CHAPTER 2

NONLINEAR COINTEGRATION RELATIONSHIP BETWEEN STOCK PRICE AND TRADING VOLUME: EVIDENCE FROM BORSA ISTANBUL

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INTRODUCTION

The trading volume, which has a great importance on stock prices and stock price volatility, reflects the cumulative response of investors to new news coming to the market. At the same time, trading volume is an important indicator that measures the information flow that cannot be observed but affects the market (Andersen, 1996; Lamoureux and Lastrapes, 1990). For these reasons, it has a critical importance in the process that creates stock prices and their volatility. The trading volume does not only play an important role on market information, but also reflects information about changes in the investors' expectations in the market (Harris and Raviv, 1993). When there is an increasing information flow to the market, an increasing number of investors are trading at the same time and the ways in which investors interpret the news affecting the stock value are different. In addition to shaping their expectations are also based on many factors such as market structure, quality and quantity of information, investors' experiences, risk preferences and strategies (Puri and Philippatos, 2008).

Karpoff (1987) explaines the importance of the relationship between price and trading volume in four reasons: 1) The linkage between price and trading volume provides information about the structure of financial markets. Theoretically, the low trading volume indicates that a market has a non-liquid structure. This means high price volatility. On the other hand, high trading volume means that the market is highly liquid and the result is low price volatility. In general, with the increase in volume, commission income will also increase, so market regulators are

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REFERENCES

- Ahmed, H.J.A., Hassan, A., Nasir, A.M.D. The relationship between trading volume, volatility and stock market returns: a test of mixed distribution hypothesis for a pre and post crisis on Kuala Lumpur stock exchange. Investment Management and Financial Innovations, 2005; 3, 146-158.
- Andersen, T.G. Return volatility and trading volume: An information flow interpretation of stochastic volatility. Journal of Finance, 1996; 51, 169-204.
- Clark, P. A subordinated stochastic process model with finite variance for speculative prices. Econometrica, 1973; 91, 135-156.
- Copeland, T. A model of asset trading under the assumption of sequential information arrival. The Journal of Finance, 1976; 31, 1149-1168.
- Cornell, B. The relationship between volume and price variability in futures markets. The Journal of Futures Markets, 1981; 1, 303-316.
- Enders, W. Siklos, P. Cointegration and threshold adjustment. Journal of Business and Economic Statistics, 2001; 19, 166–176.
- Engle, R.F, Granger, C.W.J. Cointegraiton and error correction: representation, estimation and testing. Econometrica, 1987, 55, 251-276.
- Epps, W., Epps, M. The stochastic dependence of security price changes and transaction volumes: Implications for the mixture of distribution hypothesis. Econometrica, 1976; 44, 305-321.
- Grammatikos, T., Saunders, A. Future price variability: A test of maturity and volume effect. Journal of Business, 1986; 59, 319-330.
- Harris, L. The joint distribution of speculative prices and of daily trading volume. Working Paper, 1983; 34-84, Los Angeles: University of Southern California, Department of Finance and Business Economics.
- Harris, L. Transactions data tests of the mixture of distributions hypothesis. Working Paper, 1984; 31-84, Los Angeles: University of Southern California, Department of Finance and Business Economics.
- Harris, L. A transaction data study of weekly and intraday patterns in stock returns. Journal of Financial Economics, 1986; 16, 99-117.
- Harris, M., Raviv, A. Differences of opinion make a horse race. Review of Financial Studies, 1993; 6, 479-506.
- Jennings, R.H., Starks, L.T., Fellingham, J.C. An equilibrium model of asset trading with sequential information arrival. Journal of Finance, 1981; 36, 143-161.
- Karpoff, J.M. The relation between price changes and trading volume: A survey. Journal of Financial and Quantitative Analysis, 1987; 22, 109-126.
- Lamoureux, C.G., Lastrapes, W.D. Heteroskedasticity in stock return data: Volume versus GARCH effects. Journal of Finance, 1990; 45, 221-229.
- Mckenzie, M.D., Faff, R.W. The determinants of conditional autocorrelation in stock returns. The Journal of Financial Research, 2003; 26, 259-274.
- Mcmillan, D., Speight, A. Return-volume dynamics in UK futures. Applied Financial Economics, 2002; 12, 707-713.
- Puri, T.N., Philippatos, G.C. Asymmetric volume-return relation and concentrated trading in LIFFE futures. European Financial Management, 2008; 14, 528-563.
- Sharma, J.L., Mougoue, M., Kamath, R. Heteroskedasticity in stock market indicator return data: Volume versus GARCH effects. Applied Financial Economics, 1996; 6, 337-342.
- Tong, H. (1983). Threshold Models in Non-Linear Time Series Analysis, New York: Springer-Verlag. Ying, C.C. Stock market prices and volumes of sales. Econometrica, 1966; 34, 676-685.
- Yüksel, A. The performance of the Istanbul Stock Exchange during the Russian crisis. Emerging Markets Finance and Trade, 2002; 38, 78-99.