Yes, we are in for some big structural changes. And I do agree with science fiction writer William Gibson: "The future is already here, it's just not very evenly distributed." We often have difficulty understanding the future's significance. The past won't disappear, either; it will continue to exert an influence on how we approach the future. There will be choices we will need to make about the kind of future we want. And it is up to us to choose. Hopefully this book will help us all make the right choices.

BEFORE I CONCLUDE, it might be wise to say a few words about myself. I came to do foresight for US intelligence by a circuitous route. My training was as a historian of the United States and modern Europe. After graduating from Wesleyan University with a degree in history, I studied abroad in Cambridge, England, and Paris and finished a PhD in European history in 1983. I got a job at the Central Intelligence Agency in 1986.

Twenty years ago I don't think I would have thought foresight mattered a lot. I don't think I was alone. At that time most of us thought we could predict the rough contours of the future; there was so little structural change. The fall of the Berlin Wall and the disintegration of the Soviet Union had not happened when I started at the CIA in 1986. We did not worry much about change. The world seemed to be frozen, and at most one anticipated only incremental shifts.

In 2003 I joined the National Intelligence Council. For an intelligence analyst, this was a dream job. The NIC is the premier analytic intelligence institution, drawing from all the intelligence produced throughout the whole intelligence community and providing the president and his senior foreign policy team the most authoritative analysis on key issues facing the United

States. It was at this point in my career that the changes underway became more frightening and disconcerting: 9/11 and then seven years later the 2008 financial crisis signaled the start of a new era—a less predictable and more disturbing one.

Beginning in the mid-1990s, the NIC began publishing quadrennially a major work forecasting future trends to coincide with the presidential election cycle. Members of the NIC recognized that there were new forces shaping the world that had not gotten due intelligence attention, such as demographics, globalization, and the changing environment. One of the original motives behind the work was to pull outside expertise into the intelligence community. The publications were titled *Global Trends* and looked out 15 to 20 years.

My involvement with the NIC began in 2003, when then NIC chair Ambassador Bob Hutchings brought me onto the NIC as the director of analysis and production and assigned me the task of writing the next *Global Trends*. As a trained historian, I was fascinated by the possibility of situating the changes underway into a broader context, comparing what we were living through with other historic transitions. What were the drivers and what kind of forecasts could be made? I don't think there is anything more exciting—or taxing—than analyzing all the possible trends shaping the future and thinking about how they might interact with each other to produce potentially different futures.

In the fall of 2013, I retired after 28 years in government service and now work at the Atlantic Council, a Washington think tank, as director of their Strategic Foresight Initiative. This new work is an extension of my NIC efforts, involving new clients in the private sector who want help thinking about the future. This book will hopefully help all of us not only think about the future, but ways to shape it.

PART I

Megatrends

WE LIVE IN AN ERA OF PROFOUND CHANGE. THE STATUS QUO IS NOT AN OPTION. FOR MANY of us the megatrends detailed here may represent a threat. We would rather put off the inevitable than deal with it today. The coming changes are not all bad, though; I will argue that most of it is very good. Our future world *could* turn out to be what previous generations everywhere have wished for—the chance to be prosperous and live in peace. Through science, we can enhance our human capacities to design a richer, more environmentally wise and equitable world, if we so choose.

But these megatrends have the capacity to destroy, too. And that destructiveness is heightened if we are not proactive in channeling those negative elements into a less harmful direction. Ironically, we are on the cusp of being more empowered than ever as individuals, but also more dependent on machines. With artificial intelligence, machines will someday have more brainpower than humans. This is no longer a science fiction fantasy, but it need not be a scary prospect, either, if we ensure that the automated systems operate the way we intend.

We've had a foretaste of how our capacities can outdistance our decisionmaking power with the Edward Snowden revelations on US government surveillance of all our communications. The intelligence community defends itself by saying they were adhering to the law. But the law was designed when such ubiquitous surveillance capacities did not exist.

For the West, some of these megatrends present a special challenge. The next couple of decades will see the end of Western dominance that began roughly in the late fifteenth century with the age of European discoveries. The end of Western dominance need not mean Western decline. We have already seen a global expansion of many traditional Western values even as traditionally non-Western countries are becoming the dominant force in the global economy. The rise of the West in the 1490s through the twentieth century was a traumatic experience for much of the rest of the world. The "rise of the rest" could prove equally conflicting, but it need not be.

The final issue is how much inequity we are prepared to tolerate. At a time of spectacular technological advances, we might see parts of the world being pulled back to a Malthusian or dog-eat-dog age because of a coincidence of factors happening from climate change, rapid population growth, resource scarcities, and bad governance. As we learned from the 9/11 attack, coming as it did from an obscure and impoverished part of the world, deprivation and misery might not be any easier to contain going forward.

CHAPTER 1

The Power of One

WHAT MAKES THIS COMING ERA DIFFERENT? A LOT OF PEOPLE IN WASHINGTON WOULD SAY China. Some years back when I was preparing earlier versions of *Global Trends*, I would have said the same, maybe with the difference that it's not just China but other countries too that are now being galvanized and becoming regional and global powers. The rise of new actors on the global stage—beginning with China—still contributes to what makes this coming era different. But the biggest change may be the one that is all around us in our daily lives and has to do with our own increasing powers as individuals.

My own bias was that individual empowerment is a good thing. As good as it gets. How could it not be? People—men and women of all races and nationalities—finally being given a chance to live up to their full potentials. Wasn't this the democratic dream? Wasn't this what all the generations before us have been striving for? Why wouldn't we rejoice?

I still think that way, but when I put on my analyst's hat, I can see the complications.

My first clue that others were not so high on individual empowerment was when I went on the road with the *Global Trends* works. The first NIC chairman I worked for had the wisdom to see that we could never forecast future trends by staying in Washington. We needed to get out. From that first edition I worked on in 2004, I met with academics, businessmen, scientists, academics, students, government officials, and others all over the United States and then, increasingly, overseas too. In 2004, we went to five places overseas; for the last edition I authored in 2012 it was 20. On these trips, I often had a preliminary draft to show and would ask for a critique. On this issue of individual empowerment, I got an earful.

First, to a man and woman everyone instantly agreed that the power of the individual was increasing, government officials particularly. They could feel it. It was not just a trend on paper. It was happening and people could see it.

That's where the agreement stopped, however. Many people saw real trouble ahead with all this individual empowerment. And some of the unlikeliest pessimists were among the most concerned. I was prepared for the Russian and Middle East governments to have objections. I was not prepared for many of the others.

One of the first eye-openers was in, I still think, an unlikely place. On a cold winter morning I climbed up the incline to the European Parliament building off Place Gare de Luxembourg in Brussels. After being greeted by a staffer, I was led through a veritable labyrinth of corridors. We finally reached the room for the breakfast meeting. The attendees were there to discuss the Internet. I had been brought in as an outside speaker to talk about the larger global trends. Only a relatively short presentation on the NIC's Global Trends project would be required, and they would be sure to get the point about the world being at an inflection point where the balance between individual and state was fundamentally shifting. No sooner had I finished my pitch for how the Internet had opened up untold opportunities for untold millions than a woman's hand shot up. She introduced herself as a member of the European Parliament and dove straight into exclaiming how "hyperconnectivity" had ruined her life. I must have looked puzzled, because she went on to describe the unintended and, in her mind, harmful results of the Internet revolution. Constituents were overly demanding and relentless; it had become a 24/7 world where longer-term goals could no longer be worked on. On and on she went as I tried to grapple mentally with the oddity of all of this flowing forth from a roundtable with the stated mission of furthering technological development in the European Union (EU).

It was clearly a trend. Everyone agreed with my judgment that individual empowerment was the number one megatrend and the right starting point for looking at the future. However, more and more voices sounded the alarm. In Kenya, one speaker warned that "individual empowerment comes at a high risk. Ethnic affinity is a reality of life, but can be politicized and become a weapon for conflict. Populism that's antimarket, antiwelfare, antigovernment is on the rise." She ended by voicing her biggest fear: "I am not even sure Kenya will be a united country 20 or 30 years from now." She attributed that to growing fragmentation that comes with individual empowerment.

In democratic Brazil, a former liberal minister in the Cardosa administration derided individual empowerment: "The politics of identity leads to fragmentation. This does not lead to convergence of values because the politics of identity is to differ with others rather than find common ground." He said, "The world looks more like Hobbes than Kant to me."

Thomas Hobbes was the seventeenth-century English philosopher who lived at the time of the English Civil War and authored the famous treatise on the state called *Leviathan*. Much of the book is occupied with demonstrating the necessity of a strong central authority to avoid the evil of discord and civil war. Immanuel Kant lived a century later, and he believed that one ought to think autonomously, free of the dictates of external authority. He was

enthusiastic about the French and American Revolutions and Irish efforts to fight the British for greater autonomy. A man of very regular habits, he only deviated from his routine of a daily walk on the day he heard that the Bastille had been stormed by the people of Paris, which started the French Revolution. He was also known for his treatise on *Perpetual Peace*, believing peace was possible in war-torn Europe so long as the state was based on the rule of law.

I never thought my university courses in philosophy would come in so handy for thinking about the future, but it became a leitmotif throughout the drafting of the NIC report. Were we facing an optimistic or pessimistic future? What did individual empowerment mean for the state? Were we entering a new period of chaos, with echoes of Europe's bloodletting in the seventeenth and eighteenth centuries?

The struggle between authority and the individual is endless. But we are at a point in history when the pendulum has swung much more in the direction of the individual. I expect it to swing back eventually, but not for some time and not completely. I am reminded here of the invention of the Gutenberg printing press in the mid-fifteenth century and the multiple repercussions that flowed from that technological change. The power of political and religious authorities was threatened, bolstering dissent and the flow of ideas across borders and giving a lift to the emerging Protestant middle class in Western Europe. In strengthening Protestant dissent through the wide dissemination of the Bible and Protestant tracts, the printing press revolution set in motion the social and political divisions that led to the religious wars that racked Europe in the sixteenth century. The printing press, too, eventually became an ingredient in the Catholic Church's Counter-Reformation, which upgraded the education of priests and proliferated the printing of devotional works to aid in the missionaries' work in Spain and Portugal's New World empires.

An equally complicated dynamic is at work with today's empowerment of the individual. Like the Gutenberg Bible, today's Internet and social media have set in motion a long-running revolution. The direction of these changes is not linear but more crablike in movement, spinning off other consequences, many times unintended. The nation-state—although deeply challenged—won't go away. Other nonstate bodies, including the individual and civil society, however, are growing more powerful and contesting governments' authority and legitimacy. The changes favoring individual empowerment are so powerful that they constitute sea changes.

The current technology revolution is a huge factor in tipping the balance favoring the individual and allowing those left behind by earlier revolutions to leap ahead. Mobile subscribers have been doubling every year since 2002 in Africa and increasingly with smartphones, which enable Internet connectivity. Now Africa has twice as many cell phones as there are in the United States. The rapid spread of telephony in Africa is an example of mobile technology overcoming the lack of landline infrastructure to spur

communication and connectivity. The less developed are sprinting ahead in some technologically enabled areas such as mobile banking, partly because the brick-and-mortar institutions are less prevalent and mobile banking fills in the gap.

Individual empowerment remains a complicated process, and the end results will be both positive and negative. Hopefully the former outweighs the latter, but in the short to medium term—just like in the fifteenth and sixteenth centuries—the rise of the new middle classes empowered with new technologies could be very disruptive. I will explain more as we peel back and examine the forces favoring individuals and the broader impacts, both expected and unintended.

The most obvious symptom and means by which individuals are becoming more powerful is by growing prosperity. This growing prosperity is manifest in the increasing global middle class, which constitutes a tectonic shift. I can't emphasize too much how important this growth is to understanding the coming new era. Over the next couple of decades, a majority of the world's population won't be impoverished, and the middle classes will be the most important social and economic sector—not just in the West but in the vast majority of countries around the world.

How should we define middle class? The usual way is to talk about per capita consumption. The international futures model I have used to estimate membership in the middle class defines it as per capita household expenditures of \$10–\$50 per day at purchasing power parity (PPP) rates. Goldman Sachs—which did a study—used a comparable gross domestic product (GDP) per capita of \$6,000–\$30,000 per year.² Depending on the specific income or consumption levels, you can arrive at different numbers for individuals in the middle class. A rise of the current 1 billion or so to over 2 billion is a conservative estimate. Others forecast 3 billion people or more in the global middle class by 2030. An EU report claims that over the last decade, over 70 million people per year joined the ranks of the middle classes. The report estimates "by 2030 just above half the world population" could be middle class.³ The world's population in 2030 is expected to be 8.3 billion, which would mean over 4 billion would be in the middle class.⁴

The most rapid growth will occur in Asia. The European and American middle classes will shrink from 50 percent of the global total to just 22 percent, with 2015 being "the first time in three hundred years, the number of Asian middle class consumers will equal the number in Europe and North America." If China achieves its target of increasing household expenditures at least as rapidly as GDP, the Asian Development Bank has estimated that the size of its middle class will explode, with "75 percent of China's population enjoying middle class standards and \$2/day poverty will be substantially wiped out."

One study found that while accounting for only 4 percent of the middle

class in 2010, China "could catapult to become the largest single middle class market by 2020, surpassing the US." But China might be overtaken in the following decade by India, thanks to that country's more rapid population growth and more even income distribution.⁸

Goldman Sachs in its study underlined that not even counting China and India, "New entrants to the middle class would still be larger than the world has seen for many decades." Multiple studies project that the rate of growth in the size of Africa's middle class will be faster than elsewhere in the rapidly developing world, but the base it is starting from is very low.

Much of this global middle class will be lower middle class by Western standards. Growth in the numbers in the top half of the range of this new middle class—which is likely to be more in line with Western middle-class standards—will still be substantial, rising from 350 million in 2010 to 679 million in 2030.¹⁰ The next generation of leaders in the developing world will most likely come from this segment.

Poverty won't disappear, and the fear of slipping back is likely to haunt many in the new middle classes. One Kenyan official worried, "The middle class is still really close to the lower class. They are vulnerable and prone to go back to the poverty level." Today about 1 billion people globally are living in extreme poverty, earning less than \$1.25 a day, and 1 billion are undernourished. The number of those living in extreme poverty globally has been relatively stable for a long time, but the rate has been declining with population growth. Significant numbers of people have moved from well below the poverty threshold to relatively closer to it due to widespread economic development. Absent a global recession, the number of those living in *extreme* poverty is poised to decline as incomes continue to rise in most parts of the world. The number could drop by about 50 percent between 2010 and 2030 but could still remain substantial—nearly 300 million in Africa alone in 2030, with many being undernourished. 12

The number living in extreme poverty in East Asia, notably China, has been reduced substantially and will drop further, owing to rapid economic growth. The numbers are expected to drop rapidly in South Asia and the Middle East. In sub-Saharan Africa, however, the average person living in extreme poverty will be much poorer than the average poor person in South Asia. 13

Under most scenarios—except the most dire—important advances in eliminating extreme poverty will be attained by 2030. However, if a prolonged global recession happened, as many as 300 million more people would remain in extreme poverty and experience malnutrition. ¹⁴ Under low-growth scenarios, the extreme poverty rate would not see the big reductions that have occurred in the past couple of decades, and fewer new entrants would join the middle class. ¹⁵

This means that under any scenario, there will still be plenty of poor people; the problem of poverty has not been solved and may be harder because many of these people are concentrated in countries—such as the landlocked countries in Africa—with few inherent sources of economic opportunity.

We are also seeing a lot of progress in health, which is a critical ingredient in the individual empowerment story. Like rising per capita income levels, improvements in health show the same pattern of the developing world catching up with the rich advanced countries and the life expectancy increasing everywhere. Deaths from infectious and communicable diseases are now falling for everyone. For centuries infants and young children have been vulnerable to diarrheal and respiratory infections, plus HIV/AIDS and malaria remain significant problems in sub-Saharan Africa. Despite the HIV/AIDS epidemic, there has been a rapid shift for several decades from communicable to noncommunicable diseases. In 2010, 7.2 million Africans died from communicable diseases and 3.5 million from chronic diseases. The trend in African deaths from the two causes is projected to cross in 2025, with more Africans dying from chronic diseases in the future. 16

Out in the field, several nongovernmental organization (NGO) health experts were more cautious about Africa getting to that point and whether we will see it by the projected 2025 date. One medical worker told me that even with the free prenatal care and extended health immunization program, it was hard to get mothers into the clinic for more than one visit. "The challenge is that a lot of women just go for one visit, figure out the baby is fine and don't go back for the three follow up ones.... Hospitals are there, we have staff, but we need to get mothers into the clinic. You need to make mothers see that health is critical for her and her baby's health. You also need to factor in salary loss for the day they go to the clinic and get rid of the perception that older generations gave birth at home which means they will be all right without a lot of treatment.... A lot of it is word of mouth among villagers, so social networks are the ones through which you want to spread your message."

Still, despite the obvious uphill struggle and absent a major pandemic, *global* deaths from all communicable diseases—including AIDS, infectious diarrhea, malaria, and respiratory infections—are projected to decline by nearly 30 percent by 2030.¹⁷ AIDS appears to have hit its global peak—around 2.3 million deaths per year—in 2004.¹⁸ Enormous progress has been made toward wiping out malaria, but past advances have slowed many times due to donor fatigue and growing disease resistance to medicines. There's still likely to be a significant health gap between rich and poor countries even by 2030, but it will be shrinking and everyone's health will be improving.

The rapid growth of increasingly healthier and more prosperous middle classes has important implications. Most of the Western studies have focused on the new markets for consumer goods, such as cars, which rise sharply with the growth of the middle class. Large US and Western businesses are growing more and more dependent on those becoming thriving marketplaces, drawing an increasing proportion of their profits from overseas.

More importantly for the countries involved, the growing middle class will be an engine of growth. History tells us that those in the middle have in the past vigorously accumulated capital, be it physical—plant, equipment, or housing—or human—education or health. But past examples also show that differences matter in how the middle classes consolidate. Brazil and South Korea both had similar income levels and rates of growth in the 1960, but Brazil's high levels of inequality are reckoned by many to have retarded its economic development. Brazil's middle class made up only 29 percent of its population, in contrast to Korea's 53 percent in the 1980s. Brazil has now caught up with over 50 percent middle class in the population, but its per capita remains substantially less than in South Korea. ²⁰

In preparing the NIC report, I spent time in Brazil studying the state of its middle class. Many Brazilians are in fact very proud of the growth of their middle class. A Brazilian social scientist told me that "we see inequality falling faster than expected." The main symbol of the new middle class has been the explosion in formal employment—workers with a formal employment contract rather than a cash-only arrangement. During the 2000s, formal job creation outpaced informal job growth by a three-to-one ratio. There was a big jump in people taking educational courses. And many Brazilians were pleasantly surprised that the rise of incomes did not translate totally into increased consumption. "The Brazilian rise was more sustainable than I thought," said an economist I spoke to, because the population was "not just consuming" but also investing in their future. The growth rate in education was very high. According to experts I consulted, "the quality of education, not just the quantity of growth" is getting better in Brazil but has a long way to go.

"Social mobility and decreasing inequality should be celebrated," a Brazilian expert on inequality told me. But he said one needs to be careful with "international comparisons." "No one in Brazil has the kind of public services that are available to the poorest person in Belgium. It is very difficult to compare groups on the basis of income if we do not include services." Middle classes also include very disparate groups. There is a big difference between public and private sector workers. The first have permanent jobs, whereas many have much less security in the private sector, which includes a big informal sector "that if they paid all the taxes they were liable for would not survive."

"Middle classes in Brazil pay a major part of their income to the state, but don't receive that much from it. Poorer classes get much more from the state than the classes paying for those services. Increasing indebtedness [is a way] to keep one's quality of life." I heard this from several experts at a conference we held at the Instituto Fernando Henrique Cardoso in São Paulo, a year