DOES STOCK PRICE SYNCHRONICITY EFFECT INFORMATION CONTENT OF REPORTED EARNINGS? EVIDENCE FROM THE MENA REGION

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Abstract

This paper documents the effect of stock price synchronicity on the value relevance of reported earnings in the MENA region during the period between 2009 and 2013. Our results show that the information content of reported earnings increases with increase in stock price synchronicity. We document higher impact of earnings on returns for firms with higher stock price synchronicity. We argue that firms with high synchronicity have better information environment. As a result, these firms disclose information that is of high quality. We also show that information conveyed through stock price synchronicity is more important than information conveyed through traditional governance mechanisms.

Keywords: Stock Price Synchronicity, Earnings Informativeness, Corporate Governance, Emerging Markets

1. INTRODUCTION

Prior literature suggests that emerging markets have relatively inadequate disclosure environment (Claessens and Fan, 2003). Leuz et al. (2003) argue that managers do not disclose the true underlying economic conditions of their firms in emerging markets. Given inadequate disclosure environment, it is worthwhile asking: Are there any mechanisms that can help investors, especially naïve investors, identify firms that disclose relatively high quality information? This paper argues that one such mechanism is the extent of stock price synchronicity.[4] Our assertion that stock price synchronicity may help investors in differentiating between firms disclosing more value-relevant information and firms disclosing less value-relevant information depends on our understanding that stock prices of firms with high synchronicity have better governance environment than firms with low synchronicity. Our argument is consistent with prior literature that associates high synchronicity with better governance and disclosure environment. Barberis et al. (2005), for instance, document that inclusion in the S&P 500 index – an event that improves governance environment of a firm – increases stock price synchronicity. In another related study, Chan and Hameed (2006) associate analyst following – proxy for governance environment of a firm – with high stock price synchronicity. Farooq and Ahmed (2014) compliment the above findings by documenting that high stock price synchronicity indicates better governance and information environment.

This paper argues that better governance associated with firms exhibiting high synchronicity lead to more informative earnings. Our argument is consistent with extant literature that documents positive relationship between informativeness of reported earnings and governance environment of a firm. Farooq (2013), for example, document that analyst following – proxy for governance environment of a firm – increase informativeness of reported earnings in the MENA region. In another related study, Fan and Wong (2002) document adverse impact of ownership concentration – another proxy for governance environment of a firm – on informativeness of earnings. They argue that concentration of ownership in the hands of a few creates agency conflicts between controlling shareholders and outside investors. As a result, controlling shareholders are perceived to report accounting information for self-interest, thereby causing the reported earnings to lose credibility to outside investors. Another reason that can help improve informativeness of reported earnings for firms with high synchronicity is the dominance of institutional ownership (Kelly, 2007). We argue that institutional investors are, generally, very sophisticated and resourceful. As a result, they are able to monitor managers more rigorously (Hartzell and Starks, 2003; Ke and Petroni, 2004; Ajinkya et al., 2005; Bushee and Goodman, 2007; Ke et al., 2008; Aggarwal et al., 2011). Prior literature suggests that superior monitoring by institutional investors manifests itself via better disclosure. Velury and Jenkins (2006), for instance, document positive association between institutional ownership and

[4] Stock price synchronicity measure the extent to which stock prices co-move with the market.

earnings quality. In another related study, Jung and Kwon (2002) report that earnings informativeness increases with the holdings of institutions. This strand of literature argues that institutional investors have more capacity to collect and process public as well as private information. Given their superior ability to gather and interpret information, institutional investors are believed to be better monitors, thereby improving the credibility of reported earnings.[5]

Using large dataset from the MENA region (Morocco, Egypt, Saudi Arabia, United Arab Emirates, Jordan, Kuwait, Qatar, and Bahrain), this paper shows that high stock price synchronicity significantly improves the informativeness of reported earnings during the period between 2009 and 2013. We document higher impact of earnings on returns for firms with higher stock price synchronicity. Our results are robust across different estimation techniques. We show qualitatively similar results with both the OLS and the panel data with fixed effect regression. This paper also shows that the above results hold in different sub-samples. For instance, we show that the impact of stock price synchronicity on the informativeness of earnings hold in a sample of firms characterized by different information environment. We show positive impact of stock price synchronicity on informativeness of earnings in a sample of firms audited by the big-four auditors and a sample of firms audited by the non-big-four auditors. However, the beneficial impact of stock price synchronicity is more pronounced in a group characterized by high information asymmetries – firms audited by the non-big-four auditors. It is because, in asymmetric environment, any mechanism that can help resolve information asymmetries should be of greater value to stock market participants (Lang et al., 2004). In addition, we also show that our results hold in a sample of firms exhibiting difference level of performances. We show positive impact of stock price synchronicity on informativeness of earnings in a sample of firms with positive returns and a sample of firms with negative returns. However, positive impact of stock price synchronicity on the informativeness of reported earnings is more pronounced in a sample of firms exhibiting positive performance.

An important question that arises from the above finding is: Is the information conveyed through stock price synchronicity more important than information conveyed through traditional governance mechanisms (analyst following, ownership concentration, and operational complexity)? Interestingly, our results show that stock price synchronicity is more important than traditional governance mechanisms for the quality of reported earnings. We show that analyst following, ownership concentration, and operational complexity do not have any impact on informativeness of earnings in our sample. We believe that our results have great important for investors investing in the MENA region. One of the main problems faced by investors in the MENA region is that it is almost impossible for them to differentiate between true and manipulated accounting information. However, our results help in resolving this difficulty by showing that complementing accounting information with stock price synchronicity may provide an initial indication on the value relevance of accounting information. Given weak relationship between reported earnings and returns, our result is of significant value to stock market participants.

The remainder of the paper is structured as follows: Section 2 summarizes the data. Section 3 and Section 4 presents assessment of our hypothesis and additional tests, respectively. Section 5 discusses the results in greater details. The paper ends with Section 6 where we present our conclusions.

2. DATA

This paper examines the impact of stock price synchronicity on the informativeness of reported earnings in the MENA region during the period between 2009 and 2013. The sample consists of firms listed in Morocco, Egypt, Saudi Arabia, United Arab Emirates, Jordan, Kuwait, Qatar, and Bahrain. The following sub-sections will explain the data in greater detail.

2.1. Stock returns

This paper defines returns (RET) as the difference between gross returns and market returns. The data for stock prices and market indices are obtained from the Datastream. The stock price data and the market index data is obtained for the first and the last day of a given year to compute RET.

2.2. Stock price synchronicity

Our measure of stock price synchronicity is derived from Morck et al. (2000). As a first step, we estimate the following regression with returns of stock 'i' during week 't' ($R_{i,t}$) as a dependent variable and returns of the corresponding market index 'm' for the same week ($R_{m,t}$) as an independent variable.

$$R_{i,t} = \alpha + \beta(R_{m,t}) + \varepsilon_{i,t} \quad (1)$$

Following prior literature, we estimate Equation (1) only for those firms for which we have at least 40 weekly observations of returns in a given year (Morck et al., 2000; Farooq and Ahmed, 2014). R-square obtained from the estimation of Equation (1) is used as follows to compute stock price synchronicity ($SYNCH_{i,T}$) for stock 'i' during year 'T'. A high value of SYNCH indicates high synchronicity and vice versa. The date required to estimate Equation (1) is obtained from the Datastream.

$$SYNCH_{i,T} = \log\left(\frac{R^2}{1-R^2}\right) \quad (2)$$

[5] Moreover, institutional investors, usually, have long investment horizon. Prior literature suggests that investment horizons affect the degree to which managers are monitored (Gaspar et al., 2005). Investors with a longer horizon have greater incentives to spend resources in monitoring, as they are more likely to remain shareholders of a firm long enough to reap the corresponding benefits. Therefore, the length of the investment horizon affects managerial behavior. We argue that weakly monitored managers will be inclined to disclose low quality information and vice versa.

Table 1 reports the average values of R-square and stock price synchronicity for our sample. The results indicate low R-square and therefore low stock price synchronicity for our sample firms across all years, all countries, and all industries. Low values of R-square and stock price synchronicity are in contrast with the arguments of Morck et al. (2000) and Jin and Myers (2006) who suggest high values of these variables in opaque environments. Given that firms in the MENA region have inadequate disclosure and governance mechanisms, Morck et al. (2000) and Jin and Myers (2006) would predict high values of these variables. We argue that the main reason behind low values of R-square and stock price synchronicity is the under diversification of marginal investors in these markets. Under diversification exposes marginal investors to idiosyncratic risk, thereby allowing them to take into account firm-specific risk while pricing stocks. It will, therefore, reduce the relative amount of market-wide information in stock returns and result in low values of R-square and stock price synchronicity.

Table 1. Descriptive statistics for R^2 and stock price synchronicity

Panel A. R^2 and synchronicity in different years		
Years	***R^2***	***Synchronicity***
2009	0.1677	-2.0337
2010	0.2800	-1.3410
2011	0.2110	-1.7731
2012	0.3629	-0.7591
2013	0.0516	-3.1258
Panel B. R^2 and synchronicity in different countries		
Countries	***R^2***	***Synchronicity***
Bahrain	0.1257	-2.3881
Egypt	0.1945	-1.8024
Jordan	0.1311	-2.2336
Kuwait	0.0689	-2.8767
Morocco	0.2631	-1.3706
Qatar	0.3451	-0.9046
Saudi Arabia	0.3515	-0.9533
UAE	0.2784	-1.3650
Panel C. R^2 and synchronicity in different industries		
Industry	***R^2***	***Synchronicity***
Oil and Gas	0.2325	-1.6584
Basic Materials	0.2786	-1.3294
Industrials	0.2650	-1.4864
Consumer Goods	0.2020	-1.7716
Healthcare	0.2252	-1.7160
Consumer Services	0.2107	-1.8415
Telecommunication	0.3059	-1.0855
Utilities	0.3550	-0.8762
Financials	0.2263	-1.7217
Technology	0.1400	-2.1329

2.3. Control variables

This paper uses number of firm-specific characteristics as control variables. These variables are:

SIZE: We define SIZE as the log of firm's total assets. The data for total assets is obtained from the Worldscope. Larger firms have lower information asymmetries due to increased interest from stock market participants. It, therefore, leads to higher stock returns of large firms. Mitton (2002) reports positive relationship between size and stock returns in Asian emerging markets.

LEVERAGE: This paper defines LEVERAGE as the total debt to total asset ratio. The data for total debt to total asset ratio is obtained from the Worldscope. High leverage exposes firms to greater financial risk and therefore negatively affects stock returns. Mitton (2002) reports negative relationship between leverage and stock returns in Asian emerging markets.

GROWTH: We define GROWTH as the growth in earnings per share. The data for growth in earnings per share is obtained from the Worldscope. We consider growth as a proxy for investor interest in a firm. Therefore, it is expected to positively influence stock returns.

BETA: We define BETA as the sensitivity of stock returns to the changes in market returns. We obtain BETA from the estimation of Equation (1). High sensitivity of stock returns to the changes in market returns is a measure of risk and therefore has a negative impact on stock returns.

Table 2 reports the descriptive statistics (Panel A) and the correlation matrix (Panel B) for control variables used in this study. An interesting observation from Table 2, Panel A, is the low level of leverage for firms in the MENA region. It may indicate the reluctance of firms in the MENA region to acquire debt due to religious concerns. Islam, the main religion in the MENA region, forbids the use of debt. Table 2, Panel A, also reports low sensitivity of stock returns to the changes in market returns. It is consistent with our earlier arguments that marginal investors are exposed to high firm-specific risk, thereby reducing sensitivity of stock returns to the changes in market returns. Furthermore, our results in Table 2, Panel B, show low correlation between the control variables used in this study. Therefore, we are able to use all control variables together in any regression equation.

Table 2. Descriptive statistics for control variables

Panel A: Descriptive statistics for control variables			
Variables	***Mean***	***Median***	***Standard Deviation***
SIZE	6.8896	6.9679	2.3272
LEVERAGE	17.2637	12.3350	17.9192
GROWTH	14.2935	9.0250	61.0868
BETA	0.1915	0.1500	0.2353

Panel B: Correlation matrix				
Variables	***SIZE***	***LEVERAGE***	***BROWTH***	***BETA***
SIZE	1.000			
LEVERAGE	0.1642	1.0000		
GROWTH	-0.0317	0.0405*	1.0000	
BETA	0.3630	-0.0069	0.0041	1.0000

3. METHODOLOGY

This paper hypothesizes that the informativeness of reported earnings depends on the level of stock price synchronicity. In order to test our hypotheses, we estimate a regression equation with returns (RET) as a dependent variable and three variables representing earnings per share (EPS), stock price synchronicity (SYNCH), and the interaction between earnings per share and stock price synchronicity (EPS*SYNCH) as independent variables. As is the case in prior literature, we measure informativeness of reported earnings with the coefficient estimate of EPS*SYNCH (Warfield et al., 1995; Fan and Wong, 2002; Farooq, 2013). As was mentioned earlier, we

also include log of total assets (SIZE), total debt to total asset ratio (LEVERAGE), growth in earnings per share (GROWTH), and beta of a stock (BETA) as control variables. Our basic regression equation takes the following form. The OLS regression and the panel regression with fixed effects are used as estimation techniques. Hausman test is used to decide between fixed effect and random effects.

$$\begin{aligned} RET = {} & \alpha + \beta_1(EPS) + \beta_2(SYNCH) \\ & + \beta_3(EPS * SYNCH) + \beta_4(SIZE) \\ & + \beta_5(LEVERAGE) + \beta_6(BETA) \\ & + \beta_7(GROWTH) + \varepsilon \end{aligned} \quad (3)$$

The results of our analysis are reported in Table 3. Consistent with our hypothesis, we show that the extent of stock price synchronicity improves the informativeness of reported earnings in the MENA region. We report significantly positive coefficient for EPS*SYNCH for both estimation techniques. Our results for the OLS regression and the panel regression with fixed effects show qualitatively the same results. We show that that for any given level of EPS, increase in SYNCH causes RET to go up. We argue that high stock price synchronicity is associated with well-diversified marginal investors. Given that these marginal investors are, usually, the institutional investors and institutional investors are good monitors, we should expect high stock price synchronicity to result in more informative reported earnings.

Table 3. Effect of stock price synchronicity on the informativeness of earnings

Variables	*OLS regression*	*Panel regression with fixed effects*
EPS	0.0016	0.0036*
SYNCH	-0.0976***	-0.1231***
EPS * SYNCH	0.0015***	0.0020***
SIZE	0.0088	-0.2691**
LEVERAGE	0.0019*	0.0023
GROWTH	0.0017***	0.0014***
BETA	0.0192	-0.0189
Industry Dummies	Yes	-
Year Dummies	Yes	Yes
Country Dummies	Yes	-
No. Of Observations	1107	1107
F-Value	31.47	46.05
Adjusted-R^2 / Overall-R^2	0.443	0.5090

*Notes: The coefficients with 1% significance are followed by ***, coefficient with 5% by **, and coefficients with 10% by **

4. ADDITIONAL TESTS

4.1. Relationship between stock price synchronicity and informativeness of earnings in a sub-sample of firms with positive returns and in a sub-sample of firms with negative returns

There may be concerns that the results obtained above are confined to certain stocks. For instance, it may be possible that the quality of reported earnings for firms in the negative performance group is so bad (probably due to bad performance of marginal investor) that stock price synchronicity becomes ineffective for earning-return relationship. In order to answer these concerns, we divide our sample in two groups – first group with positive market-adjusted returns and second group with negative market-adjusted returns – and re-estimate Equation (3) using OLS regression and the panel regression with fixed effects. We report results of our analysis in Table 4. Our results confirm our previous findings by documenting a positive impact of stock price synchronicity on the informativeness of earnings in both groups. We report significantly positive coefficient for EPS*SYNCH for both groups. Our findings in Table 4 also show that the impact of stock price synchronicity on the informativeness of earnings is more pronounced in a sample of firms with positive performance.

Table 4. Effect of stock price synchronicity on the informativeness of earnings in a sub-sample of firms with positive returns and a sub-sample of firms with negative returns

Variables	*RET > 0*		*RET < 0*	
	OLS regression	*Panel regression with fixed effects*	*OLS regression*	*Panel regression with fixed effects*
EPS	-0.0018	0.0113**	0.0019***	-0.0013
SYNCH	-0.0419	-0.0132	-0.0588***	-0.0043***
EPS * SYNCH	0.0008	0.0046***	0.0004*	0.0006***
SIZE	-0.0024	-0.0500	0.0013	-0.1505***
LEVERAGE	0.0025*	-0.0043	-0.0005	0.0016
GROWTH	0.0018***	0.0027***	0.0006***	0.0006***
BETA	-0.1873	-0.6461***	0.2033***	0.2210***
Industry Dummies	Yes	-	Yes	-
Year Dummies	Yes	Yes	Yes	Yes
Country Dummies	Yes	-	Yes	-
No. Of Observations	502	502	590	590
F-Value	5.88	12.56	25.70	13.52
Adjusted-R^2 / Overall-R^2	0.221	0.4764	0.435	0.3190

*Notes: The coefficients with 1% significance are followed by ***, coefficient with 5% by **, and coefficients with 10% by **

4.2. Relationship between stock price synchronicity and informativeness of earnings in a sub-sample of firms audited by one of the big-four auditors and in a sub-sample of firms audited by one of the non-big-four auditors

In this section, we document whether the results obtained above hold in sub-samples characterized by different information environment. For this purpose, we divide our sample into firms audited by one of the big-four auditors and firms audited by one of the non-big-four auditors. The motivation behind analyzing the relationship between stock price synchronicity and informativeness of earnings in different information environment is based on assumption that any beneficial impact of stock price synchronicity should be more pronounced in information environment characterized by high information asymmetries. We re-estimate Equation (3) for both sub-samples. We report results of our analysis in Table 5. Consistent with our expectations, our results in Table 5 confirm our previous findings of a positive impact of stock price synchronicity on the informativeness of earnings in

both groups. We report significantly positive coefficient for EPS*SYNCH for both groups. However, as was mentioned above, the beneficial impact of stock price synchronicity is more pronounced in a sample characterized by high information asymmetries – firms audited by one of the non-big-four auditors.

Table 5. Effect of stock price synchronicity on the informativeness of earnings in a sub-sample of large firms and a sub-sample of small firms

Variables	*Firms with Big-four auditors*		*Firms without Big-four auditors*	
	OLS regression	*Panel regression with fixed effects*	*OLS regression*	*Panel regression with fixed effects*
EPS	0.0013	0.0043**	0.0053	-0.0059
SYNCH	-0.0768***	-0.0970***	-0.1854***	-0.1938***
EPS * SYNCH	0.0009**	0.0012**	0.0042**	0.0038***
SIZE	0.0224**	-0.4677***	0.0389	-0.1816
LEVERAGE	0.0008	0.0030	0.0076***	0.0024
GROWTH	0.0016***	0.0014**	0.0039***	0.0035***
BETA	0.0053	-0.0401	0.3307**	0.3380
Industry Dummies	Yes	-	Yes	-
Year Dummies	Yes	Yes	Yes	Yes
Country Dummies	Yes	-	Yes	-
No. Of Observations	732	732	215	215
F-Value	27.04	38.63	32.09	57.49
Adjusted-R^2 / Overall-R^2	0.474	0.5525	0.536	0.6769

*Notes: The coefficients with 1% significance are followed by ***, coefficient with 5% by **, and coefficients with 10% by **

5. DISCUSSION OF RESULTS

Prior literature considers governance mechanisms to be associated with better information disclosure and lower agency problems. Hay and Davis (2004), for instance, suggest that firms with lower operational complexities have lower information asymmetries. Abdel-Khalik (1993) argues that a decreasing amount of operational complexity provides lower scope of control to the management and results in reduced moral hazard problems. As a result, there is higher likelihood that firms with lower operational complexity disclose more informative information. Similar arguments can be presented for other governance proxies, such as analyst following and dividend payout ratio. Analysts are considered as specialized agents that gather, interpret, and disseminate information. As a result, analysts are able to lower information asymmetries. Degeorge et al. (2013) and Farooq (2013) document that the extent of analyst following is associated with disclosure of more informative earnings.

In this section, we test which of the two – traditional governance mechanisms or stock price synchronicity – is more important for improving the informativeness of earnings in the MENA region. In order to test our conjecture, we introduce two variables representing governance mechanisms (GOVERNANCE) and interaction between governance mechanisms and earnings per share (EPS*GOVERANACE) in Equation (3). If governance mechanisms are more important than synchronicity in improving informativeness of earning, the coefficient estimate of EPS*GOVERANACE will be higher than the coefficient estimate of EPS*SYNCH. We define GOVERNANCE by three variables: (1) Analyst following[6], (2) Operational complexity[7], and (3) Dividend payout ratio[8]. We define analyst following by the number of analysts issuing earnings forecasts for a firm in a given year. Operational complexity is defined by the salaries to operating expense ratio (Knechel et al., 2008). Dividend payout ratio is the percentage of earnings paid out as dividends. All of these variables are related with governance environment to varying degrees. Our modified equation takes the following form.

$$\begin{aligned} RET = {} & \alpha + \beta_1(EPS) + \beta_2(SYNCH) \\ & + \beta_3(EPS * SYNCH) \\ & + \beta_4(GOVERNANCE) \\ & + \beta_5(EPS * GOVERNANCE) \\ & + \beta_6(SIZE) + \beta_7(LEVERAGE) \\ & + \beta_8(BETA) + \beta_9(GROWTH) + \varepsilon \end{aligned} \quad (4)$$

Results of our analysis are reported in Table 6. Our results indicate that, in comparison to traditional governance mechanisms, stock price synchronicity is more important in improving the informativeness of earnings. We report significant and positive coefficient of EPS*SYNCH and insignificant coefficient of EPS*GOVERNANCE for all proxies of governance mechanisms. As is argued earlier, we believe that having a diversified investor as a marginal investor is an important determinant of shareholder oversight. Given that the diversified marginal investors are, usually, institutional investors and institutional investors are good monitors, management is forced to report truthful earnings.

6. CONCLUSION

This paper documents the impact of stock price synchronicity on the informativeness of reported earnings in the MENA region during the period between 2009 and 2013. The results of our analysis show that informativeness of reported earnings improves with increase in stock price synchronicity. We argue that firms with high synchronicity have better information environment. As a result, these firms disclose information that is of high quality. We also show that information conveyed through stock price synchronicity is more important than information conveyed through traditional governance mechanisms. Our results are robust across different estimation procedures and different sub-samples. We also show that stock price synchronicity is more important than traditional

[6] Prior literature argues that the extent of analyst following is associated with superior information environment. Lang et al. (2004), for instance, document that analyst following mitigates the negative effect of lower investor protection on valuation in emerging markets. While, Farooq and Satt (2014) argue that analyst coverage improves firm performance in emerging markets by reducing agency problems.

[7] Prior literature argues that firms with higher operational complexity allow broader scope to management for control to assure effective operations (Abdel-Khalik, 1993; Hay and Davis, 2004). Knechel et al. (2008) indicate that an increasing amount of complexity gives rise to moral hazard problems between the managers and shareholders.

[8] Grossman and Hart (1980) argue that high dividend payouts are associated with better information environment.

governance mechanisms in improving the informativeness of reported earnings. Our results show that governance proxies – such as analyst following, operational complexity, and dividend payout ratio – do not improve informativeness of earnings for our sample firms.

Table 6. Effect of governance mechanisms on the relationship between stock price synchronicity and informativeness of earnings

Variables	*Analyst following*		*Operational complexity*		*Ownership concentration*	
	OLS regression	*Panel regression with fixed effects*	*OLS regression*	*Panel regression with fixed effects*	*OLS regression*	*Panel regression with fixed effects*
EPS	0.0023	0.0023	0.0128	0.1467*	0.0168	-0.0035
SYNCH	-0.0983***	-0.1233***	-0.0938***	-0.1158***	-0.0427	0.0099
EPS * SYNCH	0.0016***	0.0019***	0.0012**	0.0023***	0.0021***	0.0047*
GOVERNANCE	0.0037	-0.0198	-0.0441**	-0.1732***	0.0023*	-0.0015
EPS * GOVERNANCE	-0.0003	0.0007	0.0038	0.0012	0.0044	0.0001
SIZE	0.0074	-0.2413**	0.0141	-0.4525***	-0.0126	0.2714
LEVERAGE	0.0019	0.0021	0.0018	0.0056	0.0030	-0.0064
GROWTH	0.0017***	0.0014***	0.0020***	0.0015***	0.0032***	0.0020*
BETA	0.0202	-0.0190	0.0010	-0.0699	-0.2061	-0.2479
Industry Dummies	Yes	-	No	-	Yes	-
Year Dummies	Yes	Yes	No	Yes	Yes	Yes
Country Dummies	Yes	-	No	-	Yes	-
No. Of Observations	1107	1107	780	780	304	304
F-Value	29.42	40.01	26.43	31.35	9.23	7.04
Adjusted-R^2 / Overall-R^2	0.442	0.5099	0.468	0.5425	0.379	0.3899

*Notes: The coefficients with 1% significance are followed by ***, coefficient with 5% by **, and coefficients with 10% by **

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