

Indian Council for Research on International Economic Relations

Third KB Lall Memorial Lecture

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From Asian to Global Financial Crisis

by Andrew Sheng

It is a great honour to make my first visit to New Delhi to deliver the third KB Lall Memorial Lecture of the Indian Council for Research on International Economic Relations (ICRIER). I want to thank ICRIER Chairperson Dr. Isher Judge Ahluwalia for inviting me and her husband Dr Montek Ahluwalia for their warm friendship over so many years. We met thirty over years ago in Malaysia, when I was a lowly economist at Bank Negara Malaysia and Montek was then already an outstanding economist leading the World Bank team to apply the first advanced socio-econometric model for Malaysia. I learnt a lot from Montek then and have always admired his illustrious career in the Indian Government and in the global community, not least as head of the Independent Evaluation Office of the IMF. It is good to visit old friends, particularly members of ICRIER such as Shankar Acharya, Rakesh Mohan, Suman Bery, Surjit Bhalla and others. I am particularly grateful to Director Rajiv Kumar and his colleagues, especially Manmeet for all their organizational work.

To follow after two outstanding speakers, Governor Mervyn King and Larry Summers, both brilliant economists and acclaimed policy makers who are now key players in the vortex of the current financial crisis is a humbling experience. My claim by association is I worked for Larry in the research group at the World Bank when he was Chief Economist and during the Asian crisis, I was the Deputy Chief Executive in the Hong Kong Monetary Authority when he was Deputy and then Treasury Secretary. Governor King and I co-chaired the G-22 Working Group on Transparency that helped spark off the reforms to the international financial architecture.

The themes that Governor King and Larry Summers raised in the first two Lectures, on international financial architecture and global warming and international finance, were both appropriate and fitting tributes to the memory of the late Dr. KB Lall, the distinguished founding Chairman of this Institute and a great son of India who had the vision to understand the challenges of the integration of India with the global economy, even as she re-emerges to her rightful place as one of the great civilizations and economies of the world. I believe in her introductory remarks at the Second Lall Lecture, Isher quoted Prime Minister Manmohan Singh, another founding member of this Institute, on the “growing inter-dependence of the world economy” as the weave that binds us all together.

Since I am speaking amongst friends, and as the first East Asian to speak after two Anglo-Saxon intellectual giants, I will provide a less lofty

ground view of where we are in the international financial system and how we got into this mess. Standing on this stage in front of many illustrious and argumentative Indians, I have no alternative but to play the role of the recalcitrant Malaysian Chinese, perhaps less effectively and with much less stature than my former Prime Minister Dr Mahathir Mohamad. I want to say that the views expressed here are totally personal and do not represent the views of any institution that I am associated with.

Allow me to begin by agreeing with Governor King that there is a “need for a new partnership between the developed economies and the developing or emerging market economies” and that the Bretton Woods institutions set up over 50 years ago need to be redesigned. Indeed, I would go further and agree whole-heartedly with Larry Summers that the developed economies are responsible for what happened in Global Warming and that the developing world is responsible for the solution. He was stating after all the geo-political facts of life of the New Rome.

Larry’s challenge to us on the need for thought leadership from the developing world is much more difficult to handle. We have been so overwhelmed by the intellectual and military power of our teachers that that it will not be easy to think out of the box. But since raw capitalism has been proven morally bankrupt, I can only conclude that we have no alternative except to search for enlightenment the Asian way, namely, within our inner selves, our own culture and intellectual heritage, recognizing that we live in an inter-dependent world in which Western technology has changed the whole ball game.

I can refer to no greater authority on this than the great Jawaharlal Nehru in his speech on Basic Wisdom to the University of Ceylon on January 12, 1950, when he said, “one thing seems to me to be certain, namely, that we of today have no integrated view of life; that we, however clever we may be and however much of facts and knowledge we may have accumulated, are not very wise. We are narrower than the people of old, although every fact has gone to bring us together in this world. We travel swiftly, we have communications, we know more about one another and we have the radio and all kinds of things. In spite of all these widening influences, we are narrower in our minds. That is the extraordinary thing which I cannot understand¹.” If the great Nehru was humble enough to accept this, where does that leave us mortals?

Nehru was reminding us nearly 60 years ago that “during the greater part of these thousands of years, Asia has played an important part in world affairs. It is only during the last three or four hundred years that Asia has become static, quiescent and rather stagnant in thought and in action in spite of all the virtues she might have possessed. Naturally and rightly, she fell under the domination of other more progressive, vigorous and dynamic countries. That is the way of the world and that is the right way. If you are static, you must suffer for it. And now, you see a change coming over Asia...”

¹ Jawaharlal Nehru’s Speeches, 1949-53, Government of India, 1954, p 426-427.

We are indeed seeing a change over Asia. Thanks to Asian giants like Gandhi, Nehru, Mao and Deng, the revival of India and China is changing the 21st century.

If we were to take a grand macro-historian perspective, with India and China both growing at more than 8% per year, whilst G-3, US, Europe and Japan are growing at less than 2% per year, the relative power between the mature economies and the emerging markets will change dramatically. Angus Maddison² has projected that by 2018, China would overtake the USA as the largest economy in the world, with India as number 3. By 2030, he estimated that Asia (including Japan) would account for 53% of world GDP, whereas the US and Europe would only account for 33%. If this were the case, the global financial architecture would be significantly different from the present.

Already by 2007, Asia (including Japan) accounted for 66.8% of world official reserves, 55% of world population, 24.5% of world GDP, but only 16 percent of IMF quotas. My own crude calculations suggest that Asian financial markets will be the largest in the world within the next 10 years, assuming that financial deepening in Asia continues to improve and Asian currencies appreciate relative to the US dollar and Euro. As Nehru has foreseen, the economic, political and financial landscape will be turned upside down, but key decisions in both the mature and emerging markets within the next five years will shape that outcome profoundly.

The 2008 Great Global Credit Crisis will be seen in history as a major turning point, just as the 1930s Great Depression set in motion the Second World War and changed the financial landscape for nearly 80 years. Likewise, the present crisis will induce major changes in economic theory, philosophical outlook and in institutional structure.

This lecture is divided into three parts, building on the issues raised in the first two Lall Memorial Lectures. First, an overview of what caused the present crisis. Second, what are the possible issues? Third, what should Asia do in terms of the regional and international financial architecture?

From Asian to Global Financial Crisis

As Larry Summers recognized during the Asian crisis, all financial crises have a common element: "money borrowed in excess and used badly³." There is a current tide of Western economists, led by Fed Chairman Ben Bernanke⁴, that blame the Savings Glut in East Asia for the excessive high liquidity that provided conditions for the asset bubble and subsequent

² Angus Maddison, *Contours of the World Economy, 1-2030AD*, Oxford University Press, 2007.

³ Summers, Lawrence H., 1998, *Riding to the Rescue*, *Newsweek*, 2 February, 39.

⁴ Bernanke, Ben, 2005, *The Global Savings Glut and the US Current Account Deficit, Remarks by the Governor of the Federal Reserve Board at the Sandridge Lecture, Virginia Association of Economics*, Richmond, Virginia, 10 March.

deterioration in credit quality. I find this argument disingenuous because it smacked like a banker blaming his excess liquidity on his depositors. What the banker did with his balance sheet was the banker's responsibility over which the depositors have little say.

The hallmark of the current crisis is Complexity, so that we would have look at it from the perspective of history, macro and micro details. In essence, four historical mega-trends paved the conditions for crisis. The first was the appearance in 1989 of 3 billion labour force into the market economies following the end of the Cold War that gave rise to a global flood of cheap goods and low inflation for nearly two decades.

The second was the monetary policy responses to the Japanese bubble/deflation since 1990, which gave rise to over two decades of almost interest free yen loans globally, creating the famous Yen carry trade. The carry trade, essentially the arbitraging of differences in national interest rates and exchange rates, has now become global, because the Western economies are also going for zero interest rate policies (ZIRP)⁵. We could trace the Japanese bubble to the Plaza Accord of 1985, when Japan allowed its exchange rate to overshoot. The supply of almost interest free funding to combat Japanese domestic deflation was effectively to subsidize the rise of financial engineering, and created bubbles elsewhere, most prominently in the East Asian crisis economies between 1990 to 1996.

The third force was the emergence of financial engineers, basically scientists and physicists, who applied their technical and statistical skills to financial markets. They created the financial models and derivatives to manage risks and staffed the business schools, investment banks and hedge funds that dominated financial markets globally. Underlying their sophisticated models was one fatal flaw, that the world of risk was a bell-shaped statistical curve that ignored the long-tailed black swan risk. It was the underestimation of once in 400-year risks that proved their undoing.

The fourth was the phase of global deregulation, from the reduction of tariffs under WTO, the removal of capital controls under IMF and the philosophy that minimal intervention and letting markets determine prices and competition would create global efficiency. Such philosophy permeated the basic textbooks and the international bureaucracy.

Essentially, these mega-trends were four arbitrages that created converging globalization – wage arbitrage, financial arbitrage, knowledge arbitrage and regulatory arbitrage.

But these four mega-trends enabled the networking of national markets into a global market, giving rise to a financial inter-connected world with no global monetary authority and financial regulators compartmentalized mentally and operationally at the institutional and national levels. To paraphrase Jean-

⁵ Tim Lee, The Currency Carry Trade and Emerging Markets – the Next Phase of the Global Crisis July-August 2008, www.pieconomics.com

Jacques Rousseau, markets are born free, but everywhere they in silos. I call this crisis a network crisis of trust, because financial markets are essentially networks. Under universal banking, commercial banks began to network with securities business, mutual funds, insurance and even hedge funds, because under Metcalfe's Law, the value of the network increases exponentially with the number of users. Hence, business geography melded to become market space – enabling banks to become financial Wal-Marts providing the whole range of financial services.

But what the free market economists, financial engineers and their regulators did not realize was that networks are linked both ways – benefits come with risks. The more the networks expanded, the higher the risks of contagion. In a sense, the network is only as safe as its weakest link and if one part of the network is taking higher and higher leverage to increase its profitability, it is doing so at the expense of the rest of the network. *Interconnectivity* has win-win positive feedbacks, but also lose-lose negative feedbacks, which explain the way markets overshoot in both directions.

Unfortunately, the four arbitrages also led to four excesses that were the hallmark of the present crisis – excess liquidity, excess leverage, excess complexity and excess greed. Note that complexity creates opacity and therefore grand opportunities for fraud.

Those who understand colonial history would immediately recognize the similarities between the current Global Imbalance and the Sterling Imbalance. Under the British Empire, the colonies ran a current account surplus with Britain because they were meant to be self-sufficient; the surplus funds were placed in London to buy sterling Consols and the funds returned to the colonies in the form of credit provided by British banks and investments by British plantation and mining companies as well as trading houses. The currency board regime was basically the fixed exchange regime to sterling.

In the post-war period, the Japanese created the Asian Global Supply chain essentially to meet the demand for consumer goods by America. The Japanese had a Flying Geese theory that premised Japan as the lead goose taking all the headwinds and shedding her labour-intensive industries to the Four Dragons (South Korea, Taiwan, Hong Kong and Singapore), later to the Four Tigers (Indonesia, Malaysia, Thailand and Philippines) and today China. Collectively, Asia ran a current account surplus and put most of her official reserves with the US, creating the Global Imbalance. The funds came back to East Asia on a leveraged basis, earning higher returns on equity through US banks, fund managers and FDI. It was a total equity return swap that was mutually beneficial. Put simply, Asia swapped labour employment for greenbacks and the West enjoyed cheap goods with little inflation.

The Macro Question

I do not intend to get into a debate over the Global Imbalance, except to say that the Imbalance is fundamentally structural, emanating from a combination of factors, partly demographic (due to differences in population

age and savings levels), partly the inability of East Asia to build strong capital markets to absorb domestic savings, and thirdly, the consequences of humiliation of the Asian crisis of 1997/98. As former Chairman Greenspan had castigated Asia in 1999 for not having a spare tire, East Asia built up the spare tire with a vengeance but had to put the funds with the developed markets and then discovered that their teachers didn't have a spare tire either.

After years of declining household savings and fiscal deficits, the US twin deficits became clearly unsustainable, not just at the flow level, but at the balance sheet stock level. By the end of 2006, the net international investment position, basically the difference between foreign assets and foreign liabilities had amounted to nearly 25 percent of GDP for the United States, 10 percent for Euro area, with the surplus net positions basically with Japan, China and the Middle East oil-producers.

But no one wanted the party to stop. After bringing US Fed Fund rates to 1 percent in 2001, the Fed essentially allowed the housing bubble to occur, but Greenspan clearly thought that the central bank had the tools to deal with the consequences. No one expected that over two years between June 2004 to June 2006, the 17 step increases in Fed Fund rates of 425 basis points by the Fed from the low of 1% to a peak of 5.25% would lead not only to a decline in property prices, but also a near collapse of the US and European banking systems.

What was amazing was that the financial crisis happened in spite of the most major regulatory and accounting reforms since the 1930s after the Asian crisis and the 2000 dotcom crisis. Regulatory resources were increased in every major market, with the fundamental legal and standards reforms, such as Sarbanes Oxley, the UK Financial Services and Markets Act, IASB, Basle II, IOSCO Core Principles etc. In early 2007, when the subprime mortgage loan problems surfaced, everyone thought that losses would be manageable at US\$150 billion or roughly 1% of US GDP.

It was downhill all the way from then on, with banks showing more and more credit losses and the inter-bank market drying up, despite efforts from the major central banks to inject liquidity. History will record that the failure of Lehman Brothers on 15 September 2008 was a major mistake, causing massive shocks to the world's banking system, with stock markets seeing almost meltdown. Banks in the US and Europe were partly nationalized and investment banks disappeared as a separate unit in the US.

In 2008, it is estimated that global stock markets lost roughly US\$27 trillion or over 40 percent whilst major real estate markets dropped by about 20 percent. In October 2008, the Bank of England has estimated that the mark-to-market losses in bond and credit securities would be in the region of US\$2.8 trillion, double what the IMF predicted at US\$1.4 trillion. This was equivalent to 85% of global bank's tier 1 capital of US\$3.4 trillion. Nouriel Roubini, however, has predicted that the US total losses in credit and securities could total as much as US\$3.6 trillion, which would wipe out the capital of the banking system of US\$1.5 trillion.

At this juncture, it would be important for me to Dimension and Frame the scale of the problem. Firstly, the global nature of the present US crisis can be seen in the following context. At the end of 2007, the US had GDP of US\$13.8 trillion, compared with Japan (US\$4.4 trillion) and China (US\$3.2 trillion). By 2007, gross savings in the US had fallen to 14% of GDP, net savings to 1.7% of GDP and current account deficit (funded from abroad) had risen to US\$720 billion or 5.2% of GDP. As a result of years of cumulative deficits, the US had gross and net international liabilities of US\$16.3 trillion and US\$2.5 trillion⁶ respectively (data at end 2006). On the other hand, Japan and China together held half of the total US government treasury securities at the end of July 2007⁷. As at the end of June 2007, foreigners owned 56.9 percent of marketable US Treasury securities, 24 percent of corporate and other debt, 21.4 percent of US government agency paper and 11.3 percent of total US stock market capitalization⁸. So, the losses in the US will be felt badly by the rest of the world, both directly and indirectly.

Secondly, the comparative balance sheets are even more illuminating. Based on IMF data⁹, global GDP at the end of 2007 was US\$54.5 trillion, of which the largest bloc was EU (US\$15.7 trillion), North America (US\$15.2 trillion), Asia (US\$11.8 trillion, but only US\$7.5 trillion excluding Japan). Global total financial assets, namely bank assets, bonds and stock market capitalization) amounted to US\$229.7 trillion or 421 percent of GDP, with the EU largest at 549 percent, North America at 442 percent and Asia roughly at global average of 419 percent, but only 370 percent excluding Japan. In other words, financial sector leverage, which was only 108 percent of GDP in 1980 according to McKinsey data has risen to four times GDP by 2007. The notional value of financial derivatives amounted to US\$596 trillion at the end of 2007, which was 10.9 times GDP. About two-thirds of this was relatively simple interest-rate derivatives, but nearly US\$58 trillion was the rapidly growing CDS market. The exchange traded derivatives were US\$95 trillion in size. Together, these financial derivatives were 14 times global GDP. In a nutshell, the world has become significantly more leveraged in the last two decades.

But what most authorities missed was the size of the real estate bubble. Data on real estate values at the national level is notoriously difficult to come by. Based on US Fed Flow of Funds data, real estate value held by households and corporate sector amounted to roughly 225 percent of GDP at the end of 2007. Since banks have roughly 40 percent of their loans are either directly or indirectly to the real estate sector or have real estate as collateral, they are highly vulnerable to the deflation of the real estate bubble. As recent history has told us, real estate bubble may have different origins, but they can only grow because banks are willing to lend to fund speculative buying.

⁶ Data from www.bea.gov

⁷ Data from www.ustreas.gov/tic/mfh.txt

⁸ Data from www.ustreas.gov/tic/shl2007r.pdf

⁹ IMF Global Financial Stability Report, October 2008, Appendix Table 3.

The Japanese real estate bubble of 1989/90 is the best experience we have of the damage done to the banking system. According to PIMCO Japan specialist, Koyo Ozeki¹⁰, “Japanese banks had around 50 trillion yen (US\$450 billion) in non-performing loans immediately after the burst of the bubble in 1993, which shot up to nearly 100 trillion yen (US\$910 billion) by 1996.” Ozeki’s estimates are about the same as IMF estimates of the Japanese fiscal costs of recapitalization of the banking system at 24 percent of GDP. If the US fiscal costs of recapitalization are comparable to the Japanese experience, then the numbers would be US\$3.45 trillion, which is close enough to the US\$4 trillion that the Obama Administration estimates as the cost of guaranteeing the total toxic assets of the US banking system. With only US\$1.5 trillion of capital in the US banking system, are we surprised that the system still lacks confidence?

So far, Bloomberg has estimated that the US response to the credit crisis, including Fed lending programmes, are already US\$8.5 trillion as of November 25, 2008 or 59 percent of 2008 GDP¹¹. By October last year, the Fed had already cut the Fed Fund rate to between 0-0.25 percent per annum, whilst the major central banks had also followed. In essence, we have reached ZIRP within one year, whereas the Bank of Japan took nearly 10 years to arrive at the same position.

The Micro Origins

The above macro-economic question is crucial to understanding the current world financial crisis, because it was the ability to finance external deficits that was the basis for the emergence of the current “originate to distribute” OTD structure of the US banking system. In other words, the US and European banking system evolved from the traditional retail banking model (accept deposit and lend) to the new wholesale banking model, because they were no longer constrained by limited domestic savings, but could draw upon global savings through the securitization channel.

Unlike the 1997/98 Asian crisis, which was essentially a traditional retail banking crisis together with a currency crisis, *the present crisis was truly a wholesale banking crisis with huge derivative amplification effects*. Because the Asian crisis was still a crisis at the periphery, its network effect was limited. But the present crisis is a crisis at the center of global finance and its amplification effect that covered the two dominant powers of US and Europe was therefore significantly larger and deeper.

To understand how the micro fused with the macro environment to create the crisis, we need to understand what the financial engineers did with the derivatives, coupled with what their financial regulators allowed them to do. As indicated earlier, excessive loose monetary policy, low interest rates and carry trades made speculation and “search for yield” the driving motivation for financial innovation. Improvements in telecommunications and

¹⁰ Ozeki, Japan Credit Perspectives, www.pimco.com, October, 2008

¹¹ Bloomberg Markets, February 2009 Volume 18 Number 2, “Agenda”, pg 16

computing power had given dynamic trading using real-time information superior advantage over the conservative “buy and hold” retail investors and pension funds. Hedge funds and investment banks could trade at speed and arbitrage price differentials across markets and products. To satisfy the “search for yield”, new securitized products evolved to suit investor tastes.

Four elements of financial innovation and deregulation came together to create the toxic products that were at the root of the current crisis. The first was plain vanilla residential mortgages that were securitized into mortgage-backed papers by government mortgage institutions such as Fannie Mae and Freddie Mac. Securitization meant that assets could be moved off-balance sheet into unregulated special investment vehicles (SIVs) that did not require capital. The second was that accounting and regulatory standards permitted such potential liabilities to be moved off the balance sheet so that the banks benefited from “capital efficiency”, meaning that leverage could increase using the same level of capital. The third was the use of insurance companies and the newly evolved credit default swap (CDS) markets to enhance credit quality of the underlying paper. If the underlying assets looked weak, the purchase of credit default swaps sold by AAA insurers such as AIG enhanced their credit quality. The fourth sweetener was the willingness of the credit rating agencies to give these structured products AAA ratings, for a fee.

By slicing the traditional mortgages into different tranches of credit quality, collateralizing each tranche with various guarantees or assets, the financial engineers ‘structured’ collateralized debt obligations (CDOs) that felt and smelt like very safe AAA products with higher yields than boring government treasury bonds. What investors did not realize that these products carried embedded leverage that could unravel under certain circumstances. By taking origination fees up front, investment banks, rating agencies and mortgage originators made huge profits without anyone regulating the origination process. To assure investors who feared that these assets had no liquidity, the issuing banks gave liquidity “conduits” to these structured products that were contingent buy-back guarantees. All these were conveniently off-balance sheet commitments.

It looked too good to be true, even to the regulators, but they were assured when the market kept on growing. Time and again, Greenspan and others commented on the potential risks, but at the same time remarked that risks were being distributed outside the banking system.

This “black hole” in regulation was in practice the over-the-counter (OTC) market that originated from bilateral transactions between banks and their clients. The largest and most successful OTC market is the foreign exchange market. The advantage of the OTC market is that it is opaque to outsiders, including the regulators, but if the product is well understood, it can be a highly liquid market. Derivatives in foreign exchange and interest rate derivatives were supported by central banks because it was thought that their evolution would enhance their monetary policy instruments, as well as to enable the banks and their clients to hedge their market risks. That protection was so strong that even when Hong Kong, South Africa, Malaysia and others

protested during the Asian financial crises that illiquid foreign exchange markets in emerging markets were often manipulated, these charges were dismissed. Too much vested interests were at stake. Emerging market supervisors were too weak to change this bastion of non-regulation, because the winners of superior financial innovation were Western banks.

This OTD banking model, plus the OTC market, formed what Bill Gross of fund manager Pimco called a “shadow banking” system. New York Fed President Tim Geithner estimated that this dynamic “shadow banking” system could be as large as US\$10.5 trillion, comprising US\$4 trillion assets of the large investment banks, US\$2.5 trillion in overnight repos, US\$2.2 trillion for SIVs and another US\$1.8 trillion in hedge fund assets. This compared with US\$10 trillion in assets with the conventional US banking system, which meant that system leverage was at least double what was reported.

Throughout the last decade, central bankers would marvel at the phenomenal growth of the financial derivative markets, which conservative fund manager Warren Buffett called “financial weapons of mass destruction”. Although I am a supporter of the financial derivatives market as a tool of risk management and important area of financial innovation, I had not realized how much of the derivatives trade was used by the unscrupulous to conduct fraud, Ponzi schemes and mis-selling¹².

The Achilles Heel of the OTC market is the bilateral basis of trading between the market makers, mostly the Large Complex Financial Institutions (LCFIs) and their customers, particularly hedge funds and institutional traders. If properly controlled, the gross market value of such derivatives appeared much smaller, being US\$14.5 trillion for the OTC derivatives¹³.

The network effects of highly dynamic markets are such that only large financial institutions with specialist skills and computer technology were the winners. The conglomeration of skills, size and liquidity were such that between 2001 and 2007, 15 of the world’s largest banks and investment houses (exclusively US or European, called large complex financial institutions LCFI¹⁴) accounted for more than two-thirds of transactions in financial derivatives. Between 2001 and 2007, these 15 LCFIs tripled their balance sheets and increased their leverage markedly. The true scale of LCFI trading was even more dominant if one considered that they acted as prime brokers to many hedge funds that were formed by their former staff.

When there were occasional calls to regulate the hedge funds even by powerful regulators such as the French or Germans, the US and UK regulators were the first to point out that the hedge funds were best regulated

¹² For insider accounts of behaviour of investment banks, see Frank Partnoy, *FIASCO*, Penguin Books, 1998 and Jonathan A. Knee, 2006, *The Accidental Investment Banker*, Random House Trade Paperbacks.

¹³ Bank of England Financial Stability Report, October 2008, Box 2: Counterparty credit risks in OTC-derivative markets.

¹⁴ According to Bank of England, the 15 are: 3 US banks, 4 US investment banks, 3 UK banks, 2 Swiss banks, 1 German, 1 French and 1 Belgium bank.

by their prime brokers. This was acceptable as long as the prime brokers themselves were sound. As we have seen this was not always so.

However, since the bulk of the transactions remain on a gross basis, with no central clearing house to monitor and clear on a net basis, the OTC derivative wholesale market could remain liquid only if all the LCFIs are solvent or liquid. By the SEC removing the net capital limit of 15 times in 2004 to allow the LCFIs to use their own internal models to control risks, there were no more firewalls to excess leverage and excess greed.

This was where the complex system of derivative valuation (mark to model or mark to myth), AAA ratings, off-balance sheet accounting and use of Special Investment Vehicles (SIV) all came together to form an opaque house of cards that the regulators assumed was run by honourable gentlemen who knew what they were doing.

If you run a casino, you know that the house banker monitors all the trade and he had to be solvent. But in the OTC market, with many houses playing market maker and bookmaker to their own clients without transparency, no one knew what was the true leverage and solvency position of major players or the market as a whole. Each market maker worked on a sophisticated and complex system of margin or collateral management. For each derivative trade, the primary dealer calls for margin to protect itself from credit or market risks. In a rising market when risk spreads and volatility are narrowing, less and less margin is required, thus pro-cyclically increasing liquidity. In other words, liquidity begets liquidity, a classic network effect.

Unfortunately, it also works the other way pro-cyclically, so that if volatility increases, the need to call margin, sell assets to realize liquidity would immediately worsen liquidity, widen risk spreads and create solvency problems for the participants. This was experienced by LTCM in 1998, when it did not have enough liquid assets to meet margin calls. Any stop-loss selling of margin collateral at the highest point of volatility by its counterparties would immediately precipitate insolvency for LTCM. But this was not immediately transparent to other market players since no single player is fully aware of market positions in an OTC market.

What was also not widely known was that instead of widely distributing derivative risks outside the banking system, much of the risks were concentrated within the banking system. According to BIS statistics, only 19% of OTC trades were with non-financial customers. In the CDS market, 2006 British Bankers' Association data reported that the banks were 16% net buyers of CDS "protection", whereas the net protection sellers comprised insurance companies 11%, hedge funds 3%, and pension funds 2%. Since hedge funds were never risk holders, they would sell their risks back to the primary dealer at the first sign of trouble.

We now know that the shadow banking system grossly disguised the true level of leverage, grossly underestimated the liquidity required to support the market, grossly misunderstood the network interconnections in the global

markets and enabled the key players to over-trade with grossly inadequate capital. For example, at the end of 2007, the five US investment banks had total assets of US\$4.3 trillion, but only equity of US\$200.3 billion or a leverage of 21.3 times. However, together they had notional off-balance liabilities of US\$17.8 trillion, implying further leverage to 88.8 times.

To illustrate the gross and net effects of derivative accounting: if you had a swap of say \$100 million with Lehman's, you would not have to book the gross liability of \$100 million. Using the market calculations of risks¹⁵, your exposure would be roughly \$2.4 million. But if Lehman defaulted, your loss would be \$100 million and not \$2.4 million. Take another illustration of the total failure of VaR risk models that regulators failed to validate: in Q4 2007 Merrill Lynch's VaR, with 99% confidence, was \$69 million, compared to their write-down of \$10 billion that quarter.

The Lehman's failure will go down in history as the trigger that set off the systemic crisis worldwide. Although it had only US\$620 billion in assets, regulators grossly underestimated that at the time of failure, Lehman's had a total of US\$1.6 trillion worth of counterparty positions that became frozen. Since Lehman accounted for nearly 14% of trading in equities in the London Stock Exchange and 12% of fixed income in New York and it also managed client assets for hedge funds and investor clients, the liquidity of its counterparties were immediately impaired on default.

The default of Lehman's also triggered huge increases in CDS premia, which meant that those who sold protection had to offer immediately greater collateral. AIG, which had US\$441 billion of CDS positions, had to provide US\$14.5 billion to bring total collateral posted to US\$31 billion in a matter of days. If AIG had not been nationalized by an US\$85 billion loan in exchange for 79.9% of its equity by the Fed, its failure would have set off contagion failure beyond imagination.

The default on Lehman bonds also caused money market funds to fall below their US\$1 par value, so that there were immediate withdrawals from the US\$3.4 trillion money market fund sector. If that sector had collapsed, the liquidity crunch in the US would have been catastrophic.

The irony of the Lehman's failure was that it was an effort by the high priests of free market fundamentalism to demonstrate to everyone that they were acting against moral hazard, to demonstrate that no investment bank is too large to fail. There was also an excuse that there was no legal basis for any rescue. The decision had an opposite effect – it triggered the panic that almost broke the markets. In demonstrating that those who practice bad behaviour can be allowed to fail, the effect was to tell the market that another LCFI could fail, so that the best strategy is to cut and run. Perhaps the middle of a crisis is not the appropriate time to prove a philosophical point. The correct anti-moral hazard action is during normal times, to be exercised

¹⁵ Based on total gross credit market risk of \$14.5 trillion, compared with notional value of \$596 trillion (IMF Global Financial Stability report, Appendix Table 4), October 2008.

dynamically in scale as financial risks escalate. With Lehman's, a massive deleveraging operation began and unfettered finance began to implode.

Lessons for Asia

By February 2009, we have moved from a financial crisis to a real economy crisis, with everyone adjusting down growth to negative levels. What lessons can we draw for Asia? Based upon my personal experience in reviewing at the World Bank the 1980s global bank restructuring experience¹⁶, I concluded that crisis is an event, but bank restructuring is a process. There is no one-size fit all formula for bank restructuring for all time. Most of the solutions are context-driven. However, there are broadly four major steps in the process – diagnosis, damage control, loss allocation and changing the incentive structure so as not to repeat the current crisis. Based on these four criteria, I am deeply troubled by what I have seen so far.

First, as I have already indicated, my sense is that so far the diagnosis has been ad hoc and grossly under-estimated the scale, depth and complexity of the crisis. Confidence and trust in the system will only recover when there is no denial of the depth of the issues. I reserve my judgment until the full plans have been revealed.

Second, although the central banks have partially replaced the banking system as lenders to the real sector, the damage to the real sector stems both from a lack of credit and from the damage to confidence. We are now in a stage when fear is feeding on itself so that we are going into an overshoot on the downside. The damage control phase is not yet over.

Third, the Western authorities have accepted the fact that the public will pay for the mistakes of the few. But this to me is deeply troubling because it seems to me that the incentive structure of the rescue efforts to date seems topsy-turvy. All four lines of defense failed to stop the crisis. The boards and management of the banks who are directly accountable to the depositors and shareholders did not prevent these banks from getting themselves insolvent, and many of them are still being paid hugely and with golden parachutes. The second defense line of auditors, lawyers, advisers and credit rating agencies also did not stop the greed. Some of them clearly aided and abetted in the complex derivative trades that verged on Ponzi schemes. The regulators trusted that Wall Street knew what it was doing but did not verify. Indeed, questions are being asked about how the Madoff affair escaped regulatory scrutiny for so long. Finally, market discipline also broke down since the crisis happened in full transparency, and we already had clear lessons of derivative mistakes and shonky accounting from Enron and dotcoms.

¹⁶ Andrew Sheng (ed), "Bank Restructuring: Lessons from the 1980s", World Bank, Oxford University Press, 1996.

Last but not least, crisis is both creative destruction as well as an opportunity to build something new, especially in changing the bad incentives that led to the past crisis, so that the good incentives are restored. But what has happened? The frugal savers are blamed for creating the surplus liquidity, the bad bankers and speculators are being bailed out and their losses will not only be paid by Main Street, but all future savings world-wide, since anyone who saves will be subsidizing the failed banks for years to come through very low deposit rates.

We therefore come to the issue that Larry Summers raised at the Second Lall Memorial Lecture on Global Warming and Global Finance. I want to declare up front that I am not an expert on environmental issues. But I know enough to decry the fact that we have seen in my lifetime the massive destruction of our environment. Allow me to pose three observations.

One thing at least is certain – the crisis put a question mark on the American dream - that every individual, through his own labour and creativity can have all that he wants. This could be true for individual Americans, who number less than 5% of world population, account for 25% of global GDP and is able to consume annually global resources (through the current account deficit) equivalent to 5% of GDP. The sad fact is that the global resource environment cannot support that American dream for the average Chinese and Indians, who together number 37% of world population. The problem of global resources and the environment were not constraints to developed markets during the Great Depression, but fast growing countries like China and India must address Global Warming and Environmental Sustainability not only for their own health, but for mankind as a whole.

Have you asked yourself why did we have a massive commodity price bubble with panic over inflation in 2007/8, only to collapse into an abyss of deflation? Moreover, the price of rice doubled when Australia as a producer had drought. My anecdotal conclusion is that we had great economic growth in the last 50 years mainly because of the blessings of Mother Earth. We have thus far enjoyed the good phase of Global Warming, with hardly any major droughts and natural disasters that our ancient Asian civilizations have not forgotten. Since many parts of the world are now under water stress and serious environmental degradation, what would happen to basic food prices if we were to have prolonged droughts and major natural disasters in large urban centres?

This brings me to the third observation. Despite agreeing wholeheartedly that Global Warming is the most pressing issue facing mankind, indeed our survival, it would be a truism to say that most governments (developed or developing), businesses and academia have hardly factored this into our daily strategies, policies, processes and action, let alone serious reflection. So, if the current crisis is not the opportunity to seriously do something about this, will we have to wait for the next environment disaster to react? We need a radically different set of crisis management and financial system to deal with these issues.

All of us would agree that this crisis has hit Asia much harder than all of us expected. The reason is actually quite simple. Asia spent the last 30 years building up the Global Supply Chain to feed Western consumption. Although this has brought wealth for some, it has not brought wealth for all. Indeed, there is greater awareness amongst the young in China that this prosperity was bought at high environmental cost. The growing middle class is becoming conscious that GDP fever that has driven material growth is ephemeral. Now that our teachers have failed in their ideology of raw capitalism, Asians need to ask themselves some serious questions.

First, we used to think that our rudimentary banking systems would eventually evolved to become the Citibanks of the developing world. Now that we have found that the wholesale “Originate to Distribute” Universal bank model has serious flaws, where do we go from here?

Second, if free market forces cannot deal with social inequities and environmental degradation, as well as the provision of global public goods, then how should the state machinery function to tackle these issues without huge bureaucracy and wastage, if not serious rent seeking? Make no mistake about it. Friedmanite free market philosophy has been discredited by this crisis and Keynesian theory was evolved during a time when the environment was not even an issue. Even the best Keynesians grossly under-estimated the high costs of state-intervention. We all understand that good policy intentions do not necessarily lead to good outcomes.

I am frankly rather appalled by the naive idea that Asian savers should or could overnight become big spenders just to reflate global markets. Yes, some parts of the emerging markets have reached developed country levels of income, but the bulk of the developing economies are still poor. Spending on infrastructure, health and environmental protection is the right way to begin, but we must be at least decades away from the idea that Asians have the critical mass and spending power to replace the West’s consumption capacity.

Simply put, we have neither good Western theory to guide us in the way forward, nor are we institutionally and psychologically geared to provide that intellectual leadership posed by Summers.

Structurally, we have to accept the fact that emerging markets were dependent on the advanced economies for markets and financing. Asia’s surplus role has been too recent for the fact to sink in.

Asia had to put its excess savings in the West precisely because its own financial system is not ready to intermediate such savings. Its regulatory structure is still evolving and Asian bureaucrats are neither internationally minded nor prepared psychologically to act in the international monetary order. In the last 10 years, the number of Asian bureaucrats in the Bretton Wood institutions has declined not just because of better career prospects at home, but also because they see little future for themselves in these institutions. There are not many think tanks in Asia, like ICRIER, dedicated to

thinking about the international financial order. Nor has the Asian private sector felt confident enough to finance think tanks and research into the areas that Summers has raised.

Nevertheless, I am not totally pessimistic. On the contrary, I believe that this crisis can be a blessing in disguise. Business school guru Charles Handy recently pointed out that IT and knowledge is the right direction where mankind can grow without irrevocably destroying the environment. If anything, Asia should prepare for global warming by increasing our research and development in IT, biotechnology, energy and resource efficient services and industries. We should look at ways to improve agricultural productivity through plants that produce food with less water and work on energy and resource saving consumption habits. In this regard, I believe that the Indian advances in the IT area are the right way forward, because it achieves growth at lower environmental destruction than hardware manufacturing.

The International Financial Order

From lofty Global Warming issues, we now move to more mundane, but no less important issues of the global financial order, the issue raised by Mervyn King in his first Lall Lecture and what to do about regulation of the financial system.

I repeat my dictum about the present problem – we have global markets but national mindsets. So far, national responses to the crisis have been faster than regional or global responses. A major defect of the current international financial architecture is that even within Europe, initial reaction to the crisis was at the national level, rather than the global level. Everyone cared for their own banks. There was also insufficient coordination between the US and Europe on the appropriate response on rescue efforts. This implies that we must strengthen domestic crisis management and response policies before we even begin to think about global policies.

Central to this debate is the Westphalian Dilemma, in which collective solutions are all voluntary, with no enforcement on nations who breach the collective good. Hence, the Asian response to the dilemma is that our contributions to global good are best achieved through solutions at the national level. Asians do not have the global reach to change global conditions. If the global leaders cannot set the example, we do what we can in our own small way.

But there is no denial that the world has become much more inter-dependent and networked. Since the leveraging in the mature markets was huge, the deleveraging will impact on the emerging markets and may not stop until the excesses are worked out. In the meantime, without huge statesmanship to stave off the rising tide of nationalism and protectionism, we will see further negative multiplier effects on Asia as the Supply Chain loses its customers.

What can Asians do in both the short and medium term, both domestically and in the international architecture?

Time will allow me only to articulate six fundamental points, moving from the philosophy of regulation to the international architecture.

Back to Basics

The first is that crisis is the natural outcome of human excesses. It is the most Darwinian of collective human action – it creatively destroys the irrational exuberance and brings everyone back to reality that there is no free lunch. Schumpeter was right to say that out of crisis comes rejuvenation. Crisis actually accelerates the exit of weak and fraudulent institutions that should have been the function of effective regulation over a normal period of time. Accordingly, we must go back to basics and get our priorities right – better a relative simple system of social justice with long run sustainability, than a fancy complex derivative system where some people get excessively rich at the expense of the rest of the world. We must be realistic – if reform, restructuring and regulation are continuous processes, it will be a long painful road ahead.

Remember, there is in fact only a short window of opportunity of reform before memory of crisis fades and vested interests again capture the need for reform. If we do not reform while the winds are in our favour, the next crisis is an inevitability.

The second is that financial is a derivative of the real sector that carries leverage and risks. Risks are transferred but do not disappear. Indeed not understanding the nature of derivatives is itself a major risk.

The problem with derivatives is that the higher the level of derivation, the more complex (and more opaque) the relationship with the underlying and the greater the leverage, making the derivative pyramid dynamically profitable and risky at the same time. As we see from experience, if the underlying asset gets into trouble, the derivative pyramid can come crumbling down very rapidly.

The instability of the financial pyramid is precisely why finance should be fettered or regulated heavily. Left to pure market forces and no constraints, the financial derivative game can be exploited at great moral hazard – increase leverage and opacity for private gain at eventual social cost. At the purest conceptual level, there is therefore no principal difference between state planning and unfettered finance – both consume or waste at great social loss. We need to walk the golden mean – how to utilize the efficiencies of market forces and yet regulate it to prevent excesses and instability. Herein lies the uncomfortable relationship between the government and the market. Too much government is bad and too much unfettered markets is also bad.

The third fundamental is that if finance is a derivative of the real economy, no financial structure is strong unless the real economy is strong. We cannot allow monetary theory to dazzle us from the common sense fact that finance must serve the real economy, rather than to drive it. If this is so, then it does not make sense that Wall Street should be paid more than Main Street. We must ensure that the incentive structure is even-handed – financial wizardry cannot be rewarded irrespective of performance. The corporate governance structure must be transformed so that there can be no golden parachutes and pay must be aligned with long-term performance.

Focusing on the real sector means that greater attention will have to be paid to the housing market as one of the key pillars of social stability, to ensure via appropriate government policy that there is adequate supply and that housing is affordable to the majority of the population on a sustainable and equitable basis. Finance for housing is good, but not for speculation and therefore, banks will need to use lower Loan-to-Value ratios as house prices increase to contain the risks.

The fourth key lesson is that the whole philosophy of financial regulation and the role it plays within the financial stability policy function needs to be examined. For example, there is a current argument that we should not impose more regulation to exacerbate the pro-cyclicality. It was a stock argument that additional regulation would deter financial innovation and create new distortions. Frankly speaking, I would say that if we could have paid US\$50 billion more in regulation to stop Ponzi schemes and save the world from US\$2.8 trillion of losses, every cent of the additional regulation would have been worth it. The real risk with any financial regulation system is whether it has been captured by the industry. Financial regulators cannot swallow the whole dream of financial risk management through derivatives without verifying whether the dream was not a scam. Hence, it is not the cost of regulation to the industry that counts, but the total social costs (including cost of crises) that matters.

In this regard, I agree that we need a system-wide view of financial stability, not only at the national level, but also at the global level. Those who argue for macro-prudential regulation (top-down view) in addition to micro-prudential regulation (bottom-up, institution-by-institution) may have missed the most important elements of network crisis, which are the interconnectivity and the feedback mechanisms within the network. We need to think about not just market place by geography, but also market space in which negative feedbacks can bring the whole network down. This is where firewalls are critical to stable networks. Viral attacks can only be stopped through isolation.

Financial regulators need to think strategically on how to regulate effectively over the whole economic cycle. The current Basle type approach of off-site surveillance and on-site examination has assumed peace-time conditions as normal, whereas financial regulators need to deal with and prepare for crisis conditions as bubbles emerge. Anti-cyclical mentality needs to be built into the work process, including the necessary budgetary

resources. As Churchill used to say, in peace prepare for war, and in war, prepare for peace.

Fifthly, we cannot allow theory and wishful thinking to advance way ahead of practice and reality. The signal difference between the Asian crisis and the current crisis is Complexity. The Asian crisis had all the hallmarks of excessive leverage in the corporate sector, but it was an old-fashioned banking and currency crisis. The present derivative crisis was so complicated that investors, bankers and financial regulators simply did not understand the complexity and the risks involved. What I find very disturbing in the present agenda of reforms is that every standard setter and regulator seems to want to add to the complexity, rather than using the crisis as an opportunity to simplify. If Sarbanes-Oxley is any guide, we cannot legislate away bad behaviour. Bad market behaviour can only be changed by enforcement that “pick important problems, fix them and tell everyone”, as Harvard Professor Malcolm Sparrow¹⁷ reminded us. We got so enamoured with technical completeness (remember the quest for complete markets?) that perfection became truly the enemy of the good.

At this point of time, let me say something about the division of labour in managing financial stability. From a balance sheet point of view, the present value of the financial sector is simply price times quantity, plus duration, the most important price being the price of money. The central banks are in charge of macro-financial stability, whereas the financial regulators are responsible for micro-prudential or institutional stability, influencing through rules and standards the mismatches in duration and the capital adequacy.

However, if the price of money is too low, are we surprised that the quantity and the duration explode? Central bankers cannot just look after monetary stability, but must examine the full implications of the price of money on the total financial structure. This is why I feel that the current tendency to use ZIRP will create huge markets distortions that we have not fully begun to comprehend.

One World, Three Paths

If you accept my thesis that you need a system-wide view of global markets and that you need to pay attention to the interconnectivity between markets as networks, then we cannot avoid the implication that the right model for financial stability is tri-partite coordination between the financial regulator, the central bank and the ministry of finance. Hence, the fundamental problem of financial stability is that appropriate government policy must be coordinated and enforced in order to achieve stability. This cannot be the function of financial regulators alone. If this is complicated at the national level, this is even worse at the global level.

¹⁷ Sparrow, Malcolm, 2000, *The Regulatory Craft: Controlling Risks, Solving Problems and Managing Compliance*, Washington D.C.: The Brookings Institution.

The Group of 20 Leaders met on November 14-15, 2008 in Washington DC and a flurry of work is in progress. The Group was established in 1999 as part of the response to the Asian crisis. It comprised central bank and ministries of finance leaders from the G-8 (US, UK, France, Germany, Canada, Italy, Japan, Russia), EU and China, India, Brazil, Argentina, Australia, Indonesia, Mexico, Saudi Arabia, South Africa, South Korea and Turkey). The goals of the summit are to identify the causes of the problem and their possible solutions. It is perhaps too early to prejudge the outcomes, but already there have been a number of important publications and proposals, such as the Geneva Report on Principles of Financial Regulation, the Group of Thirty Report, the IIF Report and various IMF papers.

Where does Asia fit in the global architecture? I will make three observations.

Status quo

Although there are signs that there is some willingness to change, I think there is every chance that the status quo in the international financial order will continue. The reason is very simple. The vested powers in the majority shareholders in G7 will not want to let go of power and the emerging markets are psychologically and institutionally not ready to share power. The 1944 Bretton Woods framework was essentially a tradeoff between the opening up of global trade in exchange for finance for development under Pax Americana. There is currently little to trade off between the Emerging Markets and G8, because the surplus countries do not have an alternative to put their excess savings, except with the advanced markets.

Under globalization, debt is the connectivity, but if power is unequal, the creditor is hostage to the debtor.

In other words, I see relatively little change within the next five years to the present international monetary order. The advanced countries will ask the surplus economies to place more savings with the Bretton Woods institutions that will remain under their control. The IMF and World Bank will continue to lend to help emerging markets in problems due to their excessive reliance on external financing. The dollar and Euro dominance will continue and the balance between the two will depend on their respective geo-political strengths. The IMF may be given more enforcement and surveillance powers, but its legitimacy to do so remain questionable until the quota structure is resolved.

However, the quota issue will not be resolved until the Europeans decide whether they should vote as one group or whether individual countries will still maintain huge voting power relative to the emerging markets. For example, Belgium, with a population of 10 million, has almost the same voting power (2.13 percent) as China with 1.3 billion (2.94 percent) and Brazil and Mexico combined (2.61 percent and 300 million people).

If this is the case, then emerging markets will do well to get their own financial stability infrastructure in place, namely a domestic Financial Stability Forum, comprising all the relevant players, including dialogue with standard setters and the private sector. Each member of the domestic FSF will need to understand the interconnectivity domestically, as well as internationally. Hence, a strong global network must begin with strong and resilient domestic networks.

The rise of regional markets

The second observation is regional. Since Asia is being blamed for surplus savings, then Asia will have to accelerate the programme of building strong regional markets to finance all the social infrastructure and environmental adjustments that Asia needs.

In this scenario, those emerging markets that take the opportunity to strengthen their domestic financial systems, improve domestic corporate governance, develop their social infrastructure and maintain social stability will be the major winners. Advanced country pension and mutual funds and surplus emerging markets will still have to park their savings in markets with high growth potential that offer stability in property rights.

There is where I feel that institutionally, we must have regional Financial Stability Forums as the building block for stronger global architecture. The present FSF is essentially a talk shop with influence on some regulators and standard setters, but no implementation capacity, especially on the systemically important markets.

Regional FSFs are important institutional arrangements to increase implementation capacity, technical assistance and dialogue. South-South dialogue between emerging markets will increase if the present powers are unwilling to change the status quo. Within Asia, there will be greater monetary and financial cooperation, not ruling out a regional currency arrangement. Instead, I see an Asian BIS as an important institutional development to provide the secretarial support for regional FSF discussions and thinking. It would be ideal if the BIS could play that regional role also, but that would depend on whether the current European shareholders are willing to expand the BIS role.

The creation of regional FSF arrangements will strengthen regional cooperation, but also to support deliberations of the FSF at the global level.

It is possible that the G-7 may concede to some power sharing in the Bretton Wood institutions in order to coordinate policies to address the global imbalance. This will certainly come in the form of greater pressure on exchange rate revaluation for the emerging markets, particularly China. My own personal view is that exchange rates matter less than real total factor productivity growth. As long as a country's total factor productivity is growing, changes in the nominal exchange rate should stably adjust to reflect such

changes. For example, global imbalance will be adjusted partly through a gradual increase in Asian exchange rates as a bloc against the US dollar and the Euro.

The International Financial Architecture

My own assessment of the International Financial Architecture is that not only must it satisfy the question of voting power and legitimacy, it must fit the evolving global real sector architecture. For example, even though I am a strong supporter of IOSCO, as a former securities regulator, we need a debate on whether we need three or four different sets of financial regulatory standards for banks, securities market, insurance and other financial institutions. We should try and simplify the international architecture and try and agree on general principles. The current standards, codes and rules are getting too complex and too complicated to understand, implement and enforce.

In this regard, the G20 exercise that asks the present architecture to advise on the next architecture may face considerable headwinds. We may need an Independent Commission to put forward some radical proposals to see what is feasible and what options we can realistically achieve. We may need to allocate clear duties and accountability between home and host regulators on property protection and supervisory functions. Moreover, we should debate the Summers suggestion that global financial institutions should provide mainly global public goods, such as technical assistance and funding for dealing with Global Warming.

If, as I personally expect, that regionalism will be one outcome of the current crisis, then within the next two decades, the global monetary and financial architecture will be radically different from today. By then, there will be at least three global reserve currencies contending for hegemony. Notice that I have not specified what the third reserve currency would be. Within Asia, it could be the Japanese Yen, the Renminbi, the Indian rupee or even an Asian currency that include large components of Korean, Middle East and ASEAN currencies. In Latin America, it could be the Brazilian real or Mexican peso that forms the core of their regional currencies. Given the complex politics in each region itself, it is not clear which and how these currency arrangements will emerge.

Nevertheless, since Asia remains a dynamic fast growing region, there is no doubt in my mind that for regional growth to be stable, some institutional form of monetary cooperation and regional financial market is inevitable.

At that point of time, diversified global portfolios will comprise a more equal distribution of assets at the geographical level, so that the investor is not exposed excessively to only one or two major currencies, but at least three, if not four, global reserve currencies and related assets. The competition for resources in this more equal environment would offer better choice for investors globally.

Conclusion

Having studied financial crises almost all my life, I come to the conclusion that crisis is ultimately political in nature. Even if it erupts as a financial crisis, its resolution would inevitably be political because the distribution of losses would be highly arbitrary and controversial. Ultimately, all financial crises are crisis of governance. Financial crises prove that financial engineering cannot create perpetual prosperity. It takes good governance, at the corporate, financial and social level, to generate long-run sustainable stability. All crises have to be solved by governments, and if not satisfactorily, by the next government.

To conclude, finance must serve the real sector. The three key functions of financial sector are to protect property rights, reduce transaction costs and have high transparency. These are Western concepts that were not understood well within the Asian experience. But Asians do have the advantage of being pragmatic and have deep historical and cultural wisdom to accept the facts of life and to adjust accordingly. The challenges thrown down in the last two Lall Memorial Lectures were right. Asians have to recognize that we live in an inter-dependent world, we need to cooperate to live in an increasingly small and fragile planet. We have national rights, as well as global responsibilities. How we move forward will depend on all our fountains of patience and understanding to listen to other views and hopefully find the right way forward.

Finally, my thanks once again to ICRIER and everyone present for this rare opportunity and honour to think aloud on the issues facing Asia and the global financial system.

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New Delhi.