GlobalResearch
Center for Research on Globalization

The Size of the Derivatives Bubble = $190K Per Person on Planet

The Invisible One Quadrillion Dollar Equation

By DK Matai
Global Research, March 16, 2009
siliconvalleywatcher.com 16 March 2009
Theme: Global Economy

The Invisible One Quadrillion Dollar Equation — Asymmetric Leverage and Systemic Risk

According to various distinguished sources including the Bank for International Settlements (BIS) in Basel, Switzerland — the central bankers' bank — the amount of outstanding derivatives worldwide as of December 2007 crossed USD 1.144 Quadrillion, ie, USD 1,144 Trillion. The main categories of the USD 1.144 Quadrillion derivatives market were the following:

1. Listed credit derivatives stood at USD 548 trillion;

2. The Over-The-Counter (OTC) derivatives stood in notional or face value at USD 596 trillion and included:

a. Interest Rate Derivatives at about USD 393+ trillion;

b. Credit Default Swaps at about USD 58+ trillion;

c. Foreign Exchange Derivatives at about USD 56+ trillion;

d. Commodity Derivatives at about USD 9 trillion;

e. Equity Linked Derivatives at about USD 8.5 trillion; and

f. Unallocated Derivatives at about USD 71+ trillion.

Quadrillion? That is a number only super computing engineers and astronomers used to use, not economists and bankers! For example, the North star is "just" a couple of quadrillion miles away, ie, a few thousand trillion miles. The new "Roadrunner" supercomputer built by IBM for the US Department of Energy's Los Alamos National Laboratory has achieved a peak performance of 1.026 Peta Flop per second — becoming the first supercomputer ever to reach this milestone. One Quadrillion Floating Point Operations (Flops) per second is 1 Peta Flop/s, ie, 1,000 Trillion Flops per second. It is estimated that all the data found on all the websites and stored on computers across the world totals more than One Exa byte of memory, ie, 1,000 Quadrillion bytes of data.

Whilst outstanding derivatives are notional amounts until they are crystallised, actual exposure is measured by the net credit equivalent. This is normally a lower figure unless many variables plot a locus in the wrong direction simultaneously. This could be because of

catastrophic unpredictable events, ie, “Black Swans”, such as cascades of bankruptcies and nationalisations, when the net exposure can balloon and become considerably larger or indeed because some extremely dislocating geo-political or geo-physical events take place simultaneously. Also, the notional value becomes real value when either counterparty to the OTC derivative goes bankrupt. This means that no large OTC derivative house can be allowed to go broke without falling into the arms of another. Whatever funds within reason are required to rescue failing international investment banks, deposit banks and financial entities ought to be provided on a case by case basis. This is the asymmetric nature of derivatives and here lies the potential for systemic risk to the global economic system and financial markets if nothing is done.

Let us think about the invisible USD 1.144 quadrillion equation with black swan variables — ie, 1,144 trillion dollars in terms of outstanding derivatives, global Gross Domestic Product (GDP), real estate, world stock and bond markets coupled with unknown unknowns or “Black Swans”. What would be the relative positioning of USD 1.144 quadrillion for outstanding derivatives, ie, what is their scale:

1. The entire GDP of the US is about USD 14 trillion.

2. The entire US money supply is also about USD 15 trillion.

3. The GDP of the entire world is USD 50 trillion. USD 1,144 trillion is 22 times the GDP of the whole world.

4. The real estate of the entire world is valued at about USD 75 trillion.

5. The world stock and bond markets are valued at about USD 100 trillion.

6. The big banks alone own about USD 140 trillion in derivatives.

7. Bear Stearns had USD 13+ trillion in derivatives and went bankrupt in March. Freddie Mac, Fannie Mae, Lehman Brothers and AIG have all ‘collapsed’ because of complex securities and derivatives exposures in September.

8. The population of the whole planet is about 6 billion people. So the derivatives market alone represents about USD 190,000 per person on the planet.

The Impact of Derivatives

1. Derivatives are securities whose value depends on the underlying value of other basic securities and associated risks. Derivatives have exploded in use over the past two decades. We cannot even properly define many classes of derivatives because they are highly complex instruments and come in many shapes, sizes, colours and flavours and display different characteristics under different market conditions.

2. Derivatives are unregulated, not traded on any public exchange, without universal standards, dealt with by private agreement, not transparent, have no open bid/ask market, are unguaranteed, have no central clearing house, and are just not really tangible.

3. Derivatives include such well known instruments as futures and options which are actively traded on numerous exchanges as well as numerous over-the-counter instruments

such as interest rate swaps, forward contracts in foreign exchange and interest rates, and various commodity and equity instruments.

4. Everyone from the large financial institutions, governments, corporations, mutual and pension funds, to hedge funds, and large and small speculators, uses derivatives. However, they have never existed in history with the overarching, exorbitant scale that they now do.

5. Derivatives are unravelling at a fast rate with the start of the "Great Unwind" of the global credit markets which began in July 2007 and particularly after the collapse of Freddie Mac and Fannie Mae in September this year.

6. When derivatives unravel significantly the entire world economy would be at peril, given the relatively smaller scale of the world economy by comparison.

7. The derivatives market collapse could make the housing and stock market collapses look incidental.

Three Historical Examples

1. The so-called rogue trader Nick Leeson who made a huge derivatives bet on the direction of the Japanese Nikkei index brought on the collapse of Barings Bank in 1995.

2. The collapse of Long Term Capital Management (LTCM), a hedge fund that had a former derivatives and bond dealer from Salomon Brothers and two Nobel Prize winners in Economics as principals, collapsed because of huge leveraged bets in currencies and bonds in 1998.

3. Finally, a lot of the problems of Enron in 2000 were brought on by leveraged derivatives and using derivatives to hide problems on the balance sheet.

The Pitfall

The single conceptual pitfall at the basis of the disorderly growth of the global derivatives market is the postulate of hedging and netting, which lies at the basis of each model and of the whole regulatory environment hyper structure. Perfect hedges and perfect netting require functioning markets. When one or more markets become dysfunctional, the whole deck of cards could collapse swiftly. To hope, as US Treasury Secretary Mr Henry Paulson does, that an accounting ruse such as transferring liabilities, however priced, from a private to a public agent will restore the functionality of markets implies a drastic jump in logic. Markets function only when:

1. There is a price level at which demand meets supply; and more importantly when

2. Both sides believe in each other's capacity to deliver.

Satisfying criterion 1. without satisfying criterion 2. which is essentially about trust, gets one nowhere in the long term, although in the short term, the markets may demonstrate momentary relief and euphoria.

Conclusion

In the context of the USD 700 billion rescue plan — still being finalised in Washington, DC —

the following is worth considering step by step.

Decision makers are rightly concerned about alleviating immediate pressure points in the global financial system, such as, the mortgage crisis, decline in consumer spending and the looming loss of confidence in financial institutions. However, whilst these problems are grave, they are acting as a catalyst to another more massive challenge which may have to be tackled across many nation states simultaneously. As money flows slow down sharply, confidence levels would decline across the globe, and trust would be broken asymmetrically, ie, the time taken to repair it would be much longer. Unless there is government action in concert, this could ignite a chain-reaction which would swiftly purge trillions and trillions of dollars in over-leveraged risky bets.

Within the context of over-leverage, the biggest problem of all is to do with "Derivatives", of which CDSs are a minor subset. Warren Buffett has said the derivatives neutron bomb has the potential to destroy the entire world economy, and is a "disaster waiting to happen." He has also referred to derivatives as Weapons of Mass Destruction (WMD). Counting one dollar per second, it would take 32 million years to count to one Quadrillion.

The numbers we are dealing with are absolutely astronomical and from the realms of super computing we have stepped into global economics.

There is a sense of no sustainability and lack of longevity in the "Invisible One Quadrillion Dollar Equation" of the derivatives market especially with attendant Black Swan variables causing multiple implosions amongst financial institutions and counterparties! The only way out, albeit painful, is via discretionary case-by-case government intervention on an unprecedented scale. Securing the savings and assets of ordinary citizens ought to be the number one concern in directing such policy.

This article was orignally published on the ATCA Open and Philanthropia Socratic Dialogue on Facebook. *To reflect further on this, please respond within Facebook's ATCA Open discussion board.*

The "ATCA Open" network on Facebook is for professionals interested in ATCA's original global aims, working with ATCA step-by-step across the world, or developing tools supporting ATCA's objectives to build a better world.

Asymmetric Threats Contingency Alliance (ATCA) is a philanthropic expert initiative founded in 2001 to resolve complex global challenges through collective Socratic dialogue and joint executive action to build a wisdom based global economy.

Articles by: DK Matai