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Investment and profitability of commercial banks in Nepal

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Abstract

The objective of this study is to analyze the impact of investment on profitability of selected Nepalese commercial banks. This research employs a descriptive and causal comparative research design. Given the impracticality of including all banks, the study focuses on a selected sample of twenty banks, specifically NABIL bank limited and Standard Chartered bank limited, chosen through judgment sampling. Secondary data, including annual reports and various published sources has used for analysis. The research employs statistical tools such as arithmetic mean, standard deviation, coefficient of variation, correlation coefficient, and regression analysis to evaluate and interpret the data. The results indicate that higher NRB Balance and Investment on Security are positively associated with both return on assets (ROA) and return on equity (ROE), suggesting that banks with larger reserves and substantial investments in securities tend to achieve better profitability. Conversely, Loan and Advance to Customers show a strong positive correlation with ROA but a negative correlation with ROE, indicating that while increased lending boosts asset returns, it may reduce returns on equity and investment in securities. Regression analyses further illuminate these relationships. For ROA, Bank Size emerges as the most significant factor, with a strong positive impact, followed by NRB Balance and Loan and Advance to Customers, which also positively influence ROA. Investment on Security, although positively related, has a less pronounced effect.

Keywords: *Return on assets, Return on equity, NRB Balance, Investments on securities, Loan and advance to customers, bank size*

Background

The investment process includes phases such as setting investment policies, analyzing securities, building and revising portfolios, and assessing performance (Larsson & Hammarlund, 2015). Investment analysis, involving the examination of financial statements like the cash flow statement, balance sheet, and income statement, helps investors evaluate potential returns and risks (CRAB). Methods such as net present value and internal rate of return are used to gauge expected returns (Nazarov, 2024).

In the national international period as well, a great deal of research has been done on the issue of investment analysis. Investments in various areas are to be managed by the joint venture banks. Even yet, in a short amount of time, joint venture banks have outperformed regional commercial banks (Bhattarai & Sapkota, 2023). They have been in intense rivalry with one another, the banks' interest rates have decreased, and the majority of the mobilized resources are sitting idle. Nepal's commercial banks have likewise fallen short of their clients' increasing demands. They are not meeting the rapid service expectations of their customers by functioning in a conventional manner. It is anticipated that commercial banks in Nepal would direct their passive funds toward trade and commerce in order to support business owners financially and instill a culture of saving among the general people. Commercial banks' operations are supplying the nation's expanding financial needs for growth (Bhattarai, 2018). Between joint venture banks and other commercial banks, there is fierce rivalry. The depositors are discouraged by the declining interest rate.

Moreover, such research should take into account the unique characteristics of the Nepalese banking sector, including regulatory frameworks, market conditions, and economic factors, which may influence the relationship between investment and profitability (Bhattarai, 2018). By exploring these dynamics, future studies can provide

valuable insights for policymakers, bank managers, and investors, aiding in the formulation of informed strategies to enhance financial performance and promote sustainable banking practices in Nepal. Given these issues, the following research challenge is the focus of this study: What is the status of investment and profitability of selected Nepalese commercial banks? Is there any relationship between investment and profitability of selected Nepalese commercial banks? What is the impact of investment on profitability of selected Nepalese commercial banks?

An analysis of the profitability and investment strategies of Nepalese commercial banks involves examining how these institutions manage their resources and investments to achieve financial success. This analysis focuses on understanding how banks in Nepal allocate their assets, manage risks, and generate returns, particularly in a unique economic context marked by challenges such as being landlocked and less technologically advanced. By evaluating key financial metrics and investment practices, this analysis aims to shed light on the effectiveness of Nepalese banks in driving economic growth and addressing the specific financial needs of the country. The objective of this study is to analyze the impact of investment on profitability of selected Nepalese commercial banks.

Literature Review

Nazarov (2024) analyzed the increasing the efficiency of investment projects by commercial banks. The study aimed to identify the problems related to increasing the efficiency of crediting investment projects of commercial banks and develops scientific proposals aimed at solving them. The research utilized trend analysis, induction and deduction, expert assessment, grouping to analyzed data. The finding revealed that the costs of construction of new objects and purchase of equipment and technologies within the framework of the investment project will be financed by the loans of commercial banks. The study concluded that increasing the effectiveness of crediting investment

projects by commercial banks creates the need to strengthen the long-term resource base of banks and improve the risk management of investment projects. According to Maharjan (2023), to enhance the credibility of BFIs into public by promoting overall banking and financial system and to develop competitive capacity of financial system by improving capital base. The research utilized different ratio analysis technique to analyzed the data. The findings revealed that the investors should consider various factors, including regulatory environment, demand for banking services, and the financial health of individual banks, before making investment decisions. The study concludes that investing in the banking sector in Nepal could offer favorable returns, especially considering the sector's undervaluation compared to other sectors. Likewise, Chalimatuz (2021) assessed investment choices and profitability influence the value of listed banks in Indonesia. The study aimed to understand the impact of profitability, capital structure, and investment choices on firm value. The research used multiple linear regression to analyzed the data. The findings indicated a positive and significant relationship between a company's value and its capital structure, investment decisions, and profitability.

Zverev et al. (2021) analyzed the Investment policy of the banking sector: data from Russia. The study aimed to analyze the investment mechanism of the Russian banking sector and to characterise the investment policy and risks connected with investment activities. The researched utilized the quantative and qualitative including theoretical analysis, monographic survey, synthesis, analogy, scientific generalisation and the graphical method of economic research to analyzed the data. The finding revealed that the commercial banks should prioritize the selection of securities for their investment portfolios based on specific criteria, such as maturity period, REPO transaction discount rates, and risks identified in their investment policy, rather than focusing solely on nominal profitability. In the same way, Jamshid (2020) examined investment strategies of commercial banks in financial markets. The study aims to elucidate the importance of investment portfolios and management strategies. The study assesses the role of

investment portfolios in revenue generation, risk management, and diversification. The research employed quantitative analysis techniques to evaluate investment patterns and performance. The findings underscored the significance of investment portfolios in enhancing banks' profitability and resilience. The study concluded that effective investment management is essential for banks to thrive amidst evolving market dynamics.

Mohamad et al. (2019) analyzed the exposure to interbank investment and financing risk by islamic banks. The study aimed to facilitate funding for the Islamic banking sector in the country. The research utilized correlation coefficient and dynamic panel analysis to analyze the data. The finding revealed the negative relationship between the interbank investment variable with the financing decisions of Islamic banks. The study concluded the investment activities between Islamic banks had a "substitution effect" and decreased their capability of financing because of their tendency to maintain liquidity.

Bhattarai (2018) analyzed the impact of bank-specific and macroeconomic variables on investment in commercial banks in Nepal. The study aimed to assess the factors influencing investment decisions in commercial banks. The research employed descriptive statistics and multiple regression to analyzed the data. The findings indicated that non-interest income, credit-to-deposit ratio, GDP, and exchange rate significantly influenced bank investment. The study concluded that market share, liquidity and gross domestic products are the major determinants of profitability of Nepalese commercial banks so that the banker should be careful about these factors to increase the profitability. Likewise, Timsina (2017) investigated the determinants of bank lending in Nepal. The study aimed to analyze the factors influencing commercial bank lending behavior in Nepal. The research employed time series OLS regression to analyzed the data. The findings highlighted the significant impacts of gross domestic product and liquidity ratio on bank lending behavior. The study concludes that GDP is the barometer of the economy and commercial banks should pay attention to the overall macroeconomic situation of the country.

Pradhan (2016) analyzed the effects of bank lending on economic growth in Nepal. The study aimed to investigate the relationship between commercial bank lending and economic growth over a specified period. The research employed coefficient correlation and multiple regression for analyzing data. The findings indicated a positive impact of bank lending on economic growth. The study concluded that the policy makers should focus on the development of formal sector financing and efficient financial market to increase the bank lending which is instrumental to promote economic growth in Nepal. Similarly, Rop et al. (2016) examined the effect of investment diversification on the financial performance of commercial banks in Kenya. The study aimed to assess the influences of portfolio diversification on banks' financial performance. The research employed multiple regression to analyzed data. The findings indicated that banks' investment diversification positively impacted financial performance. The study concluded that commercial banks should extend their product mix and diversification policy to increase profitability of the bank.

Research Framework

The theoretical framework is the basis or foundation upon which the study is established. It is within the framework of this theory that the entire story proceeds. This framework is design to understand the effect of investment on financial performance. In view of theories and evidence, it is expected that the financial performance may be influenced by investments. The theoretical framework is developed to test the impacts of variables on the investments of commercial Banks of Nepal.

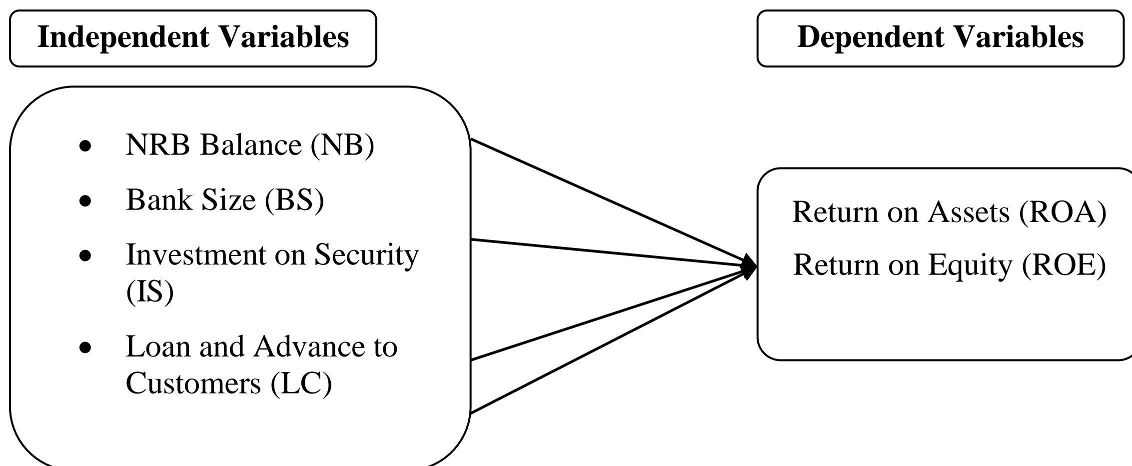

Figure 1: Research Framework

Return on Assets (ROA)

The goal of the research will determine which particular performance measure is used. Bank performance may be measured in a variety of ways. There are many performance metrics that may be found in theoretical literature, including economic and conventional metrics like return on assets (ROA), return on equity (ROE), cost to income ratio, and net interest margin. From an accounting standpoint, return on assets (ROA) is a comprehensive indicator of a bank's entire performance (Sinkey & Joseph, 1992).

Return on Assets (ROE)

Return on Equity (ROE) is a financial ratio that measures a company's profitability in relation to the equity held by its shareholders. It's calculated by dividing the company's net income by its shareholders' equity (Nazarov, 2024). Essentially, it shows how effectively a company is using the money invested by its shareholders to generate profits.

NRB Balance (NB)

NRB Balance (NB) of commercial banks refers to the mandatory reserve requirements set by the Nepal Rastra Bank (NRB), the central bank of Nepal. Commercial banks are required to maintain a certain portion of their deposit liabilities as reserves with the

central bank. These reserves serve as a liquidity buffer to ensure the stability of the banking system and facilitate effective monetary policy implementation. The NRB Balance represents the amount of funds that commercial banks hold in their accounts with the central bank to fulfill this reserve requirement. Failure to maintain the required NRB Balance may lead to penalties or regulatory sanctions imposed by the NRB (Pradhan, 2016). From the review the hypothesis of the study are as:

H1a: There is significant impact of NRB balance on return on assets of Nepalese commercial banks.

H1b: There is significant impact of NRB balance on return on equity of Nepalese commercial banks.

Bank Size (BS)

One of the control variables used to analyze the performance of the banking system is bank size as measured by total assets. In the banking industry, bank size is often employed to take advantage of possible economies or diseconomies of scale. This variable adjusts for product cost variations and risk diversification based on the financial institution's size. This is added to account for the likelihood that larger banks may have more diverse loan and product offerings. The natural logarithm of the banks' total assets is often used as a stand-in for bank size in financial literature (Bhattarai & Sapkota, 2023). The hypothesis was developed from the above review are:

H2a: There is significant impact of bank size on return on assets of Nepalese commercial banks.

H2b: There is significant impact of bank size on return on equity of Nepalese commercial banks.

Investments on Securities (IS)

Investments on Securities (IS) typically refer to the funds that commercial banks allocate to various types of securities such as government bonds, corporate bonds, treasury bills, stocks, and other financial instruments. These investments represent a significant portion of a bank's assets and are made with the objective of earning returns through interest income, dividends, or capital appreciation. Commercial banks often invest in securities as part of their asset-liability management strategy to diversify their portfolio, manage risk, and optimize returns. The level of Investments on Securities (IS) can vary depending on market conditions, regulatory requirements, and the bank's risk appetite and investment policies (Mohamad et al., 2019). The hypothesis is:

H3a: There is significant impact of investments on securities on return on assets of Nepalese commercial banks.

H3b: There is significant impact of investments on securities on return on equity of Nepalese commercial banks.

Loan and Advance to Customers (LC)

Loan and advance to customers refer to the funds extended by commercial banks and financial institutions to individuals, businesses, or other entities in the form of loans. (Chalimatuz, 2021). These loans are typically provided to borrowers for various purposes, including personal financing, business expansion, investment, or other financial needs. Commercial banks evaluate the creditworthiness of borrowers based on factors such as their income, credit history, collateral, and the purpose of the loan. Once approved, borrowers receive the requested funds, which are then repaid over time according to agreed-upon terms, including interest rates and repayment schedules. Loan and advance portfolios are a significant component of banks' assets and play a crucial role in generating interest income, driving profitability, and supporting economic growth by facilitating access to capital for individuals and businesses (Jamshid, 2020). The hypothesis of the study are:

H4a: There is significant impact of loan and advance to customers on return on assets of Nepalese commercial banks.

H4b: There is significant impact of loan and advance to customers on return on equity of Nepalese commercial banks.

Research Methodology

This research employs a descriptive and causal comparative research design to analyze the investment and profitability of two commercial banks. In this study, a sample is drawn from the larger population of commercial banks in Nepal to represent their characteristics. Given the impracticality of including all banks, the study focuses on a selected sample of twenty banks, specifically Nabil bank limited and Standard Chartered bank limited, chosen through judgment sampling as per the highest earnings of the commercial banks. This method simplifies the research by concentrating on two banks to provide detailed insights. Secondary data, including annual reports and various published sources has used for analysis. The research employs statistical tools such as arithmetic mean, standard deviation, coefficient of variation, correlation coefficient, and regression analysis to evaluate and interpret the data, ensuring a comprehensive understanding of the banks' financial performance and investment strategies.

The impact of investment on the performance of commercial banks has been calculated using the regression equation below by using the prescribed econometric model, specifically tailored to this study:

$$ROA_{it} = \beta 0 + \beta 1\ NB_{it} + \beta 2\ BS_{it} + \beta 3\ IS_{it} + \beta 4\ LC_{it} + e_{it}$$

$$ROE_{it} = \beta 0 + \beta 1\ NB_{it} + \beta 2\ BS_{it} + \beta 3\ IS_{it} + \beta 4\ LC_{it} + e_{it}$$

Where,

ROA_{it} = Return on assets (ratio of earnings after taxes to total assets) of bank I in year t, ROE_{it} = Return on equity (ratio of earnings after taxes to total equity) of

bank *I* in year *t,* NB_{it} = NRB Balance of ith bank in year t, BS_{it} = Total assets of a company of ith bank in year t, IS_{it} = Investment on Security of ith bank in year t, LC_{it} = Loan and Advance to Customers of ith bank in year t, B_0 = the intercept (constant), β_1, β_2, β_3, β_4, β_5 = The slope which represents the degree with which bank performance changes as the independent variable changes by one unit variable and e_{it} = error component

Analysis and Results

Table 1 presents the descriptive statistics of the independent factors (NRB Balance (NB), Bank Size (BS), Investment on Security (IS), Loan and Advance to Customers (LC)) and dependent variables (return on equity and return on assets) for a subset of Nepalese commercial banks. For the research period of 2013/14 to 2022/23, the dependent and independent variables of two chosen Nepalese commercial banks are shown in the table below. Return on assets is the dependent variable, whereas bank size, NRB Balance, bank size, and investment on security are the independent factors.

Table 1 *Descriptive statistics*

	Minimum	Maximum	Mean	S.D.
ROA	1.06	2.53	2.0220	.46071
ROE	7.69	53.42	16.4603	6.64741
NB	11.79	18.60	14.2955	2.42619
BS	12.30	24.15	16.7895	3.78244
IS	0.16	0.81	0.4515	0.23752
LC	10.91	15.06	11.3511	5.42041

In the Table 1 the period from 2013/14 to 2022/23, the average return on assets for Nepalese commercial banks was 2.02 times, with a range from 1.06 to 2.53 times and a

standard deviation of 0.461, indicating minimal fluctuation. The average NRB balance for the period 2014-2023 was 14.2955 percent, varying between 11.79 and 18.60 percent, with a standard deviation of 2.43, reflecting low fluctuation. The average bank size was 16.79 percent, with a range from 12.30 to 24.15 percent and a high standard deviation of 3.78, indicating significant variability. Investments in securities averaged 0.4515 percent, with a range from 0.16 to 0.81 percent and a low standard deviation of 0.24. Loans and advances to customers averaged 11.3511, varying from 10.91 to 15.06, with a high standard deviation of 5.42603, showing considerable fluctuation.

The bivariate Pearson's correlation coefficients between the various research variables are shown in Table 2. Based on data from two chosen commercial banks with fifty /observations from 2013/14 to 2022/23, the correlation coefficients were calculated. Return on assets is the dependent variable, while the NRB Balance, investments on securities, loan and advance to customers, and bank size are the independent factors.

Table 2 *Correlation Analysis*

	ROA	ROE	NB	IS	NPL	LC
ROA	1					
ROE	.168*	1				
NB	.287*	.171*	1			
IS	.347**	.162**	-.262	1		
BS	.255*	.049*	-.919**	.323	1	
LC	.772**	.286**	.637*	-.553	-.617	1

Table 2 reveals the relationships between the dependent variables, return on assets (ROA) and return on equity (ROE), and independent variables including NRB Balance (NB), Bank Size (BS), Investment on Security (IS), and Loan and Advance to Customers (LC) for Nepalese commercial banks. The NRB Balance shows positive correlations with both ROA (0.287) and ROE (0.171), suggesting that higher reserves with the central bank are linked to improved asset and equity returns. Investment on Security also shows positive

correlations with ROA (0.347) and ROE (0.162), indicating that greater investments in securities contribute to higher profitability. Loan and Advance to Customers have a strong positive correlation with ROA (0.772) but a negative correlation with ROE (-0.617), implying that increased lending boosts asset returns but reduces equity returns and investment in securities. Finally, Bank Size shows a positive correlation with ROA (0.255) and a weak correlation with ROE (0.049), indicating that larger banks tend to have better returns on assets, though the effect on equity returns is minimal.

Table 3 *Regression Analysis for ROA*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	39.018	5.801		6.725	.000
NRB Balance	.115	.049	.166	2.357	.020
Investment on Security	.394	.210	.129	1.880	.062
Bank Size	.318	.058	.386	5.500	.000
Loan and Advance to Customers	.019	.006	.217	3.116	.002
Adj. R^2	.547				
F-value	11.049				
P-value	.000				

a. Dependent Variable: ROA

Table 3 presents the results of a regression analysis examining the factors affecting return on assets (ROA). The model includes NRB Balance, Investment on Security, Bank Size, and Loan and Advance to Customers as independent variables. The constant term is significant ($p < 0.001$). Among the independent variables, Bank Size has the highest positive standardized coefficient (Beta = 0.386) and is highly significant ($p < 0.001$),

indicating its strong impact on ROA. NRB Balance and Loan and Advance to Customers are also significant ($p = 0.020$ and $p = 0.002$, respectively), suggesting positive contributions to ROA. Investment on Security shows a positive but less significant effect ($p = 0.062$). The model has an adjusted R^2 of 0.547, meaning it explains approximately 54.7% of the variance in ROA, with an overall F-value of 11.049 ($p < 0.001$), indicating the model's robustness.

Table 4 *Regression Analysis for ROE*

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.199	.195		6.142	.000
NRB Balance	.377	.055	.377	6.905	.000
Investment on Security	.167	.066	.142	2.550	.011
Bank Size	.113	.053	.109	2.119	.035
Loan and Advance to Customers	-.019	.006	-.217	-3.116	.002
Adj. R^2	.431				
F-value	39.307				
P-value	.000				

a. Dependent Variable: ROE

Table 4 displays the results of a regression analysis for return on equity (ROE). The model includes NRB Balance, Investment on Security, Bank Size, and Loan and Advance to Customers as predictors. The constant term is highly significant ($p < 0.001$). NRB Balance has the highest standardized coefficient (Beta = 0.377) and is highly significant

($p < 0.001$), indicating it strongly influences ROE. Investment on Security is also significant ($p = 0.011$) with a positive impact (Beta = 0.142). Bank Size shows a smaller but significant positive effect (Beta = 0.109, $p = 0.035$). Conversely, Loan and Advance to Customers has a negative effect on ROE (Beta = -0.217) and is significant ($p = 0.002$), suggesting that increased lending reduces equity returns. The model has an adjusted R^2 of 0.431, indicating it explains about 43.1% of the variance in ROE, with an overall F-value of 39.307 ($p < 0.001$), demonstrating the model's strong explanatory power.

Conclusion and Discussion

The analysis of the relationship between various financial variables and the performance of Nepalese commercial banks reveals several key insights. The correlation results indicate that higher NRB Balance and Investment on Security are positively associated with both return on assets (ROA) and return on equity (ROE), suggesting that banks with larger reserves and substantial investments in securities tend to achieve better profitability. Conversely, Loan and Advance to Customers show a strong positive correlation with ROA but a negative correlation with ROE, indicating that while increased lending boosts asset returns, it may reduce returns on equity and investment in securities. Regression analyses further illuminate these relationships. For ROA, Bank Size emerges as the most significant factor, with a strong positive impact, followed by NRB Balance and Loan and Advance to Customers, which also positively influence ROA. Investment on Security, although positively related, has a less pronounced effect. The model explains about 54.7% of the variance in ROA, underscoring the importance of bank size and lending activities in driving asset returns.

In the context of ROE, NRB Balance has the most substantial positive effect, highlighting its critical role in enhancing equity returns. Investment on Security and Bank Size also contribute positively to ROE, though to a lesser extent. However, Loan and Advance to Customers negatively affect ROE, suggesting that aggressive lending might reduce returns for shareholders. The regression model accounts for approximately 43.1% of the

variance in ROE, indicating that while several factors influence equity returns, NRB Balance and investment strategies play crucial roles in shaping overall profitability.

The study shows a positive and statistically significant NRB Balance. The outcome defies the conclusions drawn by Bhattarai (2018), who discovered that the ratio of gross loans to investments had a detrimental impact on banks' financial performance. This outcome, however, is consistent with Jamshid (2020) results, which indicated a negative correlation between investment on security and bank performance. The study's findings indicate that there is little correlation between poor credit and liquidity and bank performance. The outcome of the second aim is in line with the findings of Maharjan (2023), who discovered a strong and favorable correlation between bank performance and the investment on security. The outcome shows that the coefficient of investment on security is positive and statistically insignificant, which is contrary to priori expectations.

Based on the analysis, several implication can be made for Nepalese commercial banks:

- By increasing their reserves with the central bank, banks can not only improve profitability (as indicated by ROA and ROE) but also bolster their financial stability, which is crucial in a volatile economic environment.
- The suggestion to increase investments in securities implies that banks can enhance their profit margins through strategic asset management. However, this also highlights the need for robust risk management practices to avoid exposing the banks to excessive market risks.
- The recommendation to expand bank size suggests that growth can drive profitability, but it also implies that unchecked expansion could lead to inefficiencies or unsustainable operations. Banks need to carefully manage their growth to ensure it aligns with long-term strategic objectives.
- The note on lending implies that while increasing lending can improve short-term returns on assets, excessive lending could harm equity returns and create financial

risks. This calls for a more nuanced, balanced approach to lending strategies to sustain profitability without jeopardizing shareholder value.

- The emphasis on regularly reviewing and adjusting financial strategies indicates that banks must remain flexible and responsive to changing market conditions. It implies that banks need to continually assess performance metrics to optimize their balance between asset returns and equity returns, fostering long-term success.

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