



Corporate Governance as a Determinant of Stock Price Synchronicity: Empirical Evidence from Pakistan

Vol. II, No. I (2017) | Page: 289 – 304 | DOI: 10.31703/grr.2017(II-I).20

p- ISSN: 2616-955X | e-ISSN: 2663-7030 | L-ISSN: 2616-955X

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Abstract

The objective of this study is to investigate the association of investor protection (IP) and stock price synchronicity (SPS). Based on the theory that a strong IP reduces information asymmetry (IA) and enhances the quality of firm fundamental information through disclosures of annual reports. Such information is then considered for investment decisions. SPS is measured by Co-movement of majority of share prices in either direction in a stock market, while IP is proxied by Size of the Board of Directors, ratio of the independent directors to total size, and audit committee. Data has been downloaded from State Bank of Pakistan, Companies' web sites, and Pakistan Stock Exchange for the period 2010-17. Using panel data analysis techniques, results show that IP and SPS are negatively related. These findings suggest that companies with strong IP help in reducing IA and thus increase the use of FFIs for investment purposes.

Key Words: Stock Price Synchronicity, Corporate Governance, Investor Protection, Board Size, Independent Directors, Audit Committee, Disclosure

Introduction

Capital markets are considered efficient and critical tools for development of economy (Henry & Okuitan, 2013). Owizy (2013) argues that capital market is an important institution in development of the economy by channelizing resources, promoting reforms to strengthen financial sector and use of savings amongst competitive uses which are critical for efficiency of economy. They help individuals to invest in their future needs and channelize these savings to support economy (EU Economic Review, 2014).

Over the past few decades, major public companies have experienced corporate frauds which results in turmoil in the capital market, loss in shareholders' value and downfall in the overall economy (Bhasin, 2013). Farinha (2003) reports that recent corporate scandals and frauds raised a question in the mind of public that whether top managers of companies are working in best interest of

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shareholders? Agrawal and Cooper (2009) conclude that one of the reasons for recent financial scams is the weak corporate governance (CG) systems of firms. This leads to more controlled powers of managers who tend to work for their own interests rather than shareholders and firms. Bhasin and Madan (2013) study corporate collapses and report that recent scandals put a big question on the effectiveness of CG within firms. Similarly, Mukhopadhyay (2013) argues that recent debacle made it clear that public is demanding accountability, responsibility, and compliance with rules and regulations in corporate behavior and CG is evolved in response to these corporate scandals and defaults. Lipman and Lipman (2006) conclude that strong CG helps to prevent frauds through effective control and made it more attractive for investors and customers.

CG discusses the different processes, rules, and regulations by which a company is operated and governed. It provides such guidelines that control companies for attainments of its goals and objectives and is also beneficial for stakeholders (Thomson & Bureau, 2009). Fan (2004) defines CG as process of putting in place the mechanism by which firms are managed and controlled in a way that will benefit the shareholders in long term. In other words, CG means the establishment of procedures to control agency problems that give rise to conflict of interest. Thus CG helps in managing a firm in such a way as to limit management's controlling powers.

Agency problem refers to the dissolution of ownership and control faced by firms leading to issues related to efficient use of its resources to increase shareholders' wealth. CG helps in reducing agency problems and restrain managers from working in their own interests (Shleifer & Vishny, 1997). Jensen and Core (1999) argue that an agency conflict allows the managers to extract more private benefits. A strong CG mechanism helps to mitigate these problems by establishing a balance between ownership and control reducing the IA and also among interest of stakeholders.

Earlier literature reports that one of the main issues in a firm is the information dissemination among insiders and outsiders. For example, Ashok and Kumar (2013) argue that agency problem arises under circumstances of IA between principal and agent. Klein (2002) states that IA refers to situation in which firm insiders (managers) have more information than market participants. Anglin, Edelstein, Gao, and Tsang (2011) conclude that good CG improves efficiency of markets by reducing IA between managers and shareholders. Kyereboah (2006) reports that purpose of many CG reforms is aimed toward reducing the IA among the stakeholders. Bahmani (2014) argues that availability of firm fundamental information (FFI) decreases IA between management and outside directors, market participants are always looking for high-quality financial information.

Barros (2013) investigates that a variety of reforms and codes of CG, for example, Sarbanes-Oxley Act (SOX) of 2002 in US and Financial Security Law (2003) in France are established to enhance transparency and improve the

accounting quality. Verrecchio (2001) examines whether CG enhances the standard of access information and thus improves information environment of listed companies. Gul, Kim, and Qiu (2010) conclude that increased informative environment and availability of firm fundamental information leads to control stock price co-movement based on low IA among the stakeholders.

Stock Price Synchronicity (SPS) is described as the parallel co-movement of stock returns over a selected period (Khandakher, 2010). Morck, Yeung and Yu (2000) indicate that stocks co-move more in emerging markets due to low investor protection (IP) than developed countries. They suggest that strong IP countries show low levels of SPS. La-Porta et. al. (1998) conclude that IP differs around the countries depending on their legal system and enforceability of laws. They conclude that countries with Common Law characteristics have strong IP than those prevailing in code law countries. These varying differences in IP and CG levels in countries result in higher IA and thus have different levels of quality of accounting information. These differences are wide in developed and developing countries. For example, Common Law countries of US, UK, and Canada have strong capital markets with strong IP (La-Porta et. al.,1998) while countries such as Pakistan, Indonesia, Bangladesh, and India have either developing markets or emerging markets but belongs to Common Law Countries.

Pakistan is a common law country but it has a weak IP environment. Considering this, the current study empirically examined the relationship of IP with the use of firm fundamental information (FFI) proxied by SPS in capital market of Pakistan. In particular, it investigated the effect of board size (BS), ratio of independent directors (ID) and existence of audit committee (AC) on SPS for the period 2010-2017. Using data from 640 firm-year observations, the study finds that IP (as proxied by BS, ID and AC) is negatively affecting SPS. The study concludes that companies with strong IP produce high-quality financial reports that reduce IA among the stakeholders who use FFIs in making investment decisions.

The rest of the paper is organized as follows. Section 2 provides in-depth literature review on IP and SPS; Research Methodology and Hypothesis Development are provided in section 3; section 4 discusses the results and Conclusion is presented in the last section.

Literature Review

Capital market is recognized as a viable and efficient tool for growth and improvement of the economy (Oluitan & Henry, 2013). This is rationale that different bodies and government advisors keep a close eye on the activities of capital market (Gilani, 2010). In order to strengthen the markets and protect the investments of both national and international investors, specific policies and regulations are implemented. The aim of these policies is to attract investors and make their investments protected (KPMG, 2010). A key component to protect the

investors is to establish effective CG mechanism by strengthening the role of BoDs and their subcommittees (Brennan, 2006).

SPS Studies

SPS is studied by different authors from time to time. For example, Morck et al. (2010) investigate stock price movements in relation to differences in markets. They conclude that SPS is high in emerging markets in relation to the developed economies and this difference is because of difference in IP. The difference in IP among countries is because of differences in their legal systems (La Porta et al., 1998). Moreover, they conclude that legal jurisdiction has varying levels of IP (i.e. Common Law Countries-Strong Legal Environments while Civil Law Countries-Weak Legal Protection of Investors).

Morck et al. (2010) conclude that strong IP leads to decrease SPS. Hasan, Sang, and Wachtel (2013) explain SPS in relation to institutional development; they conclude that strong institutional development in a country decreases SPS by increasing the availability of information for investors. Shaiban and Saleh (2010) investigate that there exists an inverse relation between SPS and information availability and information intermediaries. Morck et al. (2010) report that SPS can be used as a measure of FFIs reflected in stock returns.

Skaife, Gassen, and Fond (2005) investigate that SPS is because of differences in an informative environment in different countries, weak informative environment leads to increase synchronicity. Faroor, Sribi, and Ahmed (2013) argue that strong CG mechanism within a country leads to increase the flow of information due to which SPS decreases. LaPorta et al. (2002) report that CG is a set of mechanism through which shareholders are protected from managers.

Butt (2011) states that CG specifies rights and responsibilities of stakeholders to avoid agency problems within a corporation. Jensen and Meckling (1976) blamed the agency problem on the incompatibility of principle interests with that of agent. They define agency issues as contracts in which managers, on behalf of the principal, perform activities related to firm. Hubbard and Palia (1999) report that agency problems are not same everywhere, but it differs among firms and industries. McColgan (2001) argues that agency problems can be mitigated by application of an effective CG mechanism leading to a decrease in IA between stakeholders. Anglin et al. (2011) argue that strong CG reduces IA problems by increasing efficiency of capital markets through increasing financial reporting quality. Lambert, Leuz, and Verrecchia (2005) report that high financial reporting quality decrease IA and improves the investor's ability to monitor firm activities. Cohen (2004) argues that important function of CG mechanism is to prevent manipulation of information by improving financial reporting quality.

Barros (2013) investigates that reason behind the evolution of reforms in CG is to enhance the reporting quality which increases the availability of firm

fundamental information. Verrecchia (2001) investigates that CG helps to improve quality of available information and hence improves information environment. Morck et al. (2010) argue that SPS measures the availability of firm-specific information. Gul et al. (2010) report that increased informative environment and availability of firm fundamental information leads to increase the protection of investor which decrease SPS. Alzoubi and Selamat (2012) state that the high profile corporate collapses increases concern of governments and regulators toward effectiveness of CG mechanism. They further argue that the integrity of financial reporting mechanism is questioned if the BODs fail to oversee and monitor the implementation of this system.

Strong CG supplements the board's ability and its relative committees to manage their affairs effectively. It also enhances the shareholders' trust and confidence in the disclosure of accounting information (SOX, 2012). DeFond and Francis (2005) report that shareholders depend on the BoD's ability to judge management's decisions. They further report that effectiveness of board and their subcommittees improve financial reporting quality. Abbot and Parker (2000) investigate that AC is usually considered as an only indicator to ensure the integrity of FFIs disclosures. The performance of AC depends on practices and attitude of entire BODs. However, if the board is an ineffective one, then AC will not be able to perform effectively (Blue Ribbon Committee, 1999). Boo and Sharma (2008) investigate that effectiveness of AC depends on composition of entire board. Alzoubi and Selamat (2012) conclude that firms with an effective IP environment increase the credibility of their disclosure and FFIs and thus promote higher financial reporting.

Investor Protection (Board Size, Independent Directors, Audit Committee)

Pradhan (2011) argues that BOD held an important position in the functioning of corporate control. Shivdasanni and Zenner (2002) report that the process of determining the optimal size of board has been a long-standing debate in the CG literature. Lipton and Lorch (1992) is pioneer in study on board size as a dimension of CG; they perform their study on the board size and conclude that an effective board has seven to nine members. Guest (2009) empirically investigates the effect of board size on firm performance (FP) in UK and finds that board size is negatively associated with FP.

Vo and Phan (2013) investigate the effect of BS on FP and reported an adverse association between BS and performance of a firm. Bond (2009) investigates BoD's characteristics (specifically BS) with FP. They conclude that BS is a weak predictor of FP and there is no statistically significant relationship found between board size and corporate performance. Moreover, Cheema and Din (2013) study CG relation with FP. The focus of study is on board size and CEO duality; their results documented insignificant association between BS and FP.

Shivdasanni and Zenner (2002) investigate board size impact on corporate performance. They argue that large boards through increase deliberation enhance the overall quality of CG. Hermlin and Weisbach (2003) study about the board size in relation to corporate decision making and conclude that small board size is favorable in the organization to promote deliberations among board members which leads to effective control and improved performance of firm. But researchers support larger board size, for example Klein (2002) supports the fact that large sized board brings diversity in terms of experience, expertise, skills, innovation and creativity. Others report that a firm with a larger board shows better FP (Dalton, 1999). Adams and Mehran (2003) argue that large board effectively monitors the management and can provide better expertise.

Forbes and Milliken (1999) study board size and conclude that larger boards are more effective as compared to smaller ones. It benefits in term of the experience which facilitates in the making of the corporate decisions and strengthen CG mechanism through effective exchange of information. Joshua (2012) investigates the relation of CG and firm's disclosure's environment and concludes that firms with larger boards reduce firm-specific information with leads to increase synchronous movements of share prices. Gyamfi (2013) investigates the extent of SPS with different aspects of CG and derive its association, he concludes that smaller board enhance informative environment which tends to decreases SPS.

The AC being a key CG structure is normally entrusted with responsibility of accuracy, timely disclosure and quality of FFIs (Adeyemi, 2013). It is now a compulsory requirement for all public companies to maintain standing ACs (Sarbanes Oxley Act, 2002). William and Marnret (2013) study AC in relation with CG and concludes that internal control and external audit responsibilities lie with AC which is important for effective implementation of CG mechanism. Mohiuddin and Karbhari (2010) argue that AC plays as a control tool for BoD and other stakeholders in firms for better performance and increasing the shareholder's wealth. Turley and Zaman (2004) study the role of AC and conclude that there is no clear evidence regarding its impact on FP but oversight role is important for flow of information. Bean (1999) argues that the prime purpose of an AC is to review and oversee the accounting information that is provided to all stakeholders. He further argues that audit process and internal control procedure is to assist the BoD in fulfillment of their oversight functions. Hossain and Khan (2006) argue that AC as a subcommittee of BoD that is tasked with ensuring the credibility and objectivity of financial disclosures.

Pandya (2013) reports that financial scams made investors attentive towards investment. He further argues that the presence of AC attract investor by safeguarding their interests through credible financial disclosure. Barros et al. (2013) report in his study that AC emphasizes on credibility of financial reports which enhance informativeness in markets. Elbadry, Gounopoulos, and Skinner

(2014) investigate that AC encourage the monitoring of the managers thus making it difficult for them to conceal any information which increase in formativeness of firm. Gul et al. (2010) conclude that AC disseminates reliable information to market thus imparting credibility to financial reports which increase the in formativeness of the firm leading to decrease SPS.

Stock prices are important source of information in corporate world (Ferreira & Raposo, 2007). On basis of these stock prices the performance of the firms is evaluated. Investors use these prices to make investment decisions. Morck et al. (2000) report that share prices move in a synchronized way and these co-movements differ around the world depending on level of IP and use of FFIs in these capital markets of the world.

A strong CG mechanism is implemented to increase IP which increases the confidence of investors. Alzoubi and Selamat (2012) suggest that regulatory bodies believe that better CG implementation results in an improvement in protection of investors via improvements in the effectiveness of the boards and its relative committees. Shivdasanni and Zenner (2002) report that determining an optimal BS has been a long and ongoing debate in CG. Bond (2009) argues that large board because of increase expertise and effective monitoring mechanism enhance availability of credible information. Gyamfi (2013) concludes that board size and its committees not only improve transparency of information but also improves the quality of information reducing IA. This not only enhances information environment but also helps investors making investment decisions and thus negatively affect SPS.

SOX (2002) emphasizes on establishment of ACs to improve effectiveness of CG mechanism. Turley and Zaman (2004) conclude that presence of AC leads to increase flow of information toward stakeholders. Barros et al. (2013) report in his study that AC emphasizes on credibility of financial reports which enhance informativeness in the market. Gul et al. (2010) conclude that AC ensures the time disclosure and dissemination of FFIs to the market which increases the informativeness of firm's operational performance leading to reduction in SPS levels.

The above literature represents previous works perform on impact of IP on SPS. These studies are performed in different countries with different IP variables within different periods of time. In Pakistan Code of CG is implemented in year 2002 to increase IP. The present study examines the impact of CG (specifically the effects of Board size, ratio of independent directors to total directors in the board and audit committee) on SPS.

Research Methodology

Sample

The population of the study is all listed companies on the Pakistan Stock Exchange.

The time period selected for the study is from 2010-17. This time period is selected based on the premise that Global Financial Crises (GFC) started in 2007 and ended somewhere in late 2009. During the period of financial crisis, majority of the companies lost investments as a result of below standard investor protection regimes and systems as reported during the Asian Financial Crisis (AFC) by Johnson et al. (2000). They report that during crisis most of the investors both local and foreign lost confidence on the IP systems of not only companies but also on the regulatory environments of these countries and took their investments out from the market leaving companies as well as countries in deep turmoil. The sample firm is filtered on the basis of 30 weeks trading data availability on a stock exchange (Morck et al., 2000). Moreover, other variables' data availability is also selection criteria; i.e. if data for at least 5 years is available for a company, then it is included in the sample. These conditions reduced the sample to 80 companies from non-financial sectors. The sample did not include banks' financial companies, insurance companies and investment funds because of their differences in capital structure and operational requirements. The data is collected from Karachi/Pakistan Stock Exchange, State Bank of Pakistan and Annual Reports and also some from Open Doors website.

Analysis Tools

This research is quantitative in nature and uses Panel data that is secondary in nature. The study uses both univariate and multivariate analyses. Univariate analysis reports the nature of the data through descriptive statistics and to extract meaningful information regarding data and its structure etc. while multivariate analyses comprise of correlation and regression analysis.

To empirically investigate the association of SPS with IP, the following model is proposed;

$$SPS_t = \alpha_0 + \alpha_1 BS + \alpha_2 ID + \alpha_3 AC + \alpha_4 LTA + \alpha_5 Lev + \varepsilon \quad (1)$$

where SPS refers to stock price synchronicity for the firm at time t. BS is board size and is proxied through the strength of members in a Board of Directors of a firm; ID is ration of Independent Directors to Total Directors; AC refers to of audit committee; LTA is log of total assets of the firm; Lev is leverage value of firm.

Results

Descriptive Statistics

Table 1 presents descriptive statistics for SPS, BS, ID, AC, LTA Assets and Leverage. For SPS mean and median is 0.56 and 0.55 respectively, while skewness and kurtosis of SPS represent the normal distribution of the data. Mean values of BS, ID, and AC are 9.30, 3.54, and 0.56, while their median values are 9.00, 3.60

and 1.00, respectively. All these variables tend to be normally distributed as per skewness and kurtosis values represented in the table. These descriptions show that on average a company board size is 9 members while ratio of the independent director to total board size is about 4 persons, which is roughly 45%. The ratio shows that companies are efficient in applying code of CG of Pakistan which requires one third as independent members in the board. The presence of the AC is a requirement of the code of CG of Pakistan (the Code).

Table 1: Descriptive Statistics of SPS, BS, ID, AC, LTA & Lev

Variables	Mean	Median	Std deviation	Minimum	Maximum
		Skewness	Kurtosis		
<i>SPS</i>	0.56	0.55	0.04	0.50	0.67
	0.58	-0.47			
<i>BS</i>	9.30	9.00	2.32	6.00	14.00
<i>ID</i>	0.66	-0.76			
<i>AC</i>	3.54	3.60	1.34	3.00	7.00
	1.66	1.99			
<i>Log Assets</i>	0.56	1.00	0.50	0.00	1.00
<i>Leverage</i>	-0.25	-2.00			
	7.16	7.03	0.73	6.20	9.53
	1.51	2.17			
	0.61	0.61	0.17	0.23	1.02
	0.04	-0.43			

Table 1 illustrate the statistical description of all variables. SPS refers to stock price synchronicity; BS refers to Board Size; ID is ratio of Independent Directors to total directors; AC refers to audit committee; Log Assets is natural log of assets value at end of year and Lev is leverage calculated as total liabilities divided by total assets.

Correlation

Table 2 presents the results of correlation coefficient. The dependent variable is Stock Price Synchronicity (SPS) while independent variables are used as BS, ID, AC, log of total assets and leverage are taken as control variables. Correlation

results show that BS is negatively correlated with SPS with statistically significant association. This relationship indicates that an effective board reduces stock price synchronicity. Moreover, the correlation between ID and AC with SPS is also negative and statistically significant. In a nutshell, this relationship indicates that companies with strong IP and CG regimes reduce SPS in a market with low implementation levels and weak market structure.

Moreover, the correlation of total assets and leverage has a varying association with SPS based on theoretical perspectives. For example, large companies have high SPS based on the correlation while it has a positive association board size as well as AC. In short, the results corroborate with the prior literature and report that strong IP and legal environment firms in developed markets show low level of SPS (Morck et al., 2000).

Table 2: Correlation of SPS with BS, ID, AC, Log TA & Lev

	SPS	BS	ID	AC	LTA	Lev
SPS	1.000***					
BS	-0.217**	1.000***				
ID	-0.29**	0.42***	1.000***			
AC	-0.158***	0.253**	0.042	1.000**		
LTA	0.058	0.027*	0.014	0.050*	1.000***	
Lev	0.056*	0.070**	0.048	0.041	0.567*	1.000***

***, **, * represent 1%, 5% and 10% level of significance. Table 2 reports descriptive statistics for dependent and explanatory variables. SPS refers to stock price synchronicity; BS refers to Board Size; ID is ratio of Independent Directors to total directors; AC refers to the audit committee; Log Assets is natural log of assets value at end of year and Lev is leverage calculated as total liabilities divided by total assets.

Regression Results

The data used in this study, as reported earlier, is panel and secondary. Therefore, we use panel data techniques in estimating the regression model. Following Panel data procedures for data analyses, we apply diagnostic tests to determine which panel data analysis techniques is suitable for estimation of the relationship in SPS and BD, ID and AC. Following these procedures, we test the nature of data analysis through the Hausman Test. The diagnostic test shows that Fixed Effect Model (FE

Model) is a suitable technique to be used analysis for this study. Tests results are presented in the table mentioned below;

Table 3. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	45.54	5	0.001

The proposition of the regression model for the study is that the quality of FFIs reduces IA through timely disclosures financial information. This information is then impounded in their investment decision related to stock returns. Earlier literature such as Morck et al. (2000) suggested that countries with more stabilized financial markets and where information dissemination is free and easy show low SPS. Following the given premise, we estimate Model 1 given above.

Table 4 reports results of the FE Model. Stock price synchronicity (SPS) is used as dependent variable while BS, ID and AC are used as the independent variable and represent Investor Protection/Corporate Governance.

Table 4: Fixed Effect Model of SPS with BS, ID, and AC

Variable	Coefficient	t-Statistic	Prob.
Constant	0.032	1.431	0.161
BS	-0.019	-3.563	0.000
ID	-0.031	-4.621	0.000
AC	-0.118	-2.942	0.001
LTA	0.225	3.340	0.005
Lev	0.131	1.892	0.112
Adjusted R-Squared	0.425		
F-Statistic	43.773***		

***, **, * represent 1%, 5% and 10% level of significance. Table 4 reports descriptive statistics for dependent and explanatory variables. SPS refers to stock price synchronicity; BS refers to Board Size; ID is ratio of Independent Directors to total directors; AC refers to audit committee; Log Assets is natural log of assets value at end of year and Lev is leverage calculated as total liabilities divided by total assets.

Regression results in table 4 illustrate that BS has a negatively association with use of FFIs (SPS) and that this relation is statistically significant ($p\text{-value} \leq 0.05$). The findings in table 4 reflect that firms with large boards have low SPS. One of the reasons for such an association could be that since large boards normally consist of experienced and qualified board members having understanding of the

market as well company's operations. Thus, they tend to make decisions regarding timely disclosures of firm information disclosure as well distributing it to all stakeholders for efficient utilization of such information for making investment decisions (Hermalin & Weisbach, 2003). Moreover, the relation of ID with SPS is also negative and statistically significant. Earlier literature reports that firms with a high ratio of independent directors perform operationally better than those firms with low number of independent directors (Gul et al., 2010).

Audit committees play a vital role in ensuring that firms timely disclose its information to the market. For example, Darabi et al. (2012) report that after Sarbanes-Oxley Act of 2002, firms with independent ACs follow stringent auditing rules to audit firms' financial statements independently and disclose this information to outsiders and potential investors. Thus, firms with large board sizes, having a high ratio of independent directors and ACs improve quality of accounting information and thus have a timely disclosure and thus, investors take this information into account while making investment decisions (Morck et al. 2000). Choi and Wong (2007) report that investors demand strict monitoring of not only firms' operations but also a timely disclosure of financial reports to effectively monitor their performance in countries with a weak legal environment. In contrast, studies also conclude that firms with high audit quality do not improve quality of accounting information in countries with weak legal systems (Francis & Wang, 2008). Similar results are reported by Gul et al. (2010) and Sori et al. (2009) who show that SPS is negatively associated with AC. These results are based on the premise that AC improve accounting quality and timely disclosure. Results reported for BS and SPS are consistent with prior literature of Hermalin & Weisbach, (2003), Dalton (1999), Klein (2002) and Gyamfi (2013).

Most of the previous SPS studies have been performed in developed markets that have strong IP and effective legal environments. However, studies are scarce and rare regarding SPS in developing and emerging markets. Though results are consistent with prior literature there are still factors that need consideration to overcome the problems of synchronicity in these markets (developing). For example, Zhan (2003) reports that countries with volatile markets show high synchronicity as suggested by La-Porta et al. (1998), developing countries have volatile markets with low IP and weak legal environments. Moreover, Klapper and Love (2002) investigate IP and SPS and conclude that emerging markets having low protection for investors and weak CG mechanism leads to more synchronous stock movements.

Conclusion

This study empirically investigated the effects of BS, ID, and AC on SPS. The above association is examined based on the proposition that Pakistan with an ineffective legal system and weak IP would show high stock price co-movement.

We collected secondary data for 80 firms for the period 2010-2017 to investigate whether firms with larger BS, ID, and AC tend to show what sort of price co-movement. IP is measured through size of the board, ratio of independent director to total members in the board and AC while SPS is measured by the co-movement of majority of the number of companies to total companies (whose share price changed either upwards or downwards). Using panel data techniques, specifically Fixed Effect Model, results show an inverse association of all IP/ CG variables with SPS.

Earlier studies conducted to examine the association of SPS with IP have reported a similar negative association of the two stated variables. This study is different from other studies in the subject area that earlier studies have been carried out in developed countries while this evidence is from a developing country perspective. Pakistan, being a Common Law Country as reported by La-Porta et al. (1998), shall portray strong investor protection, effective legal environment with a strong and efficient market, yet it presents majority of the code law characteristics such as weak IP, legal environment and a weak and weak form of market efficiency. Moreover, it also has a very concentrated and family ownership. Thus, having a similar regulatory environment of a Code Law Country, Pakistan shows a low SPS value in relation to an IP environment that is more of a weak governance system country. Evidence in contrast to what La-Porta et al. (1998) have postulated in terms of Common Law Country is a unique perspective and might require an in-depth analysis of a more extended data set as well as time period. Future studies may extend the study beyond this dataset and time period and may include pre and post-Code of CG comparison. A specific even study regarding political instability and institutional affiliation may also be of interest to many academicians. Crises such as Asian Financial and Global Financial may also have a direct or indirect effect on the regulatory systems and on Pakistani market, that may present a different viewpoint with different comparative analysis may be another potential area for research.

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