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How Do Stock Market Development and Competitiveness Affect Equity Risk Premium? Implications from World Economies

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Abstract: Purpose: This paper examines the interrelatedness between countries' stock market development and competitiveness and the equity risk premium (*hereinafter*, ERP). In addition, this paper examines the length of time that stock market development takes to have an impact of ERP. The results offer an empirical guide to stock market authorities about the robust factors that help reduce ERP, which, in turn, encourages raising equity financing. Design/methodology: The dataset includes 59 countries that are listed in the market potential index (*hereinafter*, MPI) covering the years 1996 to 2020. The MPI provides comprehensive macroeconomic factors that can be used for examining stock market competitiveness and, thus, its potential effects on ERP. Findings: The results of the robustness test show that (a) a negative and significant association exists between the turnover ratio of domestic shares to stocks traded and ERP, (b) the increases in stock market competitiveness are associated with increases in the number of listed companies, (c) lowly ranked countries in the MPI are associated with increasing ERP, and (d) in terms of the interaction between duration of stock market development and competitiveness, the relatively competitive stock markets take 2–6 years for stock market development indicators to have a significant effect on ERP. Originality: This paper offers two main contributions to the related literature. The first contribution is to offer a measure of stock market competitiveness using indicators of stock market development. Therefore, robust indicators of stock market development can be reached. The second contribution is to offer empirical results about the length of time (referred to in this paper as duration) required for the indicators of stock market development to have a favorable effect on ERP.

Keywords: stock market development; equity risk premium; market potential index; duration; world economies; robustness

JEL Classification: D53; E44; N20

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1. Introduction

ERP remains a significant concern for shareholders, as well as for corporations. The latter consider ERP as a practical guide when raising equity financing, and it has been treated in the related studies as a tool for timing access to the equity market. Usually, corporations benefit from issuing equity when it costs less (low ERP). Shareholders are as concerned with ERP as corporations although with opposite incentives. Shareholders usually prefer high ERP as it offers a compensation for investment in the stock market. These divergent interests of shareholders and corporations provide a research motivation about what stock market authorities, as well as public policymakers, must do to make the equity market viable and attractive for both corporations and shareholders. Those efforts of the stock market authorities have taken various routes that are collectively referred to as stock market development which, eventually, aims at enhancing stock market competitiveness. In this

sense, it is worth examining the extent to which stock market competitiveness is associated with ERP. The opposite interests of shareholders and corporations regarding the benefits of ERP require that research efforts adopt one consistent point of view. Therefore, in this paper, the authors adopt the interests of the corporations with the understanding that the availability of low-cost equity financing promotes business progress that would eventually offer benefits to shareholders. Therefore, indicators of stock market development are considered favorable when they help reduce ERP.

Several studies have reported an empirically positive and significant impact of equity financing on corporate competitive performance, especially innovation and growth (Beck and Levine 2002; O'Brien 2003; Müller and Zimmermann 2009; Zhang et al. 2019). The authors of the current paper argue that the empiricism of equity financing requires an examination of the way ERP is managed. Since equity financing is associated with positive risk tolerance (Zhang et al. 2016), stockholders would be greatly interested in the movements of ERP as it deals with different preferences (Damodaran 2009; Rietz 1988).

The ERP has, therefore, been considered one of the critical indicators of a reliance on equity financing. It is plausible to argue that a high ERP is an incentive for investors to invest in equity and, hence, an opportunity for firms to raise equity financing. The critical role of ERP has been extended to monitor market volatility (Han 2011). Therefore, the stability of equity financing requires further and constant examination of the factors that influence ERP. To that extent, Bretscher et al. (2022) reported the benefits of risk premium as an indicator to uncertainty shocks.

On a larger scale, the stability of a stock market provides sufficient incentives to both domestic and foreign investors (Levine and Zervos 1998a, 1998b; El-Wassal 2013; Henry 2013; Boyd et al. 2001; Torre et al. 2006; Yartey 2008). Therefore, the call for stock market development requires an examination of the robust factors that influence ERP significantly. The previous literature has suggested several significant indicators such as size, liquidity, volatility, market capitalization, and number of listed firms (Rajan and Zingales 2003; Torre et al. 2006). To add to this discussion, we propose the following indicators commonly used in the literature: (a) market capitalization of listed domestic companies as a percentage of GDP, (b) total value of stocks traded as a percentage of GDP, (c) total listed domestic companies, and (d) turnover ratio of domestic shares to total traded stocks.

We assume that efforts to develop the functionality of a stock market must aim at enhancing its competitiveness. Therefore, the natural end-result of these efforts would be a certain impact on the index ERP. The next section offers a review of several related issues. First, we discuss the common indicators of stock market development and its effect on ERP. Then, we discuss the effects of stock market competitiveness on ERP.

1.1. Indicators of Stock Market Development

1.1.1. Market Capitalization of Listed Domestic Companies as a Percentage of GDP

This indicator is widely used in the related studies at the country level of analysis. Although market capitalization is not a universal indicator of predicting economic performance, this indicator offers a clue about the effect of financial development on the economic growth (Garcia and Liu 1999; Arestis et al. 2001; Kumar 2010; Robins et al. 1999; Tan et al. 2011). In addition, Buffett and Loomis (2001) found that stock market capitalization is the most appropriate measure which acknowledges corporate valuations. The early studies of Levine and Zervos (1996) stated that the value of market capitalization of listed shares as a percentage of GDP is a size-based measure that accounts for risk diversification and capital allocation. However, later, the same authors, Levine and Zervos (1998a, 1998b), concluded that market capitalization is not a good predictor of economic growth in the context of time series data. Rousseau and Wachtel (2000) used the ratio of market capitalization to GDP and the ratio of total value of trading stocks to GDP as measures of stock market development. Their results demonstrated that both indicators had positive and significant coefficients. Schularick and Zimmermann (2018) noted that the increase in market capitalization is associated with lower market returns. Li (2007), Mahama (2013), Tan et al. (2011), and Torre

et al. (2006) used market size as an indicator of stock market development, concluding that market capitalization, the total value of trading stocks to GDP, and the turnover ratio significantly influence the development of financial intermediaries and trade openness. Moreover, Bätje and Menkhoff (2013) argued that small firms (e.g., low market capitalization) and value stocks (high book-to-market ratio) tend to have on average higher returns than large firms (high market capitalization) and growth stocks (low book-to-market ratio).

1.1.2. Total Value of Trading Stocks as a Percentage of GDP

Bekaert and Harvey (1998) argue that a market is considered liquid if transactions of large sizes can be made instantaneously and frequently without a critical change in the price. In addition, the value of trading stocks is viewed as a better indicator of stock market development rather than market capitalization as far as the former emphasizes liquidity. El-Wassal (2013) stated that the value of trading stocks is a volume-based indicator which is most useful in measuring market size. On the other hand, Levine and Zervos (1998a, 1998b), Rousseau and Wachtel (2000), and Biswal and Kamaiah (2001) reported that the value of trading stocks has two potential pitfalls. First, it does not measure the liquidity of the market; second, it measures trading relative to the size of the economy. This view was further supported by Beck and Levine (2004). Bayraktar (2014) showed that low competitiveness between stocks is associated with low returns, while, in highly competitive stock markets, a positive relationship exists where high value of the traded stocks is associated with increases in ERP. Nevertheless, Hegde et al. (2010) reported a significant association between trading volume of the dually listed firms and competitiveness of stock markets.

1.1.3. Total Number of Listed Domestic Companies

The number of listed stocks is usually used as a proxy for the size of the stock market. The latter offers an advantage of being an indicators of stock market breadth. In addition, when measured this way, the stock market size is not subject to stock price fluctuations. Furthermore, the number of listed stocks is not affected by different possible measurements of GDP, which often happens in many developing countries. Demirgüç-Kunt and Levine (1996), Mureşan and Ioana (2012), and Mahama (2013) reported significant and positive associations between ERP and total number of listed domestic companies. Nevertheless, El-Wassal (2013) argued that this indicator suffers from two main pitfalls. The first pitfall is the slow movements in the number of listed companies that hinder changes among listed companies. The second pitfall is that this indicator may be a disadvantage in the economies possessing only a smaller number of large companies.

1.1.4. Turnover Ratio of Domestic Shares to Total Traded Stocks

Ultimately, the turnover ratio measures the liquidity of a stock market, although an overlap exists between liquidity and size of a stock market. Choong et al. (2010) considered that the value of trading stocks may be seen as a better indicator of the stock market development rather than market capitalization ratio alone. However, taken together, the interactions between market capitalization and turnover provide fuller information about country's stock market. Early studies indicated that the relationship between ERP and turnover ratios of stock portfolios is positive (Kane 1994; Brennan and Titman 1994; Jun et al. 2003; Mahama 2013). Beck and Levine (2004) noted that, since the turnover ratio of a stock market is the result of the value of trading stocks divided by the total market capitalization, then turnover ratio is an indicator of liquidity that captures the share of trading stocks related the size of the total stock market. Therefore, high turnover is often considered an indicator of low transaction costs. Nevertheless, emerging markets might be an exception where turnover is not a determinant of future market returns (Bekaert et al. 2003).

1.2. Contribution

This paper offers a contribution to stock market authorities regarding the significant factors that help enhance the competitiveness of the stock market. The benefits are also extended to the practitioners in terms of examining the indicators of stock market development that are significantly associated with ERP. Further contribution is extended by examining the indicators of stock market development at different levels of stock market capitalization. The latter is used as a proxy for stock market competitiveness.

1.3. Objectives

This paper aims at fulfilling two objectives:

(a) To examine the robust indicators of stock market development that affect ERP significantly.
(b) To examine the association between ERP and stock market competitiveness.

The paper is organized as follows: Section 1 discusses the association between stock market development and risk premium; Section 2 develops the hypotheses; Section 3 describes the data, statistical tests, and estimation; Section 4 discusses the results; Section 5 concludes the paper.

2. Hypotheses Development

The abovementioned related studies helped in developing the following testable hypotheses:

H1. *A significant association exists between the market capitalization of listed domestic companies and ERP* (Robins et al. 1999; Schularick and Zimmermann 2018; Bätje and Menkhoff 2013; El-Wassal 2013).

H2. *A significant association exists between the total value of stocks traded and ERP* (Mahama 2013; Bayraktar 2014).

H3. *A significant association exists between the total number of listed domestic companies and ERP* (Demirgüç-Kunt and Levine 1996; Bayraktar 2014; Mureşan and Ioana 2012).

H4. *A significant association exists between the turnover ratio of domestic shares to stocks traded and ERP* (Kane 1994; Brennan and Titman 1994; Mahama 2013; Jun et al. 2003; Bekaert et al. 2003).

3. Variables, Statistical Testing, and Data

This section describes the data, the variables of the paper, and the standard statistical tests to ensure the relevant measurement of the variables.

3.1. Data

The data include 59 countries listed in the market potential index (MPI). Global EDGE (https://globaledge.msu.edu/mpi, accessed on 25 December 2019) developed this index which comprises a variety of macroeconomic indicators that can be used by investors to assess the potential of a certain country. In this sense, we argue that this potential is associated with ERP. It is also an intrinsic justification to use the stock market capitalization as a proxy for relative competitiveness. The MPI provides a ranking of each country over years. The country rankings are used in this paper as a proxy for the relative investment potentials of a country. The dimensions and weights of the factors included in the MPI are reported in Appendix A (Table A1). The data cover the years 1996 to 2020.

3.2. Dependent Variable

The ERP is calculated as follows: ERP = index return − return on treasury bills.

3.3. Independent Variables

The objectives of this paper require an examination of several groups of independent variables that are classified into four groups as reported in Table 1.

Table 1. A classification of the independent variables examined in this paper.

Groups 1: main indicators of stock market development (x_{it})	(a) Market capitalization of listed domestic companies as a percentage of GDP, (b) total value of stocks traded as a percentage of GDP, (c) total listed domestic companies, and (d) turnover ratio of domestic shares to total traded stocks.
Group 2: a proxy for relative country potentials (MPI_{it})	The MPI provides a ranking to each country over years. The country rankings are used in this paper as a proxy for the relative potential of a country that are classified into three levels, namely, low, medium, and high market potentials. The three levels (thus, variables) are created by sorting countries' rankings in an ascending order, before classification into quartiles. The first quartile corresponds to low country potentials, the second and third quartiles correspond to medium country potentials, and the fourth quartile corresponds to high country potentials.
Group 3: duration of ERP ($Duration_{it}$)	This dummy variable is a proxy for the effect of time. The authors in this paper argue that an examination of the effect of time is a reasonable and relevant consideration which has been an ongoing concern in economic and financial studies (DeSerpa 1971; Chang and Lee 1977; Aruoba et al. 2009; Olsen and Khaki 1998). In this paper, the authors treat the effect of time in a convenient and simple manner that benefits from the country ranking in the market potential index (MPI) to create conditional dummy variables with the understanding that an increase in country ranking is associated with better aggregate economic conditions and, thus, lower country economic risk. In this paper, duration of ERP measures the number of years it takes until ERP decreases and the country ranking in MPI increases simultaneously, which implies an encouragement of equity financing. The dummy variable is binary, taking the value of 1 for a decrease in ERP and 0 otherwise.
Group 4: a proxy for the country effect ($Country_i$)	This variable is a dummy that takes a binary value of 1 for a respective country and 0 otherwise.

A Proxy for Stock Market Competitiveness

Although market capitalization of listed domestic companies is usually treated in the literature as a measure of the size of a stock market, we argue that the size of a stock market can also be realistically used as an indicator of stock market competitiveness. It is quite plausible to assume that large-size stock markets are more competitive than small-size stock markets. This proxy reflects a realistic understanding of competitive stock markets. As competition in a stock market intensifies, ERPs are expected to converge. Grossman and Hart (1979), Soros (1994), and Madhavan (1996) offered extensive examples of the positive role of competitiveness of stock markets.

This variable is classified into three levels to reflect the relative effects of stock market competitiveness. Therefore, three dummy variables are created to account for the relative stock market competitiveness. The three levels, namely, low, medium, and high, are carried out by sorting market capitalization of listed domestic companies in an ascending order. The low level corresponds to the first quartile, the medium level corresponds to the second and third quartiles, and the high level corresponds to the fourth quartile. Tables A2–A4 in Appendix A report the descriptive statistics for the three levels of stock market competitiveness.

3.4. Estimation Models

In terms of the three levels of stock market competitiveness, three regression equations are examined corresponding to low, medium, and high market capitalization of listed domestic companies. The estimating regression equation takes the following form:

$$y_{it} = \alpha_i + \sum_{t=1}^{n} \beta_i x_{it} + \sum_{t=1}^{n} \beta_i MPI_{it} + \sum_{t=1}^{n} \beta_i Duration_{it} + \sum_{t=1}^{n} \beta_i Country_i + \varepsilon_i$$

where y_{it} denotes ERP (annual), x_{it} denotes the main indicators of stock market development (https://data.worldbank.org/indicator/CM.MKT.LCAP.GD.ZS), MPI_{it} is a proxy for relative country potential, $Duration_{it}$ is a dummy binary variable that measures the "duration" of ERP due to a change in MPI ranking, and $Country_{it}$ is a dummy binary variable that measures the country's effect.

3.5. Testing for the Significance of Levels of Stock Market Competitiveness

This section tests whether the three levels of stock market competitiveness are distinct. The objective is to make sure that the empirical results offer clear and distinct implications about the impact of stock market competitiveness of ERP. The Kruskal and Wallis (1952) test is used for testing whether the differences among the three levels of stock market competitiveness are significant. This is a necessary step to ensure that the indicators of stock market development qualify for reflecting significant differences in the three levels of stock market competitiveness.

H_0. *The three levels of stock market competitiveness are similar.*

H_1. *The three levels of stock market competitiveness are different.*

The results of the Kruskal–Wallis test show that the three levels of stock market competitiveness are different (chi-square = 515.545, DF = 2, p-value = 0.000). This result ensures that the proceeding examination of stock market competitiveness is exclusive; thus, an overlap does not exist.

3.6. Testing for Linearity vs. Nonlinearity (RESET Test)

The testing for linearity vs. nonlinearity was carried out using the regression equation specification error test (RESET; Ramsey 1969; Thursby and Schmidt 1977; Thursby 1979; Sapra 2005; Wooldridge 2006; Bahng and Jeong 2012; Pao and Chih 2005) to test two hypotheses: H_0: $\hat{\gamma}^2, \hat{\gamma}^3 = 0$; H_1: $\hat{\gamma}^2, \hat{\gamma}^3 \neq 0$. The null hypothesis refers to linearity and the alternative refers to nonlinearity. The RESET test follows the F distribution.

The results reported in Table 2 show that data fit the assumption of nonlinearity. Accordingly, the independent variables were transformed in cubic form as an approximation to nonlinear form. The cubic form preserved the intrinsic trend of the data.

Table 2. The results for RESET test.

	Model 1: Low Competitiveness	Model 2: Medium Competitiveness	Model 3: High Competitiveness
F stat.	1.7749	4.8254	0.1120
Right critical values	3.0564	3.0250	3.0556
p-value	0.17305	0.00864	0.89415

3.7. Testing for Fixed and Random Effects (Hausman Test)

The Hausman specification test (Hausman 1978; Hausman and Taylor 1981) was carried out to determine whether the fixed or random effects model should be estimated. The test looks for the correlation between the observed x_{it} and the unobserved λ_k, addressing

the following hypotheses: $H_0 : \text{cov}(x_{it}, \lambda_k) = 0$, $H_1 : \text{cov}(x_{it}, \lambda_k) \neq 0$, where x_{it} denotes the regressors, and λ_k is the error term.

The results reported in Table 3 show that the coefficients of are significant at the low and high competitiveness levels. Therefore, the fixed effect model is relevant, while the random effect is relevant to the medium competitiveness level.

Table 3. The results for Hausman test.

Test Period Random Effect Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Model 1: low stock market competitiveness	8.42	4	0.0772
Model 2: med stock market competitiveness	0.500	4	0.9734
Model 3: high stock market competitiveness	12.56	4	0.0136

3.8. Cointegration Regression Results

Cointegration regression addresses the possible cointegration between indicators of stock market development and ERP. The existence of cointegration implies a valid estimation of long-run coefficients.

4. Discussion

The results reported in Table 4 show the trend and significance of the main four indicators of stock market development with regard to ERP. These results are discussed below.

Table 4. Cointegration regression results. The dependent variable is the equity risk premium (ERP). Standard statistical tests are carried out. The general estimating equation of a nonlinear model takes the form of least squares dummy variables (LSDVs). The estimation method is the fully modified least squares (FMOLS). Outliers are detected and removed. The multicollinearity is examined. All variables are associated with VIF ≤ 5. The long-run covariance estimate; Bartlett kernel; Andrews bandwidth = 11.00. The coefficients estimates are adjusted using White heteroscedasticity-consistent standard errors and covariance.

Variable	Coefficients		
	Model 1: Low Stock Market Competitiveness	Model 2: Medium Stock Market Competitiveness	Model 3: High Stock Market Competitiveness
(Constant)	0.204 (5.420) ***	----	0.036 (0.373)
Percentage of market capitalization of listed domestic companies to GDP	----	----	−0.045 (−2.630) ***
Percentage of total value of trading stocks to GDP	−0.495 (−6.110) ***	0.079 (2.806) ***	0.047 (1.654) *
Natural log of total number of listed domestic companies	----	0.125 (41.843) ***	0.048 (2.977) ***
Turnover ratio of domestic shares to stocks traded	----	−0.089 (−2.237) **	−0.058 (−2.088) **

Table 4. *Cont.*

Variable	Coefficients		
	Model 1: Low Stock Market Competitiveness	**Model 2: Medium Stock Market Competitiveness**	**Model 3: High Stock Market Competitiveness**
Country low ranking in MPI	----	−0.095 (−7.318) ***	−0.130 (−2.535) **
Country high ranking in MPI	0.273 (3.958) ***	0.058 (3.563) ***	----
Duration	7, 10, 13, 15, years	1, 4, 15, 17,18, 20, 21	2, 6, 10, 11, 12, 14, 16, 17, 18, 20, 21
Country effect (dummies)	Significant (1)	Significant (2)	Significant (3)
N	152	288	155
Adjusted R-squared	0.6074	0.9895	0.6484
S.E. of regression	0.2269	0.0750	0.1687
Durbin–Watson stat	1.667	1.670	1.4884

*** Significant at 1%, ** significant at 5%, * significant at 10%. (1) The significant countries are Argentina, Czech Republic, Egypt, Pakistan, the Philippines, Poland, Portugal, Sri Lanka, Thailand, Turkey, and Venezuela. (2) The significant countries are Argentina, Austria, Bangladesh, Belgium, Brazil, Chile, Colombia, Egypt, Greece, Hong Kong, India, Indonesia, Ireland, Mexico, Morocco, New Zealand, Norway, Peru, the Philippines, Poland, Portugal, Qatar, Russia, Saudi Arabia, South Korea, Thailand, Turkey, the United Arab Emirates, and Vietnam. (3) The significant countries are India, Malaysia, South Korea, and Spain.

4.1. The Effects of Market Capitalization of Listed Domestic Companies as a Percentage of GDP on ERP

Table 4 shows that high stock market competitiveness (Model 3) exerts pressures that lead to lower market index returns. Further support is offered through the descriptive statistics in Table A2 showing that the average market index returns (1996–2020) in the case of low competitiveness are 6.09%, in the case of medium competitiveness are 8.95% (Appendix A, Table A3), and in the case of high competitiveness are 4.62% (Appendix A, Table A4). It is worth noting that this inverted U shape is further supported by the results reported by Robins et al. (1999) and Schularick and Zimmermann (2018).

4.2. The Effects of the Value of Trading Stocks as a Percentage of GDP on ERP

The results in Table 4 show that, in the case of low competitiveness (Model 1), the low competition between stocks is associated with comparatively low stock market index returns leading to negative effects on ERP. The descriptive statistics in Tables A2–A4 show that the average market returns in the case of low competitiveness are 6.09% in comparison to 8.95% in the case of medium competitiveness. This result is significant in certain countries such as Argentina, Czech Republic, Egypt, Pakistan, the Philippines, Poland, Portugal, Sri Lanka, Thailand, Turkey, and Venezuela.

The cases of medium and high competitiveness (Models 2 and 3, respectively) are associated with higher index returns leading to positive ERP. This is true as far as the descriptive statistics show that the average ERP (1996–2020) is positive in both medium and high competitiveness (3.54% and 1.12%, respectively). In terms of country effects, these results are significant in certain countries such as Argentina, Austria, Bangladesh, Belgium, Brazil, Chile, Colombia, Egypt, Greece, Hong Kong, India, Indonesia, Ireland, Mexico, Morocco, New Zealand, Norway, Peru, the Philippines, Poland, Portugal, Qatar, Russia, Saudi Arabia, South Korea, Thailand, Turkey, the United Arab Emirates, and Vietnam.

4.3. The Effects of the Number of Listed Domestic Companies on ERP

In Models 2 and 3 (medium and high stock market competitiveness), the results show that, as competition increases between stocks, ERP increases as a result of the growth of stock market index returns. In addition, the positive coefficients are quite reflective of the

reality of stock market development (Torre et al. 2006). That is, increases in stock market competition are associated with increases in the number of listed companies (Mahama 2013; Bayraktar 2014; Mureşan and Ioana 2012; Demirgüç-Kunt and Levine 1996).

4.4. The Effects of Turnover Ratio of Domestic Shares to Stocks Traded on ERP

The results in Table 4 show that, in Model 1 (low competitiveness), the negative effect on ERP indicates that high stock market competitiveness exerts pressures that cause lowering stock returns (Beck and Levine 2004; Mahama 2013; Kane 1994; Jun et al. 2003; Griffin et al. 2004). These results are plausible as the listed companies in Model 3 are located in industrial countries that include Germany, India, Malaysia, South Korea, Spain, and the United Kingdom.

4.5. The Role of Market Potential Index as a Proxy for Market Competitiveness

The results in Table 4 show that lowly ranked countries are associated with increasing ERP, especially when competition between companies intensifies. The opposite is true in case of highly ranked countries where the coefficients are positive. These results indicate that low ranked countries in the MPI index can rely on stock market equity financing by increasing ERP as an incentive to investors. The opposite is true in the case of highly ranked countries.

4.6. The Effect of the Duration of ERP

In terms of duration, Table 4 includes novel results regarding the time (years) it takes until the stock market competitiveness influence ERP. The duration dummy variables show the number of years until the ERP decreases and the country's rank in MPI increases simultaneously. In Model 1, in the case of low competitive stocks, it takes 7–15 years. The countries that are significantly listed in this category are Argentina, Czech Republic, Morocco, Pakistan, Peru, the Philippines, Poland, Portugal, Sri Lanka, Thailand, Turkey, and Venezuela. In Model 2, in the case of medium competitive stocks, it takes 1–4 years or 16–21 years until ERP decreases as a result of simultaneous increases in MPI ranking. The countries that are significantly listed in this category are Argentina, Austria, Bangladesh, Belgium, Brazil, Chile, Colombia, Egypt, Greece, Hong Kong, India, Indonesia, Ireland, Mexico, Morocco, New Zealand, Norway, Peru, Poland, Qatar, Russia, Saudi Arabia, South Korea, Thailand, Turkey, the United Arab Emirates, and Vietnam. In Model 3, in the case of highly competitive stocks, it takes intervals of 2–6 years or 10–21 years. This is an interesting outcome as Model 3 includes the countries that rely less on equity financing, which means that it might take longer time intervals to realize a decrease in ERP.

4.7. Testing for the Effects of Structural Break

Since our data encompassed 2008, it is quite informative to examine whether this year offered a structural break in the results. The results of the Chow test (F stat = 3.118, p-value = 0.0087) indicate that the results included a significant structural break. This is an expected result as far as financial contagion is considered. This result also carries significant implications for the stock market authorities, as well as the policymakers, in those countries that use ERP as an incentive for equity financing requires ongoing efforts to avoid similar structural breaks, which is usually affected significantly by the quality of financial regulations

4.8. Testing for Robustness of the Results

The authors argue that the stability of the results requires an examination of the factors that must be considered by a stock market authority to enhance ERP. The authors test the robustness of the results using the skewness of the ERP (Doane and Seward 2011). As the latter is usually time-varying, a trend is included. That is, the skewness measures the movements in ERP over time. A positive skewness indicates an increasing trend, and vice versa. The skewness is calculated for every country. As a result, the entire dataset

is divided into two groups: positively and negatively skewed ERPs. It is worth noting that the percentage of negatively skewed ERPs is 60.86% and the percentage of positively skewed ERPs is 39.14%, which requires further examination of whether the indicators of stock market development vary in the two groups. The results are compared with the above-reported estimates in Table 4. The results of the robustness test are reported in Table 5.

Table 5. The results for the robustness test. The dependent variable is the equity risk premium (ERP). The estimation method is fully modified least squares (FMOLS). Outliers are detected and removed. The multicollinearity is examined. All variables are associated with VIF ≤ 5. The long-run covariance estimate; Bartlett kernel; Andrews bandwidth = 9.00. The coefficients estimates are adjusted using White heteroscedasticity-consistent standard errors and covariance.

Variable	Coefficients	
	Model 1: Positively Skewed ERP	**Model 2: Negative Skewed ERP**
(Constant)	0.522078 (1.734818) *	0.645082 (3.995692) ***
Percentage of market capitalization of listed domestic companies to GDP	−0.00571 (−0.474264)	0.001206 (0.621098)
Percentage of total value of stocks traded to GDP	−0.046296 (−1.231177)	−0.042621 (−1.791193) *
Natural log of total number of listed domestic companies	−0.007018 (−0.226272)	0.021418 (1.408832)
Turnover ratio of domestic shares to stocks traded	−0.174078 (−1.944899) **	−0.00127 (−0.038381)
Country low ranking in MPI	−0.013897 (−0.20967)	−0.175634 (−4.638399) ***
Country high ranking in MPI	0.199222 (2.400061) **	0.050278 (1.241913)
Duration effect	10 years	Years 1, 4, 7, 18, 21
Country effect (dummies)	Significant (1)	Significant (2)
N	199	310
Adjusted R-squared	0.315275	0.693996
S.E. of regression	0.288745	0.249915
Durbin–Watson stat	1.709797	1.89455

*** Significant at 1%, ** significant at 5%, * significant at 10%. (1) Hungary and Sri Lanka. (2) Argentina, Costa Rica, Croatia, Cyprus, Czech Republic, Egypt, Greece, Hungary, Indonesia, Kazakhstan, Morocco, Nigeria, Oman, Pakistan, Peru, the Philippines, Tunisia, and Venezuela.

The results in Table 5 show that, in the case of positive ERP skewness, the results are robust (in terms of the trend and significance shown in Table 4). That is, the turnover ratio of domestic shares to trading stocks is a robust determinant that explains only the increases in ERP.

5. Conclusions

The general conclusion in this paper is that the indicators of stock market development must be examined in terms of usefulness for the financial decision makers, stock market authorities, and/or practitioners. Stock market authorities must focus on enhancing the turnover ratio of domestic shares to trading stocks as it helps stabilize the ERP, as well as increase the competitiveness of the equity market. This indicator is quite critical as the results in this paper show that high equity market competitiveness eventually leads to lower market returns. This conclusion is generally viewed as an indicator of stability

in trading, which offers a mutual benefit to stock market authorities, practitioners, and traders. The effects of macroeconomic indicators compiled by the MPI are also quite useful. The results show that countries positioned on the lower side of the MPI are associated with increasing ERP, especially when competition between equity stocks increases. This reflects a compensation for risk that offers an incentive to investors to move capital to lowly ranked countries. The opposite is true in case of highly ranked countries where the coefficients are positive.

Lastly, the duration of ERP is also quite indicative for the stock market authorities. That is, (a) in the low competitive stock markets, the decreases in ERP take 7–15 years, (b) in the medium competitive stock markets, they take 1–4 years or 16–21 years, and (c) in the highly competitive stock markets, they take 2–6 years or 10–21 years. This is an interesting outcome that stock market authorities must continuously enhance the turnover ratio of domestic shares since the benefits usually occur in a long term.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Dimensions and measures of market potential index.

Dimension	Weight Measures Used
Market size	25/100 (weight) • Electricity consumption (2011) [1] • Urban population (2012) [1]
Market intensity	15/100 (weight) • GNI per capita estimates using PPP (2012) [1] • Private consumption as a percentage of GDP (2012) [1]
Market growth rate	12.5/50 (weight) • Average annual growth rate of primary energy use (between years 2007–2012 [2]) • Real GDP growth rate (2012) [1]
Market consumption capacity	12.5/100 (weight) • Consumer expenditure (2013) [4] • Income share of middle class (2011) [1]
Commercial infrastructure	10/100 (weight) • Cellular mobile subscribers (2012) [3] • Households with internet access (2012) [3] • Main telephone lines (2012) [3] • Number of PCs (2012) [4] • Paved road density (2013) [4] • Population per retail outlet (2013) [4] • Percentage of households with color TV (2013) [4]

Table A1. *Cont.*

Dimension	Weight Measures Used
Market receptivity	10/100 (weight) • Per capita imports from US (2013) [7] • Trade as a percentage of GDP (2012) [1]
Economic freedom	7.5/100 (weight) • Economic freedom index (2014) [5] • Political freedom index (2013) [6]
Country risk	7.5/100 (weight) • Business risk rating (2014) [8] • Country risk rating (2013) [9] • Political risk rating (2014) [10]

[1] Source: World Bank, *World Development Indicators* (http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators) (accessed on 25 December 2019). [2] Source: US Energy Information Administration, *International Energy Annual* (http://www.eia.gov/countries/) (accessed on 25 December 2019). [3] Source: International Telecommunication Union, *ICT Indicators* (http://www.itu.int/ITU-D/ict/statistics/) (accessed on 25 December 2019). [4] Source: Euromonitor International, *Global Market Information Database* (http://www.euromonitor.com/) (accessed on 25 December 2019). [5] Source: Heritage Foundation, *The Index of Economic Freedom* (http://www.heritage.org/index/) (accessed on 25 December 2019). [6] Source: Freedom House, *Survey of Freedom in the World* (http://www.freedomhouse.org/report-types/freedom-world) (accessed on 25 December 2019). [7] Source: U.S. Census Bureau Foreign Trade Division, *Country Trade Data* (http://www.census.gov/foreign-trade/statistics/product/enduse/exports/index.html) (accessed on 25 December 2019). [8] Source: Swiss Export Risk Insurance, *Country Risk Survey* (https://premium.serv-ch.com/premium-calculator/coverPractice/list?lang=en_US) (accessed on 25 December 2019). [9] Source: Coface, *Country Risk Survey* (http://www.coface-usa.com/Economic-studies) (accessed on 25 December 2019). [10] Source: Credendo, *Country Risk Survey* (https://www.credendo.com/country_risk) (accessed on 25 December 2019).

Table A2. Descriptive statistics for the low level of stock market competitiveness.

	Mean	Standard Error	Median	Mode	Sample Variance	Kurtosis	Skewness	Minimum	Maximum	Count
ERP	−0.07200	0.047596	−0.03664	−0.66848	0.353396	43.17198	−4.61559	−5.45494	1.664132	156
Stock market index returns	0.060866	0.038846	0.030668	−0.38448	0.2294	14.9966	−1.6095	−3.2229	1.7587	156
Market capitalization of listed domestic companies (% of GDP)	0.993379	0.324266	0.177156	0.042842	16.40313	27.7855	5.257087	0.037421	29.87876	156
Stocks traded, total value (% of GDP)	0.116918	0.014133	0.053394	0.000956	0.031158	7.123418	2.624998	0.000956	0.933249	156
lnListed domestic companies, total	4.643637	0.078835	4.532542	3.78419	0.969531	−0.43151	−0.03419	2.197225	6.654153	156
Stocks traded, turnover ratio of domestic shares (%)	0.334995	0.028576	0.194594	0.022314	0.127384	4.402697	1.825099	0.014044	1.885788	156
LowMPI	0.397436	0.039307	0	0	0.241026	−1.84467	0.423251	0	1	156
MedMPI	0.423077	0.039683	0	0	0.245658	−1.92599	0.314431	0	1	156
HighMPI	0.179487	0.030824	0	0	0.148222	0.855572	1.686644	0	1	156
Duration1	0.166667	0.029934	0	0	0.139785	1.278839	1.806269	0	1	156
Duration2	0.237179	0.034165	0	0	0.182093	−0.44890	1.247806	0	1	156
Duration3	0.230769	0.033842	0	0	0.17866	−0.33922	1.290461	0	1	156
Duration4	0.24359	0.034478	0	0	0.185443	−0.55202	1.206326	0	1	156
Duration5	0.25641	0.035073	0	0	0.191894	−0.74047	1.12658	0	1	156
Duration6	0.25641	0.035073	0	0	0.191894	−0.74047	1.12658	0	1	156
Duration7	0.25641	0.035073	0	0	0.191894	−0.74047	1.12658	0	1	156

Table A2. *Cont.*

	Mean	Standard Error	Median	Mode	Sample Variance	Kurtosis	Skewness	Minimum	Maximum	Count
Duration8	0.217949	0.033161	0	0	0.171547	−0.09797	1.379656	0	1	156
Duration9	0.217949	0.033161	0	0	0.171547	−0.09797	1.379656	0	1	156
Duration10	0.205128	0.032434	0	0	0.164103	0.1769	1.47472	0	1	156
Duration11	0.185897	0.031247	0	0	0.152316	0.667063	1.630544	0	1	156
Duration12	0.217949	0.033161	0	0	0.171547	−0.09797	1.379656	0	1	156
Duration13	0.205128	0.032434	0	0	0.164103	0.1769	1.47472	0	1	156
Duration14	0.217949	0.033161	0	0	0.171547	−0.09797	1.379656	0	1	156
Duration15	0.224359	0.033507	0	0	0.175145	−0.22245	1.334379	0	1	156
Duration16	0.205128	0.032434	0	0	0.164103	0.1769	1.47472	0	1	156
Duration17	0.237179	0.034165	0	0	0.182093	−0.44890	1.247806	0	1	156
Duration18	0.230769	0.033842	0	0	0.17866	−0.33922	1.290461	0	1	156
Duration19	0.185897	0.031247	0	0	0.152316	0.667063	1.630544	0	1	156
Duration20	0.185897	0.031247	0	0	0.152316	0.667063	1.630544	0	1	156
Duration21	0.211538	0.032803	0	0	0.167866	0.03489	1.426397	0	1	156
Argentina	0.070513	0.020563	0	0	0.065964	9.600868	3.38791	0	1	156
Bahrain	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Bulgaria	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Costa Rica	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Croatia	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Cyprus	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Czech Republic	0.083333	0.0222	0	0	0.076882	7.363011	3.044466	0	1	156
Egypt	0.00641	0.00641	0	0	0.00641	156	12.49	0	1	156
Greece	0.012821	0.009036	0	0	0.012738	75.4478	8.745319	0	1	156
Hungary	0.128205	0.026853	0	0	0.11249	3.083213	2.245851	0	1	156
Indonesia	0.032051	0.014148	0	0	0.031224	27.13321	5.365211	0	1	156
Israel	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Kazakhstan	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Morocco	0.00641	0.00641	0	0	0.00641	156	12.49	0	1	156
Nigeria	0.012821	0.009036	0	0	0.012738	75.4478	8.745319	0	1	156
Oman	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Pakistan	0.032051	0.014148	0	0	0.031224	27.13321	5.365211	0	1	156
Peru	0.032051	0.014148	0	0	0.031224	27.13321	5.365211	0	1	156
The Philippines	0.051282	0.017717	0	0	0.048966	15.071	4.108276	0	1	156
Poland	0.044872	0.016628	0	0	0.043135	17.9408	4.4397	0	1	156
Portugal	0.012821	0.009036	0	0	0.012738	75.4478	8.745319	0	1	156
Slovenia	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
South Korea	0.00641	0.00641	0	0	0.00641	156	12.49	0	1	156
Sri Lanka	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Thailand	0.032051	0.014148	0	0	0.031224	27.13321	5.365211	0	1	156
Tunisia	0.025641	0.012696	0	0	0.025145	35.18209	6.060624	0	1	156
Turkey	0.019231	0.011031	0	0	0.018983	48.60165	7.069559	0	1	156
Venezuela	0.128205	0.026853	0	0	0.11249	3.083213	2.245851	0	1	156
Vietnam	0.00641	0.00641	0	0	0.00641	156	12.49	0	1	156

Table A3. Descriptive statistics for the medium level of stock market competitiveness.

	Mean	Standard Error	Median	Mode	Sample Variance	Kurtosis	Skewness	Minimum	Maximum	Count
ERP	0.04032	0.019456	0.065376	−0.29895	0.119239	4.71283	−0.89074	−1.91874	1.248012	315
Stock market index returns	0.089517	0.020333	0.113529	0.334450	0.126506	4.563673	−0.66241	−1.90864	1.294532	315
Market capitalization of listed domestic companies (% of GDP)	1.598876	0.566251	0.484125	0.451346	101.0017	116.4873	10.65886	0.09583	128.2342	315
Stocks traded, total value (% of GDP)	0.283378	0.016297	0.169848	0.439929	0.083658	12.04943	2.446532	0	2.554426	315
lnListed domestic companies, total	5.630147	0.057713	5.55296	6.075346	1.049198	1.459267	−0.03161	2.564949	8.699348	315
Stocks traded, turnover ratio of domestic shares (%)	0.428187	0.022234	0.299753	0.974705	0.155722	3.763276	1.804899	0.007346	2.380804	315
LowMPI	0.244444	0.024253	0	0	0.18528	−0.57567	1.195	0	1	315
MedMPI	0.574603	0.027901	1	1	0.245213	−1.92028	−0.30324	0	1	315
HighMPI	0.180952	0.021726	0	0	0.148681	0.778536	1.665423	0	1	315
Duration1	0.209524	0.022967	0	0	0.166151	0.057686	1.43435	0	1	315
Duration2	0.203175	0.022707	0	0	0.16241	0.198987	1.482486	0	1	315
Duration3	0.212698	0.023093	0	0	0.167991	−0.00951	1.410883	0	1	315
Duration4	0.2	0.022573	0	0	0.16051	0.273306	1.507187	0	1	315
Duration5	0.203175	0.022707	0	0	0.16241	0.198987	1.482486	0	1	315
Duration6	0.231746	0.023812	0	0	0.178607	−0.37014	1.277595	0	1	315
Duration7	0.231746	0.023812	0	0	0.178607	−0.37014	1.277595	0	1	315
Duration8	0.238095	0.024036	0	0	0.181984	−0.47604	1.23573	0	1	315
Duration9	0.244444	0.024253	0	0	0.18528	−0.57567	1.195	0	1	315
Duration10	0.238095	0.024036	0	0	0.181984	−0.47604	1.23573	0	1	315
Duration11	0.257143	0.024665	0	0	0.191629	−0.75795	1.116649	0	1	315
Duration12	0.231746	0.023812	0	0	0.178607	−0.37014	1.277595	0	1	315
Duration13	0.206349	0.022838	0	0	0.164291	0.127151	1.458212	0	1	315
Duration14	0.196825	0.022438	0	0	0.158589	0.350226	1.532333	0	1	315
Duration15	0.2	0.022573	0	0	0.16051	0.273306	1.507187	0	1	315
Duration16	0.215873	0.023218	0	0	0.169811	−0.07453	1.387797	0	1	315
Duration17	0.228571	0.023697	0	0	0.176888	−0.31469	1.29898	0	1	315
Duration18	0.263492	0.02486	0	0	0.194682	−0.84137	1.078895	0	1	315
Duration19	0.301587	0.0259	0	0	0.211303	−1.25321	0.868786	0	1	315
Duration20	0.295238	0.025742	0	0	0.208735	−1.19386	0.902085	0	1	315
Duration21	0.292063	0.025661	0	0	0.207421	−1.16292	0.918969	0	1	315
Argentina	0.028571	0.009402	0	0	0.027843	30.53087	5.686568	0	1	315
Austria	0.012698	0.006319	0	0	0.012577	74.96652	8.745889	0	1	315
Bangladesh	0.012698	0.006319	0	0	0.012577	74.96652	8.745889	0	1	315
Belgium	0.012698	0.006319	0	0	0.012577	74.96652	8.745889	0	1	315
Brazil	0.025397	0.008878	0	0	0.024831	34.97271	6.062235	0	1	315
Chile	0.063492	0.013761	0	0	0.05965	11.01078	3.597348	0	1	315
China	0.006349	0.004482	0	0	0.006329	154.9744	12.48961	0	1	315
Colombia	0.047619	0.012018	0	0	0.045496	16.327	4.268884	0	1	315
Czech Republic	0.022222	0.008319	0	0	0.021798	40.68464	6.513552	0	1	315

Table A3. *Cont.*

	Mean	Standard Error	Median	Mode	Sample Variance	Kurtosis	Skewness	Minimum	Maximum	Count
Egypt	0.044444	0.01163	0	0	0.042604	17.84754	4.442326	0	1	315
Greece	0.022222	0.008319	0	0	0.021798	40.68464	6.513552	0	1	315
Hong Kong	0.012698	0.006319	0	0	0.012577	74.96652	8.745889	0	1	315
India	0.025397	0.008878	0	0	0.024831	34.97271	6.062235	0	1	315
Indonesia	0.044444	0.01163	0	0	0.042604	17.84754	4.442326	0	1	315
Ireland	0.012698	0.006319	0	0	0.012577	74.96652	8.745889	0	1	315
Israel	0.050794	0.012391	0	0	0.048367	14.99699	4.111181	0	1	315
Malaysia	0.060317	0.013435	0	0	0.05686	11.84938	3.711358	0	1	315
Mexico	0.053968	0.012751	0	0	0.051218	13.8239	3.966884	0	1	315
Morocco	0.009524	0.005481	0	0	0.009463	101.6347	10.14837	0	1	315
New Zealand	0.012698	0.006319	0	0	0.012577	74.96652	8.745889	0	1	315
Nigeria	0.006349	0.004482	0	0	0.006329	154.9744	12.48961	0	1	315
Norway	0.012698	0.006319	0	0	0.012577	74.96652	8.745889	0	1	315
Pakistan	0.019048	0.007714	0	0	0.018744	48.3017	7.070718	0	1	315
Peru	0.031746	0.009894	0	0	0.030836	26.9781	5.367201	0	1	315
The Philippines	0.038095	0.010803	0	0	0.036761	21.65073	4.849052	0	1	315
Poland	0.04127	0.011225	0	0	0.039693	19.60258	4.634453	0	1	315
Portugal	0.022222	0.008319	0	0	0.021798	40.68464	6.513552	0	1	315
Qatar	0.012698	0.006319	0	0	0.012577	74.96652	8.745889	0	1	315
Russia	0.006349	0.004482	0	0	0.006329	154.9744	12.48961	0	1	315
Saudi Arabia	0.028571	0.009402	0	0	0.027843	30.53087	5.686568	0	1	315
Singapore	0.031746	0.009894	0	0	0.030836	26.9781	5.367201	0	1	315
South Africa	0.025397	0.008878	0	0	0.024831	34.97271	6.062235	0	1	315
South Korea	0.022222	0.008319	0	0	0.021798	40.68464	6.513552	0	1	315
Thailand	0.044444	0.01163	0	0	0.042604	17.84754	4.442326	0	1	315
Turkey	0.053968	0.012751	0	0	0.051218	13.8239	3.966884	0	1	315
The United Arab Emirates	0.012698	0.006319	0	0	0.012577	74.96652	8.745889	0	1	315
Vietnam	0.009524	0.005481	0	0	0.009463	101.6347	10.14837	0	1	315

Table A4. Descriptive statistics for the high level of stock market competitiveness.

	Mean	Standard Error	Median	Mode	Sample Variance	Kurtosis	Skewness	Minimum	Maximum	Count
ERP	0.01212	0.02506	0.04411	−0.791	0.09927	3.46349	−1.01177	−1.21274	0.995928	158
Stock market index returns	0.046225	0.025033	0.062035	−0.62905	0.096504	3.705884	−0.66477	−1.11477	1.158328	158
Market capitalization of listed domestic companies (% of GDP)	1.75812	0.20428	0.80081	0.6230	6.59373	7.76101	2.89102	0.274632	12.54465	158
Stocks traded, total value (% of GDP)	1.11135	0.11647	0.68935	0.41744	2.14332	11.7059	3.263734	0.096976	9.526673	158
lnListed domestic companies, total	6.70332	0.10010	6.5959	5.66988	1.5832	0.24615	−0.13819	3.044522	10.20492	158
Stocks traded, turnover ratio of domestic shares (%)	0.71851	0.05715	0.60185	0.67003	0.51621	10.7523	2.951927	0.010585	4.802873	158

Table A4. *Cont.*

	Mean	Standard Error	Median	Mode	Sample Variance	Kurtosis	Skewness	Minimum	Maximum	Count
LowMPI	0.11392	0.02535	0	0	0.10158	4.07180	2.453654	0	1	158
MedMPI	0.42405	0.03944	0	0	0.24578	−1.9282	0.310318	0	1	158
HighMPI	0.46202	0.03978	0	0	0.25014	−2.0018	0.153803	0	1	158
Duration1	0.16455	0.02959	0	0	0.13835	1.3541	1.826779	0	1	158
Duration2	0.16455	0.02959	0	0	0.13835	1.3541	1.826779	0	1	158
Duration3	0.2405	0.03411	0	0	0.18382	−0.5035	1.225985	0	1	158
Duration4	0.22151	0.03314	0	0	0.17354	−0.1687	1.354097	0	1	158
Duration5	0.24050	0.03411	0	0	0.18382	−0.5035	1.225985	0	1	158
Duration6	0.24050	0.03411	0	0	0.18382	−0.5035	1.225985	0	1	158
Duration7	0.1962	0.03169	0	0	0.15871	0.39086	1.544693	0	1	158
Duration8	0.24050	0.03411	0	0	0.18382	−0.5035	1.225985	0	1	158
Duration9	0.20253	0.03207	0	0	0.16254	0.23662	1.494588	0	1	158
Duration10	0.21519	0.03279	0	0	0.16995	−0.0423	1.399413	0	1	158
Duration11	0.2468	0.03441	0	0	0.18709	−0.6021	1.185599	0	1	158
Duration12	0.20253	0.03207	0	0	0.16254	0.23662	1.494588	0	1	158
Duration13	0.20253	0.03207	0	0	0.16254	0.23662	1.494588	0	1	158
Duration14	0.26582	0.03525	0	0	0.19640	−0.8654	1.070365	0	1	158
Duration15	0.29113	0.03625	0	0	0.20769	−1.1529	0.928346	0	1	158
Duration16	0.3417	0.03785	0	0	0.22639	−1.5662	0.673613	0	1	158
Duration17	0.29113	0.03625	0	0	0.20769	−1.1529	0.928346	0	1	158
Duration18	0.31012	0.03691	0	0	0.21531	−1.3299	0.828884	0	1	158
Duration19	0.27848	0.03577	0	0	0.20220	−1.0173	0.997868	0	1	158
Duration20	0.27215	0.03552	0	0	0.19934	−0.9435	1.03372	0	1	158
Duration21	0.32911	0.03750	0	0	0.2222	−1.4796	0.734333	0	1	158
Australia	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158
Brazil	0.0759	0.02114	0	0	0.07062	8.55493	3.23215	0	1	158
Canada	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158
China	0.11392	0.0253	0	0	0.10158	4.07180	2.453654	0	1	158
France	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158
Germany	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158
Hong Kong	0.10126	0.02407	0	0	0.09159	5.18814	2.668825	0	1	158
India	0.07594	0.02114	0	0	0.07062	8.55493	3.23215	0	1	158
Indonesia	0.00632	0.00632	0	0	0.00632	158	12.56981	0	1	158
Italy	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158
Japan	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158
Malaysia	0.00632	0.00632	0	0	0.00632	158	12.56981	0	1	158
Mexico	0.01898	0.01089	0	0	0.01874	49.2691	7.116573	0	1	158
The Netherlands	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158
Russia	0.11392	0.02535	0	0	0.10158	4.07180	2.453654	0	1	158
Saudi Arabia	0.01265	0.00892	0	0	0.01257	76.4484	8.802321	0	1	158
Singapore	0.06329	0.01943	0	0	0.05966	11.2584	3.621613	0	1	158
South Africa	0.07594	0.02114	0	0	0.07062	8.55493	3.23215	0	1	158

Table A4. *Cont.*

	Mean	Standard Error	Median	Mode	Sample Variance	Kurtosis	Skewness	Minimum	Maximum	Count
South Korea	0.07594	0.0211	0	0	0.07062	8.55493	3.23215	0	1	158
Spain	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158
Switzerland	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158
Thailand	0.00632	0.00632	0	0	0.00632	158	12.56981	0	1	158
The United Kingdom	0.02531	0.01253	0	0	0.02483	35.6829	6.101754	0	1	158

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