How to Avoid another Derivative Crisis:

Risk management for emerging markets

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Abstract:

The losses reported by companies and financial institutions caused enormous alarm and concern in society, as well as debate and confusion on the appropriate use of derivatives instruments. Were derivatives responsible for these losses or was it simply their poor management? The fact is that while derivatives securities can effectively control and hedge financial risks, their uncontrolled use can be very dangerous. The chapter "Derivative Products in Emerging Markets and Prudential Regulations", included in the monography Emerging Markets: Recent Developments, Challenges and Future Prospects (Nova Science Publishers, Inc., New York, 2018), examined the recent changes observed in derivatives trading in emerging markets, such as Mexico. In my experience as a practitioner and researcher of risk management and derivative products, I analyze the main obstacles to the adequate use of these instruments and offer practical recommendations for the use of efficient operational platforms, rigorous regulations and effective surveillance to discourage delinquencies and rogue trading within the financial service industry.

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This October will mark ten years since the ***derivatives crisis***, an unprecedented event in Mexico that caused sharp losses and put large listed companies, such as Comercial Mexicana (formerly, Comerci) – which entered into bankruptcy proceedings –, Vitro or Gruma, among others, on the brink of liquidation. These companies failed to measure the risks they were taking properly and used these financial instruments to speculate, instead of as hedges.

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The attraction of emerging markets

Since the early nineties, emerging countries have played a key role in the **derivative** and **structured products** markets. These countries are characterized by their political instability and lack of regulations or historical financial data. But, far from being an obstacle, their enormous volatility is one of their attractions for both speculators and hedgers.

Volatility is the most important factor for the valuation of "options contracts" on any financial and non-financial underlying assets. In fact, derivatives products are only of value in an **environment of uncertainty** (volatility or risk), which is precisely why they are so good at hedging the risk of unexpected fluctuations in the prices of typically volatile assets, such as: government and corporate bonds, raw materials, currencies, shares and market indices.

Derivatives do not reduce the inherent risks of volatile assets, but rather transfer the risk from a hedger to someone who is willing to assume the risk, such as speculators or risk-takers. Since the beginning of the seventies, derivatives securities have been used more and more often for hedging and investment purposes.

Why do companies use derivatives products?

Companies usually use derivatives products to:

- **Separate specific financial risks** from the function of financing or investment of financial instruments. For example, a company that is financed with variable rate debt can avoid the risk of an increase in the cost of the debt simply by contracting a swap contract.
- **Reassign risk** (i.e., dividing and sharing risks). This makes it possible to complete projects that are too risky for an investor or individual entity.
- **Implement investment strategies** less expensively than in cash markets through the purchase of futures contracts on market indices.
- **Reduce borrower costs** by allowing counterparts to negotiate their competitive advantage.
- **Hedge transaction exposure** in confirmed import/export transactions or debt issue.
- **Protect expected cash flows** or the company’s value from fluctuations in financial and raw materials prices.

An approach for emerging markets

Nevertheless, emerging markets have a set of characteristics that require different risk management approaches from those used in developed countries. For example:

- Negotiated securities are, in many cases, insufficient to **establish suitable benchmarks and historical data** for the valuation of certain operations, such as swaps contracts.
- Calculating the **"implied volatility"** of options prices as a benchmark is a challenge, given the few options of securities in currencies, interest rates, raw materials or market indices that are frequently negotiated.
- Emerging markets are characterized by **recurrent government interventions** in financial markets to stabilize the short-term impact of a current event or crisis. In these situations, risk calculations require estimations of the possible fall of financial markets in case of a possible crisis or event.
- The **investment risk is lower in information technologies** and talent with technical training in economics and finance, such as traders, arbitrageurs, quantitative analysts and risk managers.

Moreover, for derivatives markets to function in emerging countries, the following is required:

- **Liquid cash markets** that function satisfactorily and well-founded credit and financial institutions with a substantial number of traders, speculators and hedgers.
- **A legal structure** that includes a system of property rights and credible commercial contracts.
- **Support from the local government** and legislators, and adequate financial resources to create successful derivatives clearing houses.
- **Absence of similar derivatives products** that compete in transactions with well-established foreign derivatives.

In general, a greater understanding of derivatives products and their risks is needed. As mentioned beforehand, this can be accomplished by implementing a series of institutional changes that will help to reduce uncertainties in derivatives and structured securities.

In an increasingly integrated and changing world of financial markets, improved management and closer supervision of derivatives positions is preferable to the formal regulations centered on specific instruments, markets or participants. Logically, this must be combined with a clearer legal framework, well-established risk management and accounting regulations that control their use, as well as a greater dissemination of derivatives and structured products.

Web link to the article in English:

https://egade.tec.mx/en/ideas/how-avoid-another-derivatives-crisis

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References:

1. Al Janabi, M.A.M. (2018), "*Derivatives Products in Emerging Markets and Prudential Regulations*", in Claire Payne and Sidney Garcia (Eds.), *Emerging Markets: Recent Developments, Challenges and Future Prospects*, Nova Science Publishers, New York, USA. ISBN: 978-1-53613-039-3|.

2. Al Janabi, M.A.M. (2012), *"Derivatives Securities in Emerging MENA Markets: Structuring Lessons from other Financial Markets*", *Journal of Banking Regulation*, Vol. 13, No. 1, pp. 73-85.

3. Al Janabi, M.A.M. (2008), "*On the Appropriate Function of Trading Risk Management Units: Principal Objectives and Adequate Use of Internal Models"*, *Journal of Banking Regulation*, Vol. 10, No. 1, pp. 68-87.

4. Al Janabi, M.A.M. (2008), "*Internal Regulations and Procedures for Financial Trading Units"*, *Journal of Banking Regulation*, Vol. 9, No.2, pp. 116-130.

5. Al Janabi, M.A.M. (2006), "*Internal Risk Control Benchmark Setting for Foreign Exchange Exposure: The Case of the Moroccan Dirham*", *Journal of Financial Regulation and Compliance*, Vol. 14, No. 1, pp. 84-111.

6. Al Janabi, M.A.M. (2006), "*On the Inception of Sound Derivative Products in Emerging Markets: Real-World Observations and Viable Solutions*", *Journal of Financial Regulation and Compliance,* Vol. 14, No. 2, pp. 151-164.

Further Reading:

1. Al Janabi, M.A.M., Ferrer, R., and Shahzad, S. J. H., (2019). "Liquidity-adjusted value-at-risk optimization of a multi-asset portfolio using a vine copula approach". Physica A: Statistical Mechanics and its Applications, Volume 536, Article 122579.

2. Al Janabi, M.A.M., Arreola-Hernández, Jose, Berger, Theo, Khuong Nguyen, Duc, (2017), "Multivariate Dependence and Portfolio Optimization Algorithms under Illiquid Market Conditions", European Journal of Operational Research, Vol. 259, No. 3, pp. 1121-1131.

3. Al Janabi, M.A.M. (2021a), "Is Optimum Always Optimal? A Revisit of the Mean-Variance Method under Nonlinear Measures of Dependence and Non-Normal Liquidity Constraints". Journal of Forecasting, Vol. 40, No. 3, pp. 387-415.

4. Al Janabi, M.A.M. (2021b), "Multivariate Portfolio Optimization under Illiquid Market Prospects: A Review of Theoretical Algorithms and Practical Techniques for Liquidity Risk Management". Journal of Modelling in Management, Vol. 16, No. 1, pp. 288-309.

5. Al Janabi, M.A.M. (2014), "Optimal and Investable Portfolios: An Empirical Analysis with Scenario Optimization Algorithms under Crisis Market Prospects", Economic Modelling, Vol. 40, pp. 369-381.

6. Al Janabi, M.A.M. (2015), "Scenario Optimization Technique for the Assessment of Downside-Risk and Investable Portfolios in Post-Financial Crisis", Int. J. of Financial Engineering, Vol. 2, No. 3, pp. 1550028-1 to 1550028-28.

7. Al Janabi, M.A.M. (2013), “Optimal and Coherent Economic-Capital Structures: Evidence from Long and Short-Sales Trading Positions under Illiquid Market Perspectives”, Annals of Operations Research, Vol. 205, No. 1, pp. 109-139.

8. Al Janabi, M.A.M. (2012), “Optimal Commodity Asset Allocation with a Coherent Market Risk Modeling”, Review of Financial Economics, Vol. 21, No. 3, pp. 131-140.

9. Al Janabi, M.A.M. (2011), “A Generalized Theoretical Modeling Approach for the Assessment of Economic Capital under Asset Market Liquidity Risk Constraints”, Service Industries Journal, Vol. 31, No. 13 & 14, pp. 2193-2221.

10. Al Janabi, M.A.M. (2011), “*Economic Capital Allocation under Coherent Market Liquidity Constraints*”, *Journal of Economic Research,* Vol. 16, No. 2, pp. 147-186.

11. Al Janabi, M.A.M. (2011), “*Dynamic Equity Asset Allocation with Liquidity-Adjusted Market Risk Criterion: Appraisal of Efficient and Coherent Portfolios*”, *Journal of Asset Management*, Vol. 12, No. 6, pp. 378-394.

12. Al Janabi, M.A.M. (2011), “*Modeling Coherent Trading Risk Parameters under Illiquid Market Perspective*”, *Studies in Economics and Finance,* Vol. 28, No. 4, pp. 301-320.

13. Al Janabi, M.A.M. (2009), “*Commodity Price Risk Management: Valuation of Large Trading Portfolios under Adverse and Illiquid Market Settings”*, *Journal of Derivatives & Hedge Funds,* Vol. 15, No. 1, pp. 15-50.

14. Al Janabi, M.A.M. (2008), “Integrating liquidity risk factor into a parametric value at risk Method”, Journal of Trading, Vol. 3, No. 3, pp. 76–87.

15. Al Janabi, M.A.M. (2007), “*Risk Analysis, Reporting and Control of Equity Exposure: Viable Applications to the Mexican Financial Market”*, *Journal of Derivatives & Hedge Funds,* Vol. 13, No. 1, pp. 33-58.

16. Arreola-Hernandez, J. and Al Janabi, M.A.M. (2020), “Forecasting of dependence, market and investment risks of a global index portfolio”. Journal of Forecasting, Vol. 39, No. 3, pp. 512-532.

17. Arreola-Hernandez, J., Hammoudeh, S., Khuong, N.D., Al Janabi, M.A.M., and Reboredo, J.C., (2017), “Global financial crisis and dependence risk analysis of sector portfolios: a vine copula approach,” Applied Economics, Vol. 49, No. 25, pp. 2409–2427.

12 Arreola-Hernandez, J., Al Janabi, M.A.M., Hammoudeh, S. and Nguyen, D.K. (2015), “Time lag dependence, cross-correlation and risk analysis of U.S. energy and non-energy stock portfolios,” Journal of Asset Management, Vol. 16, No. 7, pp. 467-483.

13 Asadi, S., and Al Janabi, M.A.M. (2020), “Measuring market and credit risk under Solvency II: Evaluation of the standard technique versus internal models for stock and bond markets”, European Actuarial Journal, Vol. 10, No. 2, pp. 425–456.

14 Grillini, S., Sharma, A., Ozkan, A., & Al Janabi, M.A.M. (2019), "Pricing of time-varying illiquidity within the Eurozone: Evidence using a Markov switching liquidity-adjusted capital asset pricing model". International Review of Financial Analysis, Vol. 64, pp. 145-158.

15 Uddin, M.S., Chi, G., Al Janabi, M.A.M., and Habib, T., (2020), "Leveraging random forest in micro-enterprises credit risk modeling for accuracy and interpretability". International Journal of Finance & Economics, Early View: https://doi.org/10.1002/ijfe.2346