

THE IMPACT OF DERIVATIVES ON MARKET FUNCTIONING

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Abstract: Derivatives were initially a response to the increased volatility of financial markets, but then the growth of financial derivatives has played a role in exacerbating shocks. Hence, implications of derivatives for the functioning of financial markets may differ between normal and crisis conditions. In normal market conditions, derivative markets perform a number of economic functions likely to help in discovery of future as well as current prices, to improve risk-sharing, to enhance the liquidity and efficiency in the market for the underlying asset etc. Given their leverage and low transactions costs, derivatives facilitate the taking of speculative positions and can assist uninformed investors in taking market positions, which could finally reinforce markets fall. In times of stress, they may increase the valuation uncertainties which inevitably arise in such periods.

JEL classification: G15, G32

Key words: derivatives, financial markets, risk-sharing, underlying asset, leverage

1. INTRODUCTION

Derivatives market financial transactions arose from the desire of traders to cover commercial and financial risks of their operations. Increasing volume of international market and derivatives gave rise to a constant diversification as new tools and new underlying assets for these instruments. On the other hand there are many opinions that come to criticize the use of such instruments considering that they were one of the causes that generated the crisis on Wall Street, which was the starting point of the global crisis.

2. OBJECTIVES

The large-scale use of financial derivative instruments is likely to have altered the economic and financial market environment. Giving the economic functions of derivatives and their implications on the performances of markets related, they become a favorite subject for modern economics. The importance of derivatives is also crucial in shaping economic policies, particularly from a monetary point of view.

The purpose of this article is to analyze some aspects of the benefits that derivatives have demonstrated over time and identify some negative aspects that the current financial crisis has highlighted. In this way, we try to stimulate a debate on the way to reduce the great potential systemic instability that derivatives could generate.

3. METHODOLOGY

The Bank for International Settlements' (BIS) surveys was the source of data. The market size is measured through the indicators of notional amounts and gross market value, whereas activity is measured by average daily turnover of notional amounts. Also, data were collected from published materials, books and academic working papers. The collected data may be processed and analyzed in order to make the present study useful to the readers, interested parties and policy makers of the concern area.

4. ANALYSES

The history of derivatives markets reveals that the earliest contracts were linked to tulip bulbs in Holland and to rice in Japan in the 17th century. Despite the early use, the derivatives were known in small areas until the 1970s, when the global economic conditions have changed. In that decade, giving up the principles which have guided international financial system designed to Bretton Woods, increased sharply the volatility of exchange rates and interest rates, making it imperative to find efficient ways to hedge related risks. The demand for financial products to manage risk was increased by soaring international trade and capital flows¹. Derivatives seems to meet best the new challenges of financial markets.

The development of the Black-Scholes formula in the early 1970s added advances in the pricing of derivatives². Then the introduction of cheaper, faster computers to manage the computations, changed the trading of derivatives forever and led to spectacular growth. As people became successful quickly, they used derivatives not to reduce their risk, but to take on more risk to make more money. Businesses started to go into areas that was not necessarily part of their underlying business.

The growth has materialised especially in OTC transactions, as illustrated by the graph below. The OTC derivatives markets are decentralized and unregulated (except by contract law), and the parties are not required to report transactions. Their rapid growth and the limited transparency of over-the-counter (OTC) markets compared with official exchanges have led to a great discussion of the role they play in modern financial markets.

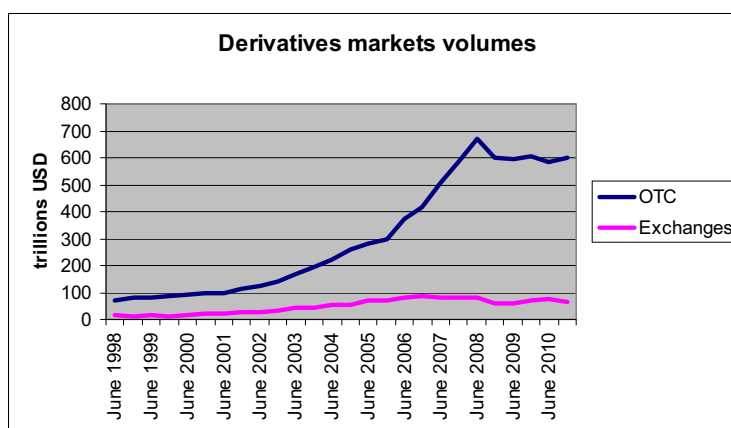
In June 2008, the total notional amount of derivatives traded over the counter reached a pick of 672 trillion american dollars, an increased of ten times compared to 1998, the year when Bank for International Settlements has been able to estimate the size of the OTC market for derivatives by surveying financial firms³. By the end of 2010 the OTC market value of derivatives was limited to 601 trillion American dollars, a small decrease thinking that the global financial crisis put them in a bad light, being accused that they acting as triggers of the crisis.

By comparison, the volumes traded on the exchange markets is significantly smaller. Also, activity keeps on expanding more rapidly in OTC than in official markets, where the total notional amount of derivatives registered an increased of only five times the value from 1998.

¹ Bodnar, G. M.; Gebhardt G., Derivatives Usage in Risk Management by U.S. and German Non-Financial Firms: A Comparative Survey, CFS Working Paper Nr. 98/17

² Stulz, R. M., Demystifying Financial Derivatives, The Milken Institute Review, Third Quarter 2005, p. 24

³ Fratianni M., Pattison J., The Bank for International Settlements: An Assessment of its Role in International Monetary and Financial Policy Coordination, Open economies review 12: 197–222 (2001), Kluwer Academic Publishers



Source: Bank of International Settlement, http://www.bis.org/publ/otc_hy1105.htm

Figure no. 1

The growth of derivatives markets is due to the positive effects in normal market conditions including:

- enhancing the liquidity and efficiency in the market for the underlying asset. The empirical data suggest that bid-ask spreads on the underlying assets decrease after the listing of derivatives. Also, the discovery price effect is an important benefit is that derivatives can make underlying markets more efficient.

- allow investors to choose the combination of risk and return that optimizes the resources' allocation⁴. With a small payment, the initial margin, the investor can open a position in derivatives benefiting from the favorable movement of prices and exploiting the leveraged effect. This strategy allow a combination of risk and return that other financial assets cannot guarantee.

- offer alternative sources of demand and supply, allowing price changes to be transmitted from one market to another⁵. In that way, derivative market is acting as a safety valve., helping to diffuse disturbances.

- make it possible to hedge risks that otherwise would not be possible to hedge; so, firms can take on riskier, but more profitable projects by hedging. Also, redistributing risks, there is likely to be a reduction in the fragility of the financial system.

These considerations suggest that derivatives may help, in normal market conditions, to stabilise financial markets, to improve the overall risk bearing capacity of the economy generally.

Having some examples in the recent history of financial markets of turbulences, like collapse in equity prices, decline in the bond prices, tensions in currency markets, all culminating with the current global financial crisis, it become necessary to think of several ways in which derivatives may have been a contributing factor.

Minimizing the cost of opening a position on the market, derivatives become an attractive tool for speculators. The main risk is to be used by uninformed investors, tempted only by their leverage and low transactions costs, not owners of additional market positions for the underlying asset. When traders in derivatives are neither market makers

⁴ Savona, P., Maccario, A.; Oldani, C., On Monetary Analysis of Derivatives, Open economies review 11:S1 149–175 (2000), Kluwer Academic Publishers, p. 155

⁵ Hannoun H. (coord.), Macroeconomic and Monetary Policy Issues Raised by the Growth of Derivatives Markets, Working Paper of the Bank of International Settlements, 1994, p.17-18

nor do they have any interest in the underlying they facilitate speculation, volatility and the building up of risks in the system.

In times of stress, derivatives may increase the valuation uncertainties which arise in such periods. The statistical and mathematical techniques which underlie pricing and trading strategies are based on the assumption that historical distributions of price changes are reasonable guides to future volatility. In situations of crisis, such assumptions can become invalid.

5. CONCLUSIONS

Derivatives represent one of the greatest financial innovations of the last years. They have many roles on the financial markets starting with giving hedging opportunities for investors, new opportunities to diversify their portfolios for market agents, offering new combinations of costs and profits that fit their preferences. In that way they have a great contribution to enlarging financial markets.

Dominant literature has pointed out these advantages, underlining derivatives' role in boosting market efficiency with the price discovery effect and with the decrease in market volatility. But, it seems to us that most economists and institutions have not paid enough attention to study the impact of derivatives at the macro level, on market functioning in distressed conditions. And, unfortunately, the current financial crisis has illustrated that these risks are not theoretical but real. The current crisis has highlighted the need to deal with OTC derivatives markets to allow them to fulfil their economic role in a way which does not endanger the stability of the system.

Derivatives didn't cause this financial meltdown but they did accelerate it. Derivatives revolutionized the financial markets and will likely be here to stay because there is such a demand for insurance and mitigating risk.

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