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Social Norms and Cost of Equity: Empirical Examination in Indonesia

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Abstract

This paper provides evidence of the effect of social norms, as measured by sin stock status, on the cost of equity capital. We consider Indonesian publicly traded sin stocks that produce alcohol and tobacco. While previous studies focused on whether sin and saint stocks have different financing preferences, we examine how these companies are charged differently in terms of their cost of equity capital. Our research sample consists of companies listed on the Indonesian Stock Exchange from 2016 to 2020. Regression analysis proves that sin stock status has a significant influence on equity capital costs. There is an extra premium for sin stocks, as they are perceived to be riskier by investors in the market. Our results make a significant contribution to the emerging literature on social norm-based investing, demonstrating a major impact on both corporate finance and investment management decisions. The study's sample is restricted to publicly traded companies in Indonesia from 2016 to 2020, potentially limiting the generalizability of its findings to other countries or periods. Further research could broaden the scope of analysis and delve deeper into the factors that influence the cost of equity for sin stocks in various contexts.

Keywords: cost of equity, financing decision, sin stock, social norm

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Introduction

Faith-based or norm-based investment strategies have garnered significant attention in financial studies in recent years. In the United States, norm-based mutual funds represent over 10% of total assets under management, with more than 200 such funds reported by the Social Investment Forum in 2006. Socially Responsible Investing (SRI), encompassing ethical and moral principles, involves either favouring companies with environmentally friendly or ethical operations or excluding companies deemed unethical, such as those producing tobacco or alcohol or engaging in gambling.

The term "sin stock" was coined by H. Hong and M. Kacperczyk [1], who identified such firms as benefiting from easier access to funding from entities less influenced by societal norms. While perceiving sin stocks as unethical investments, numerous studies indicate their superior market performance compared to saint stocks [2–4]. Sin stocks exhibit characteristics similar to value stocks, trading below their intrinsic value [1]. This undervaluation prompts sin stocks to prefer debt over equity as their primary funding source [5].

Notably, institutional investors often avoid sin stocks due to public scrutiny despite their high performance [6]. In contrast, individual investors, unconstrained by social pressures, are more willing to hold sin stocks. This avoidance by institutional investors has been consistently observed across studies, further reinforcing the undervaluation of sin stocks and their reliance on debt financing.

Despite the increasingly global focus on norm-based investing, research has predominantly examined contexts in Catholic or Christian-majority countries. For example, H. Hong and M. Kacperczyk [1] and R.B. Durand et al. [5] analyse sin stocks primarily in the United States and other Western countries where Christian or Catholic values significantly influence societal norms and investment behaviours. F.J. Fabozzi et al. [7] also explore controversial industries in Western markets, focusing on how religious and ethical considerations shape investment patterns. Similarly, J.M. Salaber [8] investigates sin stocks across European markets, with a particular emphasis on how different degrees of religiosity in Christian-majority countries affect the risk and return of these investments. These studies collectively highlight the gap in understanding how norm-based investments operate in Muslim-majority contexts like Indonesia. Our study investigates the implications of sin stock status in Indonesia, focusing on the tobacco and alcohol industries, which are particularly sensitive to societal norms in a predominantly Muslim context. This research contributes to the literature by analysing the potential downsides of sin stock status, such as the challenges posed by negative perceptions and regulatory pressures. Furthermore, it expands the scope of previous studies by exploring differences in the cost of capital between sin and non-sin stocks, offering new insights into how societal norms and ethical considerations influence financing decisions and capital structure.

Literature review

Social norms play a pivotal role in shaping financial decisions, particularly for companies producing goods or services perceived as unethical, commonly referred to as "sin stocks". These firms – operating in industries such as tobacco, alcohol, and gambling – have been the subject of numerous studies, yet much remains unexplored regarding their financial performance and the broader implications of societal norms, particularly in non-Western contexts.

The performance of sin stocks has been extensively studied in Western, Christian-majority countries. H. Hong and M. Kacperczyk [1] identify sin stocks as undervalued due to societal norms and demonstrate their reliance on debt financing over equity. They attribute the undervaluation to the "norm-constrained hypothesis", where institutional investors avoid sin stocks due to reputational concerns, resulting in risk-adjusted abnormal returns (α). This outperformance is supported by studies such as F.J. Fabozzi et al. [7], who found annual excess returns averaging 11.15% across 21 countries in 1970–2007, and J. Chong et al. [9], who demonstrated the Vice Fund's superior performance compared to socially responsible funds.

[8] further corroborates the defensive nature of sin stocks, showing that these companies outperform during market downturns due to the addictive nature of the products they produce. However, their performance diminishes during market upswings. Similarly, N. Areal at al. [10] find that sin stocks exhibit higher systematic risk (β) in low-volatility regimes and lower risk in high-volatility regimes, contributing to their uneven performance across market conditions.

However, there are also contrasting findings. A.G. Hoepner and S. Zeume [11] argue that the Vice Fund's abnormal returns are not statistically significant, citing trading instability as a potential detractor. Furthermore, D.P. Liston [12] finds that abnormal returns for sin stocks disappear after controlling for investor sentiment, suggesting that market inefficiencies may play a role in their observed performance.

Despite the wealth of research on Western markets, there has been limited exploration of sin stocks in Muslim-majority countries like Indonesia, where societal norms against alcohol and tobacco are particularly strong. P.D. Pratiwi [13] provides one of the few studies on Indonesian sin stocks, examining their financing decisions but leaving broader financial implications, such as cost of capital and risk-adjusted returns, unaddressed. Given Indonesia's unique cultural and regulatory landscape, the interplay between social norms and financial outcomes remains a critical area for investigation.

Institutional setting

Our analysis of the effect of social norms on investing behaviour within the stock market follows the approach of H. Hong and M. Kacperczyk [1], focusing on the industries known as the "Triumvirate of Sin": tobacco, alcohol, and gaming. E. Fama and K. French [14] define sin stocks

more broadly as companies within the entertainment, food and beverage, soda, and hotel industries. S. Leventis et al. [15] view alcohol, gambling, tobacco, guns, firearms, and the nuclear industry as sin companies. For our research, we exclude the gaming industry since, in Indonesia, no public gaming companies exist for the moment. Tobacco and alcohol are viewed as "unethical" – especially alcohol, since Indonesia is the country with the highest number of Muslims in the world, and drinking alcohol is strictly prohibited. While alcohol is perceived as a sin product because it is prohibited by the Quran, negative social norms on tobacco started to emerge recently due to the health consequences of consuming tobacco-based products such as cigarettes.

Tobacco in Indonesia

With a population exceeding 260 million, Indonesia is indisputably the largest economy in Southeast Asia. However, this potential is under threat due to the high number of deaths associated with smoking. Approximately 10 percent of smokers in Southeast Asia are found in this country, with half of them being Indonesian. To address this issue, the Indonesian government has implemented Government Regulation (PP) No. 109 of 2012, demonstrating its commitment to mitigating the adverse effects of tobacco use among its citizens. This regulation imposes various restrictions on tobacco companies. For instance, they are only permitted to advertise and promote their tobacco products on television or radio between 9:30 p.m. and 5 a.m. local time. Furthermore, promotional materials are prohibited from displaying the actual cigarette product, while cigarette packages are required to display health warnings.

Despite all the efforts to control tobacco, some still view government measures as being half-hearted. Tobacco accounts for almost 10 percent of Indonesia's tax revenue and employs more than 2.5 million workers in farming and manufacturing processes. Thus, it is hardly surprising that the government is reluctant to strengthen restrictions on tobacco companies, as this could damage the industry and the economy in general.

Alcohol in Indonesia

In some parts of Indonesia, drinking is part of culture. Traditional alcoholic beverages such as *Arak Bali* (Bali) and *Ciu* (Java) vary across different provinces in Indonesia. Alcoholic beverages from other countries, such as beer, wine, and whiskey, are also popular and can be easily found in Indonesian cities. However, as Indonesia is the largest Muslim nation in the world, the issue of alcohol regulation has always been controversial, with conservative Islamist groups asking for a ban on sales, distribution, and consumption.

In 2015, the government enacted the Ministry of Trade Regulation No. 06/M-DAG/PER/1/2015 on the Control and Supervision of Procurement, Distribution, and Sale of Alcoholic Beverages, prohibiting the sale of alcoholic beverages in all Indonesian minimarkets. Moreover, it has elevated the import tax on alcoholic beverages, raising the overall price of drinking and turning people toward the black market or the consumption of methanol-laced drinks, many of which contain non-food grade materials and are therefore hazardous to health.

Hypothesis development

Due to the adverse effects of tobacco and alcohol, a company manufacturing or selling these products will be perceived as sinful and less socially responsible by investors. This impacts the company's decisions, especially when it is looking for a source of funds. As the company has a negative image, managers will be more reluctant to use equity-based funds since there is a higher chance of being scrutinized by the public, media, or even investors; this, in the end, affects stock performance. Sin stocks also tend to be undervalued by the market. Institutional investors such as pension funds, universities, religious organizations, banks, and insurance companies [1] are also less likely to have sin stocks within their portfolio as a result of social norm pressures. While institutional investors are reluctant to hold sin stocks, contrasting behaviour is shown by individual investors, who can keep sin stocks in their portfolios without having to worry about social pressure.

A. Goss and G.S. Robert [16] give evidence of the relationship between socially responsible firms and the cost of debt, demonstrating that sin stocks tend to choose debt over equity to finance their projects as it is cheaper, and creditors only need to verify the company's ability to pay its debts, neglecting other variables. Creditors do not take socially responsible activities into account when taking decisions on credit realization. This result is also supported by R.B. Durand et al. [5] and H. Hong and M. Kacperczyk [1], who agree with [16] that sin stocks tend to choose debt financing since it is cheaper than equity financing, which is more sensitive to corporate reputation issues.

As sin stocks are often perceived as riskier, especially by investors mindful of corporate social responsibility who are afraid of facing regulatory penalties or legal challenges, a higher return on equity is required to convince investors to bear the risk. This argument is supported by F.J. Fabozzi et al. [7], who show that companies involved in controversial industries often trade at a discount, increasing their cost of equity to counter negative perceptions. Moreover, sin stocks, which are more exposed to political and regulatory risks, tend to have more volatile stocks due to uncertainty in profitability and future cash flows, leading to a higher cost of equity [8].

Sin stocks often try to mitigate negative perceptions by improving the quality and transparency of financial reporting to reduce information asymmetry. While this can help attract investments, it also indicates that sin stocks face higher scrutiny from equity investors who demand more detailed information. A company's effort to improve transparency can furthermore result in an increased cost of equity, as it signals the need to compensate for heightened investor concerns [17]. Sin companies also try to reduce the damage by engaging in charity activities and donating significant amounts of money. Thus, we expect sin stocks to have a higher cost of equity:

H1: Sin stocks positively affect the cost of equity.

Data and methodology

Data

We use accounting data from 2016–2020 obtained from financial reports published by the Indonesian Stock Exchange (IDX). This period was chosen due to several reasons. First, in 2016, the Indonesian government raised taxes on tobacco products for the first time since 2012[1]. These changes potentially impacted the financial performance of sin stocks and influenced investor behaviour in the capital market. Second, in the same year, new cigarette advertising regulations were applied both online and off, restricting tobacco advertisements in various public spaces[2]. This could have potentially evoked investor reactions in the capital market. Third, the Indonesian government continued to raise the cigarette tax over the decade, culminating in a 23% tax increase in early 2020. Finally, in 2018, IDX introduced the SRI-KEHATI index, which tracks company ESG practices. This could have been seen as an indicator of rising concern for ethical investing in Indonesia, putting more pressure on both sin stocks and investors who include sin stocks in their portfolios. We exclude stocks from the financial sector, especially the banking and insurance industry, due to the different nature of that industry, which is heavily regulated in Indonesia and has different forms of capital structure. In particular, banking and insurance companies usually have high debt ratios, affecting their financial behaviour and making it different from that of other industries.

Sample selection procedure

The study uses data from companies that were publicly listed on the Indonesian Stock Exchange (IDX) from 2016 to 2020. To generate the final sample, we utilize the purposive sampling method: 1) identification of companies that were available five years in a row during our observation period; 2) exclusion of companies from the financial sector; 3) elimination of companies with incomplete values; 4) trimming the data by winsorizing it at 1% to reduce outliers. Applying these criteria, we get a sample size of 654 observations, which consist of both sin and non-sin stocks.

Dependent variable

In this study, we utilize Easton's model [18] to assess the cost of equity. Several prior studies have examined the cost of equity by employing a weighted average of various models with the aim of reducing estimation errors [18–22]. However, we stick to Easton's model because it has shown a high correlation with other widely accepted models mentioned earlier, as well as with the model from N. Hu et al. [23], which reveals a significant positive correlation between the models and the 1% alpha level. The cost of equity capital (CC_t) is calculated as the square root of the difference in EPS (net profit at t divided by shares outstanding at t) divided by P_0 (the closing price of stock at t = 0):

$$CC_t = SQRT\ [(EPS_{t+1} - EPS_t)/\ P_0]. \quad (1)$$

Independent variable

The independent variable in this study is Sindum, a dummy variable with a value of 1 if the company is involved in the production or sale of tobacco or alcohol as its primary business activity and 0 otherwise. This classification is based on the definitions and industry categorizations provided by previous studies [1; 14; 15]. If a company is diversified, Sindum takes the value 1 if more than 50% of its revenue that year comes from tobacco or alcohol. If the company's core operations are not focused on sin products, it is classified as non-sin (value 0). These criteria follow the approach of H. Hong and M. Kacperczyk [1]. The data used to classify companies into sin and non-sin industries comes from company financial reports and industry classifications published by the IDX. Our industry classification follows the classification by IDX (IDX-IC). The data sources provide detailed information on company activities and revenue breakdowns, which we use to help identify sin stocks.

Control variables

In this research, we use control variables that empirical studies have demonstrated to have an impact on a company's cost of capital (see, in particular, Boubakri [22]). These variables include Company Size (measured in total assets), Leverage (expressed as the ratio of debt to total assets), and Investment Opportunity Set (calculated as the ratio of the book value to the market value of equity). Since most of these are accounting variables, we collect them from financial reports published by IDX.

Modelling

We conduct a regression based on the following formula:

$$CC_{,t} = \alpha_{i,t} + \beta_1\ Sindum_{,t} + \Sigma\ \beta_n\ Control_{i,t} + e_{\ i,t,} \quad (2)$$

where

CC – cost of equity capital (CC);

Sindum – dummy for sin stock: 1 if the company is categorized as a sin stock, and 0 otherwise;

Control – control variables Company Size, Leverage, and Investment Opportunity Set.

Empirical results and analysis

Descriptive statistics

An analysis of the descriptive data presented in Table 1 allows us to draw several conclusions. For instance, the mean cost of capital is relatively low when compared to the maximum value, indicating that the majority of the cost of capital values within the sample are on the lower side. Additionally, the average value of Sindum stands at 0.069, implying that there are relatively few sin stocks compared to non-sin stocks in the dataset.

[1] Ministry of Finance No. 147/PMK.010/2016.

[2] Undang-Undang Nomor 19 Tahun 2016 tentang Perubahan Atas Undang-Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik.

Table 1. Descriptive Statistics

Variable	N	Mean	Std. Dev.	Minimum	p25	p50	p75	Maximum
CC	654	0.345	0.554	0.012	0.156	0.672	0.899	0.961
Sindum	654	0.069	0.430	0	0	0	0	1
SIZE	654	10.167	1.221	5.506	10.453	12.221	13.434	20.989
IOS	654	3.675	5.345	0.003	0.435	0.877	2.121	5.129
Lev	654	0.465	0.234	0.175	0.223	0.343	0.445	0.878

Table 2. Correlation Matrix

	CC	Sindum	SIZE	IOS	Lev
CC	1				
Sindum	0.433	1			
SIZE	-0.165	-0.086	1		
IOS	0.485	0.022	-0.031	1	
Lev	0.312	0.187	-0.129	0.167	1

Table 2 shows the correlations between the variables. This matrix provides a context for understanding the potential effect of CC and Sindum. The moderate positive correlation between CC and Sindum (r = 0.433) suggests that sin stocks may have a higher cost of equity than non-sin stocks. This raises the question of whether this relationship is due to the perceived stigma of dealing in sin products or comes from the risks associated with these firms. SIZE shows a weak negative correlation with CC, which suggests firm size may vary slightly across sin and non-sin stocks but is not strongly related to the cost of equity, further hinting at the underlying heterogeneity across firms. The weaker negative correlation between Sindum and SIZE suggests that sin stocks tend to be smaller, which could partially explain their higher cost of equity. Meanwhile, IOS, which has a moderate positive correlation with CC, highlights that growth opportunities may also influence the cost of equity borne by the company, although there is almost no correlation between sin stocks and growth opportunities. In sum, the table shows evidence that there is no correlation between the independent variables.

With regard to model selection based on correlation data, the pattern implies that unobserved, time-invariant factors most likely play a role in determining the cost of equity and are correlated with sin stock status, making fixed effects a robust choice to control for such heterogeneity. By focusing on within-firm variation and removing the influence of unobserved, time-invariant factors, the fixed effects model ensures that the estimates of the relationship between Sindum and CC are not biased by omitted variables. This approach is particularly suitable given the structure of the correlations, which point to potential firm-specific unobservables that could affect the outcome. Thus, based on the correlation analysis, the fixed effects model is well-justified for accurately isolating the impact of sin stock status on the cost of equity.

Table 3 shows the mean difference between sin stocks and non-sin stocks for four variables: CC, SIZE, IOS, and Lev. The asterisks (*) indicate that the difference is statistically significant at the 0.05 level. Sin stocks have a significantly higher mean CC than non-sin stocks. This means that sin stocks are more likely to be classified as concentrated ownership firms. Non-sin stocks have a significantly higher mean SIZE than sin stocks. This implies that non-sin stocks are generally larger companies than sin stocks. Non-sin stocks have a significantly higher mean IOS than sin stocks. This signifies that non-sin stocks are generally more institutionalized than sin stocks. Sin stocks have a significantly higher mean Lev than non-sin stocks. This suggests that sin stocks generally have more debt financing than non-sin stocks.

These findings are consistent with previous research on sin stocks. For example, H. Hong and M. Kacperczyk [1] found that sin stocks in the United States exhibit a higher cost of equity compared to non-sin stocks. If stocks associated with sin activities exhibit a greater cost of capital compared to similar stocks, there is apparently a sin premium. Investors can capitalize on this sin premium if they are ready to disregard reputational risks [24]. This finding is attributed to the perceived social irresponsibility of sin stocks and their tendency to be undervalued by the market. A. Goss and G.S. Robert [16] also observed a similar pattern in the United States, with sin stocks favouring debt financing over equity financing. Sin stocks prefer private debt financing over equity financing because of a limited investor base resulting from societal norms [25]. The mean difference supports our hypothesis that, if a sin stock accesses funds through equity financing, it will be charged higher since investors perceive

it as a risky company. The investment opportunity set is also higher for non-sin stocks as they will have more options to access all the funding available. If a company has strong financial capabilities, it will have no problems using debt or even equity financing, as it will not have any difficulty convincing investors regarding its prospects.

Table 3. Mean difference between sin stocks and non-sin stocks

	Sin Stock	Non-Sin Stock	Difference
CC	0.878	0.557	0.332**
SIZE	4.334	10.848	-5.448*
IOS	0.198	3.334	-2.110**
Lev	0.419	0.154	0.114**

Hypothesis Testing

Table 4 displays the regression of Sindum to CC. The fixed effects model is justified based on the correlation matrix and the Hausman test, as well as the need to control for firm-specific characteristics. The patterns indicate that unobserved, time-invariant firm-specific factors, such as industry reputation or operational risk, are likely correlated with the explanatory variables, necessitating a fixed effects approach. The Hausman test further supports the use of a fixed effects model, with a test statistic of 15.84 ($p < 0.01$), rejecting the null hypothesis that random effects are appropriate. This result confirms that firm-specific effects are correlated with the explanatory variables, making fixed effects the more robust choice. By removing the influence of these unobserved, firm-specific factors, the fixed effects model isolates within-firm variation to provide unbiased estimates. This ensures that the observed effects of Sindum, SIZE, IOS, and LEV on CC reflect genuine within-firm dynamics rather than being confounded by static firm-level characteristics, making fixed effects the most methodologically sound approach.

The findings of this study, summarized in Table 4, provide compelling evidence for the hypothesis that sin stocks (tobacco and alcohol companies) face a higher cost of equity than non-sin stocks. This aligns with the theoretical arguments that sin stocks are perceived as less socially responsible and more likely to be undervalued by the market, leading to increased scrutiny from investors, the media, and the public. The results of the stepwise regression analysis further strengthen the robustness of the findings. We follow A. Goss and G.S. Robert [16] as well as A.M.L. Destri et al. [26], who study hypotheses in hierarchical order. We believe that this method helps to clarify the unique impact of sin stock status on cost of equity. With the help of a stepwise approach, hierarchical regression will allow us to observe the marginal effect caused by the inclusion of the control variables in the model, thus providing us with more robust explanations of the primary relationship.

In Model 2, the coefficient for Sindum is positive and significant, indicating that sin stocks do indeed have a higher cost of equity than non-sin stocks. This finding still holds after controlling for various factors that could affect the cost of capital in Model 3. The higher cost of equity for sin stocks can be attributed to several factors: sin stocks are often perceived as less socially responsible due to their association with harmful products such as alcohol and tobacco or are even as socially irresponsible by investors. This perception can lead to a reluctance to invest in these companies, resulting in a lower demand for their equity shares [26]. Additional research indicates that the returns on stocks are solely influenced by investors' preferences for non-sin stocks compared to sin stocks, as highlighted by S. Colonnello et al. [27]. This reduced demand, in turn, drives up the cost of equity for sin stocks as investors demand a higher premium to compensate for the perceived risk. Research by G. Nardella et al. [28] shows that firms that are perceived as hypocritical in their behaviour, claiming to deliver a higher value or standard than is really the case, will be "penalized" by their stakeholders with a higher required rate of return.

Table 4. Fixed Effect**:** Regression Results for Hypothesis Testing

	Model 1	Model 2	Model 3
Sindum		0.793**	0.325**
		(1.721)	(2.824)
Size	-0.004**		-0.455***
	(-3.242)		(-2.541)
IOS	-5.876**		3.655***
	(-10.91)		(-2.576)
LEV	0.145***		0.177***
	(0.223)		(8.334)

	Model 1	Model 2	Model 3
Constant	1.532	7.112	4.445
	(3.989)	(2.221)	(2.362)
Firm Dummy	Yes	Yes	Yes
Observation	654	654	654
Adj-R2	0.21	0.43	0.54

Note: t statistics in parentheses, *p<0.1, **p<0.05, ***p<0.01.

Sin stocks are often undervalued by the market due to the negative connotations surrounding their products and business activities. This undervaluation further exacerbates the higher cost of equity for sin stocks, as investors require a higher premium to compensate for the perceived lower value of their investments. Thus, sin stocks tend to favour debt financing over equity financing, a decision driven by the higher sensitivity of equity to social norms. Debt financing is less susceptible to social pressures and scrutiny compared to equity financing, which is more closely tied to a company's reputation and social responsibility. This preference for debt financing further contributes to the higher cost of equity for sin stocks.

The study introduces a new dimension to the understanding of sin stocks by focusing on a Muslim-majority context, where societal and regulatory pressures are intensified. While prior research in Western countries has emphasized undervaluation and resilience [29], the findings here suggest that these dynamics may not fully apply in Indonesia due to limited access to capital markets and stringent regulations. The implications of these findings extend beyond the realm of corporate finance into the domain of investment management. For corporate finance professionals, the higher cost of equity for sin stocks necessitates careful consideration of capital structure decisions. Sin stocks may need to explore alternative financing methods or consider strategic acquisitions to mitigate the impact of the higher cost of equity on overall financial health. For investment managers, these findings present both opportunities and challenges. On the one hand, the higher cost of equity associated with sin stocks may indicate a potential for higher returns, as investors are compensated for the perceived increased risk. However, investment managers must carefully weigh these potential returns against the elevated risk profile of sin stocks.

While the results confirm our hypothesis, they also reveal complexities. The inclusion of IOS in Model 3 highlights a nuanced interaction, where sin stocks appear less capable of leveraging growth opportunities compared to non-sin stocks. This finding was unexpected, as prior research in Western contexts often portrays sin stocks as resilient and undervalued growth opportunities. Instead, the Indonesian context shows that limited access to capital markets, combined with intense regulatory scrutiny, hampers the ability of sin stocks to capitalize on potential growth. Moreover, the use of a fixed effects model underscores the importance of controlling for unobserved, time-invariant firm-specific factors. These controls were critical in isolating the true effect of sin stock classification on the cost of equity, as the correlation matrix revealed potential confounding effects from firm size and leverage.

Prior research on the cost of equity for sin stocks is consistent with the findings of this study. For instance, H. Hong and M. Kacperczyk [1] found that sin stocks in the United States exhibit a higher cost of equity compared to non-sin stocks. This finding is attributed to the perceived social irresponsibility of sin stocks and their tendency to be undervalued by the market. A. Goss and G. S. Robert [16] also observed a similar pattern in the United States, with sin stocks favouring debt financing over equity financing. While companies classified as sin stocks are not operating illegally, they have a certain image of doing so. The result shows that there is a cost to being a sin stock. Others have shown that sin stocks have difficulty getting funding from equity [1].

These findings not only contribute to the broader literature on norm-based investments but also offer practical implications. For corporate finance, the higher cost of equity underscores the need for sin stocks to strategically manage their capital structures, potentially favouring debt financing to mitigate equity costs. For investment managers, these results highlight the potential for higher returns from sin stocks, albeit with elevated risks tied to societal perceptions and regulatory changes. By situating the findings within the specific cultural and regulatory context of Indonesia, this study expands the understanding of how social norms influence corporate financing decisions. Future research could further explore these dynamics across other Muslim-majority countries or regions with similar socio-cultural pressures, providing a more comprehensive view of the global implications of norm-based investing.

Conclusions

Theoretical contributions

Despite its valuable insights, this study also has limitations. Its sample is restricted to publicly traded companies in Indonesia from 2016 to 2020, potentially limiting the generalizability of the findings to other countries or time periods. Future research could expand the scope of the analysis to include a broader range of companies and time frames to enhance the understanding of the cost of equity for sin stocks across different contexts. In conclusion, the results of this study provide strong evidence to support the no-

tion that sin stocks face a higher cost of equity compared to non-sin stocks. This finding has significant implications for both corporate finance and investment management decisions. Further research could broaden the scope of analysis and delve deeper into the factors that influence the cost of equity for sin stocks in various contexts.

In this paper, we provide evidence for the impact of social norms, measured by sin stock status, on the cost of equity capital. The sin stocks examined here consist of Indonesian publicly traded companies involved in the production of alcohol and tobacco. We show that there is a significant difference in the mean value between sin stocks and non-sin stocks. Our paper has significant implications for the emerging literature on social norm-based investing. We examine whether norm-based investing affects how managers approach their sources of funds. Sin stocks are perceived differently by investors and creditors. Creditors tend to overlook whether a company's products are related to a vice activity. Their main issue is the company's financial capability to repay its debt. In contrast, investors are more sensitive to social norm issues: ultimately, they perceive a company involved in a vice activity as a risky investment and thus expect a higher rate of return.

Practical contributions

The findings of this study have critical policy implications and practical applications. For policymakers, the elevated cost of equity for sin stocks underscores the financial penalties tied to societal disapproval and regulatory pressures. Policymakers should aim to balance public health objectives with economic stability, considering strategies like implementing targeted education campaigns or incentivizing corporate social responsibility (CSR) initiatives to address societal concerns without disproportionately burdening these industries. For corporate managers, the results emphasize the need for enhanced transparency, robust CSR efforts, and potential diversification of operations to reduce dependency on sin-based revenues and mitigate reputational risks. For investors, the study highlights potential opportunities in sin stocks, which may offer higher returns for those willing to bear the associated risks of regulatory changes and societal disapproval. These insights emphasize the importance of tailoring financial policies and investment strategies to local socio-cultural realities, providing actionable guidance for stakeholders navigating the complexities of norm-based investing.

Limitations and future research opportunities

This study, while offering valuable insights, has several limitations. Geographically, the focus is limited to Indonesia, a predominantly Muslim-majority country, which may restrict the generalizability of the findings to other regions with differing socio-cultural and regulatory environments. Additionally, the relatively short time frame of analysis (2016–2020) may not fully capture long-term trends or the evolving influence of societal norms and regulatory frameworks for sin stocks. The industry coverage is also constrained to tobacco and alcohol, excluding other significant sin industries such as gaming or firearms, which limits the comprehensiveness of the findings. Furthermore, the binary classification of sin and non-sin stocks simplifies investor behaviour and does not consider varying intensities of societal disapproval across industries or among investors. Lastly, the reliance on publicly available financial data may overlook nuanced factors, such as the informal sector's role or the impact of smaller, unlisted companies.

Future research should expand the geographical scope to include other Muslim-majority countries or regions with distinct cultural contexts, enhancing the global relevance of the findings. Extending the analysis over a longer time frame could capture the long-term effects of societal norms and regulatory changes on sin stocks. Incorporating additional sin industries, such as gaming, firearms, or emerging sectors like cannabis and cryptocurrency, would provide a more holistic understanding of the phenomenon. Furthermore, studies focusing on investor sentiment through qualitative or survey-based data could shed light on how societal norms shape investment decisions. Research could also delve deeper into the regulatory impact by examining how specific measures, such as taxation or advertising bans, influence the cost of equity and financial performance of sin stocks. Finally, comparative studies between sin stocks and socially responsible investments, such as green or ESG-compliant firms, could offer valuable insights into the diverse effects of societal norms on financial metrics. These directions would enrich the understanding of the interplay between social norms, corporate finance, and investment behaviour across various contexts.

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