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Cultural Dimensions and Sustainable Stock Exchanges Volatility in Asian Region

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ABSTRACT

The transformation of investment started from the ethical investment to green investment, then become responsible investment, continue to socially responsible investment and this modern era become more popular on sustainable investment or impact investment. Sustainable investment is based on the triple bottom line, such as environment, economic and ethic. Culture would certainly be very important for an investor in many countries to determine their investment, especially in sustainable investment. However social culture research is rarely done on investment, especially in connection with sustainable investment which is still rises. The goal of this research is therefore to show the effect of cultural dimensions: power distance, individualism, prevention of uncertainties and the long-term orientation on the sustainable stock exchanges volatility in Asian RegionL. This research uses quantitative method to examine the hypothesis. Secondary data from 7 Asian Countries stock market will be used for analyzes using a panel regression model. In this analysis, countries in Asia that do not have a sustainable index and are not included in Hofstede's cultural element index are not used. The sample data is using monthly data for 5 years period from 2015 – 2019. The finding shows that Power Distance and Long-Term Orientation negatively and significantly affect the sustainable stock exchanges volatility in 7 Asian countries. While, Individualism and Uncertainty Avoidance had positive and significant effect on volatility on sustainable stocks exchanges in 7 Asian Countries

Keywords: Cultural Dimensions, Sustainable Investment, Stock Market Volatility

Introduction

In general, investment is always influenced by market conditions, the country's economic conditions, macroeconomic conditions, the political situation and security of a country. However, if we explore deeper, it turns out that the culture of a country is also a factor that influences the habits of investors in determining the investment they will choose. The habits of investors in acting when investing will also affect the value of investments in the market. Dispositions toward such factors as financial criteria, impact investing, and positive SRI screenings are observed to be noteworthy in this relationship. Expanding mindfulness by advancing the social properties of a social impact investment portfolio will adjust SRI and impact investment. Notably, the risk tolerance attitude positively affects the willingness to pay for SRI portfolio. From the controls, education and income are important factors for greater willingness to pay and it also indicate that involvement seems to positively influence willingness to pay of SRI investors (Apostolakis, Kraanen, & van Dijk, 2016; Darsono, Muqorobin, & Yudhi, 2016; Tseng et al., 2019).

In this research, the context of the cultural dimension was adopted from Hofstede's discovery of the six cultural dimensions of various countries in the world. The theory of cultural dimensions of Hofstede (2010) provides the fundamental framework for understanding cross-cultural differences in decision-making. Using the factor analysis framework, the theory elucidates the effect process of a society's community on the attitudes, norms, values and actions of its members. He categorizes systematic differences national cultures into six dimensions in terms of power distance, individualism, masculinity, uncertainty avoidance , long-term orientation and indulgence. Research on social culture on investment is still rarely done, especially related to sustainable investment which incidentally is still rising up. In sustainable investment, investors will attach great importance to the three main aspects that must be achieved in their investments. First, the investment must have a good impact on the environment. Second, both of these investments do not violate ethics or norms and also have a good impact on the social community. The third, investments will also have a good impact on sustainable economic growth. Profit in the form of money is not the main goal in sustainable investment, but the good impact that will result from the investment itself. Not all investors have this idea, depending on their intentions and awareness of the investments they choose. Therefore, culture will definitely be very influential for an investor in determining their investment (Abdussalam & Ryan, 2011; Grinblatt & Keloharju, 2001; Zheng, 2015).

Based on the research background above, this research aims to present the effect of four cultural dimensions such as Power Distance, Individualism, Uncertainty Avoidance and Long Term Orientation on the sustainable investment return and volatility in Asian stock markets. The contribution of this research will be on the theoretical contribution in order to proof that cultural differences in each regions can affect the investment return and market volatility. Further, this research also contribute in managerial contribution for the investor manager, corporate investors and retail investor to get sight of good investment and market to invest.

Literature Review and Hypotheses Development

Numerous studies have been documenting cultural characteristics are consequential to financial activities. In the stock market, investors prefer firms nearby that share the same cultures and language (Grinblatt & Keloharju, 2001). Religious occasions and holidays affected investors' behavior, as well as stock returns and volatility (Gavriilidis, Kallinterakis, and Tsalavoutas, 2016; Al-Khazali *et al.*, 2017; Lai and Windawati, 2017). Cultural differences can be understood with Hall's Iceberg Model (1976) that it has a great hidden aspect like value,

belief, or relationship. Further, it was framed to some cultural dimensions by Hofstede (1980) as "software of the mind" shaped by the societal value. In the global financial dataset, the cultural dimensions so far have been a variable. For instance, they can predict the stock returns even if making the interpretation is challenging (Hammerich, 2019).

The first Hofstede's cultural dimension is Power Distance (PDI). It exhibits people's acceptance toward hierarchical order. The different levels of power that exists in the social structure are common and manageable for countries with a higher score of Power Distance. In the Tehran Stock Exchange Market, Iran, the investment decisions were affected by Power Distance culture (Amirhosseini & Okere, 2012). Further, Lobão and Maio (2019) explored the cultural differences that cause investors' imitative behavior or herding in 39 countries. They showed high acceptance of authority order, or high PD, was unfavorable for herding because the shareholders were more protected by good institutional quality. However, Beckmann, Menkhoff, and Suto (2008) had a prior finding that the older and less experienced assets managers in the upper hierarchy were caused by higher Power Distance.

Second, individualism (IDV). It is a prominent dimension in cultures characterized by loose ties among individuals. As the opposite of collectivism, individualistic people are more independent and detached from any collective interests. These attributes encourage investors to be more flexible and aggressive in their financial decisions, for example, by allocating more stocks and other assets to the foreign market (Anderson, Fedenia, Hirschey, & Skiba, 2011; Beugelsdijk & Frijns, 2010). Individualism, according to Chui, Titman, and Wei (2010), had a positive impact on stock market volatility and momentum profits. In contrast, Zhan (2019) indicated a less volatile stock market for individualistic nations. This was explained for cultures with higher individualism displayed a lower number of synchronized stock price movements, which lower the volatility of stock market.

In the stock market, all decisions are accompanied by unknown threats or uncertainties. Investors can be tolerant over uncertain situation, or otherwise, they are anxious and want to avoid it. Then, it refers to one culture named Uncertainty Avoidance (UAI). Most findings on this dimension related to financial studies were similar. Nguyen and Truong (2013) revealed that higher prevention of uncertainties could lower the information content of the stock market. Moreover, there is a linkage between risk-averse and conservatism with high UA. Trading activities then become more inflexible, slow, full of caution and skepticism. When investors accepted more uncertainty, the stock markets were valued more importantly in that country (De Jong & Semenov, 2002).

Another cultural dimension of Long-Term Orientation (LTO) was added after Hofstede's preliminary work. This dimension refers to the attitude like perseverance and thrifts to manage future outcomes. Long-term-oriented people tend to deal with long-term commitment; in the stock market, investors choose long-term investment or make portfolios diversification (Anderson et al., 2011; Beugelsdijk & Frijns, 2010). Hammerich (2019) found that LTO expressed a positive relationship to the stock price effect on a global cross-sectional level. Although the values of the cultural dimensions are time-invariant, LTO showed a strong predictive power for global firm-level returns. However, some studies excluded LTO from cultural analysis or could not find any significant impact on financial markets (Chui, Titman, and Wei, 2010; Lobão and Maio, 2019; Zhan, 2019).

Research Method

Sustainable stock exchanges used in this research were from Asian country that selected based on Sustainability Stock Exchanges Initiatives by United Nation. Based on the

Sustainability Stock Exchanges Initiative, we found 7 countries in Asian which had established sustainability index such as, Indonesia (JKSRI), Malaysia (FTF4GBM), Singapore (iEdge SG ESG), India (NIFTY 100 ESG), Japan (JPXNK400), China – Hongkong (HSCSUSI) and Turkey (XUSRD). We retrieve the financial data of our sustainable stock exchange sample from Thomson Reuters Data stream. The sample starts from January 2013 until December 2019. We use monthly data for the Sustainability index in each countries. Define successive stock market index observations at time t and t+1 as Pt and P_{t+1}, and transform a stock market index series $\{P_t\}$ to a stock market return series $\{y_t\}$ using the following continuous compounding principle.

$$y_t = \ln (P_{t+1} / P_t) = \ln(P_{t+1}) - \ln(P_t)$$

Inspired by Hofstede's (2010) cultural dimensions theory, this research uses 4 dimensions such as Power Distance (PDI), Individualism (IDV), Uncertainty of Avoidance (UAI) and Long-Term Orientation (LTO) to characterize national cultures in Asian region. The data of cultural dimensions for 7 Asian countries were retrieved directly from Hofstede's website.

Power Distance (PDI): The power distance index is defined as "the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally". In this dimension, inequality and power is perceived from the followers, or the lower strata. A higher degree of the Index indicates that hierarchy is clearly established and executed in society, without doubt or reason. A lower degree of the Index signifies that people question authority and attempt to distribute power

Individualism (IDV): The measurement of a preference for a loosely - knit social framework in which the care of themselves is to be expected only by individuals and their immediate families.

Uncertainty Avoidance (UAI): The measurement of uncertainty level that can be accept or avoidance by individual in a society.

Long Term Orientation (LTO): The measurement of long-term emphasis can be seen as the quest for morality in society. In culture with a short-term outlook, absolute truth is generally concerned.

Table 1. Cultural Dimension Index of 7 Asian Countries

Countries	Power Distance	Individualism	Uncertainty Avoidance	Long Term Orientation
Indonesia	78	14	48	62
Malaysia	100	26	36	41
Singapore	74	20	8	72
Thailand	64	20	64	32
Vietnam	70	20	30	57
India	77	48	40	51
Japan	54	46	92	88

Hongkong	68	25	29	61
Turkey	66	37	85	46

To examine the effect of 4 cultural dimension in each countries on sustainable stock exchanges, we applied pooled OLS panel regression for this paper which enable us to explain the result in ideal way. These panel regressions also serve as robustness test for eliminate the heteroscedasticity. The regression model of this research was consist of Sustainable Stock Exchanges return ($SSEr_{it+1}$) as dependent variable and the four time-invariant cultural dimensions of Hoftede such as power distance (PDI_l), individualism (IDV_l), uncertainty avoidance (UAI_l) and long-term orientation (LTO_l) and u_i is an idiosyncratic for error term.

$$SSEr_{it+1} = \alpha + PDI_l\, b + IDV_l\, c + UAI_l\, d + LTO_l\, e + u_i$$

Results and Discussion

We employ the robust OLS regression which less sensitive to the outliers to capture the influence of 4 cultural dimensions on 7 Sustainable stock exchanges in Asian region. Table 2 shows that all of the cultural dimension had significant effect on the market volatility in Asian region. The r-squared of this model is 0.3993, means that the cultural dimensions can explain the effect on sustainable stock exchanges volatility only 39.93% while 61,07% were explain by variables outside the model.

Table 2. Regression Results

SSE	Coef	Robust Std Error	t	P > | t |
Cons	30.225	10.185	2.97	0.003
PDI	-4.684	1.371	-3.42	0.001
IDV	1.820	0.201	9.04	0.000
UAI	0.797	0.169	4.70	0.000
LTO	-2.918	0.808	-3.61	0.000
n	415		F (4,410)	543.22
R-Squared	0.3993		Prob > F	0.000
Root MSE	2.0496			

We found that power distance negatively and significantly influences the Asian Sustainability Stock Exchanges volatility with the coefficient of -4.684. Individualism with coefficient 1.820 and Uncertainty avoidance with coefficient 0.797 were positively and significantly affect the stock exchanges volatility. The long term orientation had negatively and significantly influences the sustainable stock exchanges volatility with -2.918.

In the 7 Asian countries of this paper show that the increasing of power distance will lead to decreasing volatility of the sustainable stock market. The positive influence of individualism in the Asian region create the market more volatile, because the investors were

more flexible and more aggressive in investing. This finding is related with research by Chui et al (2010) which found that individualism had positive impact on market volatility and momentum profit. For the investors, the volatility of market shows the attraction of stock investment and growth of profit. The uncertainty avoidance also had positive impact on the sustainable stock exchanges in 7 Asian countries. So, the increasing of uncertainty avoidance will increase the market volatility. When the investors are more emotional and uncomfortable with uncertainty and ambiguity the market will tend to be more volatile. Because investors are worried with their investment when the shocks happen, so they decide to go off from the market. The investors in Asian region mostly had long term orientation on their investment, so it create the decreasing of market volatility in the short-term.

Conclusion

We have tested the impact of four cultural dimension such as Power Distance, Individualism, Uncertainty Avoidance and Long-Term Orientation on the stock market volatility, with focus on the sustainable stock exchanges in 7 Asian Countries. Pooled robust OLS regression was applied to analyse the model of this paper. The outcomes of our empirical investigation underline the fact that: (i) the increasing of power distance will lowering the market volatility in Asian region, (ii) the individualism has a positive and significant impact on the market volatility, (iii) the increasing of uncertainty of avoidance by investors in Asian region will lead to the higher volatility, (iv) the Long term orientation has a significant and negative impact on market volatility. To conclude, our robust findings highlight the persistence of cultural dimensions and its related uncertainty and amplifies the sustainable stock exchanges volatility in Asian Region.

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