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American Option Pricing under Markov-Modulated Pure Jump Processes

***Ali Foroush Bastani*[1], *Khosro Safy*[2]**

Abstract: In this paper, we present an approximate solution method based on finite-differences to the American option pricing problem under a Markov modulated. It could be shown by Ito calculus that the option price under this process satisfies a system of partial integro-differential equations (PIDEs) in which each equation is linked to an unknown early exercise (optimal) boundary. After extending the system to the entire domain by employing the dividend process, we arrive at a new numerical scheme. The results obtained support the claim that this scheme is stable and convergent. In conclusion, some further possible applications of this method specially in credit risk will be highlighted.

Keywords: ***American Option Pricing, Pure Jump Process, Finite Difference Method, Regime Switching Process*.**

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The Impact of Off-balance-sheet Activities on the Risk of Banks Listed in TSE

Mohammad Nadiri[1], Maryam Behzadi[2], Marziyeh Nourahmadi[2]

Abstract: In this study, we analyzed and investigated off-balance sheet (OBS) activities based on the annual financial statements of banks during 2005-2015 with using data panel regression method, in three levels of total risk, bankruptcy risk and credit risk, in the 8 State owned banks and private owned banks separately. The results show that, the impact of the OBS activities on the overall risk in all banks and state banks is negative and segnificant although is not segnificant in private banks. OBS activities decreas credit risk and bankruptcy in State owned banks, but their impact on credit risk and bankruptcy of all banks and private owned banks is not significant, although its sign is positive.

Keywords: *Credit Risk, Total Risk, Bankruptcy Risk, Off-balance Sheet Activities***.**

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CAPM Anomalies Analysis in Respect of Hierarchical Bayesian Approach

***Seyed Jalal Tabatabaei*[1]**

Abstract: The purpose of investors gets rational returns for investing in firms' stocks. Stock price or changes in it is one of the criteria for decision-making about buying and selling stocks. This study has tried to access capital asset pricing anomalies in TSE. The sample consisted of112 selected companies during the years 1384-1394. Firm characteristics as of anomalies include firm size, book value to market value, momentum, net marginal profit, asset growth rate, and the share issue. The hierarchical Bayesian approach in modeling conditional alpha on the company as a function of the characteristics of the company has been introduced. The results of the study show the existence of anomalies in the capital asset pricing model in separate analysis of characteristics. But the effect at the simultaneous analysis of the characteristics is reduced. The results indicate that there is a direct relationship between stock returns and four variables named book value to market value, momentum, net marginal profit and share issue but the relations between stock returns, firm size and growth rate of assets, would be inverse.

Keywords: ***Anomalies, The Hierarchical Bayesian, Capital Asset Pricing.***

JEL: G10, G12, G14

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House prices and Lending Performance of Banks

Saeed Rahimian[1] Mahrokh Alimirzaei Soloush[2]

Abstract: This paper investigates the effect of fluctuations in housing prices on bank lending performance using panel data of 50 banks in the United States. Bank lending behavior, proxied by non-performing loan and loan growth rate, has been analyzed using dynamic panel approach. Moreover, we disentangle the influence of different types of loans (real estate, commercial and industry and consumer) on lending behavior to explore any difference in the strength of them.

The results show the house price fluctuations significantly affect the dynamics of bank lending performance, while the magnitude of the impact varies across loan categories.

Keywords: ***Bank Lending Performance, Nonperforming loan, loan behavior, Housing Prices.***

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Bayesian Modeling Speculative Bubbles in Iran Stock Market

Reza Habibi[1] , Mohamadreza Salehi[2] , Mohamad Zarepoor[3]

Abstract: Bubbles are one of the most destructive factors of any market. In bubble literature, there are a variety of statistical and economic methods available to diagnose. These models generally suffer from math complications. In this paper, a simple statistical model is presented to identify speculative bubbles in stock markets. Since the parameters estimates of model are time varying, including transition probabilities, it is possible identify when and how newly born bubbles grow and burst over time. The parameters of the model can be estimated by recursive relations, however, since they require a huge storage capacity for computers, approximation in the computation are introduced which maintains the recursive nature of estimations. We then apply this model to the stock markets of the United States, Japan, and China and Iran. Advantages of this model are its simplicity, recursive relations, approximations and the use of Bayesian inference. Empirical results show the efficiency of this model in diagnosing the speculative bubbles.

Keywords: ***Financial market, Bayesian modeling, Speculative bubble.***

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Studying Investors Behavior and Monthly Effect Using Time-Space-frequency Analysis (Case Study: Tehran Stock Exchange)

Saman Mohammadi[1], Mosen Dastgir [2], Mehrdad Ghanbari[3]

Abstract: Anomaly, are events and happening that cannot explain them with dominant theory. About the stock market, anomaly is placed in the face of efficient market theory, so that in the case of existing patterns predetermined provides conditions for stock trading strategy with excess returns (over a certain amount of risk). The aim of this study is to investigate the anomaly of Monthly Effect and its effect on stock trading volume and volatility of stock index on Tehran Stock Exchange in the period of 2005 to 2015. Two models are designed to investigate this issue and using space-time-frequency analysis (Continuous Wavelet Transform and Short-time Fourier Transforms) have been tested. The results obtained of models test of this study show that Tehran Stock Exchange is inefficient and stock trading volume and volatility of stock index in the first half of calendar month is different than the second half. The results also indicate that market tension in the first half of month is more than the second half of calendar month.

Keywords: ***Market Anomaly, Monthly Effect, Behavioral Finance, Time-space-Frequency Analysis, Market Tension.***

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Does Time-Varying Beta Improve Asset Pricing? Evidence from TSE

Mehdi Asima[1], Amir Ali Abbaszadeh Asl[2]

Abstract: Capital asset pricing model (CAPM) has been among the common models to estimate expected rate of return. Single-period standard capital asset pricing model assumes that investors have homogeneous expectations regarding return, risk and covariance of assets, therefore, the coefficient beta is constant. Because of changes in economic conditions, it is possible to revolve trade-off of investors in terms of return and risk in financial markets and beta was time-varying. Hence, threshold model has been used to estimate time-varying beta. Therefore, in this study, predictive power of the threshold CAPM and standard CAPM in Tehran Stock Exchange in the period from 2006 to 2015 has been tested. For this purpose, expected returns has estimated with regard to two abovementioned models during period of the study and the results have compared with realized returns. Mean absolute percentage error and especially Diebold-Mariano test are used to measure predictive power of the models. The results indicate that using threshold capital asset pricing model significantly increases predictive power of realized returns.

Keywords: ***Time-Varying Beta, Threshold Regression, Linear Capital Asset Pricing Model, Nonlinear Capital Asset Pricing Model.***

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