GLOBAL SYSTEMIC RISKS

Preparing for the Pitfalls of Interconnectivity

By IAN GOLDIN

While the precise definition of globalization and its various phases have been widely studied and debated, the latest wave of globalization has been unique, particularly with regard to the widespread and intense integration of markets, trade and finance. This integration has been facilitated by seismic policy shifts, such as the economic and political reform processes in China and much of Asia, Latin America and Africa. There has been an ideological convergence around market primacy, which began during the Reagan, Thatcher and Kohl era, and continued with the fall of the Berlin Wall in 1989 and deeper European integration following the 1992 Maastricht Treaty.

According to reports by the International Monetary Fund (IMF) and World Trade Organization, between 1980 and 2005, foreign direct investment inflows increased 18-fold, real GDP growth increased by approximately 32 percent, and merchandise imports and exports increased more than sevenfold around the world.

Alongside this, technological innovation has accelerated our integration by compressing both virtual and physical time and space, as David Harvey notes in *The Condition of Postmodernity: An Enquiry Into the Origins of Cultural Change*. The development of fiber optics, the Internet and mobile telephony, combined with exponential growth in computing power,

EXECUTIVE SUMMARY

Recent decades of globalization have created a more interconnected, interdependent and complex world than ever witnessed before. While policy makers have focused on facilitating integration, the implications of growing interdependence have been largely ignored. Global integration has brought many benefits, but it has also created fragility by producing new kinds of systemic risks.

This article provides an understanding of these new 21st century systemic risks and the challenges they pose. The 2008-09 financial crisis is used to illustrate the failure of even sophisticated global institutions to manage the underlying forces of systemic risk, which has been amplified by our growing interdependence. At the same time, technological change has greatly increased the power of individuals to destabilize powerful systems.

Urgent reform of global governance structures and institutions is essential to improve the mitigation and management of such global risks. Likewise, significant changes in risk management and risk culture are required to ensure businesses are better prepared. This article suggests the first steps to take.

has increased our proximity virtually, while innovation in transport and infrastructure has brought us closer together physically.

Population growth and urbanization are also driving physical proximity, integration and interdependence. The world population has nearly doubled since 1950, and the share of urban dwellers has increased dramatically from 29 percent in 1950 to over 50 percent in 2009, with a strong concentration in coastal areas.

In terms of business, changes in managerial practice have emphasized just-in-time strategies, shortening the time between the production and consumption of goods and services. Outsourcing and logistics chains have reflected the declining significance of geography in determining production and trade processes.

In short, by the turn of the century, globalization was characterized by a more interconnected, interdependent and complex world than ever witnessed before.

Certainly, global integration has had its benefits: Human development indicators, for example, have registered unprecedented leaps.

However, globalization has not been an entirely benign process, with inequality between and within countries also widening.

The unintended and largely ignored downside of globalization has been the production of *systemic risk*, which George Kaufman (Loyola University Chicago) and Kenneth E. Scott (Stanford Law School) describe as "breakdowns in an entire system, as opposed to breakdowns in individual parts or components, and is evidenced by co-movements (correlation) among most or all the parts."

While historically the term *systemic risk* has referred to collapses in financial systems, the 21st century has been characterized by new and much broader global risks, such as pandemics, cyber warfare and climate change. The fragility of our institutions as a result of these new vulnerabilities challenges the core benefits that globalization has produced.

This article seeks to provide an understanding of these new 21st century systemic risks and the challenges they pose. Significant changes in risk management and risk culture are required to ensure that businesses are better prepared. This article suggests the first steps to take.

What Went Wrong?

The 2008-09 financial crisis perfectly encapsulates systemic risk. The failure of our most developed, best equipped global governance system – finance – to recognize the underlying forces and manage the new vulnerabilities associated with globalization in the 21st century highlights the scale and urgency of the global governance challenge before us.

Moreover, the financial crisis is only the first of the 21st century systemic crises to manifest itself. The interdependent and fragile nature of our new global risk society means that many age-old issues – poverty, disease, conflict, biodiversity, natural resources – will throw up deeper, more damaging global challenges.

It is vital, therefore, that we learn the lessons of the financial crisis in order to manage these other challenges better, and avoid setting off a destabilizing cycle of more crises.

The Golden Decade (1998-2007) saw the explosive growth of sophisticated financial instruments, such as credit default swaps, collateralized debt obligations and an increase in resale markets for capital. The trading of derivatives, which had been marginal in the three previous decades, had reached $100 trillion by 2000. By 2007, that trade had expanded to $600 trillion – 16 times global equity market capitalization and 10 times global GDP.

Heading Off Attacks

EXHIBIT 1

In a distributed denial-of-service attack, a hacker hijacks a system and, by exploiting the multiple interactions between networks, launches a massive attack through the compromised computer that floods the entire network, disrupting normal services and denying access to users of various other systems. One of the largest such attacks occurred in Myanmar in October 2010, taking the entire country offline. A similar attack occurred in Estonia in 2007.

Attribution in such attacks is particularly difficult, as servers in one country are used as conduits for attacks initiated by individuals in another. The anonymous and low-cost nature of cyberspace makes it an attractive domain for criminals, terrorists and states seeking means of espionage or even warfare against financial markets, banks, credit-card payment gateways and infrastructure networks, such as power grids, telecommunications and transport.

Arbor Networks, a network security provider, says that the world's top five percent of Internet data centers routinely experience as many as 500 attacks a month.

In its fifth Worldwide Infrastructure Security Report, industry respondents were asked if their team received adequate management-level support for security initiatives and projects. Only half said yes, and even fewer felt they received adequate executive-level support either.

Budgets may be tight as a result of the global economic crisis, but security for mission-critical systems must remain a top priority, especially as more companies turn to cloud services to handle large volumes of critical data. The systemic risks posed by technology must not be underestimated.

While global integration had greatly increased the robustness of the finance system, that same interdependence led to greater complexity and a growing gulf between those responsible for oversight and market innovators. The result was regulatory arbitrage, bonus gouging and other corporate governance failures at all levels, from global to individual actors, in a system that was more brittle and fragile.

The response has been a massive injection of liquidity into the system. But the deeper, underlying, systemic failures have not been addressed. As such, it is likely that further crises will occur.

Governments have reached the limits of their indebtedness. Having fired all their bullets, they are now left even more vulnerable. Their arsenal will be empty when the next systemic crisis strikes.

The fact that finance is the best skilled and equipped of the global risk management systems, and that the relatively well-endowed IMF, Bank for International Settlements, central banks, finance ministries and other institutions, whose job it is to ensure financial stability, failed to even see the crisis coming, should be serious cause for concern.

Small groups of banks, and even individual banks and individual rogue traders, have the ability to bring down the entire financial system. Collectively and individually, they will continue to be able to stay one step ahead of even the most effective supervision and regulation, because the growing complexity and connectivity of the system means that the risks they create will be amplified and can lead to systemic failure.

Spatial Awareness

Existing reforms in financial governance remain unable to address the deep, structural changes in globalization and the risks posed by increased integration and innovation in financial systems. And these numerous tensions are not just global but local.

"The subprime crisis reveals the complex tension present between the global and the local in finance. In many ways, the subprime crisis occurred because the global ignored the complexities of the local," note Oxford University's Gordon L. Clark et al. in the book, *Managing Financial Risks: From Global to Local*.

The global financial architecture of a fragmented surveillance system resulted in information asymmetry. Clark writes: "Our intuition was that the value of information for embedded market participants was being discounted by both the flow of transactions from the local to the global, and by the perfection of mathematical models that deliberately eschewed local knowl-