

GEOGRAPHIC VARIATION IN RELIGIOSITY AND ITS IMPACT OF DIVIDEND POLICIES

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ABSTRACT

The main aim of this research is to document the relationship between geographical variations in the religiosity levels and the dividend policies adopted by firms. Using the data provided by the Gallup International, we test our arguments on the firms headquartered in different states of the United States. Our results show that firms headquartered in states with high level of religiosity have higher payout ratios than firms headquartered in states with low level of religiosity. These results are robust across various proxies of religiosity and dividend policies (decision to pay dividend, decision to increase dividend, and dividend yield). We also show that value of dividend payouts is higher in states with high level of religiosity. We extend prior literature by also documenting the moderating role of religiosity for the value of dividend policy.

Keywords: Dividend policy, religiosity, clientele theory, risk aversion

INTRODUCTION

Why do certain firms pay higher dividends than the others? What factors determine the decision of firms to pay dividends? The answers to these questions have been the subject of plentiful of prior research (Kowalewski, Stetsyuk, & Talavera, 2007; La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 2000; Miller & Rock, 1985;

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John & Williams, 1985). For example, La Porta et al. (2000) highlight the importance of country-specific institutional environment by documenting higher payout ratios in the common law countries relative to the civil law countries. On the other hand, Kowalewski et al. (2007) document the importance of firm-specific factors by reporting higher payout ratios for larger and more profitable firms. A closer look at prior research reveals that it revolves around understanding how firm-specific factors and country-specific institutional environment affect the dividend decisions made by firms. An important factor that has received relatively lesser attention in prior literature is how geographical variations in the religiosity levels affect dividend decisions. This research is an attempt to fill this gap by documenting the relationship between the two in the United States (U.S.).

This research takes its motivation from prior literature that suggests that religious beliefs can explain the economic decisions of managers (Liu, 2010; Hilary & Hui, 2009; Iannaccone, 1998). This strand of literature argues that religiosity affects managerial decisions by altering their levels of risk aversion. Adhikari and Agrawal (2016), for example, report that firms located in areas with higher levels of religiosity hold safer assets. Hilary and Hui (2009) also document similar findings by showing that firms headquartered in jurisdictions with higher levels of religiosity display lower degrees of risk exposure. In this research, we maintain that one of the consequences of lower risk exposure of firms located in areas with higher levels of religiosity can be observed in the dividend policies adopted by them. We argue that these firms – firms located in areas with higher levels of religiosity – attract investors with higher levels of religiosity. Given that these investors are more likely to be risk-averse, it is possible that these firms tend to cater the preferences of these investors in their dividend decisions. Prior literature documents that these investors have strong preference for dividends (Cao, Jia, Zhang, & Chan, 2016; Lintner, 1962; Gordon, 1963). Firms recognise the preference of investors and respond to it by disgorging more cash as dividends.

Using the data provided by the Gallup International on the level of religiosity of each state in the U.S., we provide strong evidence that firms headquartered in states with higher levels of religiosity pay higher proportion of earnings as dividends. Our results are robust various proxies of dividend policies. That is, we show that these firms have higher dividend yields, are more likely to pay dividends, and are more likely to increase dividends. Our result also holds for alternate proxy of religiosity provided by the Pew Research Center. This research also shows that higher dividend payouts are more valuable for firms headquartered in the states with higher levels of religiosity. We report significantly positive impact of religiosity on stock market performance for firms headquartered in

states with higher levels of religiosity. We argue that shareholder base of these firms consists of those investors that have strong appetite for high dividends. Therefore, they reward firms that pay high dividends with better stock returns.

MOTIVATION AND BACKGROUND

This research is an attempt to document the impact of religiosity prevalent at the local level on dividend policies adopted by firms. That is, we aim to document whether firms headquartered in states with higher levels of religiosity pay higher dividends than firms headquartered in states with lower levels of religiosity. Our arguments regarding the possible relationship between religiosity and dividend policies are based on three distinct strands of literature. The first strand of literature argues that investors with higher levels of religiosity are risk-averse (Dohmen et al., 2011; Liu, 2010; Hilary & Hui, 2009). The second strand of literature notes that investor base of firms is, usually, dominated by people living in the same jurisdiction (Coval & Moskowitz, 2001; Davis & Henderson, 2008). The third strand of literature argues that, if investor base of a firm is risk-averse, firms will be inclined to disgorge more cash as dividends (Baker & Wurgler, 2004a; 2004b).

Religiosity and Risk Aversion

This research argues that a strong link exists between religiosity and risk aversion – both at the organisational level and at the individual level. Our arguments are consistent with ample amount of prior literature that argues the same. For example, Hilary and Hui (2009) show that firms located in jurisdictions with higher levels of religiosity display lower degrees of risk exposure. In another related study, Adhikari and Agrawal (2016) show that banks located in areas with higher levels of religiosity hold safer assets and provide fewer incentives to executives to indulge in risky behaviour. Highlighting the link between religiosity and risk aversion at the individual level, Miller and Hoffmann (1995) document a negative correlation between religiosity and attitudes towards risk and danger. Diaz (2000) also comes to the same conclusion when he reports that individuals with high levels of religiosity gamble less frequently and for lower amounts than those who are less religious. More recently, Jiang, Jiang, Kim and Zhang (2015) show that firms founded by religious entrepreneurs display lower degrees of risk exposure.

Main argument underlying this relationship is that religious observance, by its very nature, is risk avoidant. Most religions advocate that the pious will be rewarded and the sinner will be punished after death. Given that irreligiosity

requires undertaking a risk of punishment after death, risk-averse individuals choose to be religious. Religiousness, therefore, is a risk-averse strategy because individuals have little to lose if there is no afterlife and potentially much to gain if there is one – the Pascal’s wager (Miller & Hoffmann, 1995). According to the Pascal’s wager, religious beliefs should be looked in a way that the believer has nothing to lose (relatively low cost), but potentially much to gain by crediting God, assuming that the belief will lead to unlimited utility if God exists (Nielsen et al., 2017).¹

Location of Headquarter and the Investor Base

Prior literature argues that investors show strong preference for local equities (Coval & Moskowitz, 2001). The main reason behind this result is that investors tend to have more reliable information about firms located near them. Coval and Moskowitz (2001) note that “investors located near a firm can visit firm’s operations, talk to suppliers and employees, as well as assess the local market conditions in which the firm operates”. Geographic proximity with headquarters of firms translates into access to more relevant information. Our arguments are consistent with Davis and Henderson (2008) who argue that information advantage arises due to the fact that corporate headquarters are the center of information exchange between firms and its investors. As a result, local investors discover local information before other investors. Ivkovic and Weisbenner (2005) also find that investors have a higher propensity to invest in firms located near them due to an information advantage. Therefore, it is intuitive to believe that investors prefer to hold stocks of geographically proximate firms.²

Investor Base and Dividend Policy

Our arguments have shown that investor base of most firms is dominated by people living in the same jurisdiction as the headquarters of firms. Given that people living in states with higher levels of religiosity are more likely to be risk-averse, it is possible that these firms tend to cater the preferences of these investors in their dividend decisions. Prior literature argues that risk-averse investors have strong preference for dividends. Earlier studies, such as Lintner (1962) and Gordon (1963), note that risk aversion can lead investors to prefer dividends over future capital gains. In another related study, Becker, Ivkovic and Weisbenner (2011) show that firms headquartered in areas with a higher proportion of risk-averse investors (senior citizens) have a greater likelihood of being dividend payers. Ucar (2016) also come to the same conclusion by reporting that firms located in risk-averse counties are more likely to be dividend payers, initiate dividends, and

have higher dividend yields. Consistent with prior literature, we argue that these firms disgorge more cash as dividends because they cater to the needs of their investor base (Baker & Wurgler, 2004a; 2004b).

DATA

This research uses the data from the U.S. to document the effect of religiosity on dividend policy during 2014. The choice of year is driven by the fact that the data on religiosity was collected in that year. Following sub-sections will explain the data in detail.

Religiosity and Dividend Policy (Main Variables)

Main variables used to test our arguments are related to the level of religiosity in each of the U.S. state and the dividend policy adopted by each firm.

1. The data for the level of religiosity in each of the U.S. state (RELIGIOSITY) is obtained from the Gallup International. The data for the level of religiosity in each of the U.S. state was gathered in 2014 by the survey conducted by the Gallup International. The survey defines the level of religiosity as the proportion of population that identify themselves as very religious.
2. The data for the dividend policy adopted by firms (DIV) is obtained from the Worldscope. For the purpose of this research, we define dividend policy by the proportion of earnings paid out as dividends.

Table 1 reports the average values of the level of religiosity in each of the U.S. state (RELIGIOSITY) and the dividend policy adopted by firms (DIV). Last row in Column (3) and Column (7) indicate an interesting observation. That is, firms headquartered in states with below median level of religiosity have almost half the dividend payout ratio than firms headquartered in states with above median level of religiosity. This observation is consistent with our expectations of a positive relationship between the level of religiosity of the state in which the firm is headquartered in and its dividend payout ratio.

Table 1
Average values for dividend policy and religiosity

State	Below median religiosity			Above median religiosity			
	Religiosity index	Dividend payout ratio	Observations	State	Religiosity index	Dividend payout ratio	Observations
Vermont	22	0.0000	2	Minnesota	40	16.4602	74
Maine	25	0.0000	3	Pennsylvania	40	11.1461	113
Alaska	28	0.0000	2	Iowa	41	14.8400	15
Maryland	28	4.9885	57	New Mexico	41	12.7875	4
Massachusetts	28	4.4370	206	Idaho	42	8.9083	12
Nevada	30	3.7527	62	Virginia	42	13.0010	80
New Hampshire	30	20.751	9	West Virginia	43	0.0000	6
Oregon	30	12.272	23	Missouri	44	17.5386	38
Washington	30	7.3041	70	Nebraska	44	11.2269	13
Connecticut	31	13.310	58	North Dakota	44	17.5033	3
New York	32	9.4270	253	Indiana	45	24.0972	40
Rhode Island	32	13.019	10	Kansas	45	20.5027	18
Colorado	33	6.0730	120	South Dakota	45	60.3650	4
Delaware	33	20.132	14	Kentucky	47	27.5437	16
Hawaii	33	12.852	9	Texas	47	14.1452	343
New Jersey	34	8.7408	135	Georgia	48	16.5025	81
Wyoming	34	0.0000	3	Oklahoma	48	20.6909	31
Arizona	35	7.3319	56	North Carolina	50	12.5701	66

(continue on next page)

Table 1 (continued)

State	Below median religiosity			Above median religiosity			
	Religiosity index	Dividend payout ratio	Observations	State	Religiosity index	Dividend payout ratio	Observations
California	35	4.1767	634	Tennessee	52	10.4024	45
Montana	35	0.0000	3	District of Columbia	53	12.8342	7
Michigan	37	19.1750	48	Arkansas	54	9.9557	14
Wisconsin	37	22.6214	42	Louisiana	54	18.9166	15
Florida	39	6.5011	147	South Carolina	54	21.7012	16
Illinois	39	11.3693	119	Alabama	56	21.8050	8
Ohio	39	18.6186	81	Utah	57	3.5871	42
				Mississippi	59	11.6800	3
Average		7.7335	2166	Average		14.5678	1107

Control Variables

This research uses the following firm-specific characteristics as control variables. All of these characteristics affect dividend policy to varying degrees. The data for these variables is obtained from the Worldscope.

1. **SIZE:** We define SIZE as the log of firm's total assets. We argue that large firms have more resources, thereby increasing their ability to pay dividends (Eriotis, 2005; Al-Malkawi, 2007).
2. **LEVERAGE:** This research defines LEVERAGE as the total debt to total asset ratio. Prior literature shows that leverage has a negative impact on dividend payout ratio (Gugler & Yurtoglu, 2003). Firms with high leverage have higher incentives to retain earnings, thereby resulting in lower dividend payout ratios.
3. **EPS:** We define EPS as earnings per share. Firms with higher earnings are more likely to distribute profits to their shareholders in the form of dividends (Eriotis & Vasiliou, 2003).
4. **GROWTH:** This research defines GROWTH as the growth in total assets. Growth opportunities play an important role in a firm's decision to pay dividends. Prior literature shows that high growth firms pay lower dividends (Chen & Dhiensiri, 2009). These firms have higher appetite to retain earnings, thereby reducing payout ratios.
5. **ANALYST:** We define ANALYST as the total number of analysts issuing earnings forecast for a firm in a year. Higher analyst coverage is associated with better information environment. We expect information environment to have a significant effect on dividend payout ratios.

Table 2 reports the average values of variables (Panel A) and the correlation between variables (Panel B). Our results in Panel A show that firms headquartered in states with above median religiosity are bigger in size, have higher leverage, and are more profitable. They also have higher growth rates and are followed by more analysts. We also show in Panel B that there is no severe correlation between variables. Therefore, we can include all variables together in regression.

Table 2
Summary statistics

Panel A: Average statistics						
Variables	Below median religiosity		Above median religiosity			
	Mean	Median	Mean	Median		
SIZE	12.0146	12.2547	12.8022	13.1965		
LEVERAGE	0.2885	0.1651	0.2972	0.2262		
EPS	0.2984	-0.0030	0.9585	0.7230		
GROWTH	25.9597	5.8350	19.2745	6.1900		
ANALYST	6.4145	4.0000	7.3423	5.0000		

Panel B: Correlation matrix						
Variables	RELIGIOSITY	SIZE	LEVERAGE	EPS	GROWTH	ANALYST
RELIGIOSITY	1.000					
SIZE	0.105	1.000				
LEVERAGE	0.035	-0.139	1.000			
EPS	0.121	0.493	-0.043	1.000		
GROWTH	-0.005	-0.058	0.008	-0.025	1.000	
ANALYST	0.056	0.520	-0.044	0.421	-0.039	1.000

METHODOLOGY AND RESULTS

Graphical Analysis

Figure 1 shows the graphical relationship between the level of religiosity of the state in which the firm is headquartered in and the dividend policy adopted by the firm. The figure shows the fitted values (regression line) for the relationship between DIV and RELIGIOSITY. The figure indicates that religiosity has a positive impact on the dividend policies adopted by firms.³ The figure provides an early indication of the positive impact of geographical religiosity on dividend policy.

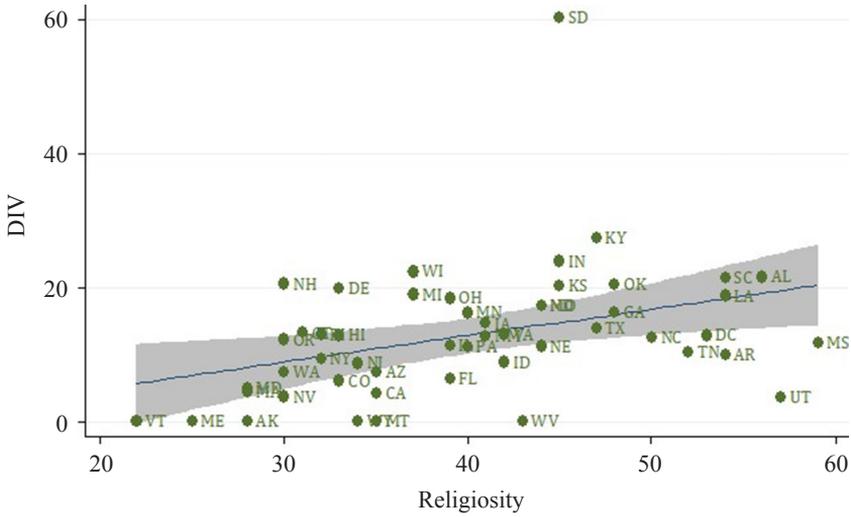


Figure 1. Effect of religiosity on dividend policy

Multivariate Analysis

This research argues that firms headquartered in more religious states have higher payout ratios than firms headquartered in other states. In order to test this conjecture, we estimate various versions of the following regression equation. All variables are as defined above. For the purpose of completeness, we also include industry dummies (IDUM) in our analysis.

$$\begin{aligned}
 \text{DIV} = & \alpha + \beta_1(\text{RELIGIOSITY}) + \beta_2(\text{SIZE}) + \beta_3(\text{LEVERAGE}) \\
 & + \beta_4(\text{EPS}) + \beta_5(\text{GROWTH}) + \beta_6(\text{ANALYST}) \\
 & + \sum_{j=1}^{N-1} \delta_j(\text{IDUM}) + \varepsilon
 \end{aligned} \tag{1}$$

Results of our analysis are provided in Table 3. Our results show that firms headquartered in states with higher levels of religiosity tend to pay more dividends than other firms. We report significantly positive coefficient of RELIGIOSITY for all models. We argue that investors tend to invest in firms located near them (Coval & Moskowitz, 2001). However, they will select only those firms for their portfolio that cater to their risk preferences. Given that investors residing in states with higher levels of religiosity are more likely to be risk-averse and have preference for stocks that pay high dividends, it is very likely that firms headquartered in these states cater to their preferences through high dividend payments (Ucar, 2016; Dohmen et al., 2011; Liu, 2010; Hilary & Hui, 2009). We also show that our results hold in sub-samples of large and small firms.

Table 3
Effect of religiosity on dividend policy

Variables	All firms		Small firms		Large firms
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
RELIGIOSITY	0.2972***	0.2422***	0.2280***	0.1975***	0.2505***
SIZE		1.9892***	1.8732***	0.8866***	4.9656***
LEVERAGE			-1.6704***	-1.9067***	-11.7477***
EPS			1.7388***	1.6431***	1.1419***
GROWTH			-0.0001	-0.0001*	-0.0050***
ANALYST			-0.1096*	-0.3084	-0.3439***
Industry Dummies	Yes	Yes	Yes	Yes	Yes
Observations	3273	3262	2734	1290	1444
F-value	52.34	81.20	82.99	6.47	46.07
R ²	0.1431	0.2158	0.2613	0.1176	0.2399

Note: *, ** and *** denote the significance at 10%, 5% and 1%, respectively.

ADDITIONAL TESTS

Effect of Religiosity on Alternate Proxies of Dividend Policy

There may be concerns that our results hold for some proxies of dividend policy and do not hold for other proxies. In order to address these concerns, we re-estimate Equation (1) for alternate proxies of dividend policy. For the purpose of analysis, we use the following alternate proxies of dividend policy: (1) Decision to Pay Dividend, (2) Decision to Increase Dividend, and (3) Dividend Yield. For the first two proxies, we use logistic regression because the variables are binary in nature, while for the third proxy, we use OLS regression. Results of our analysis are provided in Table 4. Our results support our arguments by showing significantly positive coefficient of RELIGIOSITY for all models.

Effect of Alternate Proxy of Religiosity on Dividend Policy

As another robustness check, we re-estimate various versions of Equation (1) for an alternate proxy of religiosity. The alternate measure of religiosity is obtained from the Pew Research Center. The Pew Research Center generates the religiosity index based on various religious attributes for all states in the U.S. Results of our analysis are provided in Table 5. As expected, our results of this table support our previous findings by showing significantly positive coefficient of RELIGIOSITY for all models.

Table 4
Effect of religiosity on alternate proxies of dividend policy

Variables	Decision to increase dividend	Decision to pay dividend	Dividend yield
RELIGIOSITY	0.0261***	0.0307***	0.0128***
SIZE	0.5496***	0.3768***	0.1626***
LEVERAGE	-1.3370***	-0.5057*	-0.0313
EPS	0.3059***	0.2732***	0.0604***
GROWTH	-0.0009	-0.0003	-0.0001
ANALYST	-0.0350***	-0.0311***	-0.0243***
Industry dummies	Yes	Yes	Yes
Observations	2973	3047	3017
F-value / Wald Chi-Square	577.80	537.26	84.34
R ²	0.3306	0.2670	0.2114

Note: *, ** and *** denote the significance at 10%, 5% and 1%, respectively.

Table 5
Effect of alternate proxy of religiosity on dividend policy

Variables	All firms			Small firms	Large firms
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
RELIGIOSITY	0.2196***	0.1848***	0.1765***	0.1949***	0.1512**
SIZE		1.9998***	1.8844***	0.8953***	4.9906***
LEVERAGE			-1.7233***	-1.9189***	-12.1822***
EPS			1.7335***	1.6284***	1.1290***
GROWTH			-0.0001	-0.0001**	-0.0051***
ANALYST			-0.1106*	-0.2813	-0.3478***
Industry dummies	Yes	Yes	Yes	Yes	Yes
Observations	3273	3262	2734	1290	1444
F-value	51.50	80.49	82.12	6.55	45.01
R ²	0.1414	0.2150	0.2607	0.1208	0.2377

Note: *, ** and *** denote the significance at 10%, 5% and 1%, respectively.

Religiosity, Dividend Policy and Firm Value

We have shown that firms headquartered in states with high religiosity pay higher proportion of their earnings as dividends. We argued that these firms disgorge more cash in the form of dividends because their shareholders have stronger preference for dividends. Our arguments suggest that, for these firms dividends should have a positive impact on firm value because dividends are mechanism to meet shareholder preferences. In order to test this conjecture, we estimate various versions of the following regression equation. In the following regression, Tobin's Q (Q) is a measure of firm value.

$$\begin{aligned}
 Q = & \alpha + \beta_1(\text{RELIGIOSITY}) + \beta_2(\text{DIV}) + \beta_3(\text{RELIGIOSITY} * \text{DIV}) \\
 & + \beta_4(\text{SIZE}) + \beta_5(\text{LEVERAGE}) + \beta_6(\text{EPS}) + \beta_7(\text{GROWTH}) \\
 & + \beta_8(\text{ANALYST}) + \sum_{i=1}^{N-1} \delta_i(\text{IDUM}) + \varepsilon
 \end{aligned} \tag{2}$$

Results of our analysis are provided in Table 6. Main variable of interest in this table is $\text{RELIGIOSITY} * \text{DIV}$. Our results show a significantly positive coefficient of $\text{RELIGIOSITY} * \text{DIV}$ for all models. It indicates that, for two firms with similar payout ratios, the firm headquartered in a state with higher level of religiosity has higher value than the firm headquartered in a state with lower level of religiosity. In other words, dividend policy is a significant determinant of firm value in states with higher levels of religiosity. We argue that shareholder base of firms headquartered in states with higher levels of religiosity constitute of those investors that have preferences for high dividends. Firms recognise these preferences and tend to cater these preferences. Our results indicate that firms fulfilling the preferences of investors (by paying high dividends) are rewarded by investors with higher valuations. This finding is interesting because standalone impact of dividends in the United States is negative in our sample. We report significantly negative coefficient of RELIGIOSITY for all models. Negative impact of religiosity on firm value has been observed in other studies, such as Baxamusa and Jalal (2016).

Table 6
Religiosity, dividend policy and firm value

Variables	All firms			Small firms	Large firms
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
RELIGIOSITY	-0.0179***	-0.0155***	-0.0157***	-0.0095	-0.0200***
DIV	-0.0262***	-0.0166**	-0.0226***	-0.0193	-0.0218***
RELIGIOSITY*DIV	0.0006***	0.0005***	0.0007***	0.0007*	0.0006***
SIZE		-0.1098***	-0.3930***	-0.6147***	-0.4652***
LEVERAGE			-0.6084***	-0.6159*	-0.4444**
EPS			0.0644***	0.1272***	0.0571***
GROWTH			0.0001	0.0001	0.0007*
ANALYST			0.0927***	0.3092***	0.0822***
Industry dummies	Yes	Yes	Yes	Yes	Yes
Observations	2604	2604	2355	965	1390
F-value	53.58	54.95	45.88	19.86	33.10
R ²	0.1209	0.1399	0.2637	0.2979	0.3351

Note: *, ** and *** denote the significance at 10%, 5% and 1%, respectively.

CONCLUSION

This paper documents that geographical variation in the level of religiosity is an important determinant of dividend policies adopted by firms in the U.S. We show that firms headquartered in states with higher levels of religiosity pay higher dividends than firms headquartered in states with lower levels of religiosity. Our results are robust across various proxies of dividend policies (decision to pay dividend, decision to increase dividend, and dividend yield). We also show that our results hold if we use alternate proxy of religiosity. Our findings suggest that there exists a geographically varying clientele effect induced by local level of religiosity. We argue that differences in attitudes with respect to risk aversion among shareholders with different levels of religiosity have significant implications for dividend policies adopted by firms.

NOTES

1. The argument underlying the Pascal's wager is also consistent with the risk management strategy and its appraisal (Pingle & Melkonyan, 2012; Yates & Stone, 1992; Neumann & Politser, 1992; Dawes, 1988).

2. Another commonly cited argument regarding investing in local stocks is based on behavioural biases, such as availability bias. Investors tend to hold disproportionate amount of geographically proximate stocks because they have less information about geographically stocks.
3. The slope of regression line is 0.4014 and the R^2 is 0.1386.

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