

The Cone of Uncertainty of the 21<sup>st</sup> Century's Economic Hurricane ·

By

Avinash Dixit

Princeton University

Brilliant minds including Niels Bohr and Yogi Berra are supposed to have declared that prediction is very difficult, especially about the future. And I can safely predict that several contributors to this volume will invoke that dictum. Then why are we doing it?

Speaking for myself, I have a mixture of motives. First, following in Keynes' footsteps, and in the company of such distinguished fellow-contributors, is irresistible. Second, I will not be around to be ridiculed when my predictions go spectacularly wrong. Weather forecasters and prognosticators of financial markets have thicker skins; they blithely make new predictions every day even as their previous ones prove to be mistaken. I will have the safety of absence. Third, and most important, indulging in wild speculation is simply too much fun.

Weather forecasters do take some precautions. They usually attach a probability to their forecasts of "precipitation," and recognize that forecasts farther out into the future have larger margins of error by showing "cones of uncertainty" around their projected paths of hurricanes. Economic forecasts should do likewise.

The hurricane analogy seems especially apt as I write this; the winds buffeting the world economy, assisted and in some respects even caused by policy follies, have already produced a Great Recession, with fears of more to come.

---

· Article written for *In 100 Years*, ed. Ignacio Palacios-Huerta, to be published by MIT Press, 2013.

Therefore I shall begin in the hurricane-forecasting mode, and suggest possible paths within its cone of uncertainty.

At least one prediction can be made with high confidence; think of it as the central path in the cone. On it, in the course of the next century there will be several financial and economic crises. Each crisis will be preceded by a boom and by a state of euphoria, when almost everyone will believe that “this time is different; we have learned how to avoid crises, and have finally learned the secret of how to sustain the Great Moderation.” When the crisis hits, policymakers everywhere will be shocked and unprepared. Their panicked responses will merely paper over the real problems and sow the seeds of the next crisis a few years down the line.

Another fairly safe prediction pertains to international coordination for policies on global public goods, especially precautionary measures to reduce the risk of catastrophic climate change and mitigate its consequences. Reaching and implementing agreements will remain problematic. Only the Germans and the Scandinavians will make promises in good faith and strive to fulfill them. Britain will try to emulate them but will not succeed. America will be honest about its domestic political difficulties, and therefore promise little or nothing, drawing criticism from countries like France and Italy, which will sign anything and then do nothing. China and India will repeatedly declare good intentions, but their main priority will be economic growth, and they will be too distracted by their internal problems to do much about the environmental impact of their growth.

A large fraction of the world’s electricity will continue to be generated by burning coal and oil, emitting greenhouse gases. Solar, wind, and tidal power generation will contribute much less. Nuclear fission power will go through cycles: periods of gradual increase followed by sudden setbacks after scary accidents to reactors. Fusion power has always been the technology of the future, and that will still be the case a century from now.

If the forecasts of global warming come true, the lack of international action will have some side-benefits. The north-west and north-east passages in the Arctic will be ice-free, reducing transportation costs from east Asia to Europe and the U.S. east coast. However, by then the major component of trade flows will be up and down the western Pacific along the east coast of Asia, or perhaps across the Pacific to the affluent countries in South America. The majority of traffic on the famed arctic passages of yore will consist of tourists retracing the paths of Roald Amundsen and Adolf Erik Nordenskiöld.

What about the extremes of the cone of uncertainty? United States and Europe are on the right edge. Dysfunctional politics and continued adverse demographic trends will trap these former economic giants into relative mediocrity in the world. Their situation will be eerily reminiscent of many Latin American countries in the bad old 1970s and 1980s. From time to time they may enjoy a little growth, but much of the time their economies will stagnate while new dynamic economies of Asia, and parts of South America and Africa, grow faster. Europe and America will remain burdened by debt, both private and public, and suffer periodic bouts of inflation and currency crises. International Monetary Fund officials from its shining new headquarters in Singapore will send missions to Washington and Brussels, to discuss the terms and conditions for renewing loans. The American and European public will resent these heavy burdens. The Americans will insist on their constitutional right to enjoy all the latest new imported personal helicopters and holographic 3D-surround home theaters that put them right inside the action in the movie along with the actors. The value of U.S. output will be much less than the value of all this consumption, so the country will continue to run large deficits requiring continuous borrowing. That won't stop Americans from simultaneously complaining about other countries running the surpluses that they lend to the U.S. to enable Americans to consume so much! Europeans will hold frequent and noisy demonstrations to defend their Bacchus-given right to sit and drink Ouzo (or vin-de-table, or tepid beer, ... ) all day. The governments, whose primary objective is reelection, will not defy the voters and therefore will not fulfill the conditions they

pledge to the IMF. But after long and difficult negotiations the IMF will roll over the loans anyway. The borrowers know full well that if you owe the bank a trillion dollars, you are in the bank's power, but if you owe the bank a quintillion dollars, the bank is in your power. <sup>1</sup>

In America, recurrent macroeconomic crises will be made worse by the loss of technological leadership, as governments controlled by or beholden to religious conservative forces forbid research on the frontiers of biotech and related areas. American education will continue to be squeezed between the demands of religious fundamentalists and teachers' unions; this will accelerate the decline. China gives us a grim example of long-term decline. It led the world in science and technology for centuries. Then some capricious decisions of its emperors to halt exploration, blind faith in its own traditions and superiority, and distrust of anything foreign, led to stagnation and decline from which it took almost six centuries to climb back.<sup>2</sup> For the U.S. the 21<sup>st</sup> century will be just the beginning of a similar downhill slide.

A side-effect of this decline will become good news for some: the U.S. will regain its position as a manufacturing economy.<sup>3</sup> As early as 2011, production of some mops and brooms was coming back to the U.S. from China. The Chinese didn't want to be making these crappy plastic goods any longer; they wanted to move into more advanced and complex technological sectors. At least this reversal will create employment for the poorly educated and unskilled U.S. workers.

---

<sup>1</sup> The huge magnitudes are a sad consequence of the inflation that will have taken place over the coming century.

<sup>2</sup> See Chapter 21, *Celestial Empire: Stasis and Retreat*, of David S. Landes, *The Wealth and Poverty of Nations*, New York: W. W. Norton, 1998.

<sup>3</sup> Boston Consulting Group, "Made (again) in the USA: The return of American manufacturing." <http://www.bcg.com/documents/file84471.pdf>. Accessed November 4, 2011.

On the left edge of the cone of uncertainty we find China and India, whose inevitable and irresistible rise to world domination is being forecast so confidently today, in the early years of the 21st century. Regional and ethnic inequalities in each of these countries will explode into repeated civil conflicts. The police and armed forces needed to cope with this situation will take up large fractions of their governments' resources, leaving little for productive social expenditures or public investment. Major infrastructure projects will suffer from neglect, as well as damage from sabotage and terrorism in the civil conflicts. Foreign investment will dry up, and successful domestic firms will leave for less troubled foreign countries.

Some of the scenarios I have laid out can coexist; others are mutually exclusive. But even a few of them together present a frightening prospect. Halloween approaches as I write this, so the timing is very fitting for raising fright. But my real purpose in depicting such nightmares is, of course, to shock the readers, and hopefully to help set in motion some actions that will reduce the risk of turning the nightmares into reality. What, then, might be a dream scenario, and what actions might bring it about?

In my dream scenario, policymakers will have learned that crises are inevitable, and that the most important measures to deal with them have to be put in place in advance, during the good times. In the early 2000s, copper prices were high and Chile's government coffers were flush. The Finance Minister at that time, Andrés Velasco, resisted pressure from numerous special interest groups to spend this windfall on their favorite projects; instead he built up a large reserve fund and was heavily criticized by all those groups. When the Great Recession hit the world in 2007, most countries got into serious deficit and debt problems, and had to make deep cuts in all programs. Chile would have suffered more than most as the copper price plummeted. But Velasco was able to use the accumulated reserve fund to cushion the shock, and became a hero overnight. He was quoted as saying: "Being a

Keynesian means being one in both parts of the cycle.”<sup>4</sup> In my dream scenario, this slogan will be posted in huge letters on the walls of treasury departments in all countries, and the actual practice of their fiscal policies will conform to it.

I have a dream that America’s public schools will recover the quality and purpose they had in the first half of the twentieth century, and will turn out high school graduates equipped with skills, not just self-esteem. And these high school graduates will have affordable opportunities to go on to acquire college education in subjects that matter – mathematics, natural sciences, engineering, and, dare I say, a little basic economics, instead of the easier song-and-dance majors that are popular among too many U.S. college students.<sup>5</sup> In other words, I hope America will recognize that education is mostly an investment good, not a consumer good. Schoolteachers will be well paid and will have the respect of their communities, but they will be motivated and dedicated to their vocation, and not obsessed with preserving the jobs of everyone regardless of ability, enjoying short working days and short school years, and retiring early on handsome pensions. They will have good knowledge of the subjects they teach, and will come mostly from the top third, not the bottom, of their college classes. The same hopes and dreams apply, although with varying degrees of emphasis, for most of the world that is rich in 2011.

In my dream world of 2111, there will be opportunities for individuals to take risks, exercise initiative, and innovate, getting rich if they succeed. But these opportunities will be equally available to all. Although the outcomes will be unequal, the bottom of the distribution will be cushioned by a sturdy social safety net. This will consist of a simple, comprehensible, and relatively non-manipulable set of policies, for example a negative income tax that replaces all the complex set of welfare payments, plus health care coverage that, at a minimum, protects everyone

---

<sup>4</sup> “Chile’s economy: Stimulating.” *The Economist*, February 19, 2009.

<sup>5</sup> Christopher Drew, “Why Science Majors Change Their Minds (It’s Just So Darn Hard)” *The New York Times*, November 4, 2011.

against ruinous expenditures. Many in the U.S. will reflexively denounce this as socialism, but they should be reminded that something very similar was first and most persuasively advocated by that hero of the libertarian right, Milton Friedman.<sup>6</sup> My ideal safety net will be quite lean, and not so generous as to people allow people to idle in comfort for ever. Most importantly, it will offer only a modest flat backstop income for everyone. It will not protect bankers any better than it does bakers. It will not give any special treatment to people who build or buy expensive houses in locations that are at risk from hurricanes and floods, or those who take out large mortgages and home equity loans in the expectation that house prices can never fall, or those who take other absurd risks expecting to keep any profits and unload losses on taxpayers. It will not subsidize farmers who incur large debts to buy land in boom times and then produce too much. My ideal health care system will refuse coverage to people who have demonstrably chosen lifestyles that are known to lead to health risks like cancer and diabetes for the treatment of which the rest of us would have to pay huge amounts. Herbert Spencer's motto,<sup>7</sup> "The ultimate result of shielding men from the effects of folly is to fill the world with fools," will be written in large letters on the walls of all government departments that offer bailouts, subsidies, insurance, and all kinds of handouts. Darwin Awards are given to posthumously to people whose reckless and foolish actions helped improve the gene pool by removing themselves from it.<sup>8</sup> Similar awards should be designed for those whose reckless and foolish actions lead to their own or their company's financial death. Golden parachutes of CEOs should be designed not to open when they depart after disastrous reigns.

---

<sup>6</sup> Milton Friedman, *Capitalism and Freedom*, University of Chicago Press, 1962, chapter xii.

<sup>7</sup> Herbert Spencer, "State tamperings with money and banks," in *Essays: Scientific, Political, and Speculative*, New York: D. Appleton & Co., 1891, vol. 3, ch. IX p. 354.

<sup>8</sup> See <http://www.darwinawards.com/>

When designing and implementing my ideal safety net, governments will thoughtfully balance needs of the short run and the long run. Short run economic and political imperatives are real and should not be neglected, but they often lead to excessive stimulus spending, preservation of firms and industries that should be wound down, and so on. On such occasions, politicians and several economists appeal to the great man whose essay we are attempting to update here: “In the long run we are all dead.” But in this instance the great man made a serious logical error; he should have said: “In the long run we are *each* dead.”<sup>9</sup> At any future date other people will be alive, and every ethical policymaker should pay due regard to their interests even if they do not have a voice in today’s political contests.

Wealth and income at the top will not be allowed to get so distant from the middle of the distributions as to threaten basic cohesion of the society. Even those who do not accept any moral or normative arguments for limiting inequalities of outcomes should accept the practical positive one: in the absence of any such limit, the risk of a social revolution that threatens the well-being of even those at the top is too great. With some reasonable limit, the masses will not have reason to think that the rich belong to a completely different society, or a country-within-a-country, a *Richistan*.<sup>10</sup> An underlying unity, a belief and an emotion among the nationals of each country that we are all American, Indian etc., and that ultimately we are all human and citizens of planet earth, will remain. People will have enough empathy with others to support them in times of need. However, they will also retain enough individuality and a sense of personal achievement, in short enough of the spirit of the much-maligned *homo economicus*, to defy those social norms and customs that enforce conformity and stifle innovation, to go one’s own way and be a maverick

---

<sup>9</sup> To state the difference rigorously, Keynes said “There exists a time T such that for every person X, X is dead at T” when he should have said “For every person X, there exists a time T(X) such that X is dead at T(X)”. Keynes’s dictum would apply to a complete nuclear holocaust, but thankfully that seems a remote possibility now.

<sup>10</sup> Robert Frank, *Richistan: A Journey Through the American Wealth Boom and the Lives of the New Rich*, Crown Business Books, 2007.



when the spirit moves one. Without such individualism, society can quickly become rigid and stagnant.

In my dream world, the political institutions of economic governance, and indeed politics as a whole, will be contentious but with civility and respect. People will debate others who hold opposite views, but will not think that those differing views automatically make the others traitors or devil-worshippers or communists or whatever may be the favored condemnable category of the day. I believe that one of the most important ideas to emerge in the eighteenth century was that of “His Majesty’s loyal opposition” in Great Britain. This recognized that the opposition in parliament could criticize and challenge the actions of the government of the day, without their basic loyalty to the monarch and the state being thereby called into question. This permitted the scrutiny and dissent that was essential for the functioning of democracy, and for reducing the risk of emergence of absolute rule or tyranny. Such loyal opposition, not only in legislatures but also from media, non-governmental organizations and other social groups, is more necessary than ever in today’s world where control of information and technologies of coercion can put dangerously great powers in the hands of governments. I dream that we will all have several concentric circles of loyalty: to our family and friends, our social groups, our nations, our international organizations, and to humanity as a whole. But we will all retain a spirit of loyal opposition, keeping those to whom we delegate some power of authority over us always on their toes.

How might my dream scenario be implemented? The ideal path would be one where everyone wakes up tomorrow morning, realizes what needs to be done, and contributes to bringing it about with a cooperative spirit and good will. But alas, the likeliest path is through a deep crisis. As Mancur Olson pointed out, reforms of institutions often come about after a war or some other crisis has dissolved the

previously entrenched coalitions and destroyed the power of special interests.<sup>11</sup> Therefore my dream scenario may follow one or more of my nightmare scenarios. My seemingly disconnected thoughts in this essay may, after all, constitute a coherent narrative of the economic history of the coming century!

Will we move to a fifteen-hour work week? Will we be another four or eight times as rich as we are now? Will we colonize the moon or mars? I don't know, and don't much care. I believe that the improvements in institutions and organizations that figure in my dream are much more important than any increases in leisure or any substantial increases in material wealth in today's first world. With good institutions, a good level of economic well-being can be sustained; without them, even great wealth can be fragile. I do hope that today's poor world catches up with the standard of living that prevails in many of today's advanced countries, and that the currently rich countries retain their level of economic well-being. Advances beyond that would be nice, but they are not my biggest hope or concern.

---

<sup>11</sup> Mancur Olson, *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*, New Haven, CT: Yale University Press, 1982.