

The Resurrection Of Risk

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THE PERCEPTION OF RISK

The tragic events of September 11, 2001 reminded us that we live in a world fraught with risk. That is one reason so much seems to have changed, all the more so because many believed that a variety of risks had receded permanently.

The retreat of risk in recent decades had its roots in reality, but much of it was illusory. In the second half of the 1990s, these elements of reality combined with hidden forces and some wishful thinking. An illusion of a new era emerged, where the old laws of economics, and the business cycle itself, had seemingly been repealed.

The dawn of the new millennium found the United States enjoying unprecedented prosperity and a feeling that many of the risks associated with earlier times had been vanquished for good. To some extent, the reduction in risks was real. For example, the risk of nuclear war had genuinely declined after the end of the cold war. But some went much further, proclaiming “the end of history,” with global conflict winding down with the final triumph of the western capitalist model of democracy. The hollowness of such claims is now obvious.

As this article will show, these forces drove the stock market bubble as well as the remarkable performance of the U.S. economy in the late 1990s. And the evolution of these forces, ultimately, was behind the collapse of the Information Technology (IT) boom and the end of the longest expansion in U.S. history.

Looking ahead to a future after September 11, the process of adjustment to a new awareness of risk is likely to drive the economy, the markets and national life itself. For that reason, it is important to understand how the interplay of reality and perceptions about risk helped shape the past decade, and how it is likely to mold the future.

THE RETREAT OF RISK

The story of civilization is in large measure a chronicle of the taming of risk – the danger from wild animals and the forces of nature, the threat of starvation and disease, as well as the menace of war. In the triumph of civilization, technology has long played a central role, for example by facilitating urbanization and improving food supply and

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medicine. It is not surprising, therefore, that faith in the power of technology and globalization to reduce risk was the common thread that ran through the delusions that shaped the past decade.

Of course, there was some truth to these misconceptions. For example, the increased use of IT systems was expected not only to enhance efficiency, but to also reduce risk. Certainly, in military combat, the use of technology in the Gulf War demonstrated how a formidable foe could be decisively defeated while minimizing the risk of U.S. casualties. By the end of the decade, the bombing of Kosovo had shown that even “zero-casualty war” was feasible. Increasingly, it seemed, risk was in retreat, even on the battlefield.

By the late 1990s, technology had already reduced risk in important areas of daily existence. For example, automobiles were made significantly safer through the enhanced use of seat belts, air bags and antilock brakes. More generally, increased information and communication genuinely reduced uncertainty in many walks of life – from the use of cell phones in emergencies to computerized warning systems that cut response time.

Actually, the growing popularity of extreme sports in the late 1990s was a telling comment on the perceived reduction of risk in American daily life. After all, from hunter-gatherer times, risk had always been part of the human condition. When perceived risk virtually disappeared, so did this normal feature of human existence. In this context, extreme sports may reflect an atavistic desire to artificially inject risk into lives that seemed devoid of the excitement only risk can provide.

In the business arena, IT was expected to raise productivity while reducing risk. In particular, the use of IT systems for supply chain management reduced uncertainty and cut the risk of demand surprises along the supply chain. As a result, firms could afford to carry lower levels of inventory and thus become more efficient, without worrying as much about sharp inventory corrections triggered by unexpected demand shifts flowing up the supply chain.

Volatility was apparently vanquished. Inventory corrections occurring simultaneously in many industries had been a key feature of business cycle recessions in the period after World War II. Thus, if technology could help reduce or even eliminate these fluctuations, inventory corrections would become gentler. These milder variations in inventory would result in smaller cyclical fluctuations in the overall economy. Certainly, the evidence supported this hypothesis: In

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cyclical terms, as research at the Economic Cycle Research Institute (ECRI) has confirmed (*International Cyclical Outlook*, 2001) the past decade was the least volatile in history. Separately, a New York Fed paper suggested that there has been a downshift in the volatility of the business cycle (Chauvet and Potter, 2001).

Searching for answers, many economists attributed the taming of the cycle to IT-related supply management systems and enhanced productivity growth at the micro level, and much more skillful management of the economy at the national level. In July 1997, Stephen Weber asked in *Foreign Affairs* whether “The End of the Business Cycle” could be proclaimed (Weber, 1997). His answer? It certainly could.

That paper recalled an earlier book (Bronfenbrenner, 1969), titled “Is the Business Cycle Obsolete?” Notably, that volume was published in the final year of what had then become the longest expansion in U.S. history. That remarkable expansion marked the last time a “new era” was widely proclaimed – the prior occasion being the roaring twenties.

It is instructive to review Weber’s arguments for the demise of the business cycle, because they reflect widespread misperceptions of the extent of risk. And these assessments led both to the boom in the late 1990s and to the bust that followed.

Weber noted the benefits of IT-driven supply chain management in smoothing fluctuations. Ironically for a paper published on the eve of the Asian crisis, it also argued that the rise of emerging markets should dampen the U.S. business cycle through its effect on U.S. exports.

Weber further suggested that the rapid growth of financial markets and instruments to manage risk would result in better risk management, and downturns in some markets would be offset by upturns in others, reducing the volatility of the global economy. The Long Term Capital Management (LTCM) fiasco of 1998, the recent collapse of Enron and the current synchronous global downturn raise obvious doubts about the tenability of those assumptions.

Of course, Weber was correct that if economic fluctuations became smaller, growth would be less likely to dip below zero. In other words, recessions would be less frequent.

Separately, if economic growth were to rise strongly and joblessness were to fall, as in the late 1990s, tight labor markets would likely boost wage growth. But if IT had truly boosted productivity growth

significantly, businesses could afford higher wage growth without pushing up their prices any faster, while maintaining their profitability.

In other words, if productivity growth had indeed risen significantly, faster economic growth would not trigger a rise in inflationary pressures, and the Federal Reserve would have less of a need to rein in growth and turn the boom into a bust in order to head off inflation. So if the limits to non-inflationary growth had indeed risen significantly in the late 1990s due to faster productivity growth, as many economists came to believe, the economy could enjoy a higher potential or trend rate of growth.

If all this were so, the milder economic fluctuations would occur around a higher trend. Thus growth would be even less likely to dip below zero, i.e., into recession territory. Not surprisingly, there came to be a broad acceptance of the notion that with the cycle thus tamed, the risk of recession had essentially evaporated.

ASYNCHRONOUS INTERNATIONAL RECESSIONS

Behind the veil of these illusions lay a harsher reality. In fact, much of what was assumed to be permanent was actually due to a run of good luck. The fallacy behind the optimistic arguments lay in the assumption that the reduction in volatility was caused by systemic changes and controllable factors rather than temporary good fortune.

It is not commonly known that, luckily for the U.S. economy, the 1990s was a period dominated by asynchronous global recessions, when key economies took turns going into recession. One reason this is so little understood is that many countries like Japan use the word recession to mean something quite different from its meaning in the U.S.

Because many countries saw long periods of virtually uninterrupted growth in the years that followed World War II, it was difficult for them to see the conceptual relevance of classical business cycle contractions. Instead, a couple of decades ago, many countries, along with the OECD, focused on alternating periods of above-trend and below-trend growth – called growth cycles in the U.S. to distinguish them from classical business cycles – as the primary way to monitor cyclical fluctuations in their economies.

In fact, periods of below-trend growth, also called growth recessions in the U.S., began to be called recessions, and some people even

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started referring to them as business cycle recessions, compounding the confusion. In this context, it is not surprising that there is almost universal acceptance of the notion that Japan has been in a decade-long recession, even though Japanese GDP grew at more than a 3% annual rate from late 1993 to early 1997, and at a 2% annual rate from early 1999 to the spring of 2000 – below par for Japan, but still an expansion.

No doubt, monitoring growth cycles can be very useful in international economies. But by effectively relegating classical business cycles to the dustbin of economic history, economists may have impaired their own ability to monitor and thus anticipate classical cyclical contractions abroad. That is why it is so seldom recognized that the 1990s saw long periods of asynchronous business cycle expansions and contractions in the major economies.

Geoffrey H. Moore, a pioneer in business cycle research, and his mentors, Wesley C. Mitchell and Arthur F. Burns, helped establish the historical dates of U.S. recessions. Moore founded ECRI, which under his guidance performed the painstaking task of establishing, for all major market economies, authoritative business cycle dates comparable to the official U.S. business cycle chronology. The benefits were the ability to compare business cycles across countries, along with clearer insights into the nature and timing of international cyclical fluctuations.

These international business cycle dates reveal that the 1990s began with the “English-speaking recession” involving the U.S., the U.K., Canada, Australia and New Zealand. Just when those economies began to recover, Japan and continental Europe went into recession.

In fact, it was not until early 1994 that all major economies were expanding in sync. The resulting boost in world demand growth triggered a rise in U.S. import prices that bolstered domestic inflation pressures.

As a result, the Federal Reserve raised interest rates aggressively to slow the economy and head off inflation. Notably, the rate hikes initially came as a surprise to the bond market, for which 1994 became the worst year in its six-decade history, triggering, for instance, the bankruptcy of Orange County in California.

A global slowdown followed the rate hikes, curbing inflation as intended. But in early 1997, Japan fell into a deep business cycle

recession. Later that year, the Asian crisis triggered the first business cycle recession that the Asian “tiger” economies had seen in decades.

The resultant global glut of goods caused U.S. import prices to fall for four straight years from 1995 to 1999, keeping a lid on inflation. This was the key to the non-inflationary growth experienced by the U.S. in the second half of the 1990s, as a recent paper by Robert W. Rich and Donald Rissmuller of the Federal Reserve Bank of New York finally concluded (Rich and Rissmuller, 2000).

Thus the key to the “new era” was not, after all, a lasting escalation in productivity growth that would have permitted an increase in the economy’s potential growth rate, though good economic policy certainly helped. It was mostly an extended run of good luck for the U.S. economy produced by the misfortune of other economies in recession.

By 1998, several key Asian economies had begun to export their way out of recession. It was not until 1999 that the Japanese economy also began to expand, but reports of rising GDP not only surprised most economists but were also met with widespread disbelief.

Thus, in 1999-2000, a world that had written Japan off completely experienced only its second synchronous global expansion in a decade, and was caught off-balance as a result. As we shall see later, that surprise started a domino effect that culminated in the current global recession.

THE ATTRIBUTION BIAS

The sort of arguments marshaled by Weber and increasingly endorsed by mainstream economists in the late 1990s suggested that the classical business cycle would be repealed. This was supposedly because of lasting changes in the global economy and controllable, and therefore sustainable, factors like improved supply chain management and more skillful conduct of monetary policy. Luck, in the form of falling import prices due to asynchronous business cycle recessions, did not figure prominently in this new paradigm.

In a way, this was a well-known psychological phenomenon called attribution bias. In essence, it is human nature to take credit for good outcomes but blame others or circumstances for bad outcomes. The “new paradigm” was the result of attribution bias on a national scale, with economists attributing the U.S. boom not to accident but to design.

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In fact, the resilience of the U.S. economy in the face of the Asian crisis strengthened the conviction of Weber¹ and his colleagues in the validity of their arguments. The limited fallout from the LTCM fiasco may have reinforced those beliefs even further.

As economists and stock market participants alike came to believe in this new paradigm, the perceived risk of a business cycle recession and therefore, of a sustained bear market, faded away. In fact, in the wake of the LTCM crisis, the growing faith that Alan Greenspan and the Federal Reserve would always rescue the economy from any crisis came to be known as the “Greenspan put,” an analogy to a put option that protected the holder from a market decline. In effect, investors now believed that there would be no bear market, so the “buy-on-dips” philosophy seemed rational, because every dip was supposed to be limited and thus an opportunity to buy stocks cheaply.

As stock prices climbed, joblessness fell and incomes rose, consumers went on a buying binge, borrowing more than ever and driving the savings rate down dramatically. After all, there was no reason to save for a rainy day if the stock market was going to do all the saving for you – and rain had been removed from the forecast.

Meanwhile, the IT boom and the rise of the Internet opened up visions of a brave new world where the only risk was missing the boat by not jumping into IT as a career or an investment. As money poured into stocks, and IT stocks in particular, stock prices kept rising, spurred even higher by exponents of the “buy-on-dips” philosophy.

With stock price valuations at stratospheric heights, brokerage house analysts came up with new “metrics” to justify those valuations. Even sophisticated economists were not to be left behind.

After all, if risk had truly retreated for good, the consequences were necessarily far-reaching. Taking that view to its logical conclusion, Glassman and Hassett (1999) wrote a bestseller titled “Dow 36000” based on the premise that even the existing equity risk premium was much too high. In essence, they contended that given the long-term decline in the actual risk of owning stocks compared with the risk of owning bonds, current stock prices grossly overestimated the risk of stock ownership. By that logic, 36000 would be a more appropriate level for the Dow.

¹ Weber suggested this in early 2000 on the PBS program “Think Tank” with Ben Wattenberg while discussing the topic “Is the Business Cycle Out of Business?” Weber and the author were both participants in this discussion.

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But it was not just stock prices that reflected this perception of reduced risk. The clearest evidence of the decline in perceived risk was shown by the fall in the bond risk premium. By early 1997, the risk premium shown in the yields of emerging market bonds over U.S. treasury bonds had dropped to new lows.

Also by early 1997, the risk premium in the yields of lower-quality corporate bonds over higher-quality corporate bonds, which always rises in anticipation of recessions, had fallen to its lowest reading since the last “new era” of the 1960s. That premium increased somewhat as the Asian crisis and the LTCM crisis hit, but after the changeover to the year 2000 passed uneventfully, it dropped to even lower readings.

Meanwhile, venture capitalists poured money into Internet startups with seeming disdain for risk. So much so that for many Internet entrepreneurs, business failure was seen not as a risk but as a stepping-stone to ultimate success. Most importantly, it was no bar to raising more venture capital. In effect, in this new world, even failure had been stripped of risk.

With stock prices skyrocketing, it became increasingly easy to raise money in the stock market, especially for IT firms. At the same time, with inflation in check, interest rates kept falling, making it cheap, as well, to borrow.

But with the world awash in capacity, U.S. firms had little pricing power, while labor costs kept rising. The only way to sustain profitability was through enhanced productivity, and here IT provided ready solutions. Thus the IT sector boomed, further inflating IT stock prices.

In fact, “old economy” firms’ IT-related capital expenditures soared, until by the year 2000, they accounted for almost half of all U.S. capital expenditures. Notably, as the repeal of business cycle recessions became common wisdom, the perceived risk of overbuilding capacity, commonly associated with the risk of recession, also diminished. Under the circumstances, with the availability of cheap capital from the stock market as well as from banks, capital investment appeared to be a much lower-risk proposition.

The final boost to this apparently riskless “bubble economy” was provided by the Y2K scare, which induced many firms to make major new IT-related investments ahead of the changeover to the year 2000. The Federal Reserve’s rapid infusion of cash into the economy in the weeks preceding the New Year fueled a dizzying rise in IT stock

prices in particular in late 1999 and early 2000. When the Y2K scare passed without causing any of the feared disruptions, the perception of risk declined even further, as shown by a drop in the bond risk premium.

It is important to understand that the overbuilding of capacity and the stock price bubble were thus driven in significant measure by the assumptions that recessions had been repealed and the Federal Reserve would avert any unexpected crises. After all, if these risks had indeed declined substantially, the market's exuberance was not entirely irrational.

THE RETURN OF THE BUSINESS CYCLE

As we mentioned earlier, the brief, anemic 1999-2000 recovery of the Japanese economy caught the world off guard. In part, the problem was semantic confusion, as many had expected Japan to stay mired in below-trend growth, which the Japanese called a recession. Of course, the Japanese economy did stay in such a growth recession, in the sense that it kept showing below-trend growth.

But unexpectedly, the world's second-largest economy also expanded in 1999-2000. Here again, a familiar psychological bias operated among observers. This was persistence bias – the idea that once people get used to a pattern of events, they expect it to persist. Because Japan had long been in a recession, the consensus expected it to continue, but that is not what happened.

The expansion of the world's second-largest economy in 1999-2000, following the 1998 recovery of the smaller Asian economies from the Asian crisis, marked the start of the first synchronous global expansion since 1994. Suddenly, world demand began to rise much faster than expected.

One result was that U.S. import prices started rising after falling four straight years from 1995 to 1999. For a change, domestic inflation pressures were being reinforced by the imported variety, not neutralized by the falling prices of imports and industrial commodities.

Not surprisingly, after holding off for a couple of years, the Federal Reserve started an aggressive series of interest rate hikes, disregarding the new paradigm of non-inflationary growth. But it was not just the Fed that raised interest rates – so did every major central bank, including even the Bank of Japan.

These concerted global interest rate hikes set the stage for a global slowdown, designed to cool inflation pressures, that arrived on schedule in the second half of 2000. But like many others, OPEC had also been blindsided by the Japanese expansion and the pace of the consequent rise in global oil demand.

With oil demand outstripping supply, oil prices were spiking sharply by the time the economies of the world began to slow. Rising oil prices acted like a tax on already slowing economies, especially in Europe, where fuel taxes multiplied the price hikes. As a result, by the second half of 2000, economies around the world had started slowing sharply.

U.S. growth decelerated abruptly in the context of this global slowdown. By late 2000, it had entered a window of vulnerability, in which it needed just a final shock to tip it into recession. As is often the case, that shock arrived from an unexpected source.

THE "I" OF IT

The IT sector was considered the "new economy," supposedly immune to old economy maladies like business cycles. In fact, industry leaders asserted that the new economy was insulated from old economy slowdowns.

After all, the exponential growth of the IT sector had continued through the 1995 slowdown and even the 1990-91 recession. What better proof that the new economy was essentially unaffected by the old economy's problems? On the contrary, the new economy, by using technology to improve information flow through supply chains, would tame inventory cycles in the old economy, helping it conquer the business cycle itself.

But something significant had changed by the end of the 1990s. During earlier downturns, IT had accounted for a relatively small proportion of capital spending, and market penetration of those technologies was still low enough to spur rapid growth in spite of cutbacks in other areas of capital investment. Yet, by the year 2000, IT accounted for almost half of all U.S. capital spending.

Historically, in cyclical slowdowns, corporate profits always declined. When that happened, firms always cut back on discretionary expenditures, such as advertising and capital spending. Thus, the sudden slowdown seen in the second half of 2000 necessarily caused a significant drop in capital spending. With IT now accounting for

nearly half of all capital expenditures, spending on IT naturally saw a sharp decline.

As growth projections for IT spending had been exponential, the gap between expectations and reality was dramatic. Thus, IT firms were left with huge inventories and massive amounts of excess capacity, which triggered a plunge in IT sector growth.

Because the IT sector, by the year 2000, accounted for roughly half of U.S. GDP growth, the nose-dive in IT growth slashed the growth rate of the overall economy. For the first time in decades, a recession had been triggered by a capital spending bust.

Paradoxically, the sector that had promised to smooth out the business cycle had actually ended up intensifying its volatility. When superposed on the sharp drop in growth already caused by the combination of the lagged effect of global interest rate hikes and the oil price spike, the result was a recession. "How ironic," observed Stephen Cecchetti, erstwhile director of research for the New York Federal Reserve Bank, "that the producers of the equipment that was to have eliminated the inventory cycle are themselves its foremost victims" (Cecchetti, 2001).

Ironic, indeed, but not surprising. The information technology systems performed flawlessly in transmitting supply chain data. What they lacked was the "I" of IT – the information that a cyclical downturn was imminent.

A SYNCHRONOUS GLOBAL RECESSION

Notably, the business cycle had returned with a vengeance even before the terrorists struck on September 11. Four days before the attack, the U.S. employment data showed a jump in the August 2001 jobless rate to 4.9%, a full percentage point above the October 2000 low of 3.9%. That large a rise in joblessness has never occurred outside a recession – historically, the biggest cyclical rise outside a recession was only 0.4%. Thus, a U.S. recession was clearly in progress by the time of the terrorist attack, and this was confirmed by the official recognition that the recession started in March 2001.

More importantly, what is underway is the first synchronous global recession in a generation. Japan is in a deepening recession that may become its worst on record. Germany has seen two straight quarters of decline in its GDP, and is also in an obvious recession. Not since the oil shock of 1973-75 have the world's three largest economies – the U.S., Japan and Germany – contracted in concert.

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Not surprisingly, many of their neighbors are also in recession – including Mexico, Brazil, Argentina, Taiwan, Singapore, the Philippines, Turkey, and possibly Thailand, Italy, Belgium, Holland, Denmark and Finland, all of which have shown GDP declines. Other economies may very well experience business cycle recessions, and most of those that escape an outright contraction will certainly see slowdowns. How could such a synchronous global recession occur only four years after the proclamation of the “end of the business cycle,” just a year after a synchronous expansion in the global economy?

The global recession resulted in part from the unintended consequences of well-meaning actions like global interest rate hikes, and surprises like a global oil price spike triggered by a brief but unexpected Japanese expansion. But it was also the upshot of widely shared misconceptions about lasting changes in the global economy, undergirded by a belief in the reduction of risk.

The common thread that runs through these delusions is misplaced faith in the power of technology and globalization to reduce risk. Thus the beliefs that IT could actually eliminate inventory cycles, and that esoteric financial instruments for managing risk would necessarily reduce the risk of financial crises. Hence the faith in the ability of central banks to not just moderate cyclical fluctuations but eliminate the business cycle itself, and the conviction that a globalized economy could automatically subdue cyclical fluctuations.

What was overlooked in this utopian vision was that IT could not compensate for the lack of foresight about cyclical downturns; that in unexpected crises, financial derivatives could increase risk instead of reducing it; and that globalization can mitigate cycles during periods of asynchronous recessions, but reinforce and deepen downturns during synchronous recessions.

Also overestimated were the inherent limits to what any central bank can do, even though the conduct of monetary policy has surely become more skillful. As Alan Greenspan himself noted (Greenspan, 2001) last summer, “A central bank can contain inflation over time under most conditions. But do we have the capability to eliminate booms and busts in economic activity? Can fiscal and monetary policy acting at their optimum eliminate the business cycle, as some of the more optimistic followers of J.M. Keynes seemed to believe several decades ago? The answer, in my judgment, is no, because there is no tool to change human nature. Too often people are prone to recurring

bouts of optimism and pessimism that manifest themselves from time to time in the buildup or cessation of speculative excesses.”

This is not to deny the real progress that has served to dampen the business cycle over time. It is quite true that IT-based supply chain management can reduce the amplitude of inventory cycles. It is possible that, thanks to the spread of information technology, there has been some increase in the long-term growth rate of productivity that could help mitigate cyclical fluctuations. The long-term shift to service sector jobs has certainly reduced the severity of recessions, but the output of that sector as a percentage of U.S. GDP has actually dropped significantly over the past decade as a result of the increased importance of the IT sector itself.

Globalization can indeed reduce the importance of local imbalances of supply and demand and help contain inflation pressures. But as the Asian crisis showed, emerging markets can be very fragile under certain conditions and given the paucity of reliable and timely information, it is more difficult to monitor such economies.

Also, extensive global sourcing, which the IT sector exemplifies, facilitates the transmission of cycles, helping to synchronize recessions. In such recessions, the concerted downturns reinforce one another and deepen the recessions. In fact, if the recession is global, like the one currently in progress, it tends to be deeper and longer for the economies concerned, because there is no locomotive to pull any of the economies out of recession.

THE REVIVAL OF RISK

Even before September 11, it was becoming increasingly obvious that the risk of recessions had not disappeared after all. Nor had the risk of major bear markets in stocks. The crowning irony of the return of the business cycle recession is that it was triggered precisely by the misperception of risk that led to the unsustainable excesses of the cycle. However, the adjustment to the reality of the business cycle's comeback may not yet be complete.

One way of gauging the extent of the revival in perceived risk is to look at a basic measure of stock price valuation called capitalized profits. This measure is obtained by dividing corporate profits by corporate bond yields, giving us, in a sense, the net present value of the future earnings stream generated by firms under the naïve assumption that profits and bond yields would both stay at current levels in perpetuity.

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The 1990s expansion saw capitalized profits rise roughly in step with stock prices until 1998, but the former then flattened out while stock prices kept rocketing up, opening up the first major divergence between the two since the bull market began in 1982. In the wake of the bear market that began in 2000, stock prices have dropped sharply as perceived risk has mounted, but at the time of writing, are still up much more than capitalized profits².

It is true that such rough measures of valuation are notoriously unreliable market timing tools, but they can be an indication of stock market risk. If so, the most plausible explanation to justify the wide divergence between stock prices and capitalized profits in the late 1990s is that perceived risk had declined so dramatically that the equity risk premium was justifiably lower, because high valuation levels were no longer considered to be excessive in view of the apparent retreat of risk.

What may potentially have changed on September 11 is the revival of perceived risk – the risk of recession, as well as the risk of terrorist attacks and their consequences for the economy. Under the circumstances, the overvaluation still suggested by the capitalized profits measure may be a matter of concern. This may imply a further drop in stock prices, or a period of relatively slow stock price growth to allow capitalized profits to catch up.

However, the impact of the events of September 11 is far broader than the latent impact on stock prices, because they call for a fundamental reappraisal of risks in the economy. The effort to control those risks will require a redeployment of resources that would otherwise have been unnecessary, raising costs and reducing efficiencies as firms boost inventories to guard against unexpected supply disruptions and redirect investment to enhance security rather than productivity.

Most importantly, there is a dawning realization that technology and globalization can both reduce risks and increase them. After all, in their fight against U.S.-led globalization, the terrorists were able to harness, to devastating effect, the technology that globalization had made so readily accessible. Ironically, the effort to control the risks posed by terrorism will rely heavily on technology and a global anti-terrorist alliance.

² Studies using S&P earnings instead of the government's quarterly figures on corporate profits show different results, but those earnings estimates are complicated by issues like the amortization of non-recurring expenses.

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In the domain of business cycles, the danger remains that if the current recession ends relatively soon, observers will fail to appreciate the extent to which technology and globalization are double-edged swords that can reduce or increase the risk of recession. It is worth recalling that it was misplaced faith in the ability of the twin deities of technology and globalization to bring about “the end of the business cycle” that fueled the boom of the late 1990s, including the IT boom. But it was also the domino effect triggered by the synchronous global expansion of 1999-2000, along with the failure of IT to repeal the inventory cycle, that resulted in the IT bust and subsequently, in the first synchronous global recession in a generation.

It is impossible to know precisely when this recession will end, or the shape of the subsequent recovery. Given the fundamental resilience of the U.S. economy, the recession will surely end in the not-too-distant future, particularly in the absence of further terrorist attacks. Under such circumstances, it would be natural to hope that the unspeakable horror of September 11 was a once-in-a-lifetime event, all the more so because denial of the heightened risk of the unthinkable could help us get on with our lives.

In any case, once a recovery gets underway, economic conditions could very well reinforce the old illusion of a permanently higher trend rate of growth – part of the fallacy that led to the current recession. This is because, even if the recession ends in 2002 in the U.S. and most other major economies, the Japanese economy may find itself in a deepening crisis. If so, a period of asynchronous global recessions may leave the world economy awash in capacity, which could, as in the late 1990s, cap U.S. inflation pressures and allow another period of non-inflationary growth – until the next synchronous global expansion re-ignites inflation and precipitates the next boom-bust cycle.

If, however, the fear and insecurity provoked by the terrorist actions linger for some time, the consequent pullback in spending will lead to a loss of jobs, which in turn will further depress consumer confidence and lead to a vicious cycle in which even more jobs are lost. The result would be a long and severe recession, which would be more likely to exorcise the fantasy of the permanent retreat of risk and the repeal of the business cycle. By dispelling the misperceptions that led to the current synchronous global recession, the likelihood of such a recession might, paradoxically, be reduced.

It is important, therefore, to replace blind faith in the ability of technology and globalization to lessen risk with a nuanced

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understanding of the ways in which those forces can both increase and decrease risk under different circumstances. Only such a sophisticated understanding of risk can truly reduce risk in the longer run.

With that perspective, the 1990s might come to be seen in retrospect as a long golden moment between the cold war and the war on terrorism when risks appeared to recede amid the rapid expansion of possibilities. In this view, it is to be hoped that September 11 will mark a watershed in the assessment of risk – not merely the risk of recession but risk in every sphere of life.

This fundamental reassessment of risk is neither an easy process nor a rapid one. As the process evolves, many assumptions will have to be questioned and discarded. This will necessarily alter the dynamics of the business cycle, and hence the possibilities for growth. Thus, the consequences of the September 11 tragedy are likely to reverberate through the U.S. economy for years to come.