

**CORPORATE TRANSPARENCY, PRIVATE INFORMATION  
AND STOCK PRICE SYNCHRONICITY**

**MOHAMMED SHARAF MOHSEN SHAIBAN**

**THESIS SUBMITTED IN FULFILMENT  
OF THE REQUIREMENTS  
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY**

**FACULTY OF BUSINESS AND ACCOUNTANCY  
UNIVERSITY OF MALAYA  
KUALA LUMPUR**

**OCTOBER 2010**

## ABSTRACT

The issue of stock price synchronicity as a measure of stock price informativeness has recently attracted much research attention. Using cross-country data from 40 countries, this study investigates the relationship between corporate transparency (measured by reporting timeliness, financial analyst following and credibility of disclosures) and stock price synchronicity. In addition, this study investigates the moderating effects of reporting timeliness on the relationship between financial analyst and credibility of disclosures and stock price synchronicity. Specifically, it examines whether the relationship between financial analysts and disclosure credibility and stock price synchronicity is stronger or weaker given the range of timeliness of financial reporting.

Five hypotheses are tested in this study. The first three hypotheses propose that stock price synchronicity, as an inverse measure of stock price informativeness, is negatively associated with timeliness (frequency and intensity of disclosures) and positively associated with financial analyst following and credibility of disclosures. The next two hypotheses test the moderating effects of reporting frequency on the relationship between number of analyst following and disclosures credibility and stock price synchronicity.

Results show the following: First the OLS results support the hypothesis that the higher (lower) the reporting frequency the lower (higher) the stock price synchronicity. This result is consistent with the information perspective of stock price synchronicity. Second, the standard multiple regression results support the positive relationship between financial analyst following and stock price synchronicity. This result is consistent with the earlier findings that financial analysts are outsiders who generally have less access to firm-level idiosyncratic information than insiders or big institutional investors in the firm. Therefore, analyst efforts could be directed towards obtaining and impounding industry and market level information into prices. Third, the results suggest that higher disclosures credibility helps in spreading more market and industry information. This result supports the prior evidence that audit qualification in annual reports does not provide timely signals to the capital market since it is accompanied with annual firm public information. Fourth, the relationship between analysts following and stock price synchronicity is moderated by the range of reporting frequency. Finally, range of reporting frequency is irrelevant to the relationship between credibility of disclosures and stock price synchronicity.

The major contribution of this study is that reporting frequency matters in the information incorporation process; the more frequent the financial reporting is the more firm information is reflected in stock prices.

**Keywords:** Reporting frequency, Stock price synchronicity, Analysts following, credibility of disclosures.

## ACKNOWLEDGMENTS

Praise to Almighty Allah who gave me more than He gives many of His Creations. This dissertation and the significance of my life would not be possible without Him. I like to express my gratitude and thanks to many individuals who helped me during my challenging journey finishing this dissertation.

My sincerest appreciation goes beyond gratitude and thanks to Professor Dr. Ferdinand A Gul, Head and Chair Professor of Accounting and Corporate Governance in the School of Accounting and Finance in Hong Kong Polytechnic University and Maybank Chair in the University of Malaya for the period 2007-2009. Being closely under his supervision, I had chance to observe how knowledge, modesty and professionalism could be all in one. His generosity in sharing thoughts, knowledge, and material are incredibly admirable. Knowing the international accounting academic community, being in the editing boards for a number of academic journals and being a world-class researcher, his guidance and advice have been extremely beneficial to me. His faith in me was a driving force to stand firm as I was faced with challenges. Above all, I am very indebted to him for being the consultant and co-supervisor of my dissertation.

I am indebted to my supervisor Dr. Zakiah Saleh for her valuable suggestions, guidance and for her time spent through the whole process. Her patience, support, and continuous encouragement have given me a great source of inspiration and confidence.

I am specifically thankful to the Dean and staff of the faculty of Business and Accountancy, University of Malaya for their support and the remarkable efforts in inviting a considerable number of academic visitors who gave the PhD students including myself better exposures to new ideas and techniques in financial accounting and finance research.

I am also grateful to Professor Randall Morck from the University of Alberta, Edmonton, Canada for offering to share some of his data and for Professor Katherine Schipper from Duke University for the valuable discussion I had with her during the (2009) JACE /AJPT symposium held in Hong Kong. I am also grateful for the valuable comments I received from the PhD/DBA students in *Hong Kong Polytechnic University* during my academic visit in March (2009). I am highly indebted for the organizers of the Hong Kong JACE symposiums in (2008) and (2009) for giving me the chance to attend and listen to a world-class researchers and to be exposed to the high quality papers in financial accounting.

My greatest appreciation is extended to the greatest person in my life, my lovely mother, for her prayers and wishes and to my brother Dr. Motahar for his continuous support and encouragements. I am also grateful for my small family, my wife Salwa and my kids khaled, Wala, Haitham and Ahmed for their precious time, tolerance and understanding.

Finally, I would like to express my thanks and gratitude for the University of Sana'a and the Government of Yemen for the financial support of my study.

## TABLE OF CONTENTS

<b>ABSTRACT</b> .....	<b>i</b>
<b>ACKNOWLEDGMENTS</b> .....	<b>ii</b>
<b>TABLE OF CONTENTS</b> .....	<b>iii</b>
<b>LIST OF FIGURES</b> .....	<b>vii</b>
<b>LIST OF TABLES</b> .....	<b>viii</b>
<b>LIST OF ABBREVIATIONS</b> .....	<b>x</b>
<b>CHAPTER ONE</b>	
<b>OVERVIEW OF RESEARCH</b> .....	<b>1</b>
1.1 BACKGROUND OF THE STUDY .....	1
1.2 PURPOSE OF THE STUDY .....	6
1.3 MOTIVATION FOR THE STUDY .....	6
1.4 STATEMENT OF THE RESEARCH PROBLEM .....	10
1.5 RESEARCH OBJECTIVES AND RESEARCH QUESTIONS.....	11
1.5.1 Reporting timeliness and stock price synchronicity.....	12
1.5.2 Analyst following and Stock price synchronicity .....	13
1.5.3 Credibility of disclosures and Stock price synchronicity.....	14
1.5.4 Moderating effects of Reporting timeliness on the relationship between Analyst following and Stock price synchronicity. ....	15
1.5.5 Moderating effects of Reporting timeliness on the relationship between credibility of disclosures and Stock price synchronicity.....	17
1.6 THE MAIN FINDINGS AND METHODOLOGY .....	19
1.7 CONTRIBUTION .....	21
1.8 ORGANIZATION OF THE STUDY .....	23
<b>CHAPTER TWO</b>	
<b>STOCK PRICE SYNCHRONICITY LITERATURE</b> .....	<b>24</b>
2.1 INTRODUCTION.....	24
2.2 BACKGROUND ON STOCK PRICE SYNCHRONICITY.....	24
2.3 CROSS COUNTRY STOCK PRICE SYNCHRONICITY DEVELOPMENT ...	29
2.4 PRIOR STUDIES.....	42
2.4.1 Stock price synchronicity as information.....	42
2.4.2 Stock price synchronicity as a measure of noise.....	49
2.5 SUMMARY AND CONCLUSION.....	50
<b>CHAPTER THREE</b>	
<b>CORPORATE TRANSPARENCY LITERATURE</b> .....	<b>52</b>

3.1 INTRODUCTION.....	52
3.2 BACKGROUND ON CORPORATE TRANSPARENCY .....	52
3.3 PRIOR STUDIES.....	54
3.3.1 <i>Corporate financial reporting transparency</i> .....	55
3.4 ROLE OF INFORMATION INTERMEDIARIES.....	61
3.4.1 <i>Financial analysts' role</i> .....	61
3.4.1.1 Analysts influence on information efficiency of capital markets .....	61
3.4.1.2 Financial reporting and financial analysts informativeness roles .....	66
3.5 ROLE OF INSTITUTIONAL INVESTORS.....	69
3.6 ROLE OF INSIDER TRADING .....	72
3.7 INFORMATION DISSEMINATION .....	73
3.8 SUMMARY AND CONCLUSION.....	73

## **CHAPTER FOUR**

### **HYPOTHESES DEVELOPMENT AND RESEARCH METHODOLOGY ..... 74**

4.1. INTRODUCTION.....	74
4.2. HYPOTHESES DEVELOPMENT.....	74
4.3 CORPORATE TRANSPARENCY EFFECTS ON STOCK PRICE SYNCHRONICITY .....	75
4.3.1 <i>Reporting timeliness</i> .....	75
4.3.2 <i>Analysts following</i> .....	80
4.3.3 <i>Credibility of disclosures</i> .....	83
4.3.4 <i>Reporting timeliness, Analyst following and Stock price synchronicity</i> .....	86
4.4 MEASUREMENT ISSUES AND EMPIRICAL MODELS .....	90
4.4.1 <i>Stock price synchronicity measurement</i> .....	91
4.4.1.1 Percentage of stock moving together .....	91
4.4.1.2 Market Model.....	92
4.4.2 <i>Corporate transparency measurement</i> .....	94
4.4.3 <i>Control variables</i> .....	100
4.4.3.1 Structural variables.....	100
4.4.3.2 Institutional variables .....	102
4.4.3.3 Annual reporting control variables.....	104
4.4.4 <i>Empirical models for testing hypotheses</i> .....	105
4.4.4.1 Stock price synchronicity as dependent variable .....	105
4.4.4.2 GDP per capita as a control variable.....	107

4.4.4.3 Stock market size and the role of large numbers .....	107
4.4.5 <i>Model Specification</i> .....	108
4.5 <b>SAMPLE AND DATA SOURCES</b> .....	113
4.6 <b>SUMMARY AND CONCLUSION</b> .....	117
 <b>CHAPTER FIVE</b>	
<b>EMPIRICAL RESULTS AND DISCUSSION</b> .....	<b>122</b>
5.1 INTRODUCTION.....	122
5.2 DESCRIPTIVE STATISTICS .....	122
5.3 CORRELATION ANALYSIS .....	133
5.3.1 <i>Pearson correlation between transparency measures and all independent variables</i> .....	133
5.3.2 <i>Pearson product moment correlation between main independent variables</i> .....	141
5.3.3 <i>Pearson product moment correlation between transparency attributes</i> .....	142
5.4 <b>MULTIPLE REGRESSION RESULTS</b> .....	148
5.4.1 <i>Regression results for H1, H2 and H3</i> .....	149
5.4.1.1 Reporting timeliness and Stock price synchronicity .....	151
5.4.1.2 Financial analyst following and Stock price synchronicity .....	153
5.4.1.3 Audit credibility and Stock price synchronicity .....	156
5.4.2 <i>Regression results for H4 and H5</i> .....	158
5.4.2.1 Reporting timeliness, Analyst following and Stock price synchronicity .....	162
5.4.2.2 Reporting timeliness, Audit credibility and Stock price synchronicity .....	165
5.5 <b>ROBUSTNESS CHECK</b> .....	169
5.5.1 <i>Alternate stock price synchronicity measure</i> .....	170
5.5.1.1 Market Model.....	170
5.5.2 <i>Market noise effects</i> .....	172
5.5.3 <i>Alternative methods of controlling for market size effects and model specifications</i> .....	173
5.5.4 <i>Time period effects</i> .....	179
5.5.5 <i>Alternative data set by testing developed markets and emerging markets subsamples</i> .....	182
5.5.6 <i>Multiple regressions results without control transparency attributes</i> .....	185
5.5.7 <i>Further robustness check</i> .....	188

5.5.7.1 Market wide variation and firm specific in formation .....	188
5.5.8 <i>Clustering analysis</i> .....	197
5.5.9 <i>Endogeneity</i> .....	200
5.5.10 <i>Statistical model fit tests</i> .....	204
5.5.10.1 Outliers.....	204
5.5.10.2 Normality, Linearity and Homoscedasticity of residuals.....	204
5.5.10.3. Multicollinearity.....	205
5.6 DISCUSSION .....	208
5.6.1 <i>Reporting timeliness</i> .....	208
5.6.2 <i>Analyst following</i> .....	210
5.6.3 <i>Credibility of disclosures</i> .....	212
5.6.4 <i>Reporting timeliness, Analyst following and Stock price synchronicity</i> .....	214
5.6.5 <i>Reporting timeliness, Disclosure credibility and Stock price synchronicity</i>	216
5.7 SUMMARY AND CONCLUSION.....	220
<b>CHAPTER SIX</b>	
<b>CONCLUSION AND DISCUSSION .....</b>	<b>224</b>
6.1 INTRODUCTION.....	224
6.2 RESEARCH QUESTIONS RECAPTURED .....	224
6.3 IMPLICATIONS OF THE STUDY .....	227
6.4 LIMITATIONS AND SUGGESTIONS .....	229
6.4.1 <i>Theory limitation</i> .....	229
6.4.2 <i>Data constraints</i> .....	230
6.4.3 <i>Cross-sectional country level studies</i> .....	231
6.5 FUTURE STUDIES.....	232
6.6 SUMMARY AND CONCLUSION.....	233
<b>REFERENCES .....</b>	<b>235</b>

## LIST OF FIGURES

<b>Figures</b>		<b>Page</b>
Figure 2.1	Stock Price Synchronicity in US and Selected Emerging Markets	31
Figure 2.2	Correlation between GDP and Stock Price Synchronicity Measures	35
Figure 3.1	Corporate Transparency Framework	55
Figure 4.1	Stock Price Synchronicity Empirical Model Development	111
Figure 4.2	Theoretical Representation of Relationships	112
Figure 5.1	Percent of Returns Variation Explained by Market	128
Figure 5.2	Stock Price Synchronicity and Gross Domestic Product.	172
Figure 5.3	Average Systematic Return and Variation	193
Figure 5.4	Histogram of the Normal Distribution of the Error Term	206
Figure 5.5	Linearity of the Residual of about the Stock Price Synchronicity Scores for Final Model	206
Figure 5.6	Descriptive Statistics of the Error Term and Test of Normality	207



## LIST OF TABLES

<b>Tables</b>	<b>Page</b>
Table 2.1      Stock Price Co-movement in Selected Emerging and Developed Stock Markets	30
Table 2.2      Per Capita Gross Domestic Product and Stock Return Synchronicity Measures	34
Table 4.1      Country Ranking by Stock Price Synchronicity Measured by the Weekly Fraction of Stocks Moving Together in 1995	93
Table 4.2      Country Ranking by Stock Price Synchronicity Measured by Average Weekly $R^2$ in 1995	95
Table 4.3a      Country Ranking by Per capita Gross Domestic Product for 1995	106
Table 4.3b      Country Ranking by the Number of listed Stock in 1995	109
Table 4.4      Number of listed Stock in 1995	116
Table 4.5      Variables Identification and Measurement Issues and Data Sources	119
Table 5.1      Descriptive Statistics	123
Table 5.2      Pearson Product Moment Correlation Coefficients – Panel A Synchronicity Measures and All Independent Variables	137
Table 5.2      Pearson Product Moment Correlation Coefficients - Panel B Corporate Transparency Variables and Control variables	144
Table 5.2      Product Moment Correlation Coefficients - Corporate Panel C Transparency Attributes	147
Table 5.3      Multiple Regression Results – Basic Model	160
Table 5.4      Multiple Regression Results – Interaction Variables	167
Table 5.5      Multiple Regression Results – Using Alternate Stock Price Synchronicity Measure	174

Table 5.6	Multiple Regression Results – Market Noise Effects	177
Table 5.7	Multiple Regression Results – Market Size Effects	180
Table 5.8	Multiple Regression Results – Time Period Effects	183
Table 5.9	Multiple Regression Results – Developed Markets Subsample	186
Table 5.10	Multiple Regression Results – Without Control Transparency Variables	189
Table 5.11	Stock price synchronicity ranking by country for 1995	192
Table 5.12	Multiple Regression Results – Using Market Wide Variation at Residuals Measures	195
Table 5.13	Two-Stage-Least-Squares Estimation	199
Table 5.14	Frequencies of clusters	199
Table 5.15	Clusters Centroids	199
Table 5.16	Cluster Distribution	203
Table 5.17	Heteroskedasticity Test for Residuals Breusch-Pagan-Godfrey	207

## LIST OF ABBREVIATIONS

10Q	Stock Exchange Commission Form 10-Q
APT	Arbitrage Pricing Theory
BPG	Breuch-Pagon-Godfery Test of Heteroskedasticity
CAPM	Capital Assets Pricing Model
CAR	Cumulative Abnormal Returns
CIFAR	Center for International Financial Analysis and Research
<i>Cook's D</i>	Cook's Distance
CRSP	Center for Research in Stock Prices
GAAP	General Accepted Accounting Standards
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IDC	Interactive Data Corporation
IPO	Initial Public Offerings
IRRC	Investor Responsibility Research Center
MENA	Middle East and North Africa Region
OLS	Ordinary Least Squares
RI	DataStream's total return
S&P COMPUSTAT	Standard & Poor's Data Services Compustat
SFAC	Statement of Financial Accounting Concepts
SMC	Squared Multiple Correlations
UK	United Kingdom
US	United States