William Leiss: RiskBlog 1 March 2012

Once More, Understanding Systemic Financial Risk

Andrew Palmer's recent essay on financial innovation in *The Economist,* "Playing with fire" [25.02.12: http://www.economist.com/node/21547999] has received a lot of attention. Read it, but also read the trenchant critique by Satyajit Das, one of the most perceptive observers on the subject. (Read his frequent blogs; his books, listed below, tend to be rather long-winded and egoistic, a compilation of scattered thoughts.) I have included Das's reply to Palmer below, rather than just giving you the URL for his website, because Google indicates a security problem with his site.

The global financial crisis which began in 2008 is a slow-moving massive train wreck that may take an entire decade to bring under control. The catastrophic events of 2008 – still reverberating today, more than three years later, in the European sovereign debt crisis – have caused losses of many trillions of dollars. The scope of the losses is almost uncountable [http://bettermarkets.com/blogs/financial-reform-will-keep-wall-streets-hands-out-taxpayer-pockets, from "Better Markets," a website I recommend]. This is why it is the best illustration of what I have called a "black hole of risk" in my book, *The Doom Loop in the Financial Sector* [www.blackholesofrisk.ca/].

Regulatory reform of the financial sector is designed to help us avoid a repeat of these events. But the struggle for regulatory reform is far from won, because of intensive lobbying by big banks and financial sector interests. The current battle is over the so-called "Volcker rule," designed to reduce risks from investment banks trading on their own accounts: to understand this one, and others like it, follow "Baseline Scenario," written by Simon Johnson and James Kwak [http://baselinescenario.com/]**.** If the bankers win this one, and others, they'll do it again to the rest of us: Take obscene amounts of money for themselves during the good times, and saddle the taxpayers with the costs of bailouts when they bring on the bad times again.

Part of the reason for this extended train wreck is that at least one solution adopted by governments to respond to it is itself the cause of future problems. I refer to the central banks' policy of mandating near-zero interests rates over long terms. It is already clear that this policy solution is devastating the financial health of insurance companies and pension plans, failing to rewards savers, and encouraging imprudent borrowing. Even the Bank of Canada, which joins other central banks in this flawed policy, acknowledges its downside risks, calling attention in its December 2011 review report to "a prolonged period of low interest rates, which may encourage imprudent risk-taking and/or erode the long-term soundness of some financial institutions" (preface, page 1), available at: [http://www.bankofcanada.ca/wp-content/uploads/2011/12/fsr_1211.pdf] Of course, it

uses the typical wishy-washy bureaucratic language of "*may*" encourage or erode, which is irresponsible: The serious damage being done to the insurance industry and pension funds from the extremely low interest-rate policy of central banks has already been widely reported, and it poses a serious risk to the security of the future retirement plans of millions of Canadians.

In his recent blog, below, Satyajit Das explains that Palmer's essay overlooks the most crucial truths about the nature of risk in recent financial innovations, among them: (1) a lack of transparency in the transactions; (2) a slow-growing "concentration" of risks that remains in the shadows until it's too late to stop the collapse. This is what we now call "systemic risk" in the financial sector. A broad public understanding of systemic risk – which takes a bit of effort for citizens, I admit – is essential to build public support against the bankers for effective regulatory reform. The security of your retirement assets depends on your making this effort.

WEDNESDAY, FEBRUARY 29, 2011

Satyajit Das: ~~Pravda~~ The Economist's Take on Financial Innovation

By Satyajit Das, derivatives expert and the author of Extreme Money: The Masters of the Universe and the Cult of Risk Traders, Guns & Money: Knowns and Unknowns in the Dazzling World of Derivatives – Revised Edition (2006 and 2010)

In the old Soviet Union, Pravda, the official news agency, set the standard for "truth" in reporting. Discriminating readers needed to be adroit in sifting the words to discern the facts that lay beneath. Readers of The Economist's "Special Report on Financial Innovation" (published on 23 February 2012) would do well to equip themselves with similar skills in disambiguation.

Faith Based …

The Economist sees financial innovation as positive; regarding it in the same sense as charity and goodwill to one's fellow creatures. The reader is told that: "Finance has a very good record of solving big problems, from enabling people to realise the value of future income through products like mortgages to protecting borrowers from the risk of interest-rate fluctuations." The definition of the "big problems" of our time is obviously subjective.

The *Report* lacks doubt: "The evidence of this special report suggests that the market does a brilliant job of nurturing and refining instruments that people want." A closer review of the evidence suggests that the authors of the *Report* have followed Adlai Stevenson, the Democratic candidate for president in the 1952 and 1956 elections: "Here is the conclusion on which I base my facts."

The approach is puzzling as the *Report* repeatedly admits the difficult of actually measuring the benefits of financial innovation: "… quantifying the benefits of innovation is almost impossible" and "To sift through the arguments on both sides is to confront a basic problem with any financial innovation: the difficulty of measuring its benefits."

The Economist quotes a 2011 NBER paper by Josh Lerner and Peter Tufano which argues the impossibility of quantifying the impact of a financial innovation because finance involves many (often unintended) externalities. Instead the paper proposes a “thought experiment”, imagining what the world would look like without a particular innovation. The *Report* undertakes this thought experiment, without the requisite imagination and with a pre-disposition to the self evident benefits of finance.

In David Hare’s play *The Power of Yes*, Adair Turner, head of the English FSA, is asked whether the fact that nobody understood what was going on was an issue. Turner responds that no, it wasn’t a problem as, for people like Alan Greenspan, it was just a matter of faith. The Economist follows their mentor’s *modus operandi*.

Finance is as Finance Does….

Arguably, the function of finance is to match borrowers and savers, provide safe and secure payment mechanisms and also provide efficient tools for risk management. But the **Report**lacks a discernible working thesis as to what finance should do and how specific financial instruments, new and old, either do or do not further these objectives. Finance’s primacy is held by The Economist as another self evident truth.

Despite a self conscious mention of innovations in “microfinance products aimed at the very poor, social impact bonds, and all manner of whizzy payment technologies”, the focus is on “wholesale products and techniques”. This is because “they are less obviously useful than retail innovations and because they were more heavily implicated in the financial crisis”. The *Report*outlines the case for securitisation, credit default swaps (as an example of derivatives), exchange traded funds (“ETFs”) and high frequency trading (“HTF”).

The thesis is that all financial innovations are prima facie good and useful. Occasionally people push them too far and things go wrong. It is Alan Greenspan’s “irrational exuberance”. Excesses are the work of out-of-control “rogue traders”. The sub-text is that the products and system are fundamentally sound. Occasionally unavoidable accidents are always an acceptable cost of progress – collateral damage for greater good.

In 2008, defending deregulated markets, Greenspan stated: “You can have huge amounts of regulation and I will guarantee nothing will go wrong, but nothing will go right either.” This is the central premise of The Economist’s analysis.

Transference…

Techniques of risk transfer – securitisation (collateralised debt obligations (“CDOs”) and credit default swaps (“CDS”) – are good: “… even now it is hard to find fault with the concept [of the CDO], as opposed to the practical application, of many of the most demonised products.”

The defence of securitisation is: “[a CDO] is really just a capital structure in miniature”. In addition, “securitisation—which worked well for decades—allows banks to free up capital, enabling them to extend more credit, and helps diversification of portfolios as banks shed concentrations of risks and investors buy exposures that suit them”. Europe’s ill-fated and discredited adoption of CDO technology for its bailout fund (the European Financial Stability Fund) is the proof of concept, at least for The Economist.

While securitisation is not without benefits, the extension of the technique, for example, into re-securitisations (CDO2) created problems – as the *Report* readily accepts. However, the Report does not fully understand the true role and effects of securitisation.

While a CDO might be like a bank (a capital structure in miniature), it is unregulated. Securitisation for the last 15-20 years entailed shifting assets from banks to structure which reduced the amount of capital required, arbitraging regulatory capital requirements.

If a bank already held a loan funded with deposits, then in aggregate by selling the loan to the same depositors does not increase the supply of credit. The increase in credit is a function of the several things: (1) shifting risk into the shadow banking system; (2) alchemy (tranching) to create highly rated securities (AAA or AA) which acts as collateral to allow further re-leveraging; and (3) the ability to re-hypothecate the collateral over and over again, such as in re-securitisation.

The process increased leverage (crudely the capital against risk in reduced), model risk, liquidity risk, complexity and linkages via counterparty risk. It also moves risk from somewhere where it is highly visible to where it is less visible. In cutting and dicing risk, it encourages mis-pricing. It also creates difficulties in resolving problems – a delinquent loan is difficult to restructure when it no longer exists in its original form and different slices of the cash flows are held by different investors.

The case for securitisation also misses that banks sell off risk and then re-acquire it either directly through linkages with the shadow banking system or indirectly by financing investors secured against the securitised bonds created. Instead of actually assisting diversification, the entire process concentrates risk while simultaneously lowering the amount of capital and liquidity reserves held against the loans.

Recent research and enquiries have presented considerable evidence that CDOs were a direct contributing factor for the toxic phase of the asset bubble in US housing, commercial real estate and private equity market. But if The Economist is aware of these problems, then they are not covered in any detail.

The only problem with CDOs apparently was that "they were stuffed full of subprime loans but treated by banks, ratings agencies and investors as though they were gold-plated". Given that sub-prime mortgages were only a part of the much larger CDO market, the wider fall in value of securitised debt and the losses must have been a collective hallucination.

Giving Credit…

After the expected Oxbridge cross Channel sneer at "choking Europeans", the *Report*concludes that CDS contracts are "sound". Sovereign CDS contracts perform "a useful signalling function".

The only problem apparently is that banks sometimes sell protection on their own governments increasing their exposures to the sovereign. Given large banks dependence on the sovereign for their own existence, the absurdity of a bank insuring the nation's risk collateralised by government debt is ignored.

CDS, if it is used as a pure hedge, can be useful. Over time, the market, led by dealers keen to make credit a tradeable commodity, has evolved differently. The major drivers of the market are the ability to short credit and take leveraged positions on bonds. In addition, the fact that CDS contracts are not limited by the availability of underlying bonds or credit assets (at the peak the CDS market was around 4/5 times the available underlying assets) has encouraged the growth of the market.

Standardisation of the contract to facilitate trading has created significant "basis risks" for hedgers. The recent restructuring of Greek debt, designed to specifically, avoid triggering CDS contracts, highlights the problems. A number of episodes over the last 4 years have highlighted

documentary issues – trigger events and loss payouts – which cast serious doubts as to the utility of the contract.

Curiously, The Economist cites that fact that "conservative" India has recently given permission for CDS contracts to commence trading as proof of the utility of the product. The *Report*neglects to mention that approval was highly conditional, being designed to ensure that the only contracts traded were pure hedges of underlying positions.

In the film Casablanca, Rick (Humphrey Bogart) tells Captain Renault (Claude Rains) that he came to the city "for the waters" because of his health. Informed that they are in the desert, Rick ironically rejoinders that he was "misinformed". The Economist as well as investors and banks, including those who purchased Greek sovereign CDS to protect themselves against the risk of default, may have been similarly misinformed.

ETF….

Exchange Traded Funds ("ETF") are a hoary old chestnut, a listed and tradeable version of an index fund; hardly a revolutionary "innovation". As the Supplement notes the absolute size of the ETF market is also relatively modest compared with estimated global assets under the control of fund managers.

Vanguard founder John Bogle might take justifiable issue with the statement that ETFs "allow retail investors access to diversified portfolios of assets that had previously been the sole preserve of institutional investors". Mr. Bogle founded the Vanguard 500 Index Fund as the first index mutual fund available to the general public in 1975, more than a decade before ETFs.

Argument and analysis is replaced by over energetic prose – "finance's infectious creativity"; "vibrancy looks like a victory for the investor over the fund manager"; "It is in the nature of finance that experimentation never stops."

ETFs are "good", reducing transaction costs and increasing efficiency. The **Report** notes criticism of ETFs – counterparty risk to delaers where funds use derivatives to replicate exposure to the underlying assets. Closer reading of the IMF report on ETFs suggest deeper concerns that do not merit mention – the market impact of simultaneous trend following trading by ETFs and "innovations", such as leveraged and other versions.

There is no discussion of a key underlying issue – the idea of diversification. The Economist argues that "the dotcom bust had underscored the importance of diversification".

Diversification to reduce risk is not without problems. As equity indexes are weighted typically by market capitalisation, as an individual share price rises it becomes a larger part of the index and therefore the ETF. During manic market phases, such as the dot com and now the AGF (Apple Google Facebook) boom, ETF investors may inadvertently find them heavily exposed to such stocks.

In asset classes such as debt, the idea of indexation is more problematic. As the indexes are weighted by the amount of bonds on issue, as an issuer borrows more it becomes a larger part of the ETF, irrespective of its ability to make repayments. As Worldcom and more recently European sovereign debt shows, the results are not pretty.

While successfully managing the portfolios of an insurance company and the King's College endowment, Keynes insisted that diversification was flawed: "To suppose that safety…consists in having a small gamble in a large number of different [stocks] where I have no information…as compared with a substantial stake in a company where one's information is adequate, strikes me

as a travesty of investment”. Mark Twain’s Pudd’nhead Wilson would have agreed: “Put all your eggs in one basket, and watch that basket.”

HFT….

The Economist sides with the high frequency trading (“HFT”) practitioners who are “frustrated by what they perceive as an unfair onslaught”. The **Report** resorts to tried and tested rhetoric – HFT is difficult to define; there is not enough data. But these factors present no barrier to the conclusion reached that “high-frequency traders provide liquidity and ‘knit’ together our increasingly fragmented marketplace, resulting in tighter spreads that benefit all investors” (citing testimony delivered to the Securities and Exchange Commission in 2010 by George Sauter of Vanguard, a big fund manager).

Liquidity and lower transaction costs only benefits an investor when they trade. High liquidity and tight bid-offer spreads are only available, as all practitioners know, when it is not needed, becoming the first casualties of market downturns and volatility. Market-making needs adequate compensation for the risk assumed. Forcing return below sustainable levels encourages dealers to boost revenue from proprietary trading (often using the information gained from client activity) and trading structured products, creating different risks.

The *Report* ignores the real problems of HFT – the problems of potential market manipulation, insider trading, front running client flows and increased market volatility often at critical times. The Economist cannot imagine a world without HFT which is “an “outcrop” of the market structure”.

High trading volumes are regarded as normal and desirable. In the zero sum game of trading, the presence of super fast computers copulating with other super fast machines provides uncertain benefits in financial intermediation.

Average investment periods for shares have shortened from around 7 years to 7 months since 1940. HFT now accounts for over 60% of equity trading, with an average holding period of around 11 seconds. High levels of trading may create excessive “noise” preventing prices from reflecting true value, ultimately leading to a loss of confidence in certain markets discouraging investment. HFT may damage the process of long term capital accumulation and allocation.

Collateral Damage …

The *Report* believes that collateral is problematic “the whirring of financiers’ minds … spells trouble” but confusingly sees it is as also breeding innovation. The discussion may remind the reader of an observation of Groucho Marx: “A child of five would understand this. Send someone to fetch a child of five”.

The use of collateral contributed significantly to the financial crisis. Secured lending, collateralised by securities, including high quality bonds especially created through securitisation, contributed to the increase in debt. It allowed a shift of focus from repayment ability based on income and cash flow to the value of the asset securing the borrowing. As debt fuelled a virtuous cycle of price appreciation it allowed the level of debt to increase rapidly.

The process relies on a steady and unending rise of debt and prices – a Ponzi scheme, in effect. It also relies on the ability to trade and the liquidity of markets. Unfortunately, the virtuous cycle turns vicious when the supply of debt ceases and prices fall.

The system creates exposure to short term price fluctuations as the amount of collateral required varies. It effectively amplifies the broader financial problems of funding short and lending long.

Collateral also facilitates access to derivative markets for less credit worthy counterparties.

The problems of Bear Stearns' hedge funds, AIG and Lehman all can be traced, in different degrees, to the system of collateral. Unfortunately, those unlikely to be able to meet demands for payment are unlikely to be able to meet collateral calls – a fact which financial institutions and their regulators failed to understand.

At a broader level, collateral underlies the entire shadow banking system, which proved so problematic during the crisis.

Left Unsaid…

Mistakes of commission are compounded with errors of omissions.

The *Report* notes that risk transfer may encourage excessive risk taking and lending. It identifies that the illusion of stability may cause instability, an idea first put forward by economist Hyman Minsky (who does not gain a mention).

The systemic side effects of financial innovation are barely recognised. Financial innovation played a crucial role in allowing the increase in debt levels and leverage. It created complex linkages between financial participants increasing systemic risk and informational failures.

The appropriate size of some markets, such as for over-the-counter derivative, is not considered. The Economist points to interest-rate swaps "which are used to bet on and hedge against future changes in interest rates, as an example of a huge, well-functioning and useful innovation of the modern financial era".

Interest rate derivatives (including interest rate swaps) are about 70% of total derivative outstanding on $600 trillion, which equates to over $400 trillion roughly 6 or 7 times global GDP and a significant multiple of all financial assets in existence. Daily currency turnover is between 30 and 50 times trade flows.

Derivative volumes are inconsistent with pure risk transfer. The necessity for or utility of such high trading volumes does not figure in the discussion.

A quaint economic concept – cost benefit analysis -. weighs the benefits of any actions against the costs. Unable to identify the benefits accurately by their own admission, the *Report* decides to ignore costs arguing: "Even bad ideas are not a problem when they first arise. If only a few people get burned by a duff product, the wider world need not care".

Given the high cost of failure of financial innovations as evidenced by the significant and ongoing costs of global financial crisis, the case for financial innovation, at least of many of the products cited, may fail on cost-benefit grounds. Defenders of financial innovation have a high burden of proof to overcome.

Super Smarts…

The Economist fails to understand the real motivations of financial innovation. They believe that: "Products … mutate constantly, in part because patenting is not common". Citing Franklin Allen of the Wharton School at the University of Pennsylvania and Glenn Yago of the Milken

Institute, wholesale financial innovation, they argue, is the creation of new capital structures that align the interests of lots of different parties.

In practice, the major alignment of interests relates to getting a deal done to enable the bankers to receive substantial bonuses based on mark-to-market values of the product. The profit frequently does not fully recognise the long term consequences or risks to either the client or the financial institution.

Confusing bankers with saintly figures in line for beatification, the *Report* approvingly cites Goldman Sach's Martin Chavez who explains that innovation is in response to the "clients call"… We can't tell them 'no thanks'." This, undoubtedly, is "doing God's work", which the head of the firm once stated was its primary mission.

It is difficult to reconcile this position with statements by another Goldman Sachs' employee Fabrice Tourre, who sold the Abacus deals to unwitting "widows and orphans". Among tender emails to his girlfriend Serres, the self-styled "Fabulous Fab" observed in January 2007: "More and more leverage in the system. The whole building is about to collapse anytime now?.?.?.? Only potential survivor, the fabulous Fab[rice Tourre] standing in the middle of all these complex, highly leveraged, exotic trades he created without necessarily understanding all of the implications of those monstrosities!!!"

Tourre stated that Abacus was "pure intellectual masturbation", "a 'thing' which has no purpose, which is absolutely conceptual and highly theoretical and which nobody knows how to price". But Tourre was not assailed by self-doubt: "Anyway, not feeling too guilty about this, the real purpose of my job is to make capital markets more efficient and ultimately provide the U.S. consumer with more efficient ways to leverage and finance himself, so there is a humble, noble, and ethical reason for my job :) amazing how good I am in convincing myself!!!"

Stéphane Mattatia, Société Générale's global head of equity flow engineering and advisory, told The Economist of a hedge based on the Euro falling and gold rising for a client worried about French CDSs. Of course, SG managed to lose Euro 5.9 billion through its inability to hedge its own risk on positions taken by rogue trader Jerome Kerviel. If the client was concerned about positions in French CDS, wouldn't it have been just easier to close out its existing position rather than enter into a complex, potentially expensive and illiquid instrument?

There is no acknowledgement that much of what is called financial innovation is economic rent extraction, exploiting lack of transparency as well as information and knowledge asymmetries. There is no discussion of the destructive bonus culture which encourages certain behaviours in financial institutions. Thomas Philippon and Ariel Reshef have estimated that around 30-50% of the extra pay bankers received compared to similar professionals is attributable to economic rents.

In a January 2009 speech, Lord Adair Turner, chairman of UK's Financial Services Authority, observed that: "Much of the structuring and trading activity involved in the complex version of securitized credit was not required to deliver credit intermediation efficiently, but achieved an economic rent extraction made possible by the opacity of margins and the asymmetry of information and knowledge between…users of financial services and producers…financial innovation which delivers no fundamental economic benefit, can for a time flourish and earn for the individuals and institutions which innovated very large returns."

The unpalatable reality that few, self interested industry participants and their cheerleaders are prepared to admit is that much of what passes for financial innovation is specifically designed to conceal risk, obfuscate investors and reduce transparency. The process is entirely deliberate. Efficiency and transparency is not consistent with the high profit margins on Wall Street and the

City. Financial products need to be opaque and priced inefficiently to produce excessive profits. The Report does not canvas this issue.

Fixing It ….

The *Report* makes prescriptions for strengthening financial innovation – protection of investors, more capital, improved operational procedures and stronger regulators. The solutions are familiar dictums which have been tried before with limited success. As former New York Federal Reserve President Gerald Corrigan told policy-makers and financiers on 16 May, 2007: "Anyone who thinks they understand this stuff is living in lala land."

The problem of protecting investors arises because of the difficult in "judging the sophistication of a client". Not only retail investors, it seems, need protection. The Report approvingly quotes a regulator: "A German Landesbank should be treated like a child".

The risk management problems of "sophisticated" firms (Citibank, UBS, Lehman, Bear Stearns, Merrill Lynch and Long Term Capital Management (whose numbers included Myron Scholes and Robert Merton as well a large number of highly trained financiers)) suggest that most of the industry have not reached pimply adolescence let alone sage maturity. Given a tendency to self harm, most industry participants need protection from each other and themselves. Regulatory initiatives may need to encompass preventive detention for all parties.

In the last 20 years, capital held by banks and brokers against loss fell, increasing leverage. The definition of capital was expanded to include hybrid capital, debt ranking below deposits and senior borrowings. Cheaper than normal equity, hybrids avoided dilution of existing shareholders. Increases in debt and leverage reflected "improved financial flexibility…the results of massive improvements in technology and infrastructure", according to regulators. Banks' liquidity reserves, designed to cover withdrawal of deposits, were reduced, freeing up money for lending.

The risks were ignored. Alan Greenspan argued: "The lack of a spare tire is of no concern if you do not get a flat."

The prescription for higher capital and liquidity reserves has been tried before. Each capital regime promises more stringent control, but is ruthlessly arbitraged. This time around a fragile global economy means the willingness to compromise the integrity of the financial system for greater credit fuelled growth will be difficult to avoid.

In his review of the global banking crisis, Lord Adair Turner noted that: "An underlying assumption of financial regulation in the U.S., the UK and across the world has been that financial innovation is by definition beneficial, since market discipline will winnow out any unnecessary or value destructive innovations. As a result, regulators have not considered it their role to judge the value of different financial products, and they have in general avoided direct products regulation, certainly in wholesale markets with sophisticated investors."

Regulators may always lag markets and financial institutions in knowledge, experience and pay. Regulatory capture ensures over time the loss of oversight and control. History suggests that the next time will not be different.

Realpolitik…

Given its reputation, the weaknesses of The Economist's *Special Report* are disappointing.

Information on the issues is all in the public domain. There are a plethora of reports, such as Financial Crisis Inquiry Commission Report, the Turner Report etc, which explore financial

innovation and the financial crisis. There is also, I understand, a relatively new innovative Internet-based tool – the "search engine" – with could have been used by The Economist to check and research such facts.

In recent stories and reports, The Economist has presented an increasingly strident defence of bankers and their 'City' as well as resistance to regulation of the financial system.

Professor Simon Johnson has pointed repeatedly to one cause of the financial crisis – the political economy of the financial system and the lobbying power of financial institutions. If the press becomes part of this political economy, consciously or subliminally, then the problems are exacerbated. Advertising and sponsorship revenues as well as control over access to information and key decision makers, deemed news worthy, are essential commercial links which make newspapers and media susceptible to being influenced.

Zdener Urbanek, the dissident Czech novelist, observed that assumptions about what was written are dangerous: "In dictatorships…. We believe nothing of what we read in the newspapers and nothing of what we watch on television, because we know it's propaganda and lies. Unlike you in the West. We've learned to look behind the propaganda and to read between the lines and, unlike you, we know that the real truth is always subversive."

There is an important and necessary debate about financial innovation but it is not to be found in The Economist's *Special Report* on the subject.

http://www.nakedcapitalism.com/2012/02/satyajit-das-pravda-the-economist%E2%80%99s-take-on-financial-innovation.html