The Price of Sin in the Pacific-Basin

ABSTRACT

Hong and Kacperczyk (2009) argue that social norms *against* sin stocks influence investor behaviour and corporate financial policies. This paper examines "sin" stocks in seven Pacific-Basin markets: Australia, India, Japan, South Korea, Malaysia, New Zealand and Singapore. There is only limited support for Hong and Kacperczyk's hypotheses of how social norms influence investment. Consideration of measurable cultural differences between the markets we study allows us to reconcile our findings with Hong and Kacperczyk. The evidence suggests the price of sin is a manifestation of groupthink.

1. Introduction

Hong and Kacperczyk (2009) (HK) argue that social norms – where the utility of actions is determined by the belief and actions of others (Akerlof, 1980) – drive both investor behaviour and corporate financial policies. Studying American "sin" stocks (publicly traded firms involved in alcohol, tobacco or gaming) they find that "norm-constrained" institutions have lower holdings of sin stocks. Analysts respond to institutional demand (O'Brien and Bhushan, 1990) and, as there is less demand for the analysis of sin stocks by institutions, sin stocks attract lower analyst coverage than comparable firms. HK find that sin stocks are relatively undervalued and that they have higher risk-adjusted returns *ceteris paribus*. Furthermore, sin stocks are more likely to rely on debt financing; debt markets are less open to public scrutiny than equity markets and it is therefore less difficult for sin stocks to borrow than to issue equity.

It may be that the pressure of social norms is felt particularly keenly by investors in the US market. HK argue that social norms also influence returns outside the United States. While their US analysis considers a broad range of variables which might be influenced by social norms, HK *only* extend their study to the *returns* of sin stocks in a number of countries. They find that the returns of sin stocks in Canada, France, Germany, Italy, Netherlands, Spain, Switzerland and the UK are also higher*, ceteris paribus*. These countries are all Western countries with much in common with the United States. If social norms influence investment, we might expect to find the results reported in HK also apply to a greater variety of markets than those analysed in HK. In this paper, we replicate and extend HK's analysis in seven Pacific-Basin markets: Australia, India, Japan, South Korea, Malaysia, New Zealand and Singapore. We do not find evidence that concurs with HK. Our findings, however, appear to be related to measurable cultural factors; this allows us to make some conclusions about why HK does not apply in the markets we examine.

The social-norms hypothesis in HK implies that moral constraints will drive investors towards certain behaviour. That is, investors herd. It may be serendipitous that American investors herd towards seemingly virtuous investment behaviour. Social norms, as articulated in HK, imply pressure to conform to society's notions of virtue; as we have foreshadowed, the evidence in this paper is inconsistent with HK. Groupthink (Janis, 1982) is a broader notion which allows investors to herd in a variety of directions. Virtue is the *only* option in HK's social norms framework. With groupthink, virtue is only one of many options. Taffler and Tuckett (2010) link herding to *groupthink*. Janis (1982, p. 9) defines groupthink as "…a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative course of action…Groupthink refers to a deterioration of mental efficiency, reality testing, and moral judgement that results from in-group pressure". Social norms, where investors' utility is determined by the ethos of the community, is a manifestation of groupthink. Taffler and Tuckett (2010, p. 98) state that "…when a basic assumption

group is operating, individuals do not think for themselves but engage collectively in *groupthink*… Groupthink provides comfort and good feelings to the group members through the unconscious defences the group as a whole adopts against anxiety…in the basic assumption group, people use the accumulation of information not for thought but to feel good by avoiding what its members would rather not know. A divided state[1] of mind takes over from reality-based thinking and information is evaluated to promote good excited feelings with the negative aspects split off from awareness. In a financial markets context, basic assumption group divided behaviour, which may be manifest in "herding", can take over at times…".[2] Rather than behaviour driven by social norms, the evidence in this paper argues that groupthink drives investors' attitude to sin stocks. Groupthink is a much broader concept than HK's notion of social norms.

According to Licht *et al.* (2007), cultural values guide a society in evaluating and justifying certain actions or events. Greif (1994) defines culture as a coordination device or a set of social norms and beliefs that lead a society to a specific outcomes. Hence, cultural values are likely to be linked to groupthink. Salaber (2009) reinforces this link by exploring the cultural aspects of 18 European countries based on their laws and religions. She found that investors' perceptions of sin stocks are influenced by these factors.

The culture of the countries in our sample can be compared with America's on two dimensions. The cultural dimensions of the countries we study, and those for the United States, are depicted in Figure 1. Figure 1 indicates that Australia and New Zealand are most like the United

[1] Taffler and Tuckett (2010) utilize a Freudian framework to talk about a divided state of mind. "In a divided state of mind, people employ a range of unconscious defences against the hurt of having to acknowledge that their previously idealized investments are now "faulty" with the consequent pain of loss both financial and emotional" (Taffler and Tuckett, 2010, p. 102).

[2] In contrast to Janis (1982) who focuses on groups of decision makers (for example, President Kennedy and his advisors during the Cuban Missile Crisis of 1962), Taffler and Tuckett (2010) extend the idea to much larger groups such as cohorts of investors.

States. The first dimension in Figure 1 is individualism, captured using an individualism index (Hofstede, 2001).[3.] Gelfand *et al.* (2002, p. 835) argues that collectivist cultures (as opposed to individualistic cultures) are those focussed on "being accepted by others and by focusing on negative characteristics, in order to accomplish the culturally mandated task of being interdependent and blending in". The other dimension used in Figure 1 is the level of corruption in the country. Corruption is defined by Treisman (2000, p. 1) as "the misuse of public office for private gain". It is an appropriate proxy for cultural values as individuals are more likely to be corrupt in a country where cultural values are more accepting of such behaviour (Barr and Serra, 2010). We utilize the Corruption Perception Index (CPI)[4] prepared annually by Transparency International as a measure of corruption in each country. The CPI ranks countries in terms of the degree to which corruption is perceived to exist among politicians and public officials, based on the views of analysts and business people around the world (Lambsdorff, 2007). The CPI has a scale from one to ten, with zero being "most corrupt" and ten being "least corrupt" (Corruption Perceptions Index, 2009).

[FIGURE 1 ABOUT HERE]

We discuss the definition of "sin" stocks in section 2 of this paper (along with data and methodology). The results of our analysis are reported in section 3 of this paper; as we have foreshadowed, they tend not to support HK (although Australia and New Zealand come close at times). An important question is *why* our results differ from HK and we also address that in Section 3. We find that one of the dimensions in Figure 1 – individualism – is useful in suggesting an

[3] Chui *et al.* (2010) utilize this index to analyze international differences in the momentum effect.

[4] We use the Corruption Perceptions Index for 2009 which is calculated from data that is gathered from 13 sources from 10 independent institutions for the period from 2008 to 2009 (Corruption Perceptions Index, 2009).

answer as to why our results differ from those in HK.[5] Where appropriate, we present scatter plots of the relationship between the estimated coefficients for *SINDUM* (the variable used to identify sin stocks) and individualism. We depict a line of best fit in these plots to facilitate understanding of the patterns we discuss. These scatterplots suggest a pattern of behaviour which can be best explained by less individualistic (more collectivistic) cultures being more inclined to herd towards certain behaviour in the way suggested by *groupthink* (Taffler and Tuckett, 2010). Behaviour driven by social norms is perhaps simply a special case of groupthink; as such, we can reconcile our findings with those presented in HK. Section 4 concludes the paper.

2. Data and Methodology

There is no definitive criterion for sin stocks: what is sinful is subjective. HK identified sin stocks based on the *Triumvirate of Sin*, namely firms in the alcohol, tobacco, and gaming industries. They excluded stocks in the sex industry because there were very few publicly listed firms which dealt mainly in sex-related products and services. We follow HK and identify sin stocks using the FTSE/Dow Jones Industry Classification Benchmark (ICB)[6] obtained from Thomson DataStream (TDS).[7] HK exclude stocks in the defence and weaponry industries because they were unsure as to whether their sample market viewed these industries as being sinful. There are, however, compelling arguments that defence stocks are sin stocks (Ahrens, 2004; Hamilton *et al.*, 1993; Teoh *et al.*, 1999) and we include them in the study (although removing them does not materially affect the conclusions

[5] We could not discern any relationship between our findings and the level of corruption in a culture and do not report those results.

[6] The ICB is available online at http://www.icbenchmark.com.

[7] We do not have access to the Global Investment Classification System (GICS). Gastineau (2008) notes that differences between the GICS and ICB are not substantial for most sectors.

made in this paper).[8] We compare these firms with "non-sin" companies which represent all other stocks in the market except financials. All data on prices and accounting variables are obtained from TDS.[9] Data on analysts' expectations was obtained from the Institutional Brokers Estimates System (I/B/E/S).[10]

In this paper, we focus on 7 Pacific-Basin markets, Australia, India, Japan, South Korea, Malaysia, New Zealand and Singapore,[11] for a number of reasons. Firstly, the economies of many Pacific Basin countries have been growing more than twice as fast as the rest of the world since 1980s. The markets of these dynamic economies are certainly worthy of attention. Secondly, with the deregulation of domestic financial markets, Pacific-Basin markets have become strategically important for international investment decisions; this is demonstrated by the impressive growth and success of many mutual funds that invest in Pacific Basin countries (Chan and Tse, 1994). Given that there are vast cultural and religioous differences among the Pacific Basin countries and the emerging economic importance of the region, using such a sample provides a good experiment setting to explore HK's hypotheses outside of the United States.

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[8] Our working hypothesis is that the investors from Pacific-Basin markets might accept the "Triumvirate of Sin" with defence as sinful or, at the very least, different. Our study *does not* require, however, that cultural attitudes about, and consequential choices regarding, these sin stocks be the same in each of these markets.

[9] Data are taken from the "research" and "dead" stock lists to avoid survivor bias. Stocks misclassified as common stock were identified, and removed, by using the ICB classification (Ince and Porter, 2006). Ince and Porter also note rounding errors in TDS return calculations; we calculate returns from price and dividend data and avoid this problem.

[10] Ljunqvist *et al.* (2009) present evidence that I/B/E/S data is changeable. We did not observe this problem when conducting the analysis in this paper. It should be noted, however, that the analysis presented in section 3 is simply a logit analysis of whether a firm is covered by at least one analyst and therefore does not appear to be particularly sensitive to the issues discussed in Ljunqvist *et al.*

[11] We were unable to include Indonesia, the Philippines, Taiwan and Thailand in the analyses as they do not have sufficient sin stocks for the analysis.

Table 1 provides an overview of sin stocks and non-sin stocks for each of the countries in the sample. Several points are worth noting. In the majority of these countries, there are more sinful stocks in the alcohol industries than the other sin industries except for Malaysia: Malaysia is predominantly Muslim and drinking alcohol is forbidden (حرام) under Sharia law (the code of law based on the Koran).

[TABLE 1 ABOUT HERE]

We conduct regression analyses using a variety of dependent variables, listed in Table 2 and each analysis focuses on the variable *SINDUM*. If sin stocks are different from others, *SINDUM*, a dummy variable taking the value of 1 if the firm is a sin stock at time *t* and zero otherwise, will be statistically significant. Our regressions follow HK in controlling for other variables[12] that might be considered candidate variables to explain the variation in the dependent variables we examine.[13] The discussion in the following section focuses on the sign and statistical significance of *SINDUM*, the variable of interest in determining if social norms affect investment. Additionally, we will present scatterplots of our estimates of *SINDUM* for each country against the measurable cultural factors when those plots help us infer generalisable patterns from the data.

[TABLE 2 ABOUT HERE]

[12] The variables used by HK appear well grounded in their respective literatures.

[13] In tables 3 to 7 we have utilized Akaike's Information Criterion (AIC) to determine the best combination of candidate explanatory variables (which is most often the full model) to chose which regression to report. However, choosing the best model using the AIC does not result in different conclusions regarding *SINDUM* in our study.

3. Analysis

HK argue that social norms prevent institutions from holding sin stocks. We begin our analysis by examining if this is the case in the Pacific-Basin markets we study. We cannot capture institutional ownership in the Pacific-Basin markets we study; HK use the CDA Spectrum Database of 13-F holdings and this does not exist in Asia. Rather, we use substantial holdings to proxy for institutional holdings as this is provided by TDS. Inspection of Panel A of Table 3 indicates that the coefficients for *SINDUM* for the Australian and New Zealand markets are negative (-0.0255 and -0.0822 respectively) and statistically significant. Substantial shareholders are *less* likely to hold sin stocks than comparable stocks. This is consistent with HK's argument that social norms act as a force against holding sin stocks. The coefficients for Australia and New Zealand are comparable to those reported for the US in HK, which range from -0.0449 to - 0.0672 (see Panel A of Table 3 in HK – page 25).[14] Thus, the markets most culturally similar to the United States seem to respond to social norms driving investors to eschew sin stocks. Additionally, the similarity of the estimates for *SINDUM* obtained for Australia and New Zealand to those HK report for the US gives us confidence that substantial shareholding is a good proxy for institutional ownership.

[TABLE 3 ABOUT HERE]

In contrast to Australia and New Zealand, the coefficients of *SINDUM* for Japan and South Korea in Table 3 are both positive and statistically significant (0.04442 and 0.05028 respectively); all things being equal, investors in these markets hold *greater* amounts of sin stocks. This finding contradicts HK. Perhaps, the uniqueness of the corporate governance system in Japan and South Korea offers an explanation for this finding. In Japan, Prowse (1992) shows that most firms have a blockholder like a main bank, *mochiai, or keiretsu*.[15] Almost 30% of the Japanese sin companies in

[14] Additionally, HK report a statistically insignificant coefficient of -.0.0421 in Panel A of Table 3 in their paper. We limit ourselves to comparing our results with only the statistically significant results in HK.

[15] The organisation of *Keiretsu* is based on ownership of member companies through cross-shareholdings.

our sample are members of *keiretsu*. Given the cross-listing of shareholdings within the member companies, it may not be surprising to find that substantial shareholders hold greater amount of sin stocks. In South Korea, ownership is concentrated by state-led and leading c*haebol*[16] (Kim *et al.*, 2004); one third of the Korean sin companies we study are held by *chaebol*. Although corporate governance reform has been conducted in Korea since 1980s and has been accelerated since the financial crisis in 1997, external mechanisms of corporate governance such as legal provisions to protect investors and financial markets have not yet been sufficiently developed (Kim *et al.*, 2004). The long tradition of state-led economic development and the substantial ownership by the *chaebol* suggest that social norms are unlikely to have an impact in South Korea.

SINDUM is statistically insignificant for India and Malaysia; substantial shareholders in these markets appear indifferent to sin stocks. This finding contradicts HK. We find, however, that consideration of the relation between the estimates of *SINDUM* reported in Table 3 and the individualism index, depicted in Figure 2, suggests a relationship between the propensity to hold sin stocks and the cultural dimension of individuality. The figure suggests a *negative* relationship between the *SINDUM* and individualism. Investors who are from more individualistic cultures are less likely to hold sin stocks; collectivist investors herd towards sin stocks.

[FIGURE 2 ABOUT HERE]

We develop the analysis of substantial shareholdings in Panel B of Table 3. The markets we study may differ from America's due to the presence of substantial government shareholdings (Temasek Holdings in Singpore provides an excellent example of a government owned entity in the markets we study). We re-estimate equation 1 for government substantial shareholdings and report

[16] *Chaebol* is the family controlled Korean style large business group. In the early 1960s, the South Korea government embarked on an economic development path that supported the *chaebols* and provided an implicit guarantee on bank lending, which encouraged *chaebols* to rely on bank borrowings more than equity financing (Lee, 2008).

the results in Panel B of Table 3.[17] In Panel B we find that *SINDUM* is negative and significant for India (consistent with Indian government entities being constrained by social norms). In contrast, *SINDUM* is positive and statistically significant in Japan: Japanese government entities are more likely to hold sin stocks. Perhaps this finding for Japan may help explain why social norms might not be a greater constraint against holding sin stocks in collectivist societies. In the case of Japan, the example set by government entities may provide a stronger signal of the applicable social norm than society's disapproval of the activities of such firms. In countries where *SINDUM* is insignificantly different from zero, there is no official indication of disapproval that might provide a signal that prevents herding towards sinful stocks.

HK argue that sin stocks are less likely to be followed by analysts, since they cater their services to substantial shareholders. Analyst coverage in the markets we study is not as extensive as that observed in the US. Therefore, we depart from HK's approach and estimate a logistic regression where the dependent variable takes a value of 1 if the stock is covered in the Institutional Brokers' Estimation System ("I/B/E/S") and zero otherwise.[18] The results of this analysis are reported in Table 4 and, again, we focus on *SINDUM*.

[TABLE 4 ABOUT HERE]

In Table 4 we find that *SINDUM* is positive and significant for Australia, New Zealand, Singapore and South Korea and insignificant for India, Japan and Malaysia. The positive and statistically significant results for Singapore and South Korea do not provide evidence against HK's

17 We also analysed non-government substantial holdings. This analysis does not add value to the discussion and is therefore omitted from this paper.

18 In order to check the robustness of the inferences we draw based on this analysis, we also conducted the analysis replacing the dichotomous dependent variable with a variable equal to the natural log of 1 plus the number of analysts following each firm. The results of this additional analysis did not lead us to draw materially different inferences from those reported in this paper and, therefore, they are omitted.

argument. HK only argue about social norms leading to lower institutional holdings and, consequently, lower analyst coverage. In South Korea, we find that substantial shareholders are *more* likely to hold sin stocks, so finding that sin stocks have *more* analyst coverage is consistent with HK. Australia and New Zealand, however, are found to have lower substantial shareholdings in sin stocks in Table 3 yet, in Table 4, we find such stocks are *more* likely to be covered by analysts. Therefore, the findings for the countries which are most like America, and which appeared, on the basis of the analysis reported in Table 3 to behave according to HK's social norms hypothesis, are *not* consistent with HK.

HK's argument hinges on social norms militating against investment in sin stocks. From this, as we have seen, they argue that analysts are less likely to follow sin stocks. As we have also seen, in those markets where there is a *prima facie* case that social norms apply as HK predict – Australia and New Zealand – this does not result in a lower propensity of analysts to follow firms. HK extend the neglected firm argument to returns and prices. Following Arbel and Strebel (1982) and Merton (1987) HK argue that, as sin stocks are neglected (that is, they have lower analyst coverage), they should generate higher risk-adjusted returns. If sin stocks generate positive risk-adjusted returns (returns greater than the risk-free rate) alpha (α) should be statistically significant and positive. In Table 5 we augment the CAPM with variables believed to capture the cross-section of returns such as size and book-to-market (Fama and French, 1992, 1993), past returns (capturing the momentum effect) (Jegadeesh and Titman, 1993), turnover (Pástor and Stambaugh, 2003) and firm age (Berger and Udell, 1995; James and Wier, 1990). Alpha is significant and, contrary to HK's expectations, *negative* in all seven Pacific-Basin markets: sin stocks generate negative risk-adjusted returns.[19,20,21]

[19] We also examined returns using the CAPM augmented with dummy variables taking the value of 1 if the month of the return is January (and zero otherwise) and another taking the value of 1 if the return is observed in the month of Chinese New Year (in the countries with a predominantly Chinese culture). We do not report these results in detail as they do not add substantially to the analysis. Alpha was *negative* (contrary to HK's hypothesis) and statistically significant in Australia and Singapore.

As with the relation of a culture's individualism to substantial shareholdings, Figure 3 suggests a positive relationship between the estimates of *SINDUM* for each country and sin stocks' alphas. That less individualistic (that is, more collectivist) societies are associated with lower risk-adjusted returns for sin stocks is consistent with investors herding towards a sub-optimal investment strategy. To illustrate the point, a strategy generating positive risk-adjusted returns might eventually attract sufficient investor interest to reduce alphas to zero. A continuation of this pattern might result in insignificant alphas becoming negative as an increasing number of investors herd into these portfolios. Figure 3 also suggests that the United States might be an outlier compared to the Pacific-Basin markets examined in this paper.

[TABLE 5 ABOUT HERE]

[FIGURE 3 ABOUT HERE]

HK's arguments regarding sin stocks generating higher returns also apply to the valuation of stocks.[22] They argue that, as sin stocks are neglected, they should be *cheaper*, *ceteris paribus*, than

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[20] The contrast is most telling in Australia and New Zealand (the countries which are culturally closest to the United States) Remember we found *prima facie* evidence that these stocks attract less substantial investment, (a result consistent with HK) and should therefore be relatively neglected. Such neglect does not appear to translate into superior risk-adjusted returns.

[21] Lobe and Roithmeier (2008) compared global sin indices with socially responsible indices and found that sin indices outperform both market and socially responsible indices, even after adjusting for common risk-factors. Salaber (2009) reported that sin stocks are more likely to outperform the markets when they are located in countries with higher excise taxation or higher litigation risks.

[22] Cheaper, or undervalued, stocks need not result in positive risk-adjusted returns. Assume two stocks that are similar in every respect (including, in a CAPM world, their beta – β) except that one is a sin stock. The price of the sin stock today, P_t^{sin} is reduced by a discount S compared to the non-sin stock; the price of the sin stock today is therefore $(1-S)P_t^{non\text{-}sin}$. We assume that S remains constant (the estimation of an average discount, as is done in Panels C and E of Table 4 in HK, implies this). The observed return of a sin company,

comparable stocks. In this paper, we report only one valuation ratio, the market-to-book ratio ($LNMB_{it}$).[23] If HK's findings applied to the markets in question, we would expect to see a negative coefficient for *SINDUM*. We find the opposite. In six of the markets, *SINDUM* is *positive* and statistically significant and, in New Zealand, it is not statistically significant. On average, contrary to the expectation in HK, investors in the Asia-Pacific pay *more* for sin stocks than for comparable firms. Again, inspection of Figure 4 suggests a negative relationship between the coefficients estimated for *SINDUM* and individualism. Investors in markets where the local culture is collectivist, rather than individualistic, value sin stocks more highly that others although, as may be seen from Figure 3, such firms *underperform*. It would appear that, as cultures become more collectivist, investors increasingly drive the price of sin stocks beyond those of comparable stocks. We note, again in keeping with what we have seen in Figure 3, the US lies slightly below the line of best fit.

[TABLE 6 ABOUT HERE]

[FIGURE 4 ABOUT HERE]

If social norms constrain equity holders from investing in sin stocks, it might be the case that this affects corporate financing decisions. We continue our analysis and follow HK by examining *SINDUM* for a number of corporate financial policies. HK find *SINDUM* is significant, and positive, only for market leverage. If sin stocks are less attractive to equity investors, it might be the case that

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$R^{\sin}_{t,t+1} = \frac{\{(1-S)P^{\sin}_{t+1} - (1-S)P^{\sin}_{t}\}}{\{(1-S)P^{\sin}_{t}\}}$, should be equal to the return of its non-sin counterpart

$R^{non\_\sin}_{t,t+1} = \frac{\{(P^{non-\sin}_{t+1}) - (P^{non-\sin}_{t})\}}{\{(P^{non-\sin}_{t})\}}$: the sin discount simply cancels out.

[23] Following HK, we also analysed price-to-earnings and price-to-EBITDA but the number of loss-making firms led to many observations being dropped as we could not take logs of negative numbers. The results of these analyses do not lead to materially different conclusions to the ones we make on the basis of our analysis of the market-to-book ratio.

sin firms are more leveraged than comparable firms. We examine market leverage in Panel A of Table 7 and the book leverage in Panel B. For New Zealand, the coefficient of SINDUM statistically significant and positive (as the social norm argument would lead us to expect) in both panels. In the cases of Australia, Japan, South Korea, Malaysia and Singapore, however, inspection of Panel A reveals that the coefficients of SINDUM are statistically significant and *negative*. In Panel B, *SINDUM* is negative and statistically significant only for Japan.

[TABLE 7 ABOUT HERE]

In Panel C, *SINDUM* is positive and statistically significant in the case of Japan, South Korea and Malaysia. HK do not find any relationship between SINDUM and cash in the US and do not indicate what the social norms hypothesis might predict. However, the negative coefficients found for these three countries is consistent with firms holding *more* cash to overcome capital market imperfections (Myers and Majluf, 1984) or have greater free cash flow and associated agency problems (Jensen, 1986, 1988; Jensen and Meckling, 1976). In the case of New Zealand, however, *SINDUM* is negative and statistically significant and this is difficult to explain. [24]

Examination of Figure 5 suggests a positive relationship between the coefficients estimated for *SINDUM* and individualism: sin firms in collectivist countries appear to have less debt, *ceteris paribus*. Such a relationship may be consistent with the lower alphas associated with individualism (depicted in Figure 3) as under-levered firms may underperform. Figure 5 also reveals that the most individualistic countries – Australia, New Zealand and the United States – appear to form a cluster although, as we have noted, only New Zealand generates the positive coefficient for SINDUM predicted by HK.

[24] Following HK, we also examined firms' payout ratios, dividend payout ratios and share repurchases. HK do not hypothesise how *SINDUM* might influence these variables and they find no significant coefficients. Our results are marginal; therefore, we do not report them in this paper.

[FIGURE 5 ABOUT HERE]

The bonding hypothesis (Coffee, 2002; Stulz, 1999) posited that companies cross-list to signal better standards of corporate governance by complying with the laws, disclosure policies, and exchange listing requirements of the foreign markets. Recent corporate governance studies provide empirical support for the bonding hypothesis and have argued that cross-listing companies have a higher level of corporate governance than companies that do not cross-list (see, among others, (Doidge, 2004; Doidge *et al.*, 2004; Durand *et al.*, 2006; Reese and Weisbach, 2002). HK do not consider this issue; the American market is the one to which foreign firms are expected to bond. If firms bond, it is reasonable to expect that sin companies are more likely to cross-list in foreign markets; such a move might sway investors to believing that, despite the sinfulness of their activity, such firms are committed to high levels of governance. We examine this issue in Table 8 and obtain mixed findings. In keeping with our expectations, *SINDUM* is positive and statistically significant in Japan and Malaysia; sin stocks in these countries are more likely to cross list. For Australia, India and New Zealand, however, *SINDUM* is statistically significant and, contrary to our expectations, negative.

[TABLE 8 ABOUT HERE]

4. Conclusion and Discussion

HK's analysis of the US market is consistent with their argument that social norms drive investors towards certain courses of action. They find that that "norm-constrained" institutions have lower holdings of sin stocks and, as a consequence of this lower institutional demand, analysts have a lower propensity to cover sin stocks. HK find that sin stocks are relatively undervalued but that they have higher returns *ceteris paribus*. HK also find that sin stocks tend to rely more on debt financing.

We follow HK and examine sin stocks in seven Pacific-Basin markets: Australia, India, Japan, South Korea, Malaysia, New Zealand and Singapore. In Australia and New Zealand, the

countries culturally closest to the US, we find that substantial shareholders are *less* likely to hold sin stocks; such a finding is consistent with HK's social norms hypothesis. In Japan and South Korea, we find that substantial shareholders are more likely to hold sin stocks; in the other markets we find that there is no difference in substantial shareholdings of sin stocks. These findings are inconsistent with HK. Sin stocks are *more* likely to attract analyst coverage in Australia and New Zealand; this is contrary to HK's argument that lower substantial holdings due to the pressures of social norms should result in lower analyst interest. In Singapore and South Korea, analysts are more likely to cover sin stocks than other comparable non-sin firms. HK find that sin stocks are undervalued; we find that, in all markets except New Zealand, sin stocks are overvalued. HK also find that sin stocks generate positive risk-adjusted returns in the US; our study finds the opposite in each of the seven Pacific-Basin markets we analyse.

The evidence in this paper is at odds with HK. In motivating our analysis in Figure 1, we used two cultural dimensions – individualism and corruption – to suggest that the seven markets we have studied provide markets which have cultural similarities, as well as contrast, to the US. Where relevant, we have presented figures which suggest that estimates for SINDUM (the dummy variable used to identify sin stocks) are related to one of these cultural variables, individualism. In Figure 2, the scatter plot suggests that as cultures become more collectivist (less individualistic), substantial shareholding is *more* likely to be present in sin stocks. In Figure 3, the scatter plot suggests that, as cultures become more collectivist, sin stocks are likely to *underperform* comparable stocks. In Figure 4, the scatter plot suggests that, as cultures become more collectivist, sin stocks are likely to be *overvalued* (that is, investors pay more for them in comparison with other stocks). Figures 2, 3 and 4 suggest that less individualistic investors *herd* towards sin stocks.

In America, and, to some extent, Australia and New Zealand, more individualistic investors might *herd away* from sin stocks; investors, being individualistic, take responsibility for their actions and believe they can influence the world. Collectivist investors, on the other hand, appear to *herd*

towards sin stocks. It may be the case that, in collectivist cultures, the cognitive dissonance that may results, from holding sin stocks is reduced by others holding sin stocks. It may be the case that, in collectivist cultures, official sanction, such as Japanese government entities holding statistically significantly greater proportions of sin stocks (and, in other countries with low individualism, government entities not treating sin stocks differently) facilitates the good feelings about the firms that allow members in the group to avoid the inconvenient truth of sin companies. Our analysis of the relationship of sin stocks to culture can only be preliminary, yet these considerations provide a potential insight into why HK find the results they do and why our findings differ.

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Table 1: Overview of Sin Stocks and Non-Sin Stocks

The table presents an overview of sin stocks and non-sin stocks in each of the sample countries from 1990 to 2009. The stocks are categorised as sinful in the ICB Subsector classification (DataStream level 5) provided by TDS. The figures provided are firm year observations.

Summary Statistics on the Selection of Sin Stocks: 1990 – 2009							
	Sin Stocks					Non-Sin Stocks	Number of Firms
	Alcohol	Tobacco	Gaming	Defence	**Total**		
Australia	42	4	22	6	74	2973	3047
India	25	5	-	2	32	2412	2444
Japan	12	2	15	8	37	4412	4449
South Korea	10	1	3	4	18	2156	2174
Malaysia	2	2	7	2	13	1024	1037
New Zealand	9	-	4	-	13	332	345
Singapore	5	2	5	4	16	1000	1016

Table 2: Definition of Variables

This table presents the definition of the variables employed in this paper. (*) denotes that these variables are also calculated monthly for Table 5.

Dependent Variables		
SH_{it}	=	The proportion of shares held by majority shareholders in company *i* at the end of year *t*. The major shareholders include company directors, trust funds, pension funds, corporations and individuals who hold more than 5% or more of the outstanding shares.
GOV_{it}	=	The proportion of shares held by government institutions in company *i* at the end of year *t*.
$ANALYST_{it}$	=	Dummy variable where it is equal to one if there is at least one analyst following company *i* during year *t* and zero otherwise. If the stock is not in I/B/E/S, then it is assumed to have zero analyst coverage.
$EXMRET_{it}$	=	Monthly return of company *i* in month *t* net of risk-free rate.
$LNMB_{it}$	=	Natural logarithm of company *i*'s market-to-book ratio at end of year *t*.
$MLEV_{it}$	=	Company *i*'s market leverage at end of year *t*.
$BLEV_{it}$	=	Company *i*'s book leverage at end of year *t*.
$CASH_{it}$	=	Company *i*'s cash balance during year *t* over book assets at start of year *t*.
$CROSS_{it}$	=	Dummy variable where it is equal to one if the sin stock cross-lists in foreign markets and zero otherwise.
Independent Variables		
$SINDUM_{it}$ (*)	=	Dummy variable where it is equal to one if the stock is a sin stock and zero otherwise.
$ONEDIGDUM_{it}$	=	Dummy variable where it is equal to one if the stock resides in the same Industry Classification Benchmark ("ICB") industry classification as any of the sin stocks and zero otherwise.
$LNSIZE_{it}$ (*)	=	Natural logarithm of company *i*'s market capitalisation at the end of year *t*.
$BETA_{it}$ (*)	=	The sensitivity of company *i*'s return with market return (beta) at end of year *t*.
$LNMB_{it}$ (*)	=	Natural logarithm of company *i*'s market-to-book ratio at end of year *t*.
$PRINV_{it}$	=	The inverse of company *i*'s share price at end of year *t*.
STD_{it}	=	The standard deviation of company *i*'s monthly returns at end of year *t*.
RET_{it} (*)	=	Average monthly return of company *i* at end of year *t*.
$TURN_{it}$	=	Shares traded divided by shares outstanding in company i during month t.
$LNAGE_{it}$	=	Natural logarithm of company i's age, measured by the number of years available in Thomson DataStream
JAN_{it}	=	Dummy variable where it is equal to one if the stock return resides in January and zero otherwise.
ROE_{it}	=	Company i's return on equity at end of year t.
$FROE_{it+1}$	=	Company i's return on equity at end of year t + 1.
$F2ROE_{it+2}$	=	Company i's return on equity at end of year t + 2.
$F3ROE_{it+3}$	=	Company i's return on equity at end of year t + 3.
$RDSALES_{it}$	=	Fraction of company i's R&D expenditures to sales revenue at end of year t. If company i does not have R&D expenditures, then it is assumed to have zero R&D expenditure.
$RDMISS_{it}$	=	Dummy variable where it is equal to one if company i is missing R&D expenditure and zero otherwise.
$TOBQ_{it}$	=	Company i's market capitalisation plus total assets minus the book value of equity, all divided by total assets at the end of year t.
$TANG_{it}$	=	Company i's net property, plant and equipment divided by total assets at end of year t.
$PROFIT_{it}$	=	Company i's EBITDA divided by total assets at end of year t.
$LNSALES_{it}$	=	Natural logarithm of company i's sales revenue end of year t.
SH_{it}	=	The proportion of shares held by majority shareholders in company i at end of the year t. The major shareholders include company directors, trust funds, pension funds, corporations and individuals who hold more than 5% or more of the outstanding shares.

Table 3: Substantial Holdings

This table reports the coefficients of unbalanced panel regression analyses which take the form of :

$$SH_{it} = \alpha_1 + \alpha_2 SINDUM_{it} + \alpha_3 ONEDIGDUM_{it} + \alpha_4 LNSIZE_{it} + \alpha_5 BETA_{it} + \alpha_6 PRINV_{it} + \alpha_7 STD_{it} + \alpha_8 RET_{it} + \varepsilon_i \quad (1)$$

$$Gov_{it} = \alpha_1 + \alpha_2 SINDUM_{it} + \alpha_3 ONEDIGDUM_{it} + \alpha_4 LNSIZE_{it} + \alpha_5 BETA_{it} + \alpha_6 PRINV_{it} + \alpha_7 STD_{it} + \alpha_8 RET_{it} + \varepsilon_i \quad (2)$$

Panel A (Equation 1) presents the level of substantial holdings in stocks in seven Pacific-Basin markets for the period from 1990 to 2009. Panel B (Equation 2) presents the level of substantial shareholdings held by government entities which have substantial holdings in stocks in seven Pacific-Basin markets for the period from 1990 to 2009. Variables are defined in Table 2. The standard errors of the variables are corrected for heteroskedasticity and appear in parentheses. ***, **, and * denote statistical significance at the 1%, 5 % and 10% levels respectively.

Panel A: Substantial holdings regressions: 1990 – 2009							
	Australia	India	Japan	South Korea	Malaysia	New Zealand	Singapore
C	0.5548*** (0.0156)	0.3989*** (0.0364)	1.1494*** (0.0119)	0.4544*** (0.0411)	0.4233*** (0.0388)	0.2645*** (0.0708)	2.5489 (2.0724)
SINDUM	-0.0255* (0.0138)	0.0330 (0.0231)	0.0444*** (0.0119)	0.0503* (0.0265)	-0.0383 (0.0245)	-0.0822** (0.0354)	0.0938 (0.1679)
ONEDIGDUM	0.0800*** (0.0056)	0.0150** (0.0061)	-0.0076*** (0.0022)	-0.0186*** (0.0055)	-0.0078 (0.0119)	0.0498*** (0.0175)	0.0940 (0.0857)
LNSIZE	-0.0151*** (0.0013)	0.0066*** (0.0024)	-0.0397*** (0.0007)	-0.0035* (0.0021)	0.0086*** (0.0028)	0.0201*** (0.0057)	-0.1674 (0.1725)
BETA	-0.0060*** (0.0011)	-0.0029 (0.0024)	-0.0111*** (0.0013)	-0.0072** (0.0034)	-0.0198*** (0.0032)	-0.0004 (0.0090)	-0.0147* (0.0081)
LNMB	-0.0074*** (0.0027)	0.0114*** (0.0042)		-0.0041 (0.0038)	-0.0191** (0.0077)	-0.0375*** (0.0115)	
PRINV	-0.0010*** (0.0001)	-0.0645* (0.0381)		1.6030* (0.8710)	-0.0049** (0.0023)	-0.0040*** (0.0008)	
STD	-0.0256*** (0.0041)	0.0109** (0.0055)		-0.0704** (0.0284)			
RET				0.0789*** (0.0282)			
Adjusted R^2	0.0509	0.0186	0.1734	0.0490	0.0205	0.1232	0.0181
Akaike Criterion	0.0688	-0.5833	-0.8563	-0.5869	-0.0908	0.0613	6.0476
F-Stat.	20.7762***	4.1609***	311.8123***	11.1301***	6.7599***	6.4757***	6.3091***

Table 3: Substantial Holdings – *Continued*

Panel B: Government holdings regressions: 1990 – 2009							
	Australia	India	Japan	South Korea	Malaysia	New Zealand	Singapore
C	-0.0209***	-0.0374***	-0.0166***	-0.0392***	0.0141	-0.1265***	-0.1705***
	(0.0053)	(0.0119)	(0.0054)	(0.0115)	(0.0101)	(0.0454)	(0.0205)
SINDUM	-0.0006	-0.0027**	0.0232**	-0.0002	-0.0002	-0.0048	0.0018
	(0.0005)	(0.0012)	(0.0095)	(0.0015)	(0.0027)	(0.0050)	(0.0167)
ONEDIGDUM	-0.0029***	-0.0037***	-0.0003	-0.0033***	-0.0006	-0.0138***	-0.0125***
	(0.0007)	(0.0011)	(0.0002)	(0.0009)	(0.0014)	(0.0051)	(0.0045)
LNSIZE	0.0021***	0.0028***	0.0010***	0.0023***	-0.0007	0.0107***	0.0171***
	(0.0005)	(0.0009)	(0.0003)	(0.0007)	(0.0008)	(0.0038)	(0.0018)
BETA	-0.0003***	-0.00002	-0.0002*	-0.0005***	0.0006	-0.0007	-0.0014
	(0.00008)	(0.0002)	(0.00009)	(0.0002)	(0.0005)	(0.0015)	(0.0009)
LNMB	0.0002*	-0.0035***	-0.0008**	-0.0020***	0.0005	0.0012	0.0049***
	(0.0001)	(0.0011)	(0.0003)	(0.0006)	(0.0010)	(0.0013)	(0.0010)
PRINV	0.00003***	-0.0005	0.0061***	0.9008***	-0.0002*	0.0006**	0.0003***
	(0.000008)	(0.0028)	(0.0020)	(0.3248)	(0.00009)	(0.0002)	(0.00007)
STD	0.0025***	-0.0003	0.0027**	0.0018	-0.0065	0.0507*	0.0138*
	(0.0009)	(0.0005)	(0.0013)	(0.0020)	(0.0072)	(0.0276)	(0.0078)
RET	-0.0109***	0.0004	-0.0032*	-0.0012	0.0120	-0.1554**	-0.0722**
	(0.0035)	(0.0010)	(0.0018)	(0.0018)	(0.0143)	(0.0658)	(0.0230)
Adjusted R^2	0.0355	0.0173	0.0265	0.0233	0.0108	0.1193	0.1052
Akaike Criterion	-4.7767	-3.7824	-5.4396	-4.8362	-4.1876	-3.2400	-1.7101
F-Stat.	16.2060***	4.3930***	29.4435***	7.1186***	3.2788***	5.7776***	27.0644***

Table 4: Analyst Coverage

This table reports the coefficients of a logit regression which take the form of :

$$ANALYST_{it} = \alpha_1 + \alpha_2 SINDUM_{it} + \alpha_3 ONEDIGDUM_{it} + \alpha_4 LNSIZE_{it} + \alpha_5 BETA_{it} + \alpha_6 PRINV_{it} + \alpha_7 STD_{it} + \alpha_8 RET_{it} + \varepsilon_i \quad (1)$$

The dependent variable (ANALYST) takes the value of 1 if a stock has analyst coverage (and zero otherwise) in seven Pacific-Basin markets for the period from 1990 to 2009. Variables are defined in Table 2. The standard errors of the variables appear in the parentheses. ***, **, and * denote statistical significance at the 1%, 5 % and 10% levels respectively.

	Australia	India	Japan	South Korea	Malaysia	New Zealand	Singapore
C	-12.694***	-15.016***	-10.537***	-2.8772***	-16.994***	-3.2784***	-9.4921***
	(0.3027)	(0.4625)	(0.1261)	(0.3899)	(0.5836)	(1.0707)	(0.3994)
SINDUM	0.3332*	-0.3726	-0.0044	0.6293**	0.6162	1.3119**	0.6807**
	(0.1713)	(0.2965)	(0.1221)	(0.3040)	(0.4025)	(0.5852)	(0.2929)
ONEDIGDUM	0.3952***	0.2134***	-0.0945***	-0.2678***	-0.2592***	0.3209	-0.3266***
	(0.0618)	(0.0615)	(0.0243)	(0.0719)	(0.0951)	(0.1979)	(0.0781)
LNSIZE	1.1222***	0.9884***	0.6405***	0.0334	1.3781***	0.4025***	0.8668***
	(0.0260)	(0.0305)	(0.0075)	(0.0214)	(0.0463)	(0.0819)	(0.0320)
BETA	-0.0132	-0.0500*	0.0828***	0.0981***	-0.0441	0.3005***	0.1319***
	(0.0125)	(0.0281)	(0.0106)	(0.0328)	(0.0388)	(0.1096)	(0.0360)
LNMB	-0.5274***	-0.4786***			-0.1079*	-0.3257***	-0.2255***
	(0.0324)	(0.0365)			(0.0639)	(0.0997)	(0.0306)
PRINV	-0.0320***				-0.0604**	-0.3066***	-0.0571***
	(0.0055)				(0.0256)	(0.0502)	(0.0065)
STD	1.3826***				0.0096	-0.1990	0.6173
	(0.1367)				(0.2620)	(1.6375)	(0.3971)
RET	-4.7908***				-6.2763	-6.7149***	-5.3055***
	(0.4451)				(0.9182)	(2.0668)	(0.5909)
McFadden R^2	0.4377	0.2260	0.1667	0.0049	0.3599	0.3108	0.2913
Akaike Criterion	0.7708	1.0737	1.1551	0.5960	0.8326	0.7832	0.9669
LR-Stat.	5887.354***	1887.522***	10811.29***	28.8213***	2078.535***	345.6954***	2268.575***

Table 5: Cross-Sectional Performance of Sin Stocks

This table presents cross-sectional analyses of the returns of stocks in seven Pacific-Basin markets for the period from 1990 to 2009. It reports the coefficients of an ordinary least square regression which takes the form of :

$$EXMRET_{it} = \alpha_1 + \alpha_2 SINDUM_{it} + \alpha_3 LNSIZE_{it} + \alpha_4 LNMB_{it} + \alpha_5 RET_{it} + \alpha_6 BETA_{it} + \alpha_7 TURN_{it} + \alpha_8 LNAGE_{it} + \alpha_9 JAN_{it} + \varepsilon_i \quad (1)$$

Variables are defined in Table 2. The standard errors of the variables are corrected for heteroskedasticity and appear in parentheses. ***, **, and * denote statistical significance at the 1%, 5 % and 10% levels respectively.

	Australia	India	Japan	South Korea	Malaysia	New Zealand	Singapore
ALPHA (α_1)	-0.1025***	-0.0665***	-0.0155***	-0.0950***	-0.0573***	-0.0851***	-0.0409***
	(0.0073)	(0.0248)	(0.0022)	(0.0088)	(0.0151)	(0.0125)	(0.0130)
SINDUM	-0.0035	-0.0069	-0.0040**	-0.0100**	-0.0188***	-0.0016	-0.0058*
	(0.0047)	(0.0063)	(0.0018)	(0.0042)	(0.0047)	(0.0046)	(0.0032)
LNSIZE	0.0032***	-0.0008	0.0005***	0.0021***	0.0011	0.0010	0.0021**
	(0.0009)	(0.0014)	(0.0001)	(0.0005)	(0.0010)	(0.0010)	(0.0008)
LNMB	0.0163***	0.0196***	0.0080***	0.0139***	0.0148***	0.0090***	0.0047***
	(0.0026)	(0.0026)	(0.0004)	(0.0012)	(0.0022)	(0.0026)	(0.0014)
RET	1.4628	1.0077***	0.9860***	0.9894***	1.3663*	1.1044***	1.0043**
	(1.1351)	(0.3122)	(0.0263)	(0.0524)	(0.7262)	(0.0827)	(0.4639)
BETA (β)	-0.0059		-0.0006		-0.0030		
	(0.0137)		(0.0008)		(0.0026)		
TURN	-0.0533		-0.00001		0.1004***		
	(0.0466)		(0.00002)		(0.0282)		
LNAGE			0.0011**		0.0044*		
			(0.0004)		(0.0026)		
JAN							
Adjusted R^2	0.1320	0.1506	0.2558	0.2948	0.2295	0.2514	0.1875
Akaike Criterion	1.8790	1.1026	-1.3840	-0.5395	-0.2386	-1.5590	-0.2866
F-Stat.	72.743***	112.9924***	821.7325***	160.0355***	121.6841***	15.7790***	69.0973***

Table 6: Valuation Ratio of Sin Companies

This table presents the coefficients of unbalanced panel regression analyses of the valuation of stocks in seven Pacific-Basin markets for the period from 1990 to 2009. It reports the coefficients of an ordinary least squares regression whichs take the form of :

$$LNMB_{it} = \alpha_1 + \alpha_2 SINDUM_{it} + \alpha_3 ROE_{it} + \alpha_4 FROE_{it+1} + \alpha_5 F2ROE_{it+2} + \alpha_6 F3ROE_{it+3} + \alpha_7 RDSALES_{it} + \alpha_8 RDMISS_{it} + \varepsilon_i \quad (1)$$

Valuation is measured by the natural log of the firm's market to book ratio. Variables are defined in Table 2. The standard errors of the variables are corrected for heteroskedasticity and appear in parentheses. ***, **, and * denote statistical significance at the 1%, 5 % and 10% levels respectively.

	Australia	India	Japan	South Korea	Malaysia	New Zealand	Singapore
C	0.7528***	0.1394***	-0.3231***	-0.2770***	0.2309***	0.7892***	-0.1077*
	(0.0258)	(0.0418)	(0.0081)	(0.0199)	(0.0394)	(0.0725)	(0.0587)
SINDUM	0.2100***	0.3750***	0.8047***	0.6477***	0.9743***	0.0802	0.7116***
	(0.0591)	(0.1118)	(0.1120)	(0.0883)	(0.1165)	(0.1019)	(0.1103)
ROE	-0.0001	0.0092***	0.0000	0.0000***	0.0000	0.0002	0.0004
	(0.0000)	(0.0026)	(0.0000)	(0.0000)	(0.0003)	(0.0001)	(0.0007)
FROE	-0.0002***	0.0139***	0.0000***	-0.0003***	-0.0007	-0.0012***	-0.0007
	(0.0000)	(0.0028)	(0.0000)	(0.0000)	(0.0006)	(0.0003)	(0.0008)
F2ROE	0.0000***	0.0018	0.0000	-0.0002***	-0.0004**	0.0009***	0.0000
	(0.0000)	(0.0019)	(0.0000)	(0.0000)	(0.0002)	(0.0003)	(0.0005)
F3ROE	0.0000***	0.0015	0.0000**	0.0000	0.0000	0.0003**	0.0000
	(0.0000)	(0.0013)	(0.0000)	(0.0000)	(0.0000)	(0.0002)	(0.0003)
RDSALES	0.0005	1.6456***	0.0468***	2.0825**	9.2301**	0.0330	2.5733***
	(0.0003)	(0.5096)	(0.0118)	(0.9760)	(3.7679)	(0.0278)	(0.9546)
RDMISS	-0.2174***	-0.2174***	-0.1269***	-0.0587*	-0.1588***	-0.2091***	0.0051
	(0.0292)	(0.0286)	(0.0106)	(0.0314)	(0.0406)	(0.0785)	(0.0607)
Adjusted R^2	0.0782	0.3497	0.1350	0.1954	0.2465	0.0993	0.0656
Akaike Criterion	2.6629	2.6514	2.9140	2.6226	2.1771	2.2270	3.1444
F-Stat.	23.2520***	107.0509***	298.1396***	54.4661***	68.4441***	4.7299***	13.3940***

Table 7: Financing Decisions of Sin Companies

This table presents analyses of financing decisions of firms in seven Pacific-Basin markets for the period from 1990 to 2009. It reports the coefficients of unbalanced panel regression analyses which take the form of :

$$MLEV_{it} = \alpha_1 + \alpha_2 SINDUM_{it} + \alpha_3 TOBQ_{it} + \alpha_4 TANG_{it} + \alpha_5 PROFIT_{it} + \alpha_6 LNSALES_{it} + \varepsilon_i \quad (1)$$

$$BLEV_{it} = \alpha_1 + \alpha_2 SINDUM_{it} + \alpha_3 TOBQ_{it} + \alpha_4 TANG_{it} + \alpha_5 PROFIT_{it} + \alpha_6 LNSALES_{it} + \varepsilon_i \quad (2)$$

$$CASH_{it} = \alpha_1 + \alpha_2 SINDUM_{it} + \alpha_3 TOBQ_{it} + \alpha_4 TANG_{it} + \alpha_5 PROFIT_{it} + \alpha_6 LNSALES_{it} + \varepsilon_i \quad (3)$$

In Panel A, the dependent variable is the firm's market leverage, in Panel B the dependent variable is book leverage and, in Panel C, the dependent variable is the firm's cash holdings. Variables are defined in Table 2. The standard errors of the variables are corrected for heteroskedasticity and appear in parentheses. ***, **, and * denote statistical significance at the 1%, 5 % and 10% levels respectively.

Panel A: MLEV of sin companies regressions: 1990 – 2009							
	Australia	India	Japan	South Korea	Malaysia	New Zealand	Singapore
C	-0.1014***	0.2573***	-0.1978***	-0.5015***	-0.0395	-0.1230***	-0.2953***
	(0.0069)	(0.0278)	(0.0155)	(0.0311)	(0.0275)	(0.0203)	(0.0223)
SINDUM	-0.0179**	-0.0267	-0.0751***	-0.1447***	-0.0743***	0.0690***	-0.1174***
	(0.0090)	(0.0194)	(0.0096)	(0.0305)	(0.0233)	(0.0193)	(0.0243)
TOBQ	-0.0001	-0.0316***	0.0000***	-0.0038***	0.0008	-0.0002***	-0.0040
	(0.0002)	(0.0069)	(0.0000)	(0.0012)	(0.0011)	(0.0000)	(0.0038)
TANG	0.1102***	0.4888***	0.4149***	0.3252***	0.1565***	0.0618***	0.1991***
	(0.0079)	(0.0164)	(0.0074)	(0.0138)	(0.0129)	(0.0181)	(0.0132)
PROFIT	0.0000	-0.1374	-0.3090***	-0.0660***	-0.0828***	-0.0014	-0.0205*
	(0.0000)	(0.1066)	(0.0767)	(0.0151)	(0.0280)	(0.0012)	(0.0108)
LNSALES	0.0246***	-0.0018	0.0248***	0.0441***	0.0250***	0.0288***	0.0447***
	(0.0006)	(0.0021)	(0.0010)	(0.0017)	(0.0023)	(0.0018)	(0.0017)
Adjusted R^2	0.1653	0.3316	0.1822	0.2802	0.1051	0.1752	0.1816
Akaike Criterion	-0.4120	-0.0887	-0.0083	0.1168	0.1162	-0.4709	0.0836
F-Stat.	82.1310***	233.6822***	475.7650***	164.7109***	45.0393***	13.7896***	70.4933***

Table 7: Financing Decisions of Sin Companies – *Continued*

Panel B: BLEV of sin companies regressions: 1990 – 2009							
	Australia	India	Japan	South Korea	Malaysia	New Zealand	Singapore
C	-0.1140	-0.2293	-0.1999***	-27.575	0.0743	0.1019	0.1870
	(0.2819)	(0.3238)	(0.0327)	(23.682)	(0.3033)	(0.2028)	(0.1163)
SINDUM	0.0457	-0.0758	-0.0219**	1.2011	-0.3041	0.0803***	-0.0172
	(0.0581)	(0.0577)	(0.0103)	(1.5177)	(0.2067)	(0.0291)	(0.0971)
TOBQ	-0.0144	-0.0205***	0.0000**	3.4845	-0.0421	0.0000	-0.0517***
	(0.0091)	(0.0065)	(0.0000)	(3.1137)	(0.0406)	(0.0004)	(0.0192)
TANG	0.1965	0.3887***	0.4194***	3.5666	-0.2928	-0.0166	0.1205*
	(0.1966)	(0.0936)	(0.0143)	(3.2591)	(0.4594)	(0.0592)	(0.0650)
PROFIT	-0.0047	-0.0485	-0.3870***	-29.083	0.7432	-0.0030	0.2185***
	(0.0035)	(0.1375)	(0.1189)	(25.2296)	(1.0482)	(0.0125)	(0.0703)
LNSALES	0.0300*	0.0332	0.0266***	1.2772	0.0297	0.0209	0.0097
	(0.0168)	(0.0211)	(0.0017)	(1.0806)	(0.0262)	(0.0139)	(0.0080)
Adjusted R^2	0.0015	0.0016	0.0484	0.1714	0.0028	-0.0034	0.0305
Akaike Criterion	6.4690	4.4442	1.3945	10.4584	6.8276	2.6726	3.6764
F-Stat.	1.6179**	1.7532**	109.4329***	87.9809***	2.0355***	0.7952	10.8678***
Panel C: CASH of sin companies regressions: 1990 – 2009							
	Australia	India	Japan	South Korea	Malaysia	New Zealand	Singapore
C	2.5726*	14.8613	0.7290***	0.5558***	0.2514***	0.7877***	0.2275
	(1.5339)	(14.5879)	(0.0193)	(0.0420)	(0.0456)	(0.1716)	(0.1788)
SINDUM	-0.2152	-0.2329	0.0234**	0.0777***	0.0672***	-0.0396**	-0.0167
	(0.1749)	(0.1978)	(0.0094)	(0.0238)	(0.0165)	(0.0160)	(0.0503)
TOBQ	0.0011	-0.0573	0.0000***	0.0003	0.0016	0.0008	0.0394
	(0.0028)	(0.0632)	(0.0000)	(0.0009)	(0.0013)	(0.0010)	(0.0390)
TANG	-0.2981	-0.1256	-0.3794***	-0.3518***	-0.2290***	-0.2306***	-0.2875***
	(0.3840)	(0.1524)	(0.0078)	(0.0150)	(0.0220)	(0.0512)	(0.0205)
PROFIT	0.0005	-0.0034	0.1761***	0.0496***	0.0386**	0.0137***	0.0235*
	(0.0007)	(0.2327)	(0.0402)	(0.0103)	(0.0183)	(0.0034)	(0.0140)
LNSALES	-0.1802	-0.9136	-0.0253***	-0.0145***	-0.0021	-0.0482***	0.0021
	(0.1382)	(0.9093)	(0.0011)	(0.0019)	(0.0041)	(0.0119)	(0.0110)
Adjusted R^2	0.0008	0.0017	0.0762	0.1083	0.0129	0.0661	0.0085
Akaike Criterion	8.6220	9.3064	0.3451	-0.0682	1.2789	1.5924	3.4863
F-Stat.	1.3182	1.8101**	178.5004***	50.8159***	5.6836***	5.0888***	3.6560***

Table 8: Cross-Listing Sin Companies

This table presents logit analyses of a dummy variable taking the value of 1 if a stock is cross-listed (and zero otherwise) for stocks from six Pacific-Basin markets for the period from 1990 to 2009 (South Korea is excluded from this analysis due to non-cross-listing by the Korean companies). It reports the coefficients of a logit regression which takes the form of :

$$CROSS_{it} = \alpha_1 + \alpha_2 SINDUM_{it} + \alpha_3 ONEDIGDUM_{it} + \alpha_4 LNSIZE_{it} + \alpha_5 BETA_{it} + \alpha_6 LNMB_{it} + \alpha_7 PRINV_{it} + \alpha_8 STD_{it} + \alpha_9 RET_{it} + +\alpha_{10} SH_{it} + \varepsilon_i \quad (1)$$

Variables are defined in Table 2. The standard errors of the variables appear in parentheses. ***, **, and * denote statistical significance at the 1%, 5 % and 10% levels respectively.

	Australia	India	Japan	Malaysia	New Zealand	Singapore
C	-0.6373***	-12.9055***	-16.3537***	-19.1866***	-2.4307***	-8.1179***
	(0.1748)	(0.6701)	(0.3689)	(1.5026)	(0.6635)	(0.2998)
SINDUM	-0.3296***	-1.2525***	1.0178***	1.7834***	-0.7988**	0.0478
	(0.1200)	(0.3864)	(0.1939)	(0.3899)	(0.3119)	(0.1940)
ONEDIGDUM	-0.5880***	0.4433***	-0.9345***	-0.4278*	-1.1240***	-0.7124***
	(0.0481)	(0.0900)	(0.0530)	(0.2472)	(0.1553)	(0.0715)
LNSIZE	0.1352***	0.9690***	0.8591***	1.2113***	0.3441***	0.5841***
	(0.0132)	(0.0449)	(0.0206)	(0.0987)	(0.0529)	(0.0222)
BETA	0.0368***	-0.0154	0.0958***	-0.5556***	0.1250	0.0683*
	(0.0114)	(0.0332)	(0.0238)	(0.1467)	(0.0815)	(0.0359)
LNMB	0.1331***	-0.7180***	0.0720***	-0.3196*	-0.1044	-0.1964***
	(0.0229)	(0.0585)	(0.0256)	(0.1840)	(0.0843)	(0.0266)
PRINV	0.0166***	1.3785***	5.5506***	-0.0192	0.0463***	0.0230***
	(0.0020)	(0.5220)	(1.9432)	(0.1297)	(0.0150)	(0.0029)
STD	1.3244***	-0.1979**	1.6543***	-0.4401	-1.2996	2.8705***
	(0.2308)	(0.0978)	(0.3071)	(1.6243)	(1.2135)	(0.4192)
RET	-0.8660***	0.1587	-2.1154***	-7.3721**	-0.6208	-2.3356***
	(0.2956)	(0.1623)	(0.3636)	(3.3441)	(1.7037)	(0.5460)
SH	-1.1830***	-1.0171***		0.4126	-1.7933***	
	(0.0887)	(0.2563)		(0.4762)	(0.2961)	
McFadden R^2	0.0685	0.1859	0.3494	0.3832	0.1244	0.1409
Akaike Criterion	1.2228	0.8759	0.4289	0.1499	1.2284	1.0291
LR-Stat.	861.4878***	729.2724***	5914.721***	396.9610***	169.4661***	963.6801***

Figure 1: Individualism and Corruption in Selected Markets

This figure plots Hofstede's (2001) individualism index ("individualism index") against the Corruption Perception Index ("CPI") prepared by Transparency for the countries examined in this paper and the United States (studied in Hong and Kacperczyk, 2009, denoted by HK).

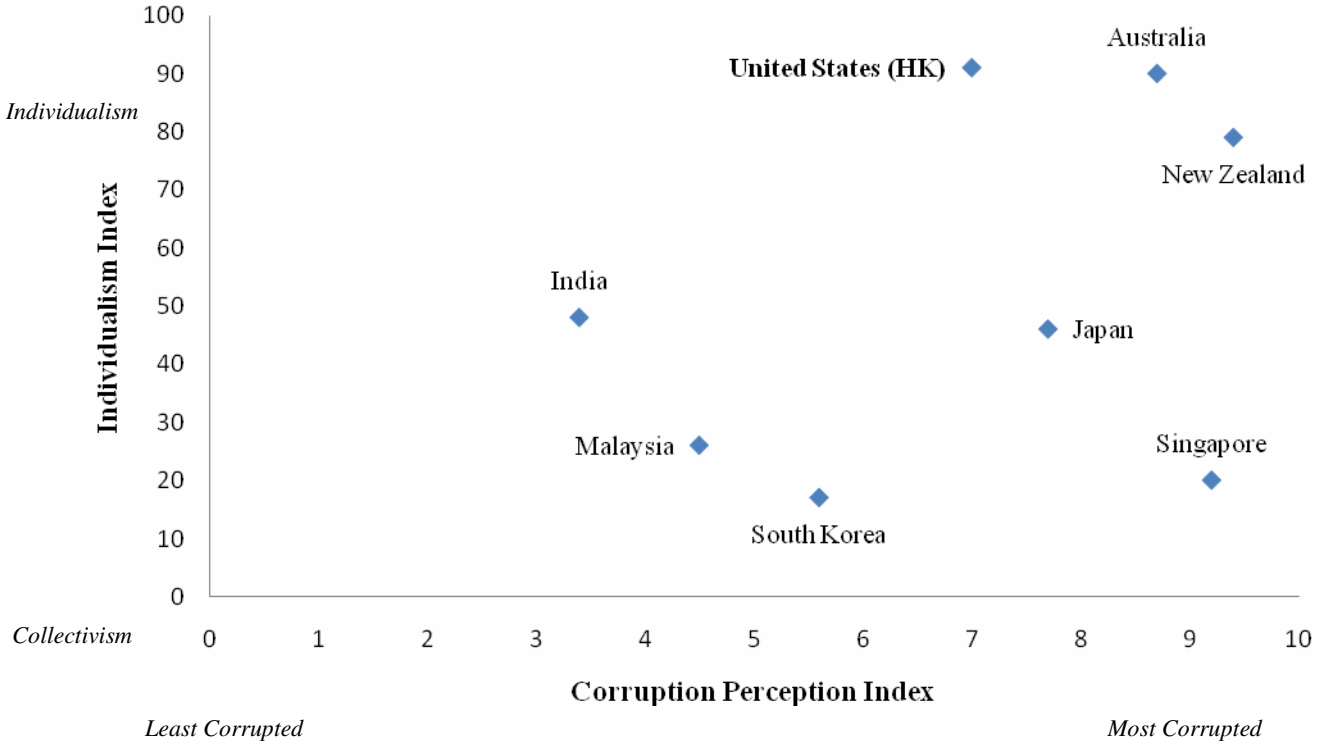

Figure 2: Substantial Holdings and Hofstede's Individualism Index

This figure plots the estimated coefficients of *SINDUM* for substantial holdings reported in Tabel 3, Panel A, as well as the coefficients for *SINDUM* reported for the US in HK, against the individualism index. The higher the individualism index, the more individualistic the people are in the country; the lower the individualism index, the more collectivist the people are in the country. ***, **, and * (denoting statistical significance at 1%, 5 % and 10% level respectively) are used to identify statistically significant coefficients reported in Table 3, Panel A.

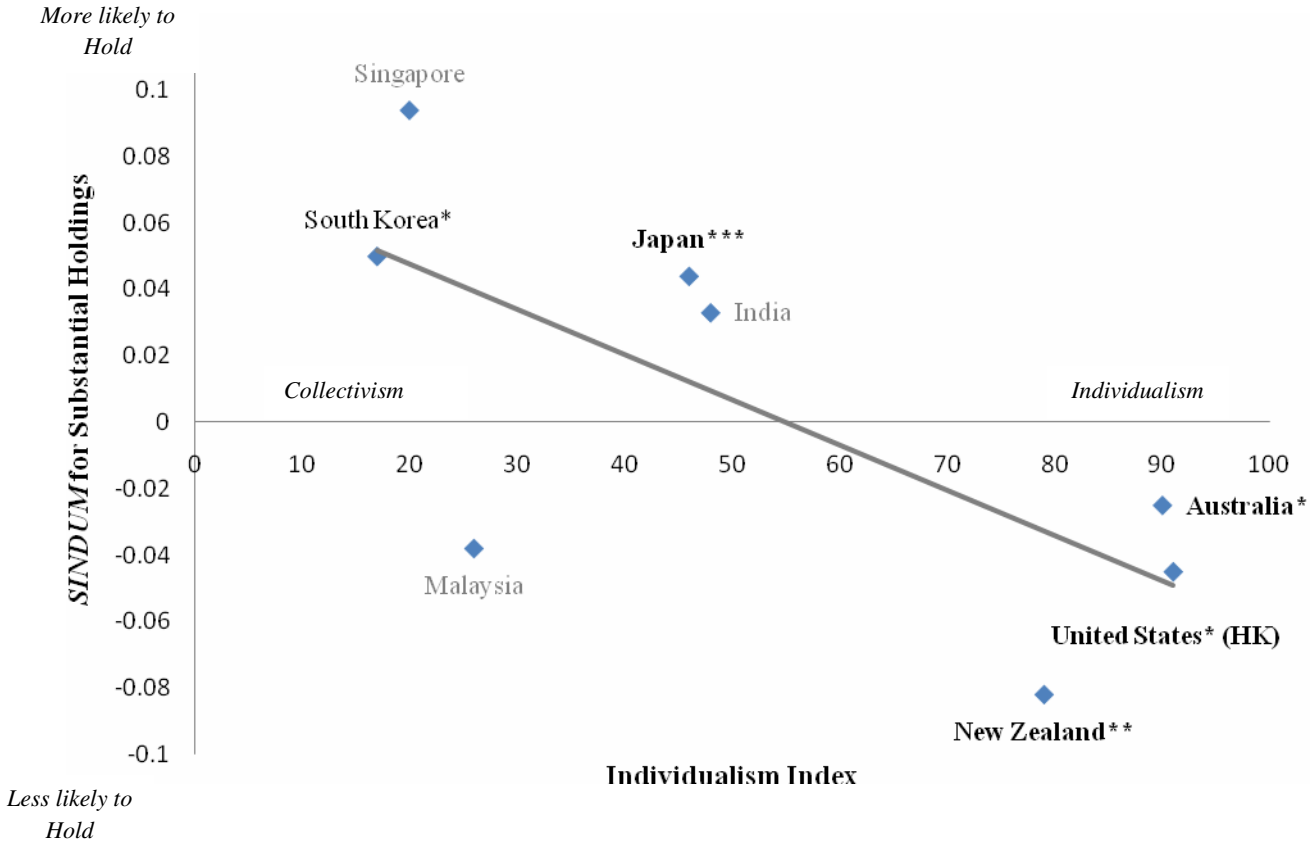

Figure 3: Cross-Sectional Performance of Sin Stocks and Hofstede's Individualism Index

This figure plots the estimated coefficients of *SINDUM* for the cross-sectional performance of sin stocks reported in Table 5, as well as the coefficients for *SINDUM* reported for the US in HK, against the individualism index. The higher the individualism index, the more individualistic the people are in the country. ***, **, and * (denoting statistical significance at 1%, 5 % and 10% level respectively) are used to identify statistically significant coefficients reported in Table 5.

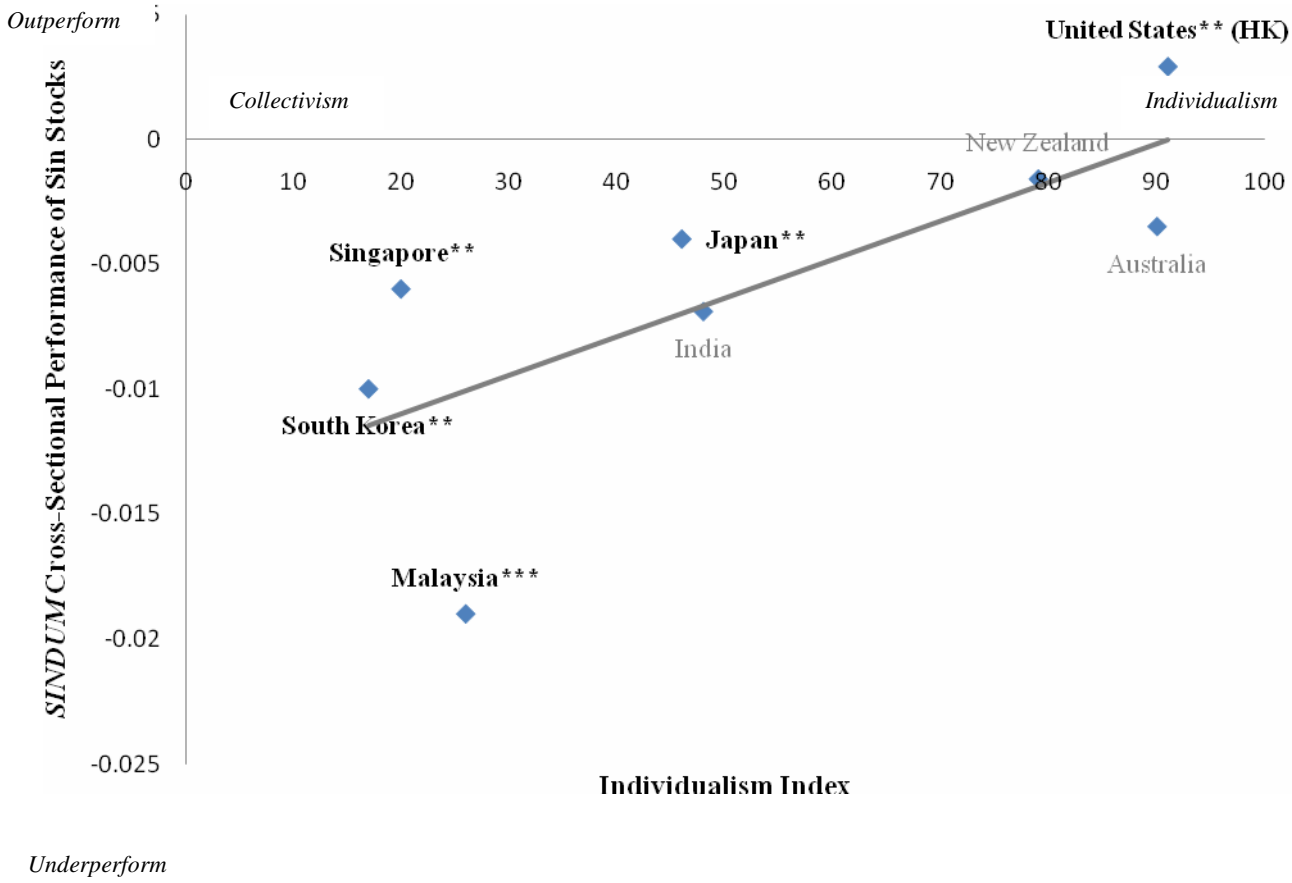

Figure 4: Market-to-Book Ratio of Sin Stocks and Hofstede's Individualism Index

This figure plots the estimated coefficients of *SINDUM* for market-to-book ratio of sin stocks reported in Table 6, as well as the coefficients for *SINDUM* reported for the US in HK, against the individualism index. The higher the individualism index, the more individualistic the people are in the country, the lower the individualism index. ***, **, and * (denoting statistical significance at 1%, 5 % and 10% level respectively) are used to identify statistically significant coefficients reported in Table 6.

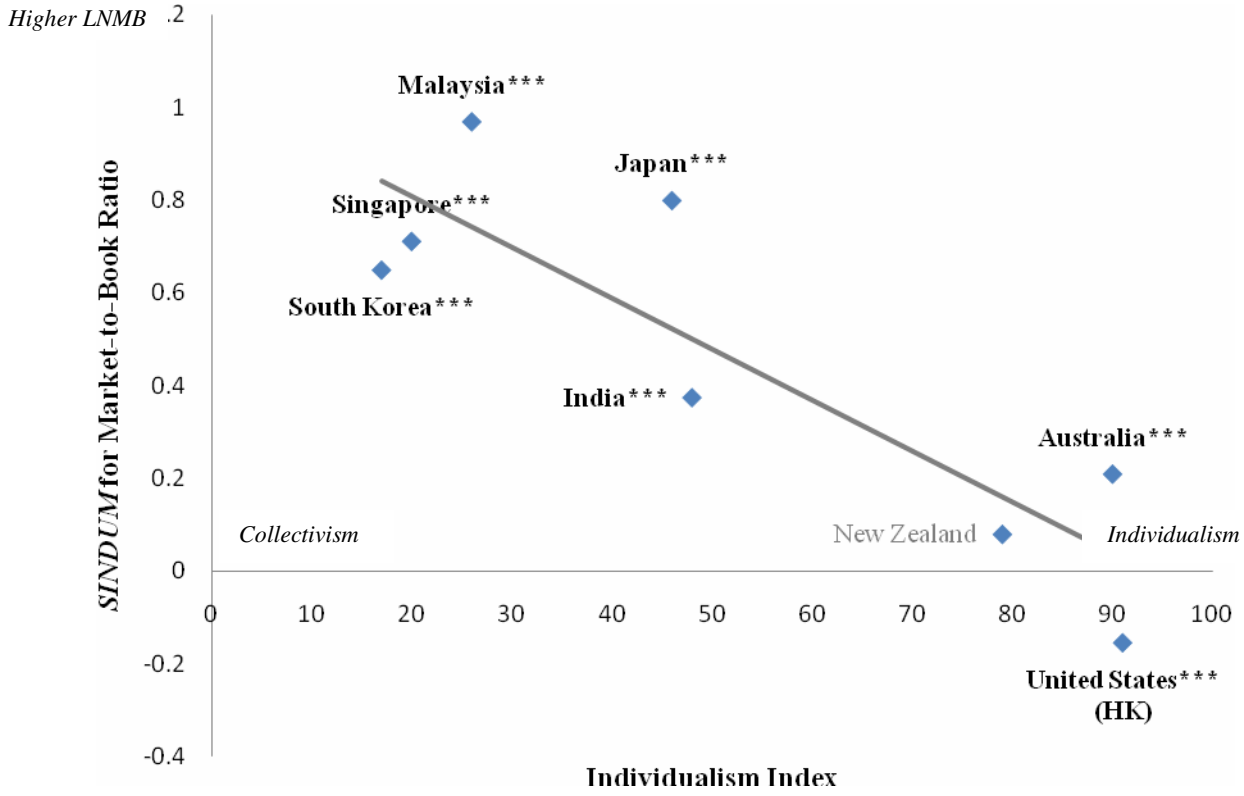

Figure 5: Market Leverage of Sin Stocks and Hofstede's Individualism Index

This figure plots the estimated coefficients of *SINDUM* for the market leverage of sin stocks reported in Table 7, as well as the coefficients for *SINDUM* reported for the US in HK, against the individualism index. The higher the individualism index, the more individualistic the people are in the country, the lower the individualism index; the lower the individualism index, the more collectivist the people are in the country. ***, **, and * (denoting statistical significance at 1%, 5 % and 10% level respectively) are used to identify statistically significant coefficients reported in Table 7.