The Influence of Financial Interest, Sensation Seeking, and Financial Literacy on Risk Tolerance

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Abstract. This study aims to investigate the influence of financial interest, sensation seeking (thrill & adventure, experience seeking, disinhibition, boredom susceptibility), and financial literacy on risk tolerance. Data was collected through an online questionnaire distributed via Google Forms to freelancers in the design and multimedia industry residing in Surabaya, who are also investors in the capital market, selected according to the purposive sampling technique criteria. The data collection process yielded responses from 100 participants and was processed using the Structural Equation Model-Partial Least Square (SEM-PLS). The findings demonstrate that financial interest, sensation-seeking experience, sensation-seeking boredom susceptibility, and financial literacy significantly influence freelancers' risk tolerance. However, sensation-seeking thrill & adventure and sensation-seeking disinhibition showed no significant influence on freelancers' risk tolerance. Given the artistic focus of the design and multimedia sector, which contrast with the more analytical nature of finance, freelancers may experience unique sensations when making investment decisions in the capital market, thus impacting their risk tolerance. This study provides valuable insights for individuals considering investment, highlighting the importance of both financial knowledge and psychological condition and its impact on the financial sector's development.

Keyword: financial interest, financial literacy, risk tolerance, sensation seeking

1. Introduction

The implementation of restrictions on outdoor activities due to the COVID-19 pandemic has led to a notable 40% increase in the use of social media platforms such as WhatsApp and Instagram [1]. Social media serves as a channel for information dissemination, social interaction, and communication [2]. Moreover, social media influencers utilize these platforms to share their opinions and experiences to influence their audience, [3] including the discussions about stock trading. Consequently, there has been a surge in the number of novice investors entering the capital market [4] with figures soaring by 56% to reach 3.87 million throughout 2020 [5]. Investing inherently carries risks, necessitating individuals intending to invest to gauge their risk tolerance – the maximum amount of uncertainty they can tolerate – which shapes their investment choices concerning wealth accumulation, portfolio allocation, and other financial decisions to achieve financial goals [6, 7]. Individuals with a high risk tolerance tend to gravitate towards investment instruments with relatively higher risks, such as stocks, prioritizing potential profits and investment growth over the risks involved. Conversely, individuals with lower risk tolerance typically opt for safer investment instruments like deposits and bonds [8]. Understanding risk tolerance allows individuals to choose the right investment instruments aligned with their financial goals. The phenomenon of increasing investors in the capital market underscores a growing financial interest among the population in investing in the capital market. Financial interest denotes an individual's interest in economic matters and financial markets [9]. Such interest can propel intrinsically motivated behavior [10] which is non-cognitive intrinsic motivation. The higher someone's financial interest, the more likely they are to know a lot of information about investments, including information about the risks and returns of each investment aspect, allowing them to navigate the risks inherent in their investment choices more effectively. [9].

Novice investors in the capital market embark on a journey of new experiences and new sensations when investing. Personality traits, accompanied by a desire for individuals to engage in new, varied, and riskier activities, are known as Sensation Seeking [11, 12] This trait is divided into four types: thrill and adventure seeking, involving the pursuit of sensations through new physically challenging, high-risk activities; experience seeking, involving the pursuit of sensations through new activities related to sensory stimulation and lifestyle; disinhibition, involving the pursuit of sensations through activities that violate prevailing norms; and boredom susceptibility, involving the pursuit of sensations by rejecting routine and mundane activities. Individuals with pronounced sensation seeking tendencies are inclined to immerse themselves in various new and challenging activities, including investment in riskier financial instruments [13, 7]. High levels of sensation seeking often correlate with heightened tolerance for investment risks. Wong & Carducci [14] have demonstrated that sensation seeking strongly influences risk tolerance, with individuals exhibiting high levels of sensation seeking tendencies also tending to exhibit elevated levels of risk tolerance. Rabbani

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et al. [15] have shown that higher levels of sensation seeking are associated with a greater propensity for aggressive risk-taking among investors.

Investing is inseparable from the concepts of risk and return inherent in investment products, thus requiring a comprehensive understanding. Investors equipped with financial literacy benefit from their cognitive abilities to comprehend information on investment products, enabling them to make informed choices of investment products for themselves [16, 9]. Hermansson & Jonsson [9] demonstrate that financial literacy influences risk tolerance. As individuals attain higher levels of financial literacy, their understanding of investment instruments and associated risks deepens, empowering them to navigate investment decisions with greater confidence. Hermansson & Jonsson [9] studied the effects of financial literacy and financial interest on risk tolerance, while Wong & Carducci [14] examined the intricate relationship between sensation seeking, which is the non-cognitive or affective ability of individuals, and risk tolerance. This study extends these investigations to the realm of freelancers–individuals renowned for their expertise in a particular field who choose to work flexibly or without being tied to specific working hours or locations [17, 18]. Drawing on data from Sribulancer's July 2019 report, which showed design and multimedia services as the most sought-after freelance offerings [19], it illuminated how freelancers' innate high creativity and imagination, making them naturally curious and more willing to try new things [20] including investing activities. While investment returns may serve as passive income with affordable initial capital [21], but freelancers' income tends to fluctuate, making this uniqueness intriguing for further research. This study aims to explore the influence of financial interest, sensation seeking (thrill and adventure, experience seeking, disinhibition, boredom susceptibility), and financial literacy on risk tolerance. The financial sector plays a crucial role in driving a sustainable and resilient economic transition. Understanding financial behavior and the psychology of financial actors will aid governments achieve sustainable development and contribute to the overall preservation and restoration of natural capital.

Risk Tolerance

Risk or *economic risk* is defined as the uncertainty surrounding the future value, profits, or assets of a company [22]. This uncertainty stems from various factors such as sales, purchases, debts, investments, and other business activities [23]. Individuals who engage in investment activities seek returns but also face risks. Risks associated with investment behavior include risk perception and risk tolerance [24]. Risk tolerance, specifically, refers to the maximum level of risk an individual is willing to accept when making financial decisions [25, 6]. Campbell [26] asserts that risk tolerance is a pivotal factor in consumer decision-making models, financial planning, and investment suitability, encompassing decisions related to saving, borrowing, credit management, and mortgage selection. Given its broad implications, risk tolerance is fundamental in personal financial decision-making, reflecting an individual's willingness to bear risk [6, 24, 27]. Grable & Joo [6] suggest that an individual's risk tolerance in investment can be discerned from their mindset and preferences regarding investments. Those with a low risk tolerance often feel more secure keeping their funds in banks rather than in the stock market, prioritizing investment security over potential returns. Additionally, individuals with a low risk tolerance perceive investing in stocks and bonds as reliant on luck, deeming it too risky and prone to losses. Individuals who are unable to tolerate investment declines of more than a few percent will tend to allocate their wealth in cash, despite cash also being susceptible to the risk of inflation [24].

Financial Interest

Hermansson & Jonsson [9] state that financial interest represents a non-cognitive ability, which is an intrinsic motivation within an individual. Non-cognitive ability is part of personality traits, thus financial interest can be considered as a personality trait [28, 9] alongside other factors such as sensation seeking [14]. Personality traits are characteristics that predict an individual's behavior and influence their interactions with the surrounding environment [29, 30]. These traits play a pivotal role in shaping risk-taking tendencies, time management, and social inclinations [31], extending to their portfolio selection, as individuals tend to choose portfolios that provide emotional comfort [32]. Individuals who are interested in diverse economic issues within the financial market are said to have financial interest [33]. Those with high financial interest actively seek information and track developments in financial markets and saving products [9]. Studies reveal that individuals who proactively seek financial advice generally exhibit better financial performance compared to those who passively receive advice [34]. Hermansson & Jonsson [9] provide evidence indicating that financial interest significantly influences risk tolerance, with individuals displaying a high level of financial interest often viewing risk-taking as necessary for attaining returns. Consequently, individuals willing to invest in riskier instruments such as stocks typically aim for higher returns.

H1: Financial interest significantly influences risk tolerance.

Sensation Seeking

Sensation seeking is a personality trait that enables individuals to tolerate various new sensations, including risk-taking, and their response to boredom [35]. It triggers adrenaline, leading individuals to feel excited and willing to take risks, experiencing satisfaction when successfully engaging in risky behavior [11]. Zuckerman [11] classifies sensation seeking into four models: Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (D), and

Boredom Susceptibility (BS). Wong & Carducci [14] demonstrate that sensation seeking significantly influences risk tolerance. Individuals with high sensation seeking tendencies seek new sensations to experience both the fear of loss and the joy of gain. Such individuals are inclined to engage in riskier financial investments [7], such as trading [36]. Conversely, individuals with low sensation seeking tendencies tend to view investments as reliant on luck and challenging to comprehend. For them, the security aspect of investing outweighs the potential return. They feel more comfortable keeping their money in the bank than investing it in the stock market. [7].

Previous studies have typically measured sensation seeking using a single general trait in the Sensation Seeking Scale. However, this study adopts a multifactorial approach, which is considered a superior option for measuring sensation seeking [37, 38]. Sensation seeking is positively correlated with adventurous behavior, avoidance of repetitive and mundane activities, enjoyment of intense experiences, defiance of social norms, and engagement in risky behavior [39]. These traits are often associated with participation in risky behaviors [40]. Experience seeking measures the thrill of varied, novel, and complex experiences as well as the willingness to take physical and social risks. Boredom susceptibility indicates a low tolerance for repetitive tasks, while Disinhibition reflects sensation seeking through various social activities. Thrill and Adventure Seeking expresses the search for novelty through mental and sensory stimulation from physical activities [41].

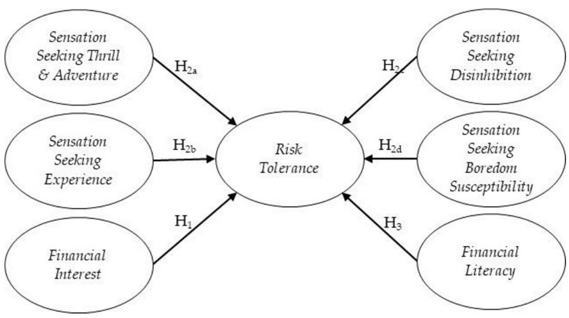
H2a: Sensation seeking thrill and adventure seeking significantly influence risk tolerance.
H2b: Sensation seeking experience seeking significantly influences risk tolerance.
H2c: Sensation seeking disinhibition significantly influences risk tolerance.
H2d: Sensation seeking boredom susceptibility significantly influences risk tolerance.

Financial Literacy

Financial literacy represents an individual's understanding and knowledge of financial concepts and their ability to make effective financial decisions, potentially leading to increased financial security and well-being [42]. It encompasses not only knowledge but also the skills and confidence needed to apply personal financial decision-making [43]. Chen & Volpe [44] categorize financial literacy into four aspects: general knowledge, savings and borrowing, insurance, and investment. Financial literacy is an individual's understanding and knowledge of various financial concepts [42] and the ability and confidence to apply this knowledge when making financial decisions [43]. Poor financial decisions can result in investment losses [45]. Given its importance, financial literacy is critical for investors as it enables them to identify the strengths and weaknesses of a business or investment, thereby influencing their financial decisions [46]. Individuals with low financial literacy often hold negative perceptions and make poor financial decisions [44], while those with higher literacy levels are more tolerant of facing financial risks [9]. This disparity arises because individuals with greater financial literacy possess better analytical skills, allowing them to understand information related to inflation, compounding interest, and risk diversification, making them more willing to invest in higher-risk investment instruments to pursue potentially higher returns [45]. Therefore, improving financial literacy is essential for making sound financial decisions. Hermansson & Jonsson [9] demonstrate that financial literacy significantly influences risk tolerance, with individuals possessing higher literacy levels being more inclined to take risks to pursue returns, accept potential losses, and invest in higher-risk investment instruments such as stocks to achieve greater returns.

H3: Financial literacy significantly influences risk tolerance.

Figure 1. Study Framework Model



2. Method

Associative research aims to explore the influence of two or more variables, namely financial interest, sensation seeking, and financial literacy as exogenous variables - on risk tolerance as an endogenous variable. The study targeted freelancers residing in Surabaya, utilizing a purposive sampling technique, specifically focusing on those in the field of design and multimedia who have invested in the capital market (stocks, mutual funds, or bonds). Using the Lemeshow method with a 10% error rate, the sample size was determined to be 100 respondents. Data collection was conducted using a questionnaire created in Google Forms and distributed directly online via LINE, WhatsApp, Instagram, and Twitter. Table 1 presents the exogenous and endogenous variables along with their measurements. Descriptive statistics were used to analyze the data, providing insights into the demographic characteristics of the respondents. Subsequently, hypothesis testing was performed using PLS-SEM to analyze latent variable models with multiple indicators, involving several stages such as Outer Model Evaluation and Inner Model Evaluation.

Table 1. Variable, Indicator, Rating Scale

Variable	Indicator/ Reference	Code	Scale
Endogenous variable			
Risk tolerance	(Grable & Joo, 2004)	RT	Likert: Scale 1-5
Exogenous variable			
Financial interest	(Rotgans, 2015)	FI	Likert: Scale 1-5
Sensation seeking (Zuckerman et al., 1978)	*Thrill and Adventure Seeking* *Experience Seeking* *Disinhibition* *Boredom Susceptibility*	SS_TAS SS_ES SS_D SS_BS	Likert: Scale 1-5
Financial literacy (Chen & Volpe, 1998):	*General Personal Finance Knowledge* *Savings and Borrowing* *Investments*	LK	True/False

The outer model testing is conducted by examining the validity and reliability of the study to demonstrate and measure the relationship of each indicator with the latent variables. The assessment results are pivotal in determining the model's predictive capacity for one or more latent variables. There are three ways to evaluate the measurement model: (1) Convergent Validity Test, (2) Discriminant Validity Test, and (3) Reliability Test [47]. The convergent validity test is assessed based on the values of outer loadings and Average Variance Extracted (AVE). High outer loading values suggest that the indicators within the model share considerable similarities, thus effectively explaining the variable. Outer loading values are considered fitting if they surpass 0.7. Indicators with outer loading values between 0.4 and 0.7 are retained unless their removal increases Composite Reliability and AVE values, whereas indicators below 0.4 should be removed. Additionally, the AVE values of variables should exceed 0.5 to be deemed valid [47]. The discriminant validity test assesses the uniqueness of a variable in explaining phenomena unaccounted for by other variables in the model. This test hinges on the values of Cross-Loadings and Fornell-Larcker criterion, which are satisfactory if the cross-loading values of indicators on the variable exceed those on other variables. The Fornell-Larcker criterion compares square root AVE values, indicating adequacy if the indicator's square root AVE values on the variable surpass those on other variables. The Reliability Test estimates the reliability of indicators with variables and the consistency in measurement, evaluated through Cronbach's Alpha and Composite Reliability values, which are commendable if they fall between 0.7 to 0.9. Values between 0.6 to 0.7 are also acceptable [47]. The Cronbach's Alpha value may exhibit bias toward the variable with only two or three indicators [48]. The inner model evaluation illustrates the relationship between latent variables, focusing on the R-square values of endogenous variables, which are satisfactory if they approach one [47]. The hypotheses are assessed using p-values.

Result

The respondents comprise freelancers in the field of design and multimedia who are also investors in the capital market and are residing in Surabaya. While the questionnaire was distributed online to 134 individuals, 34 questionnaires did not meet the sample criteria. The results from the selection process of 100 respondents who met the criteria that 59% of the respondents are female, whereas 41% are male. The majority fall between the age bracket of 20-25 years old (67%) and hold a Bachelor's degree (68%). In terms of income, 63% of the respondents earn between Rp 4,200,001 to Rp.21,000,000 (63%) per month, with 86% still unmarried. The freelancers exhibit a strong interest in various economic and financial market issues (μ=4.17). They prefer engaging in experiential activities, such as trying new foods (μ=4.47), and adventurous challenges like scuba diving (μ=4.02). Freelancers also express a dislike for prolonged indoor activities (μ=3.86) and tend to spontaneously engage in dating individuals who are physically appealing (μ=4.18). Regarding investment, freelancers demonstrate a low risk tolerance in the capital market; the majority prioritize security over profit when investing (μ=3.98).

The freelancers understand the importance of financial literacy in facilitating financial decision-making, yet there exists some misconception regarding the definition of financial planning. Freelancers grasp financial products and credit eligibility criteria to be accepted. Furthermore, concerning investments, freelancers comprehend the microeconomic relationship between interest rates and bond prices. Based on financial literacy levels, freelancers have the highest literacy in general knowledge (μ=61.6), followed by knowledge about savings and loans (μ=51.8), and the lowest in investment knowledge (μ=40.2).

The testing proceeded with hypothesis testing starting with convergent validity using outer loadings and average variant extracted (AVE), where there are 33 indicators to measure the variables. However, in the process, one indicator, LK_SB, needed to be removed as its outer loadings were below 0.4, along with six indicators: RT5, SS_TAS5, SS_ES1, SS_D3, SS_BS2, and SS_BS4. Removal could improve composite reliability and AVE values. The test results are listed in Table 2.

Table 2. Value of Outer Loadings, AVE, Cronbach's Alpha, and Composite Reliability

Variable	Indicator	*Outer Loadings*	AVE	*Cronbach's Alpha*	*Composite Reliability*
Financial Interest	FI1	0.863	0.526	0.822	0.845
	FI2	0.820			
	FI3	0.606			
	FI4	0.679			
	FI5	0.620			
Sensation Seeking Thrill and Adventure Seeking	SS_TAS1	0.839	0.686	0.863	0.896
	SS_TAS2	0.931			
	SS_TAS3	0.848			
	SS_TAS4	0.672			
Sensation Seeking Experience Seeking	SS_ES2	0.703	0.583	0.768	0.848
	SS_ES3	0.801			
	SS_ES4	0.746			
	SS_ES5	0.800			
Sensation Seeking Disinhibition	SS_D1	0.891	0.789	0.911	0.937
	SS_D2	0.830			
	SS_D4	0.909			
	SS_D5	0.920			
Sensation Seeking Boredom Susceptibility	SS_BS1	0.752	0.672	0.761	0.859
	SS_BS3	0.801			
	SS_BS5	0.898			
Financial Literacy	LK_GPFK	0.944	0.616	0.440	0.752
	LK_I	0.584			
Risk Tolerance	RT1	0.790	0.704	0.860	0.905
	RT2	0.869			
	RT3	0.829			
	RT4	0.867			

Source: processed data

Discriminant validity testing assesses the cross-loadings and the Fornell-Larcker criterion. In this test, the cross-loading values of the indicators on their respective variables must exceed those on the other variables. The Fornell-Larcker criterion requires that the square root of the AVE of the indicators on their variables should surpass that of the AVE on other variables. The indicators exhibit Fornell-Larcker values higher for their respective variables compared to other variables. These values suggest that the indicators have a stronger influence on their associated variables than on others. Subsequently, reliability testing was conducted using Cronbach's alpha and composite reliability values. All variables except financial literacy, as they meet the criteria with Cronbach's alpha and composite reliability values falling between 0.7 and 0.9. Financial literacy, despite having a Cronbach's alpha value > 0.4, is considered a weak outer loadings indicator. However, it is retained due to its contribution to content validity *[47]*. The low Cronbach's alpha value is attributed to financial literacy comprising only 2 indicators in the path model, resulting in bias towards variables with only two or three indicators. Furthermore, freelancers with high financial interest exhibit low financial literacy and risk tolerance, indicating an inconsistency in responding to financial literacy-related questions. The R-square value for Risk Tolerance is 0.387, signifying that the exogenous variables—financial interest, sensation seeking, and financial literacy—significantly influence the endogenous variable, Risk Tolerance, accounting for 38.7% of its variance. The remaining variance is influenced by other factors.

Table 3. Value of Original Sample, t-Statistics, dan p-Values

Hypothesis		*Original Sample*	*t-Statistics*	*p-Values*
H1	FI -> RT	-0.339	**1.880**	**0.061***
H2	SS_TAS -> RT	0.199	1.429	0.154
H3	SS_ES -> RT	0.228	**2.178**	**0.030****
H4	SS_D -> RT	0.143	1.169	0.243
H5	SS_BS -> RT	0.216	**2.114**	**0.035****
H6	LK -> RT	-0.231	**2.396**	**0.017****

Source: processed data, $*p < 0.10$; $**p < 0.05$

Discussion

The study's findings indicate that financial interest significantly negatively affects risk tolerance. Freelancers in the design and multimedia sectors are known for their high levels of creativity and imagination, which make them naturally curious and inclined to explore new ventures. The majority of freelancers exhibit a keen interest in economic and financial market issues, often immersing themselves in various media forms like videos and news articles to stay updated on the latest developments. While a strong financial interest motivates individuals to seek various information on economic news and financial markets, freelancers, with high levels of financial interest, tend to exhibit a neutral stance towards financial risks. This finding contradicts the statement made by Hermansson & Jonsson [9] that high financial interest correlates with a higher tolerance for risks due to increased motivation to acquire financial knowledge and track financial market developments. Interestingly, individuals who proactively seek financial advice tend to achieve better financial outcomes compared to those who passively receive financial advice [34]. This study suggests that freelancers lean towards a conservative investment approach, prioritizing security over profitability, as they struggle with investing in the stock market and seek information before investing.

The sensation seeking experiences of freelancers are felt when they discover the beauty in contrasting colors, admire irregular modern paintings, and explore new food menus. Additionally, their susceptibility to boredom becomes evident when they feel tired quickly from prolonged periods indoors and express a dislike for films with predictable storylines. This trait collectively depicts freelancers as individuals who dislike being confined for too long, detest monotony, appreciate contrasting and abstract elements, and enjoy the allure of secrets or unpredictable scenarios. As articulated by Zuckerman [11], sensation seeking leads individuals to embrace new activities that align with their lifestyle choices or rebel against mundane and predictable routines. These experiences contribute to how freelancers feel when investing in the financial markets; sensation-seeking experience and boredom susceptibility significantly influence risk tolerance. Wong & Carducci [14] prove that sensation seeking significantly affects risk tolerance. Individuals with high levels of sensation seeking enjoy seeking new experiences to allow themselves to navigate the fear of potential loss and relish the pleasure of gain. Individuals with high sensation seeking tendencies tend to engage in a riskier financial investment [7]. Freelancers are drawn to the emotional rollercoaster of investing, navigating between the fear of loss and the joy of gains, all while embracing the uncertainty inherent in their investment decisions. In contrast, their engagement with risky activities, be it physically challenging activities high-risk adventures, as well as norm-breaking behaviors, do not drive freelancers to become aggressive or tolerate risk in their activities. Furthermore, risk tolerance among freelancers is not marked by disinhibition typically associated with psychopathological behaviors such as impulsiveness, aggression, and antisocial tendencies.

When venturing into investments, freelancers require financial literacy, encompassing general knowledge, savings and loans, and investment strategies. Test results indicate a significant negative correlation between financial literacy and risk tolerance. The higher a freelancer's financial literacy, the lower their risk tolerance when investing in the capital market. However, Hermansson & Jonsson [9] argue that individuals with extensive financial literacy are typically more tolerant of financial risks. Comprehensive knowledge, understanding, and skills about various financial concepts and risks empower individuals to personally make effective financial decisions [49]. An individual's level of financial literacy influences their capacity to analyze information related to inflation, compound interest, and risk diversification, making them more inclined to engage in high-risk investment instruments to attain higher potential returns [45]. This study proves that freelancers tend to adopt a conservative investment approach, prioritizing caution when investing to avoid losses over pursuing potential profits.

3. Conclusion

This study establishes that financial interest, sensation seeking experience, sensation seeking boredom susceptibility, and financial literacy significantly influence risk tolerance. However, sensation seeking thrill and adventure seeking, as well as sensation seeking disinhibition, do not significantly affect risk tolerance, as freelancers are not inclined to seek thrills through physically challenging activities or impulsive behavior and anti-social behavior. Freelancers' keen interest in financial knowledge, combined with their existing financial literacy skills, drives them to seek experiential sensations in the capital market, thereby influencing their level of risk tolerance in investment decisions. For future research, delving deeper into personality traits can provide valuable insights into freelancers' affective aspects, mitigating biases in decision-making. Understanding both cognitive and affective aspects of individuals can inform the formulation of investment strategies by enhancing financial literacy and investment experience in the capital market. Leveraging social media and online classes provided by the Indonesia Stock Exchange can enrich knowledge about investment product selection. This research should be expanded beyond design and multimedia freelancers. Additionally, conducting psychobiological studies involving molecular genetics and functional brain imaging can offer a deeper understanding of individual personality traits. The implication of this research lies in comprehending freelancer behavior in risk taking, which can greatly aid in enhancing financial literacy among individuals who are less involved in the financial realm.

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