GOVERNING GLOBAL DERIVATIVES
To Andrea
GOVERNING GLOBAL DERIVATIVES

Challenges and Risks

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Preface and acknowledgements

The role of derivatives in governing global finance

Derivatives world markets involve resources that are more than 10 times bigger than world GDP. Despite their size, the literature has devoted very little attention to their global effects, which materialized in a very negative and unexpected way in 2007. Apart from their size, these securities play a special role in the present international financial structure, which is highly deregulated and where there is little compensation for risks. Derivatives, as with other innovative financial securities in the history of economics and finance, deserve our attention because they contribute to modify the world financial system. The dominating finance theory relies on a perfect market hypothesis and considers the free market as the best scheme to design an efficient system; however, the perfect market hypothesis holds when rules and markets players are homogenous, which we will see is unfortunately not our situation.

Derivatives have been traded in the world financial system since the ancient Mesopotamian empire, 1,700 BC, when commodity-related risks were hedged by means of forward-future types of contracts, whose details and working were not very different from those traded today. The amazing dimension and growth of the world derivatives market can be demonstrated in a few figures: according to the BIS Triennial Survey released in December 2007, the average daily turnover of traditional foreign exchange derivatives has grown by an unprecedented 71% rate since April 2004, reaching $4.2 trillion, which corresponds to an annual 20% increase; the average daily turnover rose by 65% in the same period. This increase was much stronger than the one observed in the previous survey, between 2001 and 2004. What is interesting to emphasise is that the composition of turnover by counterparty changed substantially. Transactions
between reporting dealers and non-reporting financial institutions, such as hedge funds, mutual funds, pension funds and insurance companies, more than doubled between April 2004 and April 2007 and contributed more than half of the increase in aggregate turnover

[Insert Tab. 1 preface]


The virtues of derivatives justify their amazing growth: exchange-traded contracts are liquid, available at the world level, and traded on a 24-hour basis, with an ever increasing range of maturities and underlying assets; OTC contracts are designed around customers’ needs, and then are flexible and non standardized. Derivatives break existing rules on accounting, monitoring and supervision, and this explains the most common perception of them, which is not very positive. Following some losses, Warren Buffett named derivatives “weapons of mass destruction”, or “time bombs” in 2003. But, after a certain number of realized gains, he changed his mind, and in the 2007 shareholders’ letter of Berkshire Hathaway, admitted the use of derivatives and showed the profits they brought to his fund. Buffett’s opinion does not seem very consistent, but I believe that his change of mind is simply the result of deeper knowledge and more aware trading of such complex securities.

I want to contribute to the debate on derivatives by clarifying the role these securities play in the international financial system, which at present has a very unstable structure. Deregulated markets and players, such as hedge funds and subprime mortgages and lending, modify the structure of the system and its equilibrium by attracting resources under opaque rules, and altering the effectiveness of prudential rules (like Basle II) as well as diminishing the ability of international financial institutions to intervene
successfully when a shock or crisis occurs. Derivatives have great virtues, but can contribute to exacerbate risks and losses if misused. This book is devoted to a wide range of readers: academics, professionals and civil servants, who are interested in the evolution of finance and should be aware of the potential negative effects of mismanagement and misreporting.

The introduction of the fair value accounting principle as the single measure for all financial securities in the balance sheet of banks, financial and non-financial institutions represents an important turning point, which should lead to a better representation of exposure to risks. At the same time, it can increase the firm’s volatility and then affect its valuation by markets’ participants. The ever-growing figures related to derivatives transactions pose a number of challenges with respect to financial globalization, which, at present, is highly unregulated. The number of derivatives-related crises are small, but their size is not. The LTCM, probably the best known and worse case ever of bankruptcy, registered some US$3.5 billion losses under the very small capitalization regime allowed for hedge funds. In 2008, the French bank Société Générale reported €4.9 billion losses related to positions taken by the equity derivatives desk. Since the bank does not operate under small capital, it recovered fast, the loss did not eliminate annual profits, but shareholders have been asked to intervene.

The deregulation process of financial markets and players has been the principle applied by US authorities, but, after the 2007 subprime mortgages crisis, doubts and concerns, domestically and at the international level, modified the strong belief that the market automatically comes back to equilibrium. In particular, the deregulation of OTC derivatives has been under scrutiny in the US since 2000, when the Security and Exchange Commission (SEC) testified to Congress to stimulate the development of a
better regulatory framework for OTC. At present, since some transactions are not under the control of the Commodity Future Trading Commission (CFTC), nor under the Commodity Exchange Act (CEA) “derivatives products can be tailored to circumvent regulation or tax consequences”. The approach of the SEC is that of increased legal certainty, and not of introducing bans or limits, since the SEC itself recognizes the strategic importance for firms of innovations such as OTC transactions. More recently, the SEC, CFTC, and Security Issue Board (SIB) have issued a common statement, based on which they will co-operate to a greater extent with respect to OTC derivatives. At the international level, the International Monetary Fund (IMF) has the duty of financial surveillance, and its mission should consider the evolving role and importance of the financial account of the balance of payments. At present, a crisis is more likely to originate in the financial account, than in the current account, as the first represents far more resources than the second in G10 countries. This evidence should be explicitly embodied in the Fund’s mission. Cooperation with the other institution that has superior knowledge in the field of derivatives and banking regulation, the BIS, should increase up to the moment when supervision, surveillance and standard settlements are implemented by the same authority.

Financial markets evolve due, not to rule-based, but to principles-based regulation. By applying principles, rather than rigid rules, which will one day or another be circumvented, it is possible to align regulation to business practices at a reasonable cost. Derivatives are leaders in the financial globalization process, and special types of contracts, like credit default swaps and currency derivatives, can be of help to achieve special objectives of the monetary authority. Derivatives play a role in the transmission mechanism of monetary policy; they influence the monetary aggregates, the portfolio
substitution, the interest rate channel and the expectations setting. The monetary nature of derivatives refers to their influence on money for transactions. Derivatives, especially exchange-traded futures, can provide the central bank with relevant information, although they cannot be considered as policy instruments, nor as substitutes for a more comprehensive monetary analysis. Derivatives are partly responsible for the progressive lack of informative power of wide money aggregates, as in the case of M3 in the USA. However, they can be of help in determining a different informative relationship between money and the underlying economic activity. Monetary policy is an expectation management exercise, aiming at price and financial stability. The Taylor rule is the operational rule adopted by most monetary authorities, and it links the nominal interest rate to deviations of inflation and output from their target (or potential) levels. This rule can be equipped with another relevant piece of information coming from financial markets, which has been the source of concern for a number of monetary authorities over the last decade. The implied volatility of options written on marketable and liquid contracts can signal market instability, providing information to the authority. Modern governments interact with financial markets in order to raise funds and manage expenses and outstanding public debt. They accept market rules, although, given their relative size and rule-setting ability, they can contribute to changing them. Derivatives can also be used to manage the tax burden of households. This behavior is limited to high-income and skilled taxpayers, but its effect are not negligible. Public debt management does not follow the same rules as those of corporate, or banking debt management. In particular, the accounting of financial instruments is not inspired by the IAS principles. If excessive risk is taken by non-monitored public administrations, the opaque representation of the actions of governments with derivatives and innovative
instruments can pose severe stability problems. Moral hazard is due to the lack of accounting, control and monitoring. International financial institutions, like the IMF, face political problems in setting the principles according to which they should monitor how sovereign states invest in financial markets. The proposal by the Government Accounting Standard Board (GASB) has my utmost support, since it is starting to introduce the first, necessary, transparency in this field. Derivatives are widely used for public debt management by US states, developing countries and in Europe. The disclosure of information is not satisfactory, and this issue becomes even more relevant when evaluating the financial stability of highly indebted countries, like Italy. After greater local freedom was introduced, Italy was very active in the derivatives markets, at central and periphery levels, but a comprehensive picture of amounts, rules and future effects is not provided. A small and simplified IS-LM model is shown to describe the adverse effects of a certain amount of risk taking with derivatives for a highly indebted country, in cases where the (autonomous) monetary authority independently sets a preference over the short-run interest rates that is not compatible with the preference of the government (e.g. restrictive monetary policy in the presence of high outstanding debt). The interest rate is the key variable for monetary authority rule (Taylor rule), and we consider how it can be meaningfully implemented with derivatives for the pursuit of stability. The interest rate is also the price of debt, private and public, and I show how opposite (or different) expectations and preferences can lead to an undesirable outcome. The interest rate is also the price of capital and investments. In the last part of the book we devote our attention to the process that leads to the investment decision, in which expectations play a key role. Since derivatives are able to incorporate expectations, they can be considered as having a role (i.e. signal) in the investment decision and, as a
result, in the capital accumulation process. Special derivatives, macroeconomic option contracts, can be useful instruments to hedge on future performance of countries. In the future, I expect the settlement of a market for derivatives on investments: as powerful tools for macroeconomic risks hedging.

The investment decision can be addressed by considering the ability of derivatives to incorporate market expectations; moreover, the market price of assets changes over time, and the Tobin’s Q can be modified and applied to derivatives. In perfect financial markets, the difference between investing in underlying and its derivatives should be null. But this is not verified empirically, since market expectation and risk change, modifying the risk premium on the basis of which investments are evaluated. The derivatives modified Q (*Replication Q*) can become an interesting tool to detect when market sentiment is changing; in these cases, any investment decision that relies on past performance is fundamentally mispriced. The hedging ability of derivatives can be employed to specify a stylized model of financial instability. Their contribution to stability is theoretically proved, but the model has non-linear solutions. The variables involved are interconnected in such a way that simple, two-directional relationships cannot be identified.

The interest rate is the price of money, of the public debt, and of a firm’s investment. Derivatives, especially futures and options, both exchange traded and OTC, exhibit a relationship with the interest rate and are important in the transmission mechanism of impulses in the global financial system. These linkages are of dramatic importance when considering that financial flows are completely liberalized and deregulated. I support the development and applications of international projects able to clarify risks and accounting rules of such relevant resources, such as the GASB project for
derivatives in the financial statement of governments, the IAS principles for corporate accounting, or the improvement of the IMF action. Financial global governance is missing, but global risks have not been eliminated by allowing free access to powerful financial securities to all operators. Financial derivatives are one of the most interesting expressions of animal spirits, but since we are not sure that markets can automatically reach equilibrium, nor that all market players are fully rational, we support a certain degree of monitoring over these securities. Derivatives have been referred to by practitioners in the field as being very similar to hell: easy to enter and almost impossible to get rid of. I hope this book will help in an understanding of both heaven and hell, and possibly light the way to the safest exit.

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*Chiara Oldani, Viterbo, Italy*

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List of abbreviations

ABS Assets Backed Securities
BIS Bank of International Settlements
CDO Collateralized Debt Obligation
CDSO Credit Default Swap Options
CFTC Commodity Future Trading Commission
CPI Consumer Price Index
CSO Credit Spread Options
DSGE Dynamic Stochastic General Equilibrium
EMU European Monetary Union
ET Exchange Traded
EU European Union
FAS Financial Accounting Standard
FASB Financial Accounting Standards Board
FRS Financial Report Standard
FSAP Financial Services Action Plan
GASB Governmental Accounting Standards Board
GDP Gross Domestic Product
IAS International Accounting Standard
IASB International Accounting Standards Board
IEA International Energy Agency
IMF International Monetary Fund
IMFs Institutional money funds
LTD Large Time Deposit
MIFID Market in Financial Instruments Directive

NK New Keynesian

OI Open Interest

SDR Special Drawing Right

SPV Special Purpose Vehicle

OTC Over The Counter

TRS Total Return Swaps