# Capital Structure and Profitability of Non-Life Insurance Company in Nepal

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## Abstract

**Purpose:** The study aims to find out the non-life insurance firms in Nepal that create profit using capital. The research closely examines several important factors like business size (Size), liquidity ratio (LQ), total debt to total assets (TDR) and equity to total assets (ETA).

**Methods:** Secondary data were gathered from annual reports and financial statements of twelve non-life insurance firms in Nepal which provided basis for this descriptive and explanatory research design with quantitative research approach. This study used multiple regression analysis and Pearson correlation to find important impact and associations by SPSS data analysis.

**Results:** Debt ratios and ROA and ROE have a negative association that implies too much leverage reduces profitability. Although lowering risk depends mostly on liquidity, it also lowers assets returns. This is seen by the liquidity ratio and it greatly reduces ROA but has little effect on ROE. The equity ratio reveals how difficult it is to deploy equity correctly with a strong negative connection with ROA and a great negative link with ROE. Further illustrating the advantages of economies of scale, organizational size positively links with returns on Assets (ROA). All academics, legislators and practitioners agree that the expansion and competitiveness of the insurance sector depend on a sound capital structure.

**Conclusion:** According to the study, non-life insurance firms need to improve profitability by means of strategic capital structure management. Managers need to monitor whether the company has adequate liquidity and a good debt equity ratio or not if the company wants to improve overall financial success.

**Keywords:** Equity to assets ratio, firm size, liquidity ratio, total debt ratio, return on assets, return on equity

## I. Introduction

The non-life insurance sector protects people, companies, and property from a variety of

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risks related to Nepalese economy. The resilience of this company depends on economic stability, which in turn depends on a strong awareness of the financial dynamics underneath its activities. The capital financing structure of non-life insurance firms largely determines their operating efficacy and financial situation. Any firm has to make the appropriate capital finance choices, including how much debt and how much equity (Marsh,1982). These decisions affect the cost of capital, risk profile and profitability of an organization. Non-life insurance companies functioning in a highly regulated and competitive market, understanding the ramifications of capital financing is crucial. This study analyzed the association between capital financing components including TDR, ETA, LQ, Size, ROA and ROE.

This research is theoretically grounded on important capital structure studies, most notably the claim that in an ideal market, a firm's value is unrelated to its capital structure (Modigliani & Miller, 1958). Capital structure does affect business value and performance in real-world circumstances when taxes, asymmetric knowledge, market inefficiencies and bankruptcy costs are present. Various subsequent theories provide further insight into the intricacies of financial decision-making. Myers (1984) explained the pecking order theory and the trade-off theory. Corporations weigh the tax benefits of debt against the risks of possible financial crisis, according to the trade-off hypothesis. On the other hand, according to the pecking order theory, corporations would rather use internal funds first and only then would they turn to debt. Issuing stock would be a last choice. These rules should safeguard policyholders, guarantee solvency, and maintain financial stability. Still, they do limit the way businesses could allocate their money, which affects their profit-making capacity.

Nepalese non-life insurance companies have received very little research on the topic of capital structure and profitability, particularly when it comes to the ways in which certain aspects of capital financing impact their bottom lines. In addition, the unique economic and legal context of Nepal has been under-explored in previous studies, which limits our understanding of the factors influencing capital structure and profitability in this market.Stakeholders should be aware of the financial systems influencing the success of these businesses. The capital financing is one of the most important financial factors. This article aims to investigate whether capital financing influences the profitability of Nepalese NLI sector. One must consider how profitability connects to other facets of capital finance to get at the answer to this issue. The major aim of this research is to investigate how specific capital financing factors affect the profitability of NLI companies in Nepal.

## II. Reviews

### Theoretical Review

Capital structure and profitability of company has used as research tools for this study. Modigliani and Miller (1958) explained that a company's value is unaffected by its capital structure in a perfect market. Some real-world imperfections that affect capital structure and company performance include taxes, insolvency fees and asymmetric information. The total debt ratio (TDR) is an indicator measuring an organization's indebtedness that accounts for assets financed by debt. According to the trade-off approach, businesses weigh the tax advantages of debt against the financial pressure (Kraus & Litzenberger, 1973). Tax shelters could increase profits but they also increase the danger of going into debt (Myers, 1977). The equity to total assets ratio (ETA) reflects financial stability and loss tolerance. Berger and Di Patti (2006) observed that larger equity levels reduce financial risk and increase business stability, improving risk management and profitability. The LQ shows a company's short-term liquidity. Non-life insurers need liquidity due to claims unpredictability. Liquidity reduces financial stress and improves efficiency (Cummins & Nini, 2002). As a corporation grows, market dominance, capital and economies of scale may boost profitability. These benefits boost bigger

organizations' profits but may exacerbate bureaucratic inefficiency (Amato & Burson, 2007). These ideas explain how capital finance impacts non-life insurance profitability. This research evaluates Nepalese non-life insurance capital structure and profitability to better understand local and global capital structure.

**Empirical Review**

*Total Debt Ratio (TDR)*

Return on assets (ROA) and return on equity (ROE) are two profitability measures whose link with total debt ratio (TDR) has been well researched in a number of scenarios. Jensen and Meckling (1976) explained that the debt should be a management disciplinary tool that improves company performance. However excessive debt may lead to financial trouble and danger, which can hurt profitability (Myers, 1977). Shrestha (2018) found that Nepalese commercial banks with higher leverage had worse ROA. Thapa (2020) found a negative association between TDR and ROE in Nepalese manufacturing enterprises, warning against excessive indebtedness.

$H_{1a}$: TDR significantly impacts on ROE

$H_{1b}$: TDR significantly impacts on ROA

*Equity to Total Assets Ratio (ETA)*

Berger and Di Patti (2006) Gurung (2019) discovered a correlation between greater ETA and ROA,ETA and ROE in Nepalese non-life insurance companies. The analysis indicated that companies with higher equity ratios outperform competitors owing to fewer financial risk and greater operational flexibility.Al-Najjar and Taylor (2008) conducted research in the Jordanian insurance market and found that companies with higher equity to total assets ratios were more lucrative due to their superior credit ratings and ability to withstand financial shocks and able to acquire better reinsurance rates and more business as a result. Abor (2005) found that listed businesses in Ghana with greater equity ratios had better ROA and ROE owing to lower debt and interest expenses. Kipesha and James (2014) found from the study of a comparison of East African insurance businesses that firms with a greater equity to total assets ratio are more profitable. These organizations do better financially due to operational efficiency and lesser financial leverage.

$H_{2a}$: ETA significantly impacts on ROE

$H_{2b}$: ETA significantly impacts on ROA

*Liquidity Ratio (LQ)*

Firms must manage liquidity to meet short-term obligations while maintaining operational efficiency. Cummins and Nini (2002) emphasized the need of liquidity in insurance, since firms must respond to unexpected claims. Bhattarai (2017) discovered that Nepalese commercial banks with enhanced liquidity had a better ROA. Considering substantial study on capital structure and performance across sectors, Nepal's non-life insurance market has received little attention. Literature focuses on banking and manufacturing, ignoring non-life insurance enterprises' particular regulatory and operational environment. This study fills this gap by examining how capital financing parameters impact Nepalese non-life insurance businesses' profitability.

$H_{3a}$: LQ significantly impacts on ROE

$H_{3b}$: LQ significantly impacts on ROA

*Firm Size (SIZE)*

Companies with more resources, more market share and easier access to capital tend to

be the ones who focus on profit maximization. These benefits allow larger firms to retain a higher percentage of their revenue (Amato & Burson, 2007). Examining the banking industry in Nepal, Poudel and Malla (2016) found that larger banks have higher ROA and ROE. This allows bigger banks effectively apply economies of scale and allocate their resources based on demand. Following research in Nepal's industrial sector, Dhakal (2017) found that bigger companies usually earned a profit. This could be the outcome of bigger companies better employing their resources and occupying a more commanding presence in the market.

H$_{4a}$: TA significantly impacts on ROE

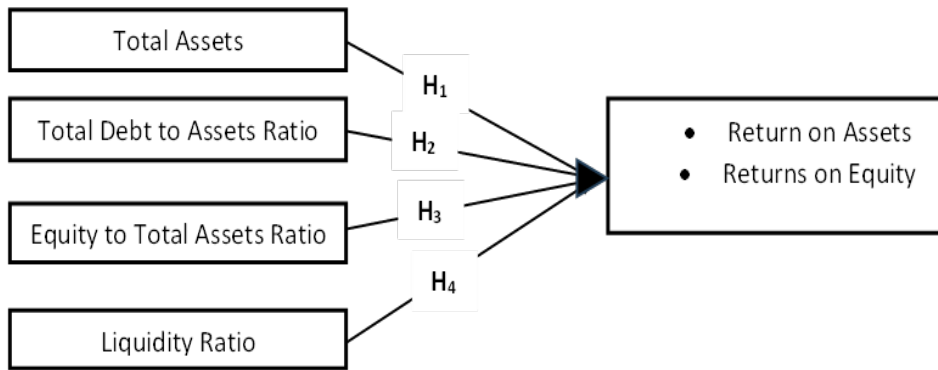H$_{4b}$: TA significantly impacts on ROA

**Figure 1**

*Conceptual Framework*



**Table 1**

*Variable Measurement*

| Variables | Scales | Notion | Measurement | Major Findings |
|---|---|---|---|---|
| Return on Assets | % | ROA | Net income / total Assets | Berger & Di Patti (2006) |
| Return on Equity | % | ROE | Net income / Equity Capital | Modigliani & Miller (1958) |
| Total debt ratio | % | TDR | Total debt / total Assets | Kraus & Litzenberger (1973), Myers (1977) |
| Equity to total assets ratio | % | ETA | Equity/ total Assets | Berger & Di Patti (2006) |
| Firm size | Rs | SIZE | Natural logarithm of Total assets of firms in millions | Amato & Burson (2007) |
| Liquidity ratio | % | LQ | Current assets/ Current Liabilities | Cummins & Nini (2002) |

## III. Methodology

This study has employed quantitative research approach with a descriptive and explanatoryresearch design to analyze the impact of fund financing on profitability of non-life insurance companies in Nepal. The research design is chosen to systematically describe the characteristics of relationships withfund investmentvariables and income and to analyze these relationships using statistical methods. Secondary data sources for a thorough examination include the financial statements and annual reports of Nepalese non-life insurance enterprises during the last decade. Companies' websites, connected financial databases, the Nepal Stock Exchange, the Insurance Board of Nepal and the Nepal Rastra Bank are among the several places the content originates from. These ratios are considered primary: TDR, ETA, LQ and SIZE. Two measures of profitability are ROE and ROA which have been enumerated using descriptive statistics including minimum, maximum, mean and standard deviation. The theories and the results on the influence of financial firm factors on profitability have been examined employing inferential statistical techniques.SPSS software has been used for data analysis. Summary statistics from descriptive statistics show central tendency and dispersion for all variables. Pearson correlation coefficients compare profitability and capital structure. Multiple regression study determined how capital structure parameters (TDR, ETA, LQ and SIZE) affect profitability (ROA, ROE).The models specified as:

$$ROA = \alpha + \beta_1(TDR) + \beta_2(ETA) + \beta_3(LQ) + \beta_4(SIZE) + \varepsilon_t$$

$$ROE = \alpha + \beta_1(TDR) + \beta_2(ETA) + \beta_3(LQ) + \beta_4(SIZE) + \varepsilon_t$$

Diagnostic tests, including multicollinearity (VIF), heteroscedasticity (Breusch-Pagan test) and autocorrelation (Durbin-Watson test), will ensure the validity of the regression models (Field, 2013; Hair et al., 2014).

## IV. Results and Discussion

Maximizing financial performance depends on knowing how capital structure influences profitability of non-life insurance companies. The mix of debt, equity, and liquidity in capital structure choices greatly affects a company's profitability measures like ROA and ROE.

**Table 2**

*Descriptive Statistics*

|  | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| ROE | -4.56 | 35 | 9.133 | 6.852 |
| ROA | -2 | 13.12 | 4.475 | 2.972 |
| ETA | 23.4 | 79.46 | 48.180 | 12.377 |
| TDR | 20.54 | 76.60 | 51.821 | 12.377 |
| LQ | 0.24 | 980.69 | 133.918 | 212.13 |
| TA | 981497388 | 16445789309 | 6025409603 | 3102917199 |

Table 2 shows the study's descriptive statistics for the investigated variables. For every variable there are presented the lowest, maximum, mean, and standard deviation values. ROE, with a mean of 9.134 and a standard deviation of 6.852, fell between -4.56 and 35.ROAhad a minimum of -2, a maximum of 13.12, a mean of 4.475, and a standard deviation of 2.972. TheETAratio ranged from 23.4 to 79.46, with a mean of 48.180 and a standard deviation of 12.377. The TDR exhibited a minimum of 20.54, a maximum of 76.60, a mean of 51.821, and a standard deviation of 12.377. LQ showed a wide range, with a minimum of 0.24, a maximum of 980.69, a mean of 133.918, and a standard deviation of 212.13.TA ranged from 981,497,488 to 16,445,789 with a mean of 6,025,509 and a standard deviation of 3,102,917,199. This information summarizes the financial performance and structure of the sample companies by showing the fluctuations among the elements.

**Table 3**

*Correlations Analysis*

|         | LnROE    | LnROA    | LnTA     | LnLQ     | LnTDR    | LnETA |
|---------|----------|----------|----------|----------|----------|-------|
| LnROE   | 1        |          |          |          |          |       |
| LnROA   | .434**   | 1        |          |          |          |       |
| LnTA    | .272*    | .864**   | 1        |          |          |       |
| LnLR    | -.388**  | -0.128   | -0.002   | 1        |          |       |
| LnDR    | -.406**  | -.746**  | -.711**  | 0.13     | 1        |       |
| LnER    | -0.16    | -.762**  | -.810**  | -0.184   | .580**   | 1     |

** $P<0.01$, * $p<0.05$

The correlation analysis may help to better understand the link between capital structure and return on assets for Nepalese non-life insurance businesses. The table indicates a significant positive association between total assets and ROA (r = 0.864, p <.01). Profitability is driven by economies of scale and resource efficiency, since larger firms tend to have superior asset returns. However, DR and ETA had significant negative associations with ROA (r = -0.746, p < .01, and r = -0.762, p <.01, respectively). Greater debt and equity levels may impair asset returns owing to greater finance expenses and equity capital underutilization. LQ has a poor and non-significant association with ROA (r = -0.128, p >.05), suggesting that liquidity management may not be crucial to non-life insurance businesses' asset returns.

The research shows a modest positive connection between ROE and TA (r = 0.272, p <.05), indicating that bigger businesses may benefit from scale advantages in boosting equity returns. LQ and TDR had moderate negative associations with ROE (r = -0.388, p < .01, and r = -0.406, p <.01, respectively). This implies that having a large amount of easily accessible funds and using borrowed money to invest might potentially hinder the profitability of stocks by decreasing investments in profitable businesses and increasing the costs associated with financing. The correlation between ETA and ROE is weak (r = -0.160, p >.05), suggesting that changes in equity levels have little impact on equity returns in this sector. There is a moderately favorable link between ROE and ROA, as suggested by the correlation index (r = 0.434, p <.01). This implies that businesses that have greater returns on their assets also typically have higher returns on their equity.

**Table 4**

*Coefficients*

| Model | Unstandardized | | Standardized | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | t-value | Sig. | Tolerance | VIF |
| 1  (Constant) | 2.65 | 2.489 | | 1.065 | 0.292 | | |
| LnTDR | -0.141 | 0.069 | -0.339 | -2.045 | 0.046 | 0.476 | 2.101 |
| LnETA | -0.003 | 0.085 | -0.007 | -0.033 | 0.974 | 0.307 | 3.256 |
| LnLQ | -0.147 | 0.052 | -0.345 | -2.806 | 0.007 | 0.865 | 1.157 |
| LnTA | 0.011 | 0.096 | 0.025 | 0.11 | 0.913 | 0.251 | 3.978 |
| $R^2$= .28 | F = 5.337 | P >.01 | | | | | |

Dependent Variable: ROE

**Tale 5**

*Hypothesis Test*

| | Statement | Report | Remarks |
|---|---|---|---|
| $H_{1a}$ | TDR significantly impacts on ROE | β = -0.339, t = - 2.045, P>.05 | Supported |
| $H_{2a}$ | ETA significantly impacts on ROE | β = -0.007, t = - 0.033, P = .974 | Not Supported |
| $H_{3a}$ | LQ significantly impacts on ROE | β = -0.345, t = - 2.806, P>.01 | Supported |
| $H_{4a}$ | TA significantly impacts on ROE | β = -0.025, t = - 0.11, P = .913 | Not Supported |

The findings shed light on how different independent factors affect the Return on Equity (ROE) for Nepalese non-life insurance businesses. Table 4 shows that the model has a decent fit, explaining around 28% of the variation in ROE ($R^2$ = 0.28). The model is statistically significant (F = 5.337, p < 0.001), which confirms that the independent variables collectively significantly impact ROE.The LQ has a negative impact on ROE (B = -0.147, p =.007), indicating a relationship between higher LQ and lower ROE. This suggests that if strong liquidity is maintained, investing less in assets with higher yields may result in lower profitability.

ROE is negatively impacted by the TDR (B = -0.141, p =.046), suggesting an adverse association between debt and ROE. This could be explained when debt levels rise, so do the related financial pressures. Total assets do influence ROE in a positive but insignificant way (B = 0.011, p = .913), suggesting that total assets, as a metric of business size, do not have a substantial effect on equity returns.According to the model, ROE is significantly affected by liquidity and debt ratios, with greater ratios resulting in poorer profitability. In Nepalese non-life insurance sector, ROE is unaffected by equity ratio or total assets.

**Table 6**

*Coefficients*

| Model | | Unstandardized | | Standardized | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 2 | (Constant) | -4.825 | 2.264 | | -2.132 | .038 | | |
| | LnTDR | -0.167 | 0.063 | -0.227 | -2.664 | 0.01 | .476 | 2.101 |
| | LnETA | -0.188 | 0.078 | -0.256 | -2.415 | .019 | .307 | 3.256 |
| | LnLQ | -0.109 | 0.048 | -0.144 | -2.281 | .026 | .865 | 1.157 |
| | LnTA | 0.368 | 0.087 | 0.494 | 4.218 | .000 | .251 | 3.978 |
| | $R^2$= .81 | F = 58.618 | P >.001 | | | | | |

Dependent Variable: ROA

**Hypotheses Test**

**Table 7**

*Hypotheses Test*

| | Statement | Report | Remarks |
|---|---|---|---|
| $H_{1b}$ | TDR significantly impacts on ROA | $\beta$ = -0.227, t = - 2.664, P>.05 | Supported |
| $H_{2b}$ | ETA significantly impacts on ROA | $\beta$ = -0.256, t = - 2.415, P >.05 | Supported |
| $H_{3b}$ | LQ significantly impacts on ROA | $\beta$ = -0.144, t = - 2.281, P>.05 | Supported |
| $H_{4b}$ | TA significantly impacts on ROA | $\beta$ = 0.494, t = 4.218, P > .001 | Supported |

Another regression study reveals many significant variables that impact theROA of Nepalese non-life insurance businesses. According to the model report, independent variables may explain 81% of the variance in ROA. Model validity is confirmed by ANOVA, which yields a significant F-value (F = 58.618, p <.001). The coefficients table shows that larger LQ reduce asset returns (B = -0.109, p = .026) owing to keeping more liquid but less lucrative assets.

The TDR also adversely impacts ROA (B = -0.167, p = .01), showing that greater debt levels reduce ROA due to higher debt financing costs. ETA also negatively affects ROA (B = -0.188, p = .019), suggesting that greater equity ratios may reduce asset returns owing to inefficient equity use. Positive correlation between TA and ROA (B = 0.368, p <.001) suggests that bigger enterprises get greater returns on assets due to economies of scale and better resource use. These results emphasize the need of capital structure management in Nepalese non-life insurance business for profitability.

The statistical analysis of the residuals using Cook's Distance for the ROA and ROE equations shows that each data point has a little impact on the regression models. With a Cook's Distance for ROA ranging from 0 to 0.152, we can see that no one observation significantly affects the regression outcomes. Furthermore, ROE has a Cook's Distance between 0 and 0.074, indicating that the observations have an even less impact than ROA.

The robustness findings, unaffected by any particular data point, is shown by the low values of Cook's Distance in both models. ROA and ROE collinearity data suggest multicollinearity, especially when the independent variables have lower tolerance values (0.251) and greater VIF values (up to 3.978).

**Table 8**

*Residual Diagnosis analysis*

|  | ROA | | ROE | |
| --- | --- | --- | --- | --- |
|  | Min | Max | Min | Max |
| Stud. Deleted Residual | -3.014 | 1.762 | -2.103 | 1.821 |
| Cook's Distance | 0 | 0.152 | 0 | 0.074 |
| Centered Leverage Value | 0.002 | 0.392 | 0.002 | 0.392 |

This study confirmed prior findings on capital structure and non-life insurance company's profits. TheLQis positively and statistically significant associated with ROA but not ROE, consistent with Dogan (2013), Nazir and Afza (2009), and Wang (2002). Research by Yustrianthe and Mahmudah (2021), Mboi et al. (2018), and Murugesu (2013) has shown that a higher TDR is negatively correlated with ROE and ROA. As to the findings of Rehman, Khan and Khokhar (2015), Khan (2012) and Samiloglu et al. (2017), there is a negative association between the ETA and ROA, and a weak negative correlation exists between the equity ratio and ROE. The total assets (TA) have a positive and statistically significant effect on ROA, but a positive but insignificant effect on ROE (Adeoye & Olojede, 2019; Sitorus et al., 2021; Zaman, 2021). The data demonstrates that although a greater asset base does contribute to higher asset returns, the non-life insurance sector in Nepal must exercise caution in managing their debt and equity in order to sustain profitability.

## V. Conclusion and Implication

The paper examined how capital structure affects the profitability of non-life insurance firms in Nepal using ROA and ROE. The findings obviously show that factors of the capital structure such as the debt ratio and liquidity ratio affect profitability. More debt reduces returns as the debt ratio has negative relation to ROA and ROE. Financial expenses rise and profitability suffers if debt becomes too high. In a similar vein, ROE was relatively little affected by the liquidity ratio, whereas ROA was greatly affected. This demonstrates that more liquidity may mitigate risks, but it may also discourage investment in high-yield assets, leading to less-than-ideal returns. The equity ratio had a strong negative association with ROA and an insignificant negative relationship with ROE, highlighting the complexity of equity use in return generation. ROA decline shows that an excessive equity basis may cause capital underutilization and asset profitability. However, total assets had a positive but minor influence on ROE and a strong positive effect on ROA, demonstrating the relevance of scale in asset returns. Profitability increases with economies of scale and resource allocation for larger enterprises.

Considering financial planning and educated decision-making have such a significant influence on profitability indicators, they are necessary for improving company performance. Improving the financial well-being, development, and market and financial resilience of non-life insurance firms may be achieved via optimizing their capital structure.

Findings from the research stress the need of strategic capital structure management for all professions, but especially insurance company CEOs and CFOs.  Given that excessive debt levels hurt profitability, organizations should avoid overleveraging. Financial managers

must critically assess debt levels and optimize debt-to-equity ratios to reduce expenses and boost profits. Even while a high liquidity ratio is necessary for risk management, it need to be tempered with assets that provide a return. Strong liquidity management techniques should be used by managers in order to meet immediate obligations without jeopardizing long-term profitability. Both the capital adequacy requirements and the recommendations for prudent financial management are subject to modification. Businesses who manage their capital structure well and maintain their financial stability should also be rewarded by policymakers. After the study, researchers may investigate a variety of avenues.

Future studies should look at how capital structure affects the profitability of both life and non-life insurance. Scholars need to examine how firms respond to changes in the market and in regulations by adjusting their debt, equity, and liquidity. Research using a longitudinal design may help to clarify how decisions about capital structure impact business success.

This study investigates the impact of capital structure on the profitability of non-life insurance companies in Nepal. The study assists industry finance managers in enhancing their performance by focusing on debt, equity, and liquidity ratios. The implications for practitioners, regulators, and academics underscore the need of maintaining a well-balanced and strategic capital structure in order to enhance profitability and foster growth in the fiercely competitive insurance industry.

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