

DETERMINANT OF PRICE EARNING MULTIPLE IN SIR LANKAN LISTED COMPANIES

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Abstract: *This study involves a determinant of the price earning multiple of listed companies in Sri Lanka. The sample of the study is composed of 30 companies listed on the Colombo Stock Exchange from 2007-2011. The results reported in the empirical study for sample companies show that the ROE has a negative impact on P/E multiple and the dividend payout has a positive impact on P/E multiple amongst listed companies in Sri Lanka. Hence it is not advisable to use the market capitalization variable to determinant the P/E multiple in Sri Lanka.*

Keywords: Price earning multiple, Payout Ratio, Market Capitalization

INTRODUCTION

The success or the long run survival of an organization is highly depend on it's posses of core competencies and ability to transfer them into a competitive advantage. Most researchers have reported the possibility of creating competitive advantage with the use of share capital in their studies. The importance of the share capital for business organizations has been increased during the past few decades. The reason behind may be the inability of imitating the core competencies which created through share capital and its capability of increasing the financial and market position of the organizations. With the increased importance of the abilities of the share capital the word, "Price earning" emerged and use in the context of the business organizations. The price/earnings ratio is widely used, particularly by practitioners, as a measure of relative stock valuation. It has been used both in cross-sectional and time series comparisons. The P/E ratio of a broad index of stocks over time reflects changes in various economic conditions and investor perceptions of future returns. This study examines the factors that plausibly explain movements in this ratio. Comparisons of P/E ratios over time are meaningless unless changes in the underlying fundamental determinants of P/E are taken into account. A high absolute P/E ratio (compared to historical averages) is often cited as an indicator of overvaluation. However, if the theoretical determinants of P/E are substantially different than historical averages, the high P/E ratio may be justified based on changes in the fundamental factors that affect P/E. For example, if interest rates are low, and estimated future growth rates are high compared to historical averages, the P/E should be correspondingly higher. This study attempts to be parsimonious in the number of explanatory variables used. As is well known, arbitrarily introducing explanatory variables can produce spurious results. This study only employs variables that can be justified on economic grounds.

Research Problem

When considering about the determinant of the price earning multiple of listed companies, it has some impacts on the performance. Therefore the price earning multiple of the companies has the influence on the performance of listed companies. Further, in many countries, many investors or public don't have the perfect knowledge and understandings when dealing with the investment activities. Therefore, it should be made clear understanding about the determinant of the price earning multiple of listed companies. On this basic the research problem of this study, is which determinant has the higher influence on price earning multiple of the Listed Company's in Sri Lanka.

Objective of the Study

The research objective answer the question, what will be the result of this research, or what can be learned from this research? The desired result or objectives of this study are:

- To empirically examine determinants of the price earning multiple of the listed companies on the Colombo stock exchange.
- To identify the relationship between Return on equity and Price earning multiple
- To identify the relationship between the Dividend growth and Price earning multiple.
- To find the determinant which have a higher influence on Price earning multiple?

Significant of the Study

This study aims to identify the determinant of the price earning multiple. The results of this study are deemed to benefit the following primary users. External investors and shareholders who will be able to know the main variables that affect the price earning and to observe firm's performance before making the decisions of whether or not to buy or sell the stock. Professional managers who can consider these determinants of price earning to establish the optimal financing vehicle that helps achieve the companies' and firm's objectives. Lenders who may find the results in evaluating the firm's performance before giving loans with particular emphasis on the level of risk involved. Finally, academicians who may have an insight into the management thinking and their perception of the capital structure and its major, determinants. Moreover, the findings of this research lead potential researchers' further investigation.

REVIEW OF EMPERICAL STUDIES

Perhaps the simplest attempt to model the determinants of P/E is the so-called Fed Model (although this model has not been endorsed by the Federal Reserve). This model indicates that the fair value of the market P/E (calculated using 12-month forward earnings) is the reciprocal of the ten-year Treasury bond yield (Yardeni, 2003). The logic behind this model is that stocks and bonds are competing assets and therefore a reduction in the bond yield should be associated with reductions in stock earnings yields. Asness (2003) argues that the

Fed model is theoretically flawed because it compares a real number (E/P) to a nominal number (the bond yield). Thus, the model is accurate only if investors consistently confuse real and nominal interest rates. Yardeni (2003) expands the basic Fed Model to include variables that differentiate stocks from bonds, primarily a risk measure and an expected growth measure. In the revised Yardeni model:

$$E/P = CBY - (d \times LTEG) (1),$$

Where *CBY* is the current Moody's A-rated corporate bond yield and *LTEG* is the consensus 5-year earnings growth forecast for the market index. The variable *d* is estimated from past data. Historically, *d* has had an average value of .13 over the period from 1985 to 2003. The primary appeal of the Fed and Yardeni models lies in their simplicity; however both of these models exclude variables that should, at least in theory, affect the P/E ratio. Several studies examine the impact of inflation on E/P. Jain and Rosett (2001) argue that in the Gordon model (1962), there is no role for inflation, because if the required return and growth are represented in nominal terms, inflation effects cancel out.

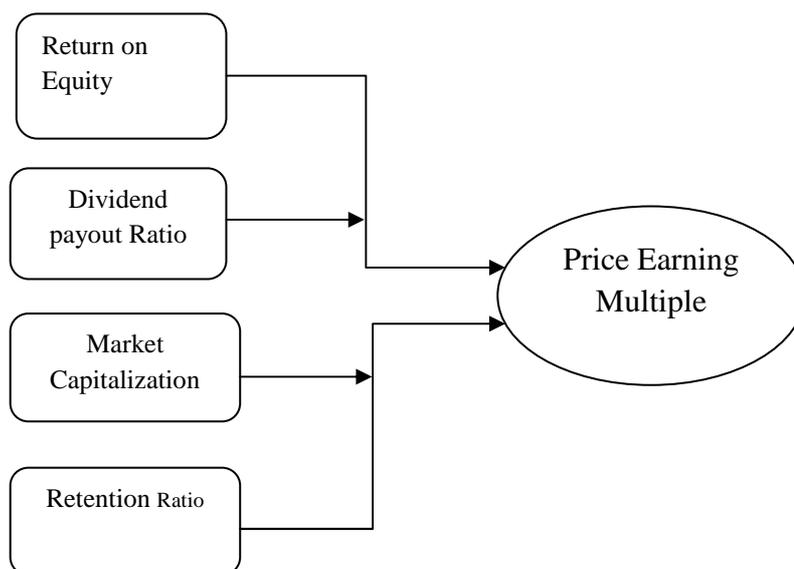
However, most empirical studies find a positive relation between inflation and E/P (Modigliani and Cohn, 1979; Reilly, Griggs and Wong, 1983; Kane, Marcus and Noh, 1996). Jain and Rosett (2001) examine the period from 1952 to 2000 and find that although the association between expected inflation and the S&P500 E/P ratio is significantly positive over the entire period, the association is not consistent across sub periods of the data, and may therefore be spurious in nature. Jain and Rosett (2001) include an index of consumer sentiment in their model, along with expected inflation, the real interest rate, expected growth in real GDP, the slope of the treasury yield curve, and the default risk spread. Of the variables used in the multiple regression analysis, only expected inflation and expected growth in real GDP are significant for the sample period from 1952 to 2000. Jain and Rosett conclude that variation in E/P across time is not easily explainable by a consistent set of macroeconomic variables, and find that consumer sentiment does not appear to be a significant factor in determining E/P. Reinganum (1983) shows that the P/E ratio effect is a result of a strong relationship between P/E ratio and firm size, and that the effect almost absent when returns are controlled for firm size. Basu (1983) further explores this relationship and reports that while the P/E ratio effect is not entirely independent of the size effect, the effect of these two variables is more complicated than expected. Keown et al. (1987) conclude that most authors opine that the P/E ratio effect and the size effect are caused by a misspecification of CAPM rather than market inefficiency. Works by Goff (1979) convince many investment advisors to recommend investing in low P/E ratios. Keown, Pinkerton and Chen (1987) argue that such advice is incomplete because investing in securities within some P/E ratios range will lead to "significant extra-market covariation or group effects among the selected securities thus, preventing the elimination of unsystematic risk that is typically achieved by diversification."

It has been shown that if investors limit their common stock selections to low or high P/E ratio firms, they expose themselves to abnormally high levels of unsystematic risk regardless of the size of the portfolio. For non-U.S. evidence, Aggarwal, Hiraki and Rao (1990) demonstrate the P/E effect for Japanese equities. The PE effect has defied rational explanation. Ball (1978), while conceding the apparent existence of such effects, considered

various possible explanations for this anomaly, including systematic experimental error, transaction and processing costs, and a failure of Sharpe's two-parameter CAPM model. Fuller, Huberts and Levinson (1993) re-examined Ball's (1978) argument by using a comprehensive multi-factor model that allowed for systematic risk (beta), 55 industry classification factors and 13 other explanatory factors for 'risk' such as earnings variability, leverage and foreign income. They again found higher returns for low P/E stocks from 1973–1990, but the factors included in the model did not account for the superior low P/E returns. Jaffe and Mandelker (1976) claim that a negative relationship between stock returns and inflation suggest that the stock market is not even a partial hedge against inflation. A negative relationship implies that investors whose real wealth is diminished by inflation can expect this effect to be compounded by a lower than average return on the stock market. Nichols (1976) advocates the study of stock returns and inflation relationship for high inflation countries. Gultekin (1983) conduct an international investigation of the Fisher effect for stock returns. They find ample evidence of a relationship between stock returns and inflation. Cagan (1974) is able to find a positive relationship between common stock returns and inflation for several countries between 1939 and 1969. Benartzi et al (1997) study U.S firm and report that the current dividend increases provide little if any information about future earning changers. Their interpretation of the evidence that the "change in dividend tell us something about what has happen ...if there is any information contain in the current dividend announcement , is it that the concurrent change in earning information.

For instance, Kane, Lee and Marcus (1984) find both current dividends and current earning conveys information when they are announced simultaneously. Penman (1983) finds however that the dividend changes carry little information once one controls for management future earning forecast.

3.0 Conceptualization



(Figure 3.1 Conceptualization)

Research Hypotheses

According to the objectives, and taking into account the previous research, the research hypotheses that this study investigates are:

H₁: There is a positive relationship between ROE and P/E of the firm.

H₂: There is a positive relationship between Dividend payout Ratio and P/E of the firm.

H₃: There is a negative relationship between Market Capitalization and P/E of the firm.

H₄: There is a positive relationship between Retention Ratio and P/E of the firm.

3.3 Operationalization

Independent variables/ Explanatory variables	
ROE	Earnings after tax and interest / Equity
Dividend Payout	Dividend per share divided by earnings per share.
Market Capitalization	Aggregate value of a company or stock.
Retention Ratio	Proportion of net income that is not paid out as dividends.
Dependent variables	
Price Earning Multiple	Multiples of earnings for which the stock is selling.

(Table 3.1 Operationalization)

Data description and Sample

Data collection

According to Jankowicz (2000), a research method is a systematic and orderly approach to the collection and analysis of data. What is collected is data, which is raw, specific, undigested and therefore largely meaningless. In this study, the data will be collected by using the secondary sources,

Sample selection

According to Jankowicz (2000), sampling can be defined as the deliberate choice of a number of people, the sample, who are to provide with data from which the researcher will draw conclusion about some larger group, and the population, whom these people represent. This study utilizes the listed companies in Sri Lanka as its population. As the sampling methods differ in the type of study to be conducted, the research technique applied to get the sample of this study is the non – random sampling. The sample of this study composed of fifteen companies listed on the Colombo Stock Exchange.

Method of Analysis

In this study, different methods of statistical processing have been applied. SPSS (version 13.0) software programme and Minitab exclusively applicable to statistical processing is used for processing the data. Statistical analysis, In addition to the usual descriptive statistical methods such as means, medians and standard deviation are used to analyze the data.

Explanation of Regression Statistics

Price Earning Multiple

	R – Square	P – Value	Relationship
ROE	0.0017%	-0.047	Negatively related
DIVIDEND PAYOUT	59.2%	.850	Positively
RETENTION RATIO	42.1%	-0.849	Negatively related
MARKET CAPITALIZATION	0.00%	-0.092	Negatively related

Table 4.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.851 ^a	.724	.680	22.84092

a. Predictors: (Constant), Retention Ratio, ROE, Market capitalization, Dividend payout

Table 4.2

Here 72.4% of the independent variables such as ROE, Dividend payout ratio, Retention ratio and Market capitalization influence the Price earning multiple. Another 27.6 percentage is influenced by other determinants of price earning multiple.

The Multiple Regression equation is

$$PE = -34.4 + 59.2 DPR - 0.0017 ROE + 42.1 Reten + 0.00 Market cap$$

Based on this analysis dividend payout and retention ratios are determinant the P/E and there is no relationship between P/E and Market capitalization.

The Linear Regression equation is

$$PE = 9.03 + 17.0 \text{ Dividend payout ratio}$$

PE= 25.8-17.0 Retention ratio

PE= 52.3-2.20 ROE

PE=25.3-0.0000 Market Capitalization

Based on the multiple regression dividend payout ratio and retention ratio determine the

P/E multiple in Sri Lanka.

Dividend payout ratio and P/E multiple

Under the Dividend payout ratio, Liner Regression analysis scatter diagram is following. Here price earning multiple determinants depending 59.2% of Price earning multiple. So the balance is determining by the other factors. So under the price earning model company's Dividend payout changes affected a major potion on P/E. Here positive relationship between Dividend payout and PE.

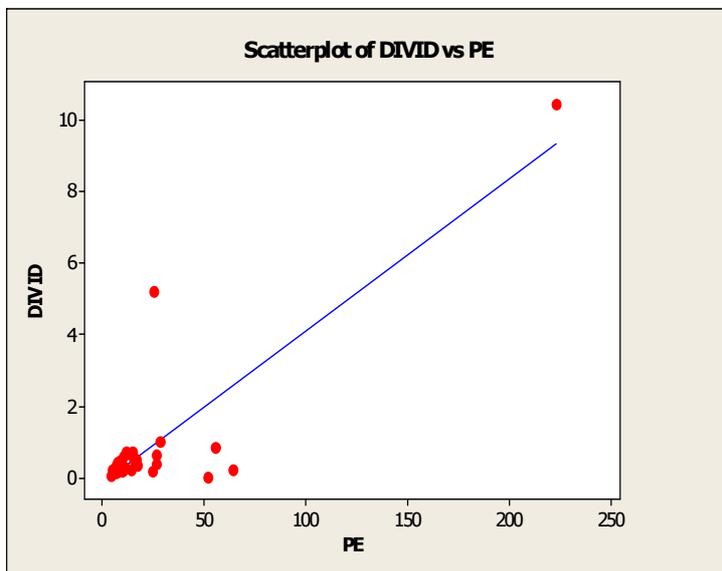


Figure 4.1

Under the ROE, Liner Regression analysis scatter diagram is following. Here price earning multiple determinants depending 0.0017% of Price earning multiple. So the balance is determining by the other factors. So under the price earning model company's ROE changes not affected on P/E. Here negative relationship between ROE and PE.

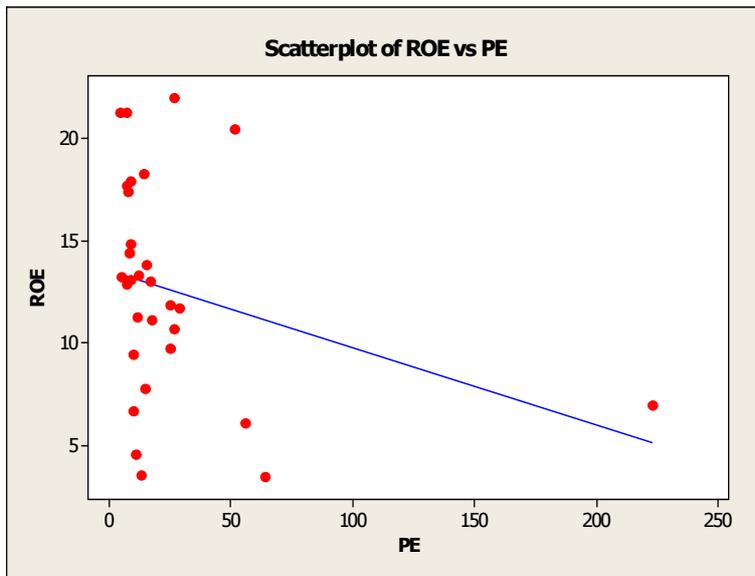


Figure 4.2

Under the Retention ratio, Liner Regression analysis scatter diagram is following. Here price earning multiple determinants depending 42.1% of Price earning multiple. So the balance is determining by the other factors. So under the price earning model company's Retention changes affected on P/E. Here positive relationship between Retention ratio and PE.

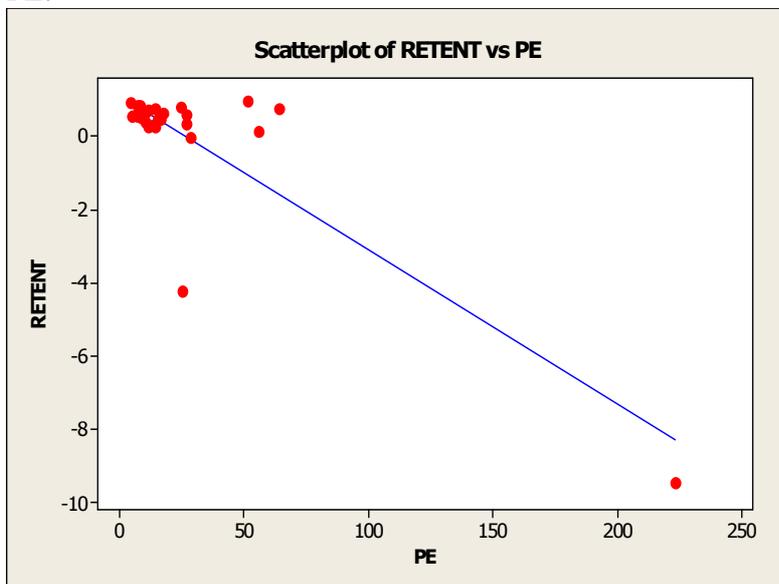


Figure 4.3

Under the Market capitalization, Liner Regression analysis scatter diagram is following. Here price earning multiple determinants depending 0.00% of Price earning multiple. So the P/E is determining by the other factors. So under the price earning model company's Market Capitalization changes not affected on P/E. Here negative relationship between Market Capitalization and PE.

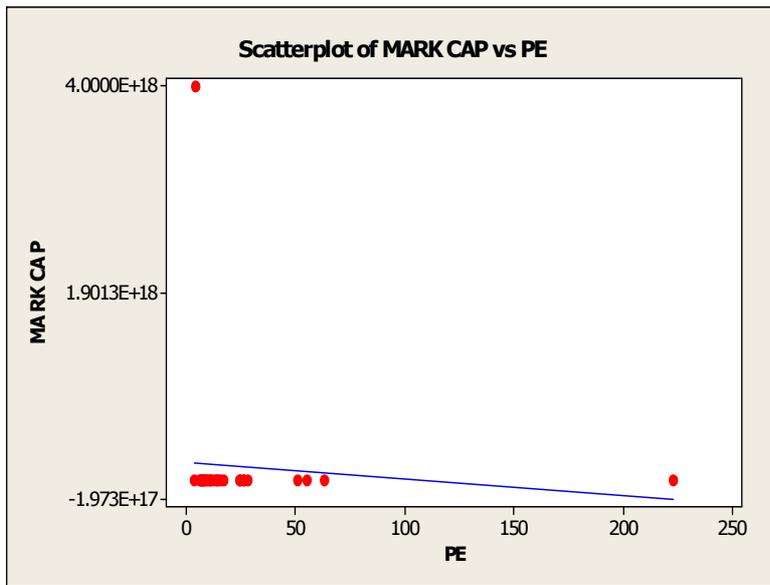


Figure 4.4

Explanation of correlation statistics

Price Earning Multiple

Regression statistics		R – Square	
		0.724	
ANOVA	F – Value	Sig	
	16.391	0.000	
	Coefficient	P – Value	t – Stat
ROE	-0.002	-0.047	-0.110
Dividend Payout Ratio	32.010	.850	0.278
Retention Ratio	15.057	-0.849	0.131
Market Capitalization	-1.3	-0.92	-0.176

Table 4.3

Based on the correlation matrix, it indicates a negative correlation between return on equity, retention ratio and the market capitalization. Further there is high significance in the negative relationship at the level of 1% significant level. The lowest p-value obtained when regressing market capitalization. The correlation matrixes show a positive sign in the correlation between the dividend payout and P/E,. Further, it is insignificant at the significant level is 0.01 and the value is 0.000. This leads to conclude that the Price Earning Multiple determine by dividend payout ratio and retention ratio.

Correlation matrix of regression variables

Variable	PE	Di.Payout	ROE	Retention	Market Cap
yout	850(**)				
	-0.047	-0.044			
tion	0.849(**)	-1.00(**)			
et Cap	.092	-0.63	0.034	0.046	1

Table 4.4

** Correlation is significant at the 0.01 level (2-tailed)

** Correlation is significant at the 0.05 level (2-tailed)

The results indicate that there is a direct and positive relationship between P/E and dividend payout ($r=0.00$). This support the hypothesis that there is a positive relationship between tangibility and leverage. However, the estimated coefficient on dividend payout is statistically significant. ($P>0.01$).

FINDINGS OF THE STUDY

This study demonstrates the determinants of the price earning multiple. These P/E of shares need to be viewed and analyzed separately. This study has examined empirically the relationship between the P/E and its determinants using a sample of listed companies in Sri Lanka. The findings of this study are consistent with those of prior studies.

According to the empirical results of this study, the researcher can drive the conclusions regarding the determinants of the price earning multiple. Based on this study documents a negative relationship with the P/E and ROE a positive relationship with the P/E and

dividend payout ratio. This can be explained more detailed as follows, when we take into consideration, each variable individually.

In the case of Return On Equity (ROE), have a negative relationship and insignificant. Therefore, the ROE hasn't any significant impact on determinant of P/E in Sri Lanka. In the case this is in the separate regressions found a significant positive relationship between Dividend payout and P/E.

Previous time series studies generally provide empirical support for the fundamental determinants of E/P suggested by the Gordon model. However, earlier studies ignore the effect of changes in taxes on E/P, and with the exception of Jain and Rosett, ignore the impact of changes in beliefs on E/P.

Basu (1977) argues that low P/E ratio stocks earn higher average returns than those with high P/E ratio. He also found that as low P/E ratios portfolios earn higher returns, those returns were not associated with higher level of systematic risk. Breen (1978) and Dreman (1980a, 1980b and 1979) support Basu (1977) findings.

In the concluding remarks section, it is summarized that Sri Lankan listed firms with dispersed ownership structure are associated with higher risk, implying higher market valuation, but worse performance when it comes to ROA and ROE. On the contrary, firms with a high domestic owner in general have lower firm-specific risk. This implies lower valuation, but better performance when it comes to ROA and ROE.

Testing of Hypotheses

As stated in the 3rd chapter of this study, the hypotheses of this study are,

H.I: "There is a positive relationship between the dividend payout and price earning multiple".

Based on the empirical results of this study, this hypothesis come true .Because in this study the empirical results shows that there is a significant positive relationship between the Dividend payout and price earning multiple. These findings are consistent with those of prior studies; Boardman, Shapiro, and Vining (1997) use a sample of Canadian firms and find significant relationship of P/E. Contrary to this, Chibber and Majumdar (1998: 1999), find that has a positive and significant relationship between P/E and dividend payout.

H.II: "There is a negative relationship between the ROE and Price earning multiple".

Based on the empirical results of this study, this hypothesis come false .Because in this study the empirical results shows that there is a significant positive relationship between the ROE and Price earning multiple. Finally, although this study doesn't directly measure the other various P/E variables on non-financial measures of performance in this study, several studies have documented a significant positive influence of Price earning multiple.

Suggestions for further research

During the course of this study several ideas and potential research areas have identified. The purpose of this section is to serve as a source of inspiration for further researchers who

want to write research papers within this area of work. In this manner the followings are the suggestions for further researches.

- One idea is to separate companies according to size.
- Another aspect would be to use other performance measures. This study has utilized only standard forms of performance measures. A more precise measure of performance would for example be EVA that shows the economic value added.
- When it comes to the measures for ownership structure this study has only applied quantitative data for possessed capital by different owners. It would be interesting to in a more qualitative way to investigate managers' and owners' direct involvement in managing the firm and separate out the effect of active and more passive owners.
- Another research area that could be extended is to test the impact of ownership structure on firm performance to the non-listed, relatively smaller turnover sized firms.

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