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Herding Behavior in Stock Market: An Empirical Analysis in ISE

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Extensive Summary

Financial crises generate a great deal of pressure on all markets. Especially in less efficient or less deeper markets like developing markets, the pressure of global systematic risk factors as well as unsystematic risk factors could frequently be observed on overall movement of the market. When a severe financial panic is being experienced, investors can have decisions beyond rationality and show the herding behavior following the overall market behavior in all markets and primarily in developing markets whose depth is not sufficient. It is important to detect the effect of herding behavior in markets in order to assess the validity of rational asset pricing models and diversification opportunities.

Two fundamental models developed to determine the existence of herding behavior in markets are Christie and Huang (C-H) (1995) and Chang, Cheng, and Khorana (CCK) (2000) models. C-H (1995) used cross-sectional standard deviation (CSSD) criterion to test the herding behavior. C-H (1995) stated that low CSSD criterion gives a hint about the existence of herding behavior but it does not prove it. To identify the herding behavior in financially pressured markets, they used a linear regression model with a dummy variable representing time period like day or week at extreme returns have been experienced.

CCK (2000) analyzed the relation between equity return dispersion and overall market return dispersion using a non-linear regression model. CCK model is unique not just because it was designed in a non-linear form but also because of the dispersion measure they used. CCK (2000) proposed cross-sectional absolute deviation (CSAD) criterion instead of CSSD.

The literature on herding behavior effect can be followed by studies like Christie and Huang (1995), Chang, Cheng, and Khorana (2000), Al-Shboul (2012), Demirer et al. (2010), Fu and Lin (2010), Kapusuzoğlu (2011), Altay (2008), Henker et al. (2003), Hwang and Salmon (2004), Khan et al. (2011), Demirer et al. (2007), Economou et al. (2011), Chiang et al. (2011), My and Truong (2011), Tan et al. (2008), and Wang (2008). In summary, related literature tends to conclude that C-H model does not generate healthy results. On the other hand, with the use of CCK model, it has been seen

that herding behavior effect takes place especially in developing markets. Theoretically this situation is consistent with the expectations since developing markets have more fragile structure because of the reasons like low number of total market participants, low transaction volume, behavior of foreign investors with speculative purpose etc. Those markets with lower efficiency and depth can fall into the financial crisis environment quickly while they can come out of financial stress with difficulty.

In this study, herding behavior effect on the basis of indices has been investigated by using daily logarithmic returns of stocks placed on Istanbul Stock Exchange (ISE)-All, Financials, Industrials, and Services Indices between the time period of January 1997 – July 2012. Additionally, most liquid 10 stocks which have been traded at least 4000 lots every trading day during 1997 – 2012 period have been identified and how is the effect for most liquid stocks has been analyzed. By dividing the research period into two sub-periods as 1997-2004 and 2005-2012, a comparison between the early years and recent years, when the market has been thought as deeper and more efficient compared to early years, has been conducted. Average market returns as benchmark portfolios at all models have been derived by cross-sectional average returns of stocks placed in analyzed portfolios.

Evaluating the overall period of 1997-2012, herding behavior effect has been detected at all five portfolios, i.e. ISE-All, Financials, Industrials, and Services Indices and the portfolio of most liquid 10 stocks. Evidence obtained from rising and falling markets, which demonstrates financially distressed environment, has also supported the herding behavior effect.

The parameters of regression model predicted for the first sub-period (1997-2004) indicate that herding behavior effect exists in rising markets but the same effect is absent in falling markets. The results are consistent with Al-Shboul (2012) and Tan et al. (2008). Our findings support the argument that market participants demonstrate herding behavior around an indicator like an index displaying a common behavior of all market components when there exist relatively expansive and "positive" fluctuations and that it leads up to a non-linear relationship between CSAD and average market returns. The findings of 2005-2012 sub-period when the market has been thought as deeper and more efficient are supportive of that idea. There has not been observed any herding behavior effect in ISE-All Index and ISE-Industrials Index while the effect has been observed in ISE-Financials and the portfolio of most liquid 10 stocks only in rising market conditions. ISE-Services Index is the portfolio that the effect has been observed at most. When reviewed with the assertion in the literature that herding behavior effect is to be seen especially in developing markets, second sub-period findings support the idea that ISE is a deeper market now compared to late 1990's and early 2000's. Hence, the findings are consistent with Chang et al. (2000), Demirer et al. (2010), My and Truong (2011) and Wang (2008). Finally, in spite of intensive herding behavior experienced at the first sub-period, findings of limited herding behavior at the second sub-period indicate the rise of diversification opportunities. It appears that investors can benefit from this strategy in falling market conditions.