



# **UNIVERSIDAD NACIONAL DEL SUR**

**TESIS DE DOCTORA EN ECONOMIA**

**VALUACIÓN DE ACTIVOS FINANCIEROS INCORPORANDO MOMENTOS  
ESTOCÁSTICOS, NO LINEALIDAD Y VARIABILIDAD TIEMPO DE  
PARÁMETROS**

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## **RESUMEN**

Los clásicos modelos financieros suponen normalidad en la distribución de probabilidad empleada para la valuación de activos. La afirmación precedente implica asumir un comportamiento homocedástico y leptocúrtico para las serie de rendimientos de un activo. En la práctica, las series de retornos presentan particularidades o características tales como i) volatilidad agrupada, ii) muy poca o ausencia de autocorrelación en los retornos iii) dependencia entre los cuadrados de los retornos, iv) distribuciones de retornos con colas pesadas, entre otras. Estas características se presentan, por ejemplo, cuando el proceso generador de datos tiene distribuciones condicionales que cambian en el tiempo, en particular en la volatilidad.

Al considerar la volatilidad como un proceso estocástico se busca ajustar un modelo que permita describir y analizar su comportamiento presente y a partir de éste su comportamiento futuro. Dentro de estas alternativas para recoger estas características de las series temporales se han planteado en la literatura los modelos no lineales de la familia ARCH, modelos que permiten especificar el comportamiento de la varianza.

En este contexto el objetivo general de las tesis consiste en estudiar y modelar el comportamiento de la serie de rendimientos de activos en países emergentes con el objeto de estimar la volatilidad para mercados emergentes. La importancia de esta medida reside en el hecho de que posteriormente podrá ser empleada, entre otras cosas, para encontrar aquellas instituciones que generan mayores *spillover effects* para el sistema financiero cuando se considera un ambiente financiero adverso, buscando limitar los riesgos sistémicos y los costos de las crisis financieras, así como también fortalecer al sistema financiero contra shocks externos.

**ABSTRACT**

Classical financial models assume the normality of the probability distribution used in the valuation of assets. This implies that series of asset returns are expected to be homoscedastic and leptokurtic. In fact, real-world series of return show the following features: i) volatility clustering, ii) little or no autocorrelation, iii) dependence among squared values and iv) heavy tails, among others. These are properties that arise when, for instance, the conditional distribution of the data generation process changes in time, particularly its volatility.

When volatility is seen as a stochastic process itself, a model able to describe and predict present and future values can be fitted. Among the many alternative ways in which this has been done in the literature, we can distinguish the nonlinear models of the ARCH family specifying the behavior of the variance of the series. Following that lead, we study and model herein the behavior of asset returns in emerging countries in order to estimate the volatility of their markets. The importance of this estimation lies in that it can be used, among other things, to detect the institutions that generate larger spillover effects in a financial system, particularly in an adverse context, in which a limitation of systemic risks and the costs of financial crises are sought, and the financial system is strengthened against external shocks.

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