

A COMPREHENSIVE DETERMINATION OF STOCK MOVEMENTS

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Abstract

Investment decisions are quite difficult to perform and have very important implications for research and practice. In this research, the fundamental aim is to comprehensively investigate the most influential macro and micro factors of stock movements in Istanbul Stock Exchange market in Turkey. This study includes 48 companies in 11 different sectors of Istanbul Stock Exchange containing electric, food, communication, paper, chemistry, metal-main, metal-product, stone, textile, commerce and transportation sectors for the data between the second quarter of 2005 and the third quarter of 2012 with 30 quarterly observations. The study reveals different factors for different sectors. Book value is observed to be the most influential micro factor for the sectors. Sector Indices and ISE are observed to be the most influencing macroeconomic factor in national setting. In international setting, there is no dominant influencing factor. The influences of the selected international macroeconomic factors vary with respect to the considered sectors. It is expected that the study will be useful for policy makers and investment decisions.

Keywords: Stock movements, microeconomic factors, macroeconomic factors, developing economies, Istanbul Stock Exchange, sectoral study

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Introduction

The environment for corporate and financial sector has full of uncertainties, especially the variation in the macroeconomic variables and its impact on capital markets. Investment steps should be carefully taken in stock markets. Therefore, firms' stock market policies are becoming more and more essential. Fluctuations in macroeconomic variables affect business negatively by disturbing the tendency of the trade smoothness. Therefore, the predictions of stock market determinants become important.

Firm success is strictly related with the national economy. Furthermore, many firms today are influenced by the conjecture of the world as a result of globalization. As well as overall economic conjecture, countercyclical sensitivity of the company sector is important. Therefore, it is important to identify all possible factors on stock movements.

In this research, the most related indicators and their weights in optimum portfolio investment decision are investigated. This study aims to identify the influencing factors of stock movements by considering the factors under two main categories including microeconomic factors (company fundamentals) and macroeconomic (national and international) factors.

Literature Review

Economy, industry and firm related analyses which evaluate general economy and industry are based more on macro factors and some estimations and projections. On the other hand, in company analyses, accounting records and financial statements are fundamentally considered. The following part provides some literature about the relationship between macro and micro determinants of stock fluctuations.

Ratio analysis is a common and easy analytical tool to evaluate the firm performance. On the other hand, the subjective evaluation of ratio analysis is necessary, because an analyst must pick and choose ratios properly to judge the overall firm performance (Malhotra and Malhotra, 2008).

Demir (2001) evaluates financial leverage ratio, profitability ratio, return on assets, dividend payout ratio, price earnings ratio, market value book value ratio, turnover ratio, earnings per

share, net profit growth rate, and the rate of increase in equity as the companies' internal (microeconomic) factors in his study. He considers the data between 1999 and 2000 for the analyses. The results show that financial leverage ratio, profitability ratio, dividend payout ratio, price earnings ratio, market value book value ratio, turnover ratio, earnings per share and net profit growth rate are effective on stock value. It is noted that the most influential factor is market value book value ratio. This is followed by earnings per share, price to earnings ratio and profitability ratio in orderly.

Malhotra and Malhotra (2008) consider days-sales-outstanding ratio, days cost of goods sold in inventory and total debt/equity ratio as input variables and cash flow per share, return on equity, return on assets, return on invested capital, inventory turnover, asset turnover, current ratio, quick ratio and interest-rate coverage as output variables by employing data envelopment analysis (DEA). They achieve the relative efficiency scores for selected 12 firms (six are efficient and the others are relatively inefficient).

Al-Tamimi (2011) considers some internal factors including earning per share, dividend per share, book values, and other company performance related factors. The most important internal factors are reported to be earning per share (EPS) and dividend per share (DPS).

Macroeconomic factors can be discussed under two headings (national and international). The rise in inflation may cause tight monetary policies, which in turn increases the discount rate, therefore, the cost of borrowing and finally investment reduction in the stock market. Aspren (1989) assumes that inflation is positively related to stock return if stocks provide a hedge against inflation. On the other hand, Barrows and Naka (1994), Chen et al. (1986) and Chen et al. (2005) empirically identify the negative effect of inflation on the stock market. Normally, it is expected that inflation rate causes to restrictive monetary policies which in turn negatively influences stock prices.

The firms which are not directly involved in the export/import business are also influenced by exchange rate movements if their input prices, output prices, or product demand are related to exchange rate (Adler and Dumas, 1984). In summary, the relation between exchange rate and

stock price is affected by international trade and the degree of trade balance. The literature about the relationship between stock markets and exchange rate gives mixed results. Aggarwal (1981) finds positive effects and Soenen and Hennigar (1988) identify negative influence of exchange rates on the stock market.

According to Maysami and Koh (2000), when the effects of inflation and interest rate on stock price are considered, an increase in expected inflation rate may cause to tightening policies which can negatively influence stock prices.

Oxelheim (2003) considers the macroeconomic environment, by considering Oxelheim and Wihlborg (1987), as exchange rates, interest rates, inflation rates, and political risk premiums.

Mukherjee and Naka (1995) assert that both short-term and long-term interest rates may positively influence discount rates through their effect on nominal risk-free rates.

Fama (1981) identifies negative relationship between real stock returns and inflation. Chen et al. (1986) observe a reliable long term correlation between macroeconomic variables and equity prices by considering inflation in United States (US).

Madura and Zarruk (1995) study the relationship between 29 British, Canada, Japan, German and U.S. banks' stock returns and the interest rate between January 1988 and April 1993 and measure various interest rate risks among countries because of probable difference in country specific bank regulations and managerial traditions.

For monthly data between January 1971 and December 1990, Mukherjee and Naka (1995), by using Vector error correction and co-integration techniques, find out a co-integration and long-term equilibrium relation between Tokyo Stock Exchange (TSE) Index and six Japanese macroeconomic variables including exchange rate, money supply, inflation, industrial production, long-term government bond rate, and call money rate. They observe positive relation between Tokyo stock prices and exchange rate. But, there are mixed relationships between

Tokyo stock prices and inflation and interest rates. Moreover, there is a negative relationship between inflation and equity prices.

Zhao (1999) considers inflation as the external influence on stock prices in the Chinese economy between January 1993 and March 1998. Inflation is found to be negatively and significantly influential on stock prices.

Al-Qenae et al. (2002) identify the influence of earning and other macroeconomic variables on Kuwait Stock Exchange stock prices between 1981 and 1997. They evaluate gross national product (GNP), interest rate, and inflation as macroeconomic variables. They significantly find the estimated earning response coefficient (ERC) as highly sensitive with the leading period returns. Besides, their statistically significant results indicate that in almost all cases both inflation and interest rate are negatively influential on stock prices while GNP has positive influence but only significant in a certain (high) return measure interval.

Nishat and Shaheen (2004) discovered that industrial production is the largest positive and inflation is the largest negative factors of Pakistani stock prices.

By employing an EGARCH model to account for the ARCH effects on daily returns instead of standard Ordinary Least Squares (OLS) estimation methods, Joseph and Vezos (2006) search the influence of interest rates and foreign exchange rates changes on US bank's stock returns and observe ARCH effects and find that the market return greatly influence stock returns at both the individual bank and portfolio levels. Furthermore, it is identified that interest rate and exchange rate changes are not influential on the stock returns.

Jones and Wilson (2006) identify that inflation adjustments can weakly estimate stock returns.

Gan et al. (2006) searches the interaction between the New Zealand Stock Index (NZSE40) and a group of macroeconomic variables which are consumer price index, exchange rate, gross domestic product (GDP), money supply (m1), long term interest rate, and short term interest rate for the period between January 1990 and January 2003 by applying Johansen Multivariate Co-

integration test and Granger-Causality test, Impulse Response and Error Variance Decomposition analysis. The interest rate, money supply and real gross domestic product (GDP) are observed to be main determinants of New Zealand Stock Index (NZSE40). Moreover, no evidence is identified that the New Zealand Stock Index causes changes in macroeconomic variables. But, Consumer price index (CPI) is observed to have a negative influence. The influences of Exchange rate, consumer price index (CPI), long-term interest rate and gross domestic product (GDP) on the NZSE40 are consistent.

Patra and Poshakwale (2006) observe both short-term and long-term relationship between inflation, money supply and trading volumes but no relationship between exchange rate and the stock prices in Athens stock exchange.

Liu and Shrestha (2008) uses monthly data covering the period from January 1992 to December 2001 on 120 observations of Shanghai Stock Exchange (SHSE) composite index and Shenzhen Stock Exchange (SZSE) composite index and reports the positive effect of industrial production and money supply on stock prices, inflation rate, interest rate and the negative effect of currency value on the stock prices. The Chinese Stock Market seems very risky or volatile in the short run, but in the long run, results predict that economic benefits can be achieved.

For macro variables including money supply (MS), consumer price index (CPI), industrial production (IP), exchange rate (EXR) and interest rate (IR), Rizwan and Khan (2007) employ descriptive statistics, (ARCH) approach, EGARCH approach, Augmented Dickey Fuller (ADF), and VAR model from July 2000 to June 2005. According to EGARCH model, stock returns are observed to be significantly affected by money supply and consumer price index (CPI). Moreover, Vector Auto Regressive (VAR) model can only explain money supply and consumer price index (CPI) volatility. VAR also reports that the effect of industrial production is positive but not significant. It is suggested that the negative signs of macroeconomic variables in Pakistan's stock market influence stock prices more than positive news.

From June 1998 to June 2008, Hasan and Nasir (2009) evaluate the influence of macroeconomic variables which include inflation, industrial production, short term interest rate, exchange rates,

foreign portfolio investment, money supply on equity prices by using cumulative sum (CUSUM) cumulative sum of squares (CUSUMSQ) tests, unit root by lag range multiplier (LM) test, Augmented Dickey Fuller (ADF) test, Phillips-Perron (PP) test, VAR models, and error correction model. Autoregressive distributed lag (ARDL) test captures industrial production (IP) as a significant factor. Inflation (INF) is detected to be not significant but interest rate (IR), exchange rate (ER) and money supply (MS) are appeared to be significant in the long run. Finally, foreign portfolio investments (FPI) appear to have significant short term influence and no long term influence. It is identified that oil prices (OP) are not significant in the long run.

Sohail and Hussain (2009) find out that inflation negatively influence stock returns while there are positive influence of money supply, industrial production and real effective exchange rate on stock prices.

Butt et al. (2010) study the stock returns variation to specific economic variables by using a multi-factor model on the companies from banking and textile sectors by considering data availability, profitability and performance on the Karachi Stock Exchange for 10 years period. GARCH model is used to analyze risk and returns relationship on company stock returns and on the entire industry data in order to generalize the results. It is observed that market return mainly affects stock returns variation and other macroeconomic and industry related variables enhance describing ability of the stock returns variation. Furthermore, economic exposure is found to be higher at industry level than firm level stock returns.

Kumari (2011) examines the relationship between stock returns and inflation in India from April 1991 to March 2009 by using weekly, monthly and quarterly indices of BSE Sensex and NSE Nifty. He uses weekly, monthly and quarterly Wholesale Price Index (WPI) and monthly Consumer Price Index (CPI) as the indicator of inflation. The subperiods 2002:4-2009:3 and 2005:1-2009:4 are examined in order to run the pre-crisis and post-crisis analysis. Unit root tests, Granger causality test and regressions are employed in order to examine the relationship between the variables. Vector Autoregression (VAR) is used to find out the causal link between stock returns and inflation and Impulse Response Functions (IRF) is used to check the response to

disturbance in the system. Finally, the results do not suggest any significant relation between stock returns and inflation for post-reform period in India.

The literature also presents the studies about global macroeconomic variables in the determination of stock fluctuations.

Chen et al. (1986) observe a reliable long term correlation between oil prices and equity prices in United States (US).

Chaudhuri and Smiles (2004) search the relationship between stock prices and real oil price in the Australian stock market from 1960 to 1998 for long-term. They find that the American and New Zealand foreign stock markets significantly influence the Australian stock return movement.

Since, the oil exports are largely effective on foreign earnings and governments' budget revenues and expenditures, Hammoudeh and Aleisa (2004) examine the relationships among Gulf Cooperation Council (GCC) stock markets and New York Mercantile Exchange (NYMEX) oil prices from 1994 to 2001. They identify that the UAE stock market index are highly linked with the Saudi Arabia market and Bahrain market.

Chancharat and Valadkhani (2007) work on the Stock market volatility between January, 1988 and December, 2004 by using Auto regressive Conditional Heteroscedasticity (ARCH) model and the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model on Thailand Stock Index and the indices of Argentina, Australia, Brazil, Germany, Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Russia, Singapore, Taiwan, the United Kingdom and the United States. Thailand Stock Index is found to be positively affected by neighbor countries' stock markets but not by the others and negatively by oil price changes.

Gay and Nova (2008) use Augmented Dickey-Fuller (ADF) test in order to identify the relationship between oil price and stock market indices of Brazil, Russia, India, and China (BRIC) on the monthly data between 1999 and 2006. The relationship between oil price and the

stock market index prices for the countries is not significant. The study suggests a weak-form of market efficiency for the markets of Brazil, Russia, India, and China.

Al-Tamimi (2011) studies but, can not find significant influence of oil prices on stock prices in UAE stock market between 1990 and 2005.

Sayilgan and Süslü (2011) analyze the influence of macroeconomic factors on stock returns in emerging market economies using panel data from 1996 to 2006 and identify the significant influence of the S&P 500 Index. However, the impact of oil prices is not observed.

Hosseini, Ahmad and Lai (2011) search and identify the relationships between stock market indices and crude oil price (COP) in China and India for the period between January 1999 and January 2009. Similarly, Oskenbayev et al. (2011) search and identify the causal relationship between oil price and Kazakhstan stock exchange (KASE) index.

Bali and Cinel (2011) employ the panel data analysis in order to investigate the effects of gold prices on the ISE 100 Index and the direction and magnitude of the effect for the data between August 1995 and March 2011. It is identified that gold prices do not have a direct influence on the ISE 100 Index.

Akar (2011) searches the associations between the Istanbul Stock Exchange (ISE), gold, and foreign exchange returns in Turkey by using monthly data from 1990 to 2010 and applying the dynamic conditional correlations GARCH (DCC-GARCH) model. It is identified that the ISE100-Dollar and ISE100-Gold relationship is clearly negative after the 2001 crisis.

Ozcan (2012) tries to identify a significant relationship between ISE industry index and selected macroeconomic variables which include interest rates, consumer price index, money supply, exchange rate, gold prices, oil prices, current account deficit and export volume. He uses the Johansen's cointegration test in order to find out the relationship and observes that macroeconomic variables show long run equilibrium relationships with the ISE industry index according to the Johansen's cointegration test.

Data and Methodology

Data

This study includes 48 companies in 11 different sectors of Istanbul Stock Exchange including electric, food, communication, paper, chemistry, metal-main, metal-product, stone, textile, commerce and transportation sectors. While selecting the companies FORTUNE 500 list for Turkey is considered.

As a result of the analyses of internal and external factors for the evaluated sectors (Ozlen, 2014a; 2014b; 2014c), the highest loaded significant factors are selected for the overall analyses. For these analyses, the data covers the period from the second quarter of 2005 to the third quarter of 2012 including 30 quarterly observations. The identified factors for each sector are given as follows:

Metal-Main Sector: Book Value, Current Ratio, XMANA (Sector Index), Inflation Rate, FTSE-100 (England) and ISE.

Transportation Sector: Total Asset Turnover Ratio, Debt Ratio, Book Value, XULAS (Sector Index), GDAX-Germany, and ISE.

Textile Sector: Book Value, Inflation Rate, XTEKS (Sector Index), GDAX-Germany, and ISE.

Stone Sector: Book Value, Price to Earning Ratio, Inflation Rate, Exchange Rate, and ISE.

Metal-Product Sector: Book Value, Debt Ratio, XMESY (Sector Index), GDAX-Germany, and ISE.

Paper Sector: Book Value, Price to Earning Ratio, XKAGT (Sector Index), GDAX-Germany, and ISE.

Communication Sector: Book Value, Price to Earning Ratio, XILTM (Sector Index), NYSE-Composite, and ISE.

Commerce Sector: Book Value, Exchange Rate, GDAX-Germany, FTSE-100 (England), and ISE.

Electric Sector: Book Value, Unemployment Ratio, XELKT (Sector Index), and ISE.

Food Sector: Book Value, XGIDA (Sector Index), NYSE-Composite, and ISE.

Chemistry Sector: Book Value, XKMYA (Sector Index), FTSE-100 (England), and ISE.

Multi-Variate Regression

The data is used to employ Multi-variate Regression test in order to evaluate the influencing factors of stock returns for each sector. Because the factors for each sector change, the Multi-variate Regression equations include different variables.

The data is also checked for the multi-collinearity and some of the variables are removed from the analyses. The general formula for a multi-factor model is as follows:

$$Y_t = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon_t \quad (1)$$

The natural log transformation is also used in this step, since this transformation is useful to remove skewness in order to allow least squares models in obtaining unbiased results. Also, through natural log transformation heteroscedasticity problem can be corrected.

$$\text{Log}Y_t = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon_t \quad (2)$$

Empirical Results

It is observed that the explanatory power of the model is medium ($R^2=0.655$) for **Electric Sector**. Book Value and Sector Index are significantly found to have positive impact on Electric Sector, while ISE has significant but slight negative influence on this sector (Table 1).

Table 1 Overall Results for Electric Sector

Electric Sector	Book Value	XELEK	ISE	Adjusted R2
Coefficient	0.537	0.579	-0.060	0.655
p-value	0.000	0.002	0.003	

Food Sector is identified to have strong significant positive influence of its internal factor Book Value and significant and weak positive influence of ISE. Furthermore, the model's explanatory power is found to be very strong ($R^2=0.825$) (Table 2).

Table 2 Overall Results for Food Sector

Food Sector	Book Value	ISE	Adjusted R2
Coefficient	0.929	0.228	0.825
p-value	0.000	0.007	

According to the results, the main significant and positive determinant of **Communication Sector** is its Sector Index. After that, it has significant and strong negative influence of its Book Value and fair positive influence of its Price to Earning Ratio. Moreover, it has also significant but medium negative effect of an international factor (NYSE-Composite). When the power of the model is considered, it is observed to be high ($R^2=0.718$) (Table 3).

Table 3 Overall Results for Communication Sector

Communication Sector	Book Value	Price to Earning	XILTM	NYSE-Composite	Adjusted R2
Coefficient	-0.667	0.268	1.331	-0.306	0.718
p-value	0.002	0.012	0.000	0.029	

The results reveal that **Paper Sector** significantly and positively influenced by its Sector Index and GDAX-Germany. Their influences are observed to be high. Additionally, the model is found

to be highly successful in order to explain the movements of the stock prices in **Paper Sector** ($R^2=0.777$) (Table 4).

Table 4 Overall Results for Paper Sector

Paper Sector	XKAGT	GDAX-Germany	Adjusted R2
Coefficient	0.400	0.548	0.777
p-value	0.005	0.000	

The results show that the obtained model for **Chemistry Sector** almost perfectly explains the reasons of changes in stock fluctuations ($R^2=0.979$). The significant results provide that the sector is positively affected by mainly its Sector Index and reasonably by English Stock Market (Table 5).

Table 5 Overall Results for Chemistry Sector

Chemistry Sector	XKMYA	FTSE-100 England	Adjusted R2
Coefficient	0.834	0.272	0.979
p-value	0.000	0.000	

The significant findings notify that **Metal-Main Sector** is mainly negatively and extremely influenced by Inflation. However, it is positively and highly influenced by its Sector Index and fairly influenced by FTSE-England. The model is observed to be powerful ($R^2=0.886$) (Table 6).

Table 6 Overall Results for Metal-Main Sector

Metal-Main Sector	Inflation	XMANA	FTSE-100 England	Adjusted R2
Coefficient	-1.236	0.631	0.172	0.886
p-value	0.000	0.000	0.057	

The significant results for **Metal-Product Sector** reveal that there is highly strong negative effect of ISE and negative effect of its Debt Ratio. On the other hand, there is positive and strong influence of its Sector Index and German Stock Market. The predictive capacity of the model is observed to be strong ($R^2=0.821$) (Table 7).

Table 7 Overall Results for Metal-Product Sector

Metal-Product Sector	Debt Ratio	XMESY	ISE	GDAX-Germany	Adjusted R2
Coefficient	-0.614	0.947	-1.159	0.891	0.821
p-value	0.000	0.000	0.000	0.000	

The significant findings of the multi-variate regression analysis present that **Stone Sector** is mainly and negatively impacted by changes in Inflation. However, it is positively affected by its Book Value and ISE. The model is found to be strong in explaining the stock movements in **Stone Sector** ($R^2=0.804$) (Table 8).

Table 8 Overall Results for Stone Sector

Stone Sector	Book Value	Inflation	ISE	Adjusted R2
Coefficient	0.529	-0.809	0.574	0.804
p-value	0.000	0.000	0.000	

The generated overall model for **Textile Sector** is observed to have almost full predictive power in the explanation of the stock behavior ($R^2=0.979$). Its significant findings show that there is slight and negative influence of ISE and medium positive impacts of its Book Value, Inflation and German Stock Market Index (Table 9).

Table 9 Overall Results for Textile Sector

Textile Sector	Book Value	Inflation	ISE	GDAX-Germany	Adjusted R2
Coefficient	0.498	0.503	-0.239	0.445	0.979
p-value	0.000	0.000	0.001	0.000	

The findings of the analysis for **Commerce Sector** show that the model components significantly and well describe the stock movements ($R^2=0.782$). The sector is positively and highly influenced by its Book Value and German Stock Market while there are negative and medium impacts of Exchange Rate and English Stock Market (Table 10).

Table 10 Overall Results for Commerce Sector

Commerce Sector	Book Value	Exchange Rate	FTSE-100 England	GDAX-Germany	Adjusted R2
Coefficient	0.748	-0.586	-0.528	0.868	0.782
p-value	0.000	0.000	0.012	0.000	

The weakest model is observed for **Transportation Sector** at the end of multi-variate regression analysis ($R^2=0.580$). Its significant results provide that the stock movements are positively and moderately influenced by Debt Ratio and ISE. On the other hand, it is again moderately but positively impacted by German Stock Exchange Market (Table 11).

Table 11 Overall Results for Transportation Sector

Transportation Sector	Debt Ratio	ISE	GDAX-Germany	Adjusted R2
Coefficient	-0.484	-0.667	0.519	0.580
p-value	0.001	0.001	0.004	

Discussion

Book Value, as an internal factor related to the strength of the company, is a positive determinant of the stock movements in Electric Sector. On the other hand, they are slightly impacted by ISE. They do not seem to be financially dependent on the factors outside the sector. Therefore, it may be suggested that they should focus more on their internal and sector level strengths.

The main determinant of Food sector is observed to be its internal factor (Book Value) implying that the financial strength of the companies in this sector seems highly related with stock movements.

Communication sector is highly determined by its Sector Index. On the other hand, the negative impacts of the remaining factors including its internal factors (Book value) and English Stock Market. Therefore, it may be suggested that they should use the benefits of their sector, develop their internal strengths and determine their policies by considering English Stock Market.

Paper sector is identified to be influenced by its Sector Index and German Stock Market Index.

Chemistry Sector is influenced positively by its external factors (Sector Index and English Stock Market).

Metal-Main sector is influenced less by the international factors (English Stock Market), but, more by internal and national factors. Inflation is the strongest negative determinant of the stock movements. Its Sector Index has positive impacts on them. Therefore, this sector should focus behave according to their sector. They should also be careful for the changes in inflation and determine their policies accordingly.

In Metal-Product sector, Debt Ratio and ISE have negative impact on stock values. So, the companies in this sector must reduce their debts. They are also positively influenced by their Sector Index. So, they should increase the strength of their association with their sector. Since

they have the positive influence of German Stock Market, they may improve their relations with German Market.

Stone Sector is found to be sensitive to changes in Book Value positively and inflation rate negatively. Furthermore, they have a positive relationship with ISE. Hence, they should determine their policies by considering these negative and positive influences.

The main positive determinant of Textile Sector is identified to be Inflation Rate. Moreover, Book Value and German Stock Market have positive impacts on the stock values in this sector. Therefore, they should increase their relationships with German Market; and develop their strategies by focusing more on Inflation Rates and their net assets. Since they are influenced by ISE negatively, they should also re-evaluate their strategies according to ISE.

Commerce Sector has a positive impact of its Book Value as an internal determinant. So, they should increase their net assets. Exchange rate is determined to have a strong negative influence on the stock movements in this sector. Moreover, they are identified to have relationships with German Stock Market (positive) and English Stock Market (negative).

Transportation Sector is negatively influenced by its Debt Ratio. So, they should decrease their debt in order to be financially strong inside. Furthermore, they have the negative impact of ISE. Finally, since the sector is also detected to be positively influenced by German Stock Market, they may adopt some strategies in order to develop their relationships with German Market.

Conclusion

This research identifies the influencing internal and external factors of stock movements in sector levels. Therefore, it provides final models for each sector. The revealed models are successful in that they almost fully explain the behavior of the stocks.

The most powerful internal determinant of the stocks is found to be Company Book Values. Sector Indices and ISE are observed to be the most influencing macroeconomic factor in national

setting. In international setting, there is no dominant influencing factor. The influences of the selected international macroeconomic factors vary with respect to the considered sectors.

Since Turkish stock market is a relatively young market when it is compared to the world's developed stock markets, even this research selects the leading successful companies in their sectors, it can not provide large amount of data. For larger sets of data, the validity of this study can give better results.

This study is important in that it provides an extensive consideration of both microeconomic and macroeconomic factors. Furthermore, the selected time interval does not include such a study.

It is realized in the literature that very few studies consider sectoral behaviours of the stocks. Hence, this study can be distinguished from the others in that it evaluates the fluctuations of the stocks in sectoral basis.

Finally, this study offers sector specific models in the considered time interval for 11 sectors chosen from Istanbul Stock Exchange (ISE).

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