

1 **Assessing the Intrinsic Value of Construction Stocks: An** 2 **Empirical Evidence from the Price Earning Models**

3 Muhamad Saiful Alizan Nordin¹, Norbaya Ab Rahim¹ and Hamimah Adnan¹

4 ¹Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA,
5 40450 Shah Alam, Selangor, Malaysia
6 saifulalizan@gmail.com

7 **Abstract.** The encouraging performance of Malaysian construction industry
8 requires a holistic understanding of the intrinsic values in order to practically
9 invest in this sector. The paper aims to assess the intrinsic values of Malaysian
10 construction stocks using price earning-valuation models. Quantitative content
11 analysis has been employed to the top 20 construction companies based on total
12 market capitalisation identified as Malaysian Construction Company (MCC) 1 to
13 MCC20. Based on the data derived from the Bursa Malaysia, annual reports and
14 stock-related websites, the intrinsic value of the construction stock is assessed
15 using two fundamental methods of valuation comprising Price Earnings Multiple
16 and Relative Price Earnings. The results suggested that there is a positive
17 consistency of intrinsic values across two methods of valuation where 11 MCCs
18 were recorded as undervalued stocks, 4 MCCs recorded as overvalued and 2
19 MCCs recorded at fairly valued in relation to its stock opening prices. Only 3
20 stocks recorded inconsistent findings where the Relative P/E were unable to
21 effectively countercheck the intrinsic values derived from P/E Multiple. Overall,
22 the results literally suggest that the 20 MCCs are lies within the semi-strong form
23 of market efficiency. This research is expected to provide preliminary evidence
24 on the intrinsic values of construction stock in relation to the existing market
25 efficiency.

26 **Keywords:** Construction Stock, Intrinsic Values, Price Earning Models.

27 **1 Introduction**

28 The construction industry is one of the preferred sectors among stock investors as its
29 encouraging investment performance is backed by the development activities by
30 numerous construction companies. Generally, construction companies carry out their
31 development activities through the acquisition of land banks in potential areas to be
32 developed with various construction projects according to the needs and the demand at
33 the respective locality. The construction activities entail public project which focus on
34 infrastructure, institutional and affordable housing as well as private projects that
35 covers all property sectors. One of the options can be taken by the construction
36 companies is to list as a public listed company which legally allow them to issues share
37 in the market.

38 In order to encourage public to invest in their shares, the company's performance
39 needs to be scrutinised. The variation and volatility in the construction sectors are
40 largely driven by its underlying performance of the previous, existing and proposed
41 development. In addition, the construction-related research and development (R&D) in
42 the context of property market research, consumers' preference and construction
43 products' quality play an important role. According to Garcia and Oliveira [1], the
44 company that emphasising the R&D will have a rapid growth of development and
45 earnings than other companies in the market. The establishment of construction stocks
46 allows public to indirectly participate in the national construction industry even with
47 the small initial cost of capital.

48 Numerous studies pertaining to the construction and other stock sectors are related
49 to the effects of the stock prices in respond to the macro and micro-economic factors,
50 risk and returns structures, stocks management as well as portfolio diversification for
51 example by Hiang at al. [2], Zull Kepili and Masron [3], Kan [4] and Ung et al. [5].
52 Other studies in identifying the effects of taxation on Malaysian stock market index
53 volatility, Haron and Ayojimi [6] found that the volatility of the Malaysian stock market
54 index is persistent during the GST announcement and highly persistent after the
55 implementation. The study however generalise all market sectors. Another example
56 from Indonesia, Simbolon and Purwanto [7] found that interest rate, inflation rate,
57 exchange rate, and GDP growth rate, as composite variables, have a significant
58 influence on real estate and property companies' stock price.

59 This study however, present the application of fundamental valuation particularly in
60 valuing the construction stocks. It served as an alternative to the technical analysis of
61 the stock by focusing on the real value of the company that simultaneously minimising
62 the speculative elements in the analysis.

63 **2 Literature Review**

64 The Efficient Market Hypothesis (EMH) assumed that the stock is accurately priced by
65 the market so that the return is justified by the number of risk bears by the security. In
66 other words, investors would not be able to obtain an abnormal return as the public
67 information reflects the intrinsic value of the stock. The stock market is categorised as
68 the best investment that meets the criteria of the efficient market hypothesis. In line
69 with this feature, indices that related to the stock market has been regarded as a leading
70 indicator to predict economic performance. The market is efficient where there is a
71 large number of rational investors, relatively low transaction costs as well as relatively
72 costless and availability of timely information [8].

73 There are three levels of market efficiency starting from lowest which is weak-form,
74 semi-strong form and strong-form. According to Hadi et al. [9], the weak-form EMH
75 states that the market is efficient in such a way that price, volume information, and
76 stock price movements cannot be predicted using historical information. This weak-
77 form EMH asserts that the stock returns are time-invariant, that is, there is no
78 identifiable short-term-based pattern [8]. Therefore under this level, the higher the
79 ability of people to assess the stock information, the greater the profit they can earn.

80 However the market is not always efficient. The achievements of Warren Buffets in
81 sustaining the returns as well as strategies in acquiring a mispriced asset based on an
82 intrinsic value thus denying the principles of EMH. Besides that, the lack of long time
83 series data and infrequent trading make the valuation of the stock market quite
84 challenging especially when involving an initial public offering. For example,
85 Yamashita et al. [10] stated that the crisis in 1988 did not allow for the development of
86 the stock options in Malaysia as much as in Japan. This may be due to the slow
87 responsiveness to the stock information. In comparing the Malaysian stock with Japan,
88 Yamashita et al. [10] also reveal that the issues related to stock options in Malaysia are
89 not that big as in Japan because the amount is not large and material. However, in the
90 case of semi-strong efficiency, both fundamental analysis and technical analysis
91 enables investors to produce excess returns as the stock prices response quickly to the
92 newly available data in the market [1].

93 Stock valuers, analyst or even investors can assess relevant information via a stock
94 exchange, to see the trading prices (opening price and closing price) as well as
95 company's website or annual report to see any updates on the organisational or business
96 structure that may affect the stock performance in the market. The application of
97 intrinsic values as indicators to the stock prices would benefit investors in choosing the
98 right stock to be invested. The intrinsic value of stocks is determined by a careful
99 fundamental analysis of the historical accounting and financial data. This information
100 can be obtained freely from the published annual report, official announcements and
101 company's website. However certain information such as investment and financial plan
102 of a company is privately available where it only can be obtained through private
103 enquiries on a company.

104 According to Wang and Ahammad [11], accounting information, especially the
105 annual reports, and direct contact with company management, represent the most
106 important and most useful sources of information to financial analysts, although there
107 is a clear shift in the relative importance of these sources over time. Survey-based
108 studies on financial analysts indicate that analysts consistently emphasise the long-term
109 view over the short-term in stock evaluation and selection [11]. In investigating the
110 relationship between accounting information and stock returns of selected Indian
111 stocks, Venkates et al. [12] found that all individual accounting signals have a positive
112 correlation with future stock returns. However, the functionality of fundamental
113 analysis might differ in the different market place. In contrast, another study by Iqbal
114 et al. [13] however found that the fundamental analysis cannot predict stock returns in
115 Pakistani listed companies. This is because the market information in Pakistan is not
116 efficient as it cannot reflects the true value of the stock. By assuming the market
117 information is efficient, many models have been constantly developed and improved
118 over time in determining the intrinsic value of the stock. However, the authors only
119 discuss on two main approaches that will be used in analysing the selected share namely
120 P/E Multiple and Relative P/E. The application of these models is briefly explained in
121 the methodology section.

122 **3 Methodology**

123 Quantitative content analysis has been employed to the 20 property developers listed in
 124 Bursa Malaysia and identified in this study as Malaysian Construction Company
 125 (MCC) 1 to MCC20. The company was selected based on the highest market
 126 capitalisation and have been randomly sorted in this study. Based on the data derived
 127 from the companies' annual report, Bursa Malaysia and stock-related websites, the
 128 intrinsic value of construction stock is assessed using two fundamental methods of
 129 valuation comprising Price Earnings (P/E) Multiple and Relative P/E. The date of
 130 valuation is taken as at April 30, 2019 where data on opening prices, P/E and EPS are
 131 concurrent with the period of the study.

132 The list of top 20 Malaysian construction companies by market capitalisation are
 133 identified as S P Setia Bhd (RM8.99bn), Gamuda Bhd (RM8.64bn), IJM Corporation
 134 Bhd (RM8.51bn), Sunway Bhd (RM8.22bn), Sime Darby Property Bhd (RM7.55bn),
 135 IOI Properties Group Bhd (RM7.54bn) Malaysian Resources Corporation Bhd
 136 (RM4.53bn), UEM Sunrise Bhd (RM4.22bn), UOA Development Bhd (RM4.17bn),
 137 Eco World Development Group Bhd (RM2.72bn), Mah Sing Group Bhd (RM2.33bn),
 138 Ekovest Bhd (RM1.88bn), WCT Holdings Bhd (RM1.50bn), Matrix Concepts
 139 Holdings Bhd (RM1.45bn), Tropicana Corporation Bhd (RM1.28bn), Eastern &
 140 Oriental Bhd (RM1.27bn), LBS Bina Group Bhd (RM959.02m), Paramount
 141 Corporation Bhd (RM918.69m), KSL Holdings Bhd (RM881.88m) and YNH Property
 142 Bhd (RM878.14m).

143 **3.1 Price Earning Models**

144 The P/E is a good indicator to the financial strength of the firm. By using the simple
 145 earnings capitalisation model to investigate the association between price and earnings
 146 across profit and loss firms, Papadaki and Siougle [14] signify a negative P/E relation
 147 for the company that report losses and a positive P/E relation for the company firms
 148 that report profits. Price Earnings (P/E) Multiple is a popular technique where the
 149 company's expected EPS are multiplied by the average P/E ratio for the industry to
 150 estimate the company's share value. The methodological strength of P/E Multiple is, it
 151 is considered superior to the use of book and liquidation values since it considers
 152 expected earnings. According to Wang and Ahammad [11], analyst compares the
 153 market P/E and share price in the same industry to come out with an estimated
 154 reasonable price interval before recommendations on investment being made. If the
 155 intrinsic value of the share is higher than the share price, it implies the shares are
 156 undervalued. As mention earlier the expected earning is the main determinant under
 157 this method. The expected changes in EPS, expected returns on equity, and prospects
 158 for the relevant industry are also considered the most important variables over the long-
 159 term besides giving the greatest weight over the short term [11]. Valuation of stock
 160 using P/E Multiple can be calculated as follows;

$$161 \quad V_{P/E \text{ Multiple}} = \text{EPS} \times \bar{x} P/E_{\text{Industry}}$$

162 where $V_{P/E \text{ Multiple}}$ is intrinsic value of stock using P/E Multiple while $\bar{x} P/E_{Industry}$ is
 163 the average P/E of construction industry that can be assess as follows;

$$164 \quad \bar{x} P/E_{Industry} = [(P/E_{MCC1} + P/E_{MCC2} + P/E_{MCC3} \dots P/E_{MCC20}) / n^*]$$

165 where $P/E_{MCC1 \dots MCC20}$ refers to the P/E of each MCC and n^* , the number of the
 166 company analysed i.e. 20. Meanwhile, Relative P/E is a measure of stock performance
 167 in relation to the average performance of the market. The method suggested that \$1.00
 168 is the relative value of stock in the market. Therefore if the relative P/E is exceeded
 169 \$1.00, the stock is said to be undervalued and otherwise if it less than \$1.00. Relative
 170 P/E can be calculated as $P/E_{Stock} / \bar{x} P/E_{Industry}$ while the intrinsic value using Relative
 171 P/E can be arranged as follows;

$$172 \quad V_{Relative P/E} = P_0 + [V_{Relative} - (P/E_{Stock} / \bar{x} P/E_{Industry})]$$

173 where $V_{Relative P/E}$ is intrinsic value using Relative P/E, P_0 is the current price of stock
 174 as well as $V_{Relative}$, the relative value of stock indicated at RM1.00 per share.

175 **4 Results and Discussions**

176 Table 1 depicts the summary of intrinsic values derived from the P/E Multiple and
 177 Relative P/E. Based on the data analysed, eight companies were reported at issuing a
 178 penny stock where the opening prices are less than RM1.00 per unit (MCC4, MCC7
 179 and MCC13 to MCC17). However, these stocks mostly are in the state of undervalued
 180 and fairly valued except for MCC16 which shows an overvalued figure. The
 181 undervalued intrinsic values ranging from RM0.8830 to RM3.6998. This figure
 182 signifies the information transparency of seven penny stocks in the study. The results
 183 also reported that, by excluding MCC1, there is a positive consistency of intrinsic
 184 values across both methods of valuation as Relative P/E can serve as a countercheck
 185 method to the P/E multiple model and vice versa. These were supported by Yoo [15]
 186 where the application of simple multiple methods of valuation is likely encompassed
 187 the common and incremental information that is beneficial for the improvement of the
 188 valuation accuracy. Incremental information in this study refers to the intrinsic values
 189 derived from the second method of valuation i.e. Relative P/E.

190 The results also suggested that only two stocks i.e. MCC12 and MCC14 were
 191 recorded at fairly valued which signals transparency of information distribution. Fairly
 192 valued stock is a stock that possesses intrinsic values that is equivalent to the stock
 193 prices or having a relatively lower variance to the traded prices in the market. The
 194 variance of fairly valued stock is recorded at the range of -4.38% to -5.28% which are
 195 consistent for both methods. However for MCC9 and MCC10, even though valuation
 196 scores are inconsistency (first method recorded at overvalued, second method at fairly
 197 valued), intrinsic values only recorded at a smaller variance of -3.20% to -6.77% as
 198 well as -4.96% to -14.8% for Relative P/E and P/E Multiple respectively. These
 199 findings further support the idea of Tiwari and Singla [16] where no single procedure
 200 is conclusively precise and therefore, combined valuation model is more informative
 201 by providing better and more accurate estimations of stock values.

Table 1. Intrinsic values of selected Malaysian construction companies using P/E models

Company	Stock Opening Price	Method 1: P/E Multiple			Method 2: Relative P/E		
		EPS	$\bar{x}P/E_{Industry}$	Intrinsic Value	P/E	Relative P/E	Intrinsic Value
MCC1	1.1100	0.0178	16.81	***0.2992 [-73.04%]	-31.2	-1.8531	*3.9631 [+257.04%]
MCC2	1.3700	0.1378	16.81	*2.3163 [+69.08%]	9.95	0.5919	*1.7781 [+29.79%]
MCC3	2.2600	0.2114	16.81	*3.5535 [+57.24]	10.69	0.6359	*2.6241 [+16.11%]
MCC4	0.9250	0.0584	16.81	*0.9817 [+6.13%]	15.85	0.9429	*0.9821 [+6.17%]
MCC5	1.0600	0.0793	16.81	*1.3330 [+25.75%]	13.37	0.7954	*1.2646 [+19.30%]
MCC6	1.9200	0.2607	16.81	*4.3822 [+128.24%]	7.36	0.4378	*2.4822 [+29.28%]
MCC7	0.6150	0.0618	16.81	*1.0388 [+68.91%]	9.95	0.5919	*1.0231 [+66.35%]
MCC8	2.1200	0.2218	16.81	*3.7283 [+75.87%]	9.56	0.5687	*2.5513 [+20.34%]
MCC9	2.2700	0.1259	16.81	***2.1163 [-6.77%]	18.03	1.0726	**2.1974 [-3.20%]
MCC10	3.5000	0.1774	16.81	***2.9820 [-14.80%]	19.73	1.1737	**3.3263 [-4.96%]
MCC11	1.0300	0.0172	16.81	***0.2891 [-71.93%]	59.95	3.5664	***-1.5364 [-249.17%]
MCC12	0.9300	0.0529	16.81	**0.8892 [-4.38%]	17.60	1.0470	**0.8830 [-5.06%]
MCC13	0.9600	0.0783	16.81	*1.3162 [+37.10%]	12.26	0.7293	*1.2307 [+28.19%]
MCC14	0.8800	0.0500	16.81	**0.8405 [-4.49%]	17.59	1.0464	**0.8336 [-5.28%]
MCC15	0.8700	0.1166	16.81	*1.9600 [+125.29%]	7.46	0.4438	*1.4262 [+63.93%]
MCC16	0.8750	0.0440	16.81	***0.7396 [-15.47%]	19.90	1.1839	***0.6911 [-21.01%]
MCC17	0.8500	0.2201	16.81	*3.6998 [+335.27%]	3.86	0.2296	*1.6204 [+90.63%]
MCC18	1.6600	0.0293	16.81	***0.4925 [-70.33%]	56.60	3.3671	***-0.7071 [-142.60%]
MCC19	2.3400	0.0520	16.81	***0.8741 [-62.65%]	44.96	2.6747	***0.6653 [-71.57%]
MCC20	1.6700	0.1318	16.81	*2.2155 [+32.66%]	12.67	0.7537	*1.9163 [+14.75%]

203

Notes:

204

1. Data on stocks' opening prices, EPS and P/E are taken as at April 30, 2019.

205

2. $\bar{x}P/E_{Industry}$ of 16.81 is derived from the average P/E of all 20 companies.

206

3. Construction stocks are in the state of *undervalued, **fairly valued and ***overvalued.

207

4. All values in the cells are in the currency of Ringgit Malaysia (RM) per unit/share.

208

5. Percentage changes [+/- %] at each intrinsic value's cells represents the variance (σ^2) of the intrinsic values from the stocks' opening prices.

209

210 Meanwhile, 11 out of 20 stocks identified as MCC2 to MCC8, MCC13, MCC15 as
211 well as MCC17 and MCC20 are in the state of undervalued. Even though it is good
212 stock to invest, the huge variance recorded within the range of +6.13% to +335.27%
213 shows that it has slightly deviated from the EMH where there is a huge potential for
214 investors to excessively outperform the stock market performance. The prolonged
215 condition may lead to the stock bubble derived from irrational expectations of return
216 by the investors. Investors are willing to pay more to buy growth stocks, which causes
217 them to reflect higher price ratios in order to reflect the market expectations [1]. The
218 similar pattern were recorded for the overvalued stock (MCC11, MCC16, MCC18 and
219 MCC19) where the variance to the opening prices ranging from -15.47% to -249.17%.

220 From fundamental perspectives, the undervalued stock is a good stock to acquire as
221 the market has yet to realise its real value besides its future potential growth and vice-
222 versa for the overvalued stock. Pertaining to the relationship with EMH, it is interesting
223 to note that the Malaysian construction stocks represented by these 20 selected
224 companies are literally in the state of semi-strong form market efficiency where there
225 is a combination of fairly valued stocks that comply the EMH theory besides
226 undervalued and overvalued stock. However, according to Mehra [17], the turnover and
227 earning statistics only reveal the quantitative expansion of the market and therefore, a
228 few relevant market efficiency testing methods such as Financial Market Efficiency
229 Index by Mehra [17] would be useful in assessing the market efficiency levels for each
230 stock.

231 **5 Conclusions**

232 This study has presented an estimate intrinsic values of the top Malaysian construction
233 stocks based on market capitalisation. As the study involving the application of price
234 earning models, the intrinsic values derived are highly dependent on the available
235 information of stock prices, P/E and EPS as at the period of the study. The assumption
236 on the average P/E is being made after taking into considerations P/E values of all
237 companies to reduce bias in obtaining the valuation multipliers. Therefore it should be
238 noted that the result only provides preliminary evidence on the intrinsic values of
239 construction stocks in relation to its opening prices and should not be treated as a
240 consultation to the specific investment decision. The volatility nature of the stock
241 market also provides an active lagging-effect to the valuation output as it requires an
242 up-to-date valuation based on the newly available market data. Future studies might
243 explore the intrinsic values using the dividend models as it would be useful in
244 identifying the construction stock that lies within the value investing strategy.

245 **References**

- 246 1. Garcia, M. T. M., & Oliveira, R. A. A.: Value versus growth in PIIGS stock markets. *Journal*
247 *of Economic Studies*, 45(5), 956-978 (2018).
248 2. Hiang L. K., Ooi, J., & Gong, Y.: Cross-market dynamics in property stock markets: Some
249 international evidence. *Journal of Property Investment & Finance*, 23(1), 55-75 (2005).

- 250 3. Zull Kepili, E. I., & Masron, T. A.: Malaysia property sector: Performance analysis and
251 portfolio diversification benefits within sub-sector. *International Journal of Housing*
252 *Markets and Analysis*, 9(4), 468-482 (2016).
- 253 4. Kan, Y. Y.: Macroeconomic environment of bull markets in Malaysia. *Qualitative Research*
254 *in Financial Markets*, 9(1), 72-96 (2017).
- 255 5. Ung, L. J., Brahmana, R. K., & Puah, C. H.: Brokerage fee, ownership expropriation and
256 earnings management of Malaysian property companies. *Property Management*, 36(4), 461-
257 482 (2018).
- 258 6. Haron, R., & Ayojimi, S. M.: The impact of GST implementation on the Malaysian stock
259 market index volatility: An empirical approach. *Journal of Asian Business and Economic*
260 *Studies* (2018).
- 261 7. Simbolon, L., & Purwanto: The influence of macroeconomic factors on stock price: The
262 case of real estate and property companies. In *Global Tensions in Financial Markets*, 29, 19-
263 39 (2018).
- 264 8. Pyeman, J., Hadi, A. R. A., Yahya, M. H., Zakariah, S. & Ahmad, I.: Value versus growth
265 investing. 1st edn. Penerbit UiTM Press, Shah Alam (2013).
- 266 9. Hadi, A. R. A., Pyeman, J., & Mahmood, W. M. W.: A quest for small-firm effect: Evidence
267 from KLSE Second Board. *IUP Journal of Financial Economics*, 9(3), 28-39 (2011).
- 268 10. Yamashita, K., Hanefah, H. M. M., & Noguchi, A.: Stock options rules in Malaysia and
269 Japan: A comparative analysis. *Journal of International Business Research*, 9, 99-118
270 (2010).
- 271 11. Wang, J., & Ahammad, M. F.: Private information acquisition and stock evaluation by
272 Chinese financial analysts. *International Journal of Management*, 29(1), 117-132 (2012).
- 273 12. Venkates, C. K., Tyagi, M., & Ganesh, L.: Fundamental analysis and stock returns: An
274 Indian Evidence. *Global Advanced Research Journal of Economics, Accounting and*
275 *Finance*, 1(2), 033-039 (2012).
- 276 13. Iqbal, N., Khattak, S. R., & Khattak, M. A.: Does fundamental analysis predict stock returns?
277 Evidence from non-financial companies listed on KSE. *Knowledge Horizons. Economics*,
278 5(4), 182-190 (2013).
- 279 14. Papadaki, A., & Siougle, G.: Value relevance of price, earnings and book values in the
280 Athens Stock Exchange. *Managerial Finance*, 33(5), 309-320 (2007).
- 281 15. Yoo, Y. K.: The valuation accuracy of equity valuation using a combination of multiples.
282 *Review of Accounting and Finance*, 5(2), 108-123 (2006).
- 283 16. Tiwari, R., & Singla, H. K.: Do combining value estimates increase valuation accuracy?
284 Evidence from Indian chemical industry. *Journal of Accounting in Emerging Economies*,
285 5(2), 170-183 (2015).
- 286 17. Mehra, R.: Financial Market Efficiency Index (FMEI)-A Qualitative Tool for Financial
287 Markets. Available at SSRN 3281188 (2018).