

*Sunanda Sen*

# Derivatives as Risk Management Tools

Derivatives are financial contracts which, as the name suggests, are arrived at by relying on the market values of stock prices, exchange rates, interest rates, or commodity prices. These financial instruments, much in use today as risk management tools in financial markets, have grown greatly since 1971-72 when exchange rates started floating and interest rates began to be adjusted at more frequently. Earlier than that, derivative trading was common in commodities, to deal with price volatility, begun by the Chicago Board of Trade in 1875.

With risks generally associated with higher returns, derivatives provide instruments which aim to minimize risks by arranging contractual agreements relating to prices, quantities as well as timing relating to transactions. Theoretical explanations for the use of these instruments by financial agents originates in mainstream theory from the claim that derivatives provide a better allocation of market risks over time, and as such are welfare-enhancing instruments. It has been argued in the literature that derivatives provide an opportunity for the transfer of market risks, from risk-averse to risk-neutral agents. The consequence, as has been argued, may be a rise in efficient allocation of resources. Hence, from a market-oriented perspective, 'the derivatives offer the free-trading of financial risks' (Siems 1987).<sup>1</sup>

Thus, derivatives are considered to enhance efficiency by offering insights into a future which is uncertain. The needed institutional arrangements also make for market expansions by dispensing the use of instant cash settlements, since these exchange traded derivatives (futures, options, swaps etc) only require cash payment of a 'margin' when contracts are agreed to.

*Two* additional aspects of the derivative instruments remain critically important in the functioning of derivative markets. *First*, these markets are subject to risks and uncertainty. As it is claimed, 'in a perfect market with no transaction

costs, no frictions and no informational asymmetries, there would be no benefits stemming from the use of derivative instruments'.<sup>2</sup> *Second*, derivatives are presumed to be related to market 'informational' uncertainty and risks.<sup>3</sup> However, the assumption of full knowledge of probability of stock price movements is untenable when the market moves quickly and unpredictably.<sup>4</sup>

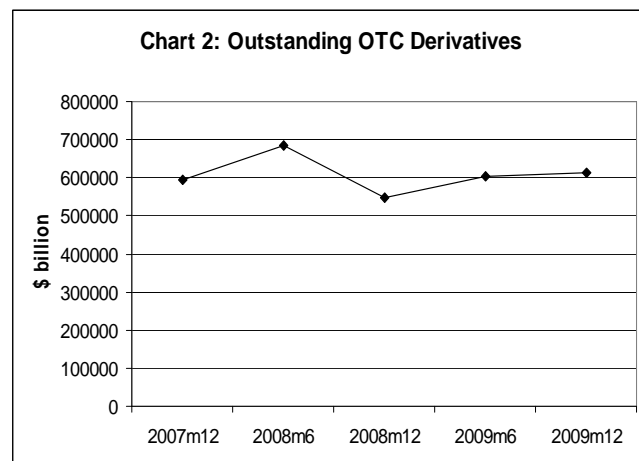
Growing uncertainty generated new market demand for instruments to hedge and speculate, and for credit to finance these demands. Financial deregulation has facilitated such innovation. As pointed out, '. . . the explosive use of financial derivative products in recent years was brought about by three primary forces: more volatile markets, deregulation and new technologies'<sup>5</sup> (Hicks 1967).

Contractual arrangements as above between parties can be informal, as with forward contracts which take place over-the-counter (OTC), or exchange-traded, as with futures or options. While futures oblige both parties to honour the contract, options allow the buyer (or borrower, in the case of loans) to opt out. Contracts are finalized by paying, as an advance, the 'margin' which is a fraction of the total deal, thus avoiding the need to procure the requisite finance until the deal matures.

The use of derivatives for risk management necessarily relies on the state of expectations of the contracting parties under uncertainty. Thus economic theory needs to start from the assumption of uncertainty, and not of perfect information, contesting the mainstream doctrine of 'efficient markets'.

Uncertainty (and knowledge) is essentially subjective. Uncertainty is thus not a natural phenomenon which is time invariant. Rather, it is embedded in social reality. Accordingly, neither hedging nor speculation necessarily avoids losses, as witnessed in the recent crisis.

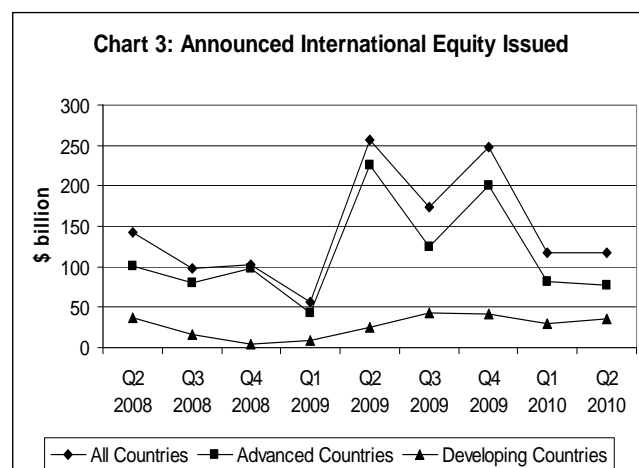
The sharp increases in both turnover as well as outstanding balance of derivatives over the last few years do not suggest efficiency in financial or even commodity markets. Thus, the values of derivatives traded in organized exchanges and at over-the-counter was 33238 times the value of announced equity issues during June 2010, as shown in table 1. The ratio has moved up considerably as compared to what it was earlier, say 171 in December 2007. The pattern reflects the sharp rise in derivative trading over recent years, rising considerably after a temporary lull during the period of more severe crisis (Charts 1 and 2). Derivative trading has thus emerged as one of the most profitable financial sector activities.



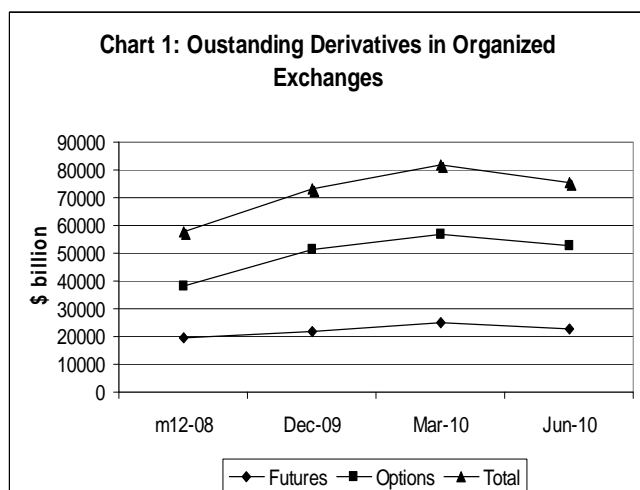
Source: BIS Quarterly Review, June September 2010

	Exchange traded derivatives	Outstanding OTC derivatives	Announced international equity issues
Dec. 2007	28049.32	595738.43	164.532
Jun. 2008	28068.873	683814.34	142.231
Dec. 2008	19507.156	547983	102.108
Jun. 2009	19701.501	604617.44	256.344
Dec. 2009	21774.113	614674	247.851
Mar. 2010	24779.39		116.734
Jun. 2010	22738.317		117.029

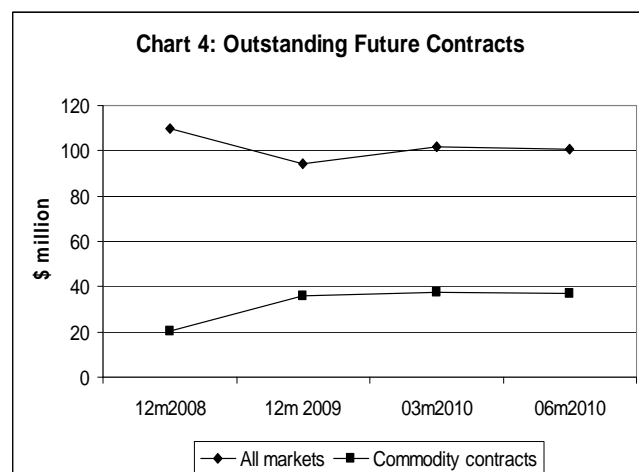
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Derivatives now dominate global commodity markets. Futures contracts in commodity markets, are run on principles similar to financial markets in seeking short run profits. Commodity contracts in recent global markets have grown despite the onset of the global financial crisis in the third quarter of 2008.

As pointed out by UNCTAD in a recent report, “a major new element in commodity trading over the past few years is the greater presence of financial investors that treat commodities as an asset class on commodity future exchanges. The fact that these market participants do not trade on the basis of fundamental supply and demand relationships and that they hold, on average, very large positions in commodity markets, implies that they can exert considerable influence on commodity price developments”<sup>6</sup>

This is related to the ‘financialization of commodity markets’ with simultaneous speculation across financial assets and commodity markets. This not only destabilized commodity prices, but also pushed them upward. The rising volatility of these prices has raised the cost of hedging, hitting small producers and traders from developing countries.

To counter speculation in global commodity markets, UNCTAD suggested a proposal for a publicly held stock of commodities.<sup>7</sup> This echoes the Keynesian proposal for an international buffer stock to counter private speculation on commodities.<sup>8</sup>

Futures trading in commodities has led to sharp increases in food prices, far exceeding the inflation rate. While speculation creates opportunities for windfall gains for those who succeed, this continues to have a serious impact on the subsistence and level of living, especially for the poor.

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<sup>1</sup> Siems, *op. cit.*

<sup>2</sup> Hyman Minsky, “Can 'It' Happen Again?” *Essays on Instability and Finance*. 1982; Paul Davidson, *Money and the Real World*, 2nd edn, 1978, London, Macmillan. Cited in Thomas F. Siems, ‘10 Myths about Financial Derivatives’, *Cato Policy Analysis*, no. 283, 11 September 1987. See also, for an analysis of capital markets under uncertainty, Sunanda Sen, *Global Finance at Risk: On Real Stagnation and Instability*. Palgrave-Macmillan, Houndsmill, 2003. Pp 31-39

<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

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<sup>5</sup> J.R. Hicks, *Critical Essays in Monetary Theory*. Clarendon Press, 1967.

<sup>6</sup> UNCTAD, *Trade and Development Report 2009*, p. 54.

<sup>7</sup> UNCTAD, *op. cit.*, pp 74-78.

<sup>8</sup> Maria Cristina Mercuzzo, Annalissa Roselli, Alionora Sanfillippo “Speculation and Buffer Stocks: The Legacy of Keynes and Kahn”. Processed, 2009.