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Piotroski F Score

Another Simple yet remarkable portfolio select technique

FBM KLCI: 1,754.00 points

2017 Year-end Target: 1,830 points

STRATEGY

Piotroski F Score – is the Value strategies adopted for this study this time. The Piotroski score is a discrete score between 0-9 which reflects nine criteria used to determine the strength of a firm's financial position. The Piotroski score is used to determine the best value stocks, nine being the best. The score was named after Chicago Accounting Professor, Joseph Piotroski who devised the scale according to specific criteria found in the financial statements. He developed the F-Score back in 2000 while at the University of Chicago. Piotroski recognized that, although it has long been shown that value stocks (or high book-to-market firms as he calls them) have strong returns as a group, there is nevertheless very wide variability in terms of the returns of these stocks. He noted that: "Embedded in that mix of companies, you have some that are just stellar. Their performance turns around. People become optimistic about the stock, and it really takes off [but] half of the firms languish; they continue to perform poorly and eventually de-list or enter bankruptcy." What he wondered was whether it was possible to weed out the poor performers and identify the winners in advance. He therefore sought to develop a simple accounting-based stock selection strategy for evaluating a stock's financial strength.

OBJECTIVE

The objective of this study is to gauge whether the Piotroski F Score historical accounting ratios as a value strategy will work on the Malaysian equities.

STUDY PARAMETERS

FBM KLCI constituents… This study is limited to the 30 largest companies listed on the Bursa Malaysia, i.e. the FBM KLCI Index components. The test period spans from January to September 2017.

…which were duly scored… To get the Piotroski F Score, all companies were scored on each of the nine factors as per below:-

1. Positive net income
2. Positive operating cash flows
3. Higher return on assets than the previous year
4. Operating cash flows greater than net income
5. Lower debt than the previous year
6. Higher current ratio than the previous year
7. Less stock dilution than the previous year
8. Higher gross margin than the previous year
9. Higher asset turnover than the previous year

These scores were then added together to give the Piotroski score of each company. Companies with the highest score are the most financially sound companies as attractive investment ideas unlike the ERP5 Modified which looked for lowest score.

...and divided into score category for portfolios... The stocks selected from the universe of 30 stocks were then divided into score category and its performance for the period was compared with the FBMKLCI Index.

...on equal-weighted basis... In addition, the portfolios were all constructed on an equal-weighted basis.

...and holding periods. All the back test portfolios were tested based from beginning of the year and monthly return from beginning of period was measured.

FINDINGS

It works... The study found that Malaysian equities also exhibit similar characteristics as mentioned in the result of studies conducted in other markets.

...thus confirms the predictive power of historical accounting ratios... It confirms the study by Piotroski which examined the predictive power of fundamental financial ratios used, as the results are overwhelming with the test shows on the average superior excess returns over the FBM KLCI Index.

...and reaffirms again Graham's portfolio focus. More importantly, the results in this study provide an affirmative answer to the question on whether a portfolio based on a basic accounting ratios focusing on the sound financial position of companies as a 1st filter (can be used with a second filters such dividend yield, price to book, price to sales even ERP5 modified to increase performance) and results of the group instead of individual stocks, as advocated by Benjamin Graham, could outperform the broader market (e.g. FBM KLCI Index).

...**buying stocks with deep intrinsic value on fundamental strength** has historically proven to be a superior system than simple stock market averages.

... recommended to stay away from a stock that's been underperforming in the past - **even with the strong financials that the Piotroski screener demands**, they're not enough to predict a turnaround with a chronically weak stock as per the 4 stocks (Tenaga Nasional, Wesports Holdings, Petronas Gas and YTL Corp) observed above.

...**weed out the underperformers and the expensive stocks,** they should still be left with a handful of solid stocks with which can be used with another strategy like the ERP5 Modified (last report) or do more in-depth research on those stocks selected by Piotroski F Score.

Piotroski's **segmentation of firms by financial strength continues to look helpful in identifying both potentially attractive stocks as well companies to avoid**. Generally, the higher the F-Score, the greater the average portfolio return

Tables of numerical results. Please refer to OVERALL FINDINGS on pages 8-10.

Conclusions. Please refer to CONCLUSIONS on page 11.

RECOMMENDATIONS

Recommended portfolio of stocks based on Piotroski F Score of finding value companies

Stock Name	Current Price 12-Oct (RM)	MIDFR Target Price (RM)	Exp. Price Return (%)	Dividend Yield (%)	Exp. Total Return (%)	MIDFR Recommendation
Petronas Dagangan	24.3	28	15.2%	3.4%	18.6%	BUY
IOI Corp	4.51	5.27	16.9%	2.2%	19.1%	BUY
KLK	24.7	29.25	18.4%	2.8%	21.2%	BUY
Tenaga Nasional	14.2	16.8	18.3%	3.8%	22.1%	BUY
Petronas Chemicals	7.32	8.18	11.7%	2.7%	14.5%	BUY
Astro	2.83	3.64	28.6%	4.9%	33.6%	BUY

Source: MIDFR, Bloomberg

Based on our latest Piotroski F Score screenings as at October 12, 2017, the above portfolio of 6 stocks listed in table above is likely to outperform the broader FBM KLCI Index in most or all of the upcoming months. It is also noteworthy that 6 out of the 6 stocks recommended by Piotroski F Score are in agreement with MIDFR forecast-based fundamental research.

Macro Strategy : Stock Selection using Quantitative Selection Strategy

Strategy Types : Value & Momentum Play Investing - (Benjamin Gram's Net Current Asset Value, Joseph **Piotroski's F-Score** and Altman Z Score)

This Strategy : Piotroski's F-Score

Strategy Concept : **Value investing is one of the best known stock-picking methods**. The concept is actually very simple: **find companies trading below their intrinsic worth**.

The value investor looks for stocks with strong fundamentals – by way of earnings, dividends, book value, cash flow, etc. – that are selling at a bargain price, given their quality. The **value investor seeks companies that seem to be incorrectly valued (mispriced) by the market** and therefore have the potential to increase in share price when the market corrects its error in valuation. This report examines which **financial ratios** have the highest probability of consistently outperforming the market by adopting one of the many value investing strategies available called **Piotroski F-Score**.

The Piotroski score is **a discrete score between 0-9** which **reflects nine criteria used to determine the strength of a firm's financial position**. The Piotroski score **is used to determine the best value stocks, nine being the best**. The score was **named after Chicago Accounting Professor, Joseph Piotroski** who devised the scale according to specific criteria found in the financial statements. He developed the F-Score back in 2000 while at the University of Chicago. Piotroski recognized that, although it has long been shown that value stocks (or high book-to-market firms as he calls them) have strong returns as a group, there is nevertheless **very wide variability in terms of the returns of these stocks**. He noted that: "Embedded in that mix of companies, you have some that are just stellar. Their performance turns around. People become optimistic about the stock, and it really takes off [but] half of the firms languish; they continue to perform poorly and eventually de-list or enter bankruptcy." What he wondered was whether it was possible to weed out the poor performers and identify the winners in advance. He therefore sought to develop a simple accounting-based stock selection strategy for evaluating a stock's financial strength.

Thus, in 2000, he wrote the paper, **Value Investing: The Use of Historical Financial Information to Separate Winners from Losers**. It was this paper that outlined 9 fundamental ranking criteria for picking winning stocks. Using his stock picking criteria, he was able to theoretically average 23% annual gains between the years 1976 and 1996. **During 2010 as the market sprang back to life, his strategy worked over 5 times better than his previous average**.

Piotroski's F-Score involves nine variables from a company's financial statements. For **every criteria that is met the company is given one point, if it is not met, then no points are awarded**. **The points are then added up to determine the best value stocks**. Piotroski regards any stocks that scored eight or nine points as being the strongest.

It should be noted that the **nine criteria covers** the **areas of profitability, capital structure/financial liquidity, and operating efficiency** to **decide whether or not a stock has solid financials, and if those financials are getting better**. Therefore, a stock that had an F-score of eight or nine would pass, and so was considered financially strong and would be expected to perform well in the future. In general, the Piotroski screener may have a slight intrinsic bias for value stocks, as high-growth companies may fail on the Cash Flow and Share Dilution criteria.

The Criteria

Here are the nine criteria that are used in the screener, and why.

Profitability

Piotroski awarded up to **four points for profitability**: one **for positive return on assets**, one for **positive cash flow from operations**, one for an **improvement in return on assets over the last year** and one if **cash flow from operations exceeds net income**. These are simple tests that are easy to measure. Because the requirements are minimal, there is no need to worry about industry, market or time-specific comparisons.

1. Positive Net Income (Return on Assets > 0)

Return on Assets (ROA) is calculated by dividing Net Income by Total Assets, so this in effect measures if the company had positive net income (or profits). It's a straightforward test: **financially sound companies should be profitable**.

2. **Positive operating cash flows (Cash Flow > 0)**

Cash flow is another (and many believe better) way to gauge earnings, and measures how much money is going in or out of the business. A **positive cash flow ensures that the company is generating enough cash from day-to-day operations** in order to continue its day-to-day operations. A **firm can have a positive net income but negative cash flow**, which is why this criterion is included on top of ROA>0. Additionally, **cash flow is harder to manipulate under GAAP than Net Income is**.

3. **Higher return on assets than the previous year (Return on Assets > Last Year's Return on Assets)**

This equation **measures whether or not the firm is improving its profitability**. If the company was less profitable this year than last, it could signal that there are financial troubles to come.

4. Operating cash flows greater than net income (Cash Flow > Income After Tax)

This equation also measures profitability and is **meant to weed out any stocks that may be playing accounting tricks** in order make their earnings appear larger than they are. Because income has had taxes and depreciation subtracted from it, cash flow is generally larger than income. If it's not, then it means that the firm may be shifting earnings forward, thus misrepresenting them in the long run.

Capital Structure

Piotroski awarded up to **three points for capital structure** and the firm's ability to meet future debt obligations: one if the ratio of **debt to total assets declined in the past year** (change in average), one if the **current ratio improved over the past year** (change in liquidity) and one if the company **did not issue any additional common stock**. Since many low price-to-book-value stocks are constrained financially, **he assumed that an increase in financial leverage, a deterioration of liquidity or the use of external financing are signs of increased financial risk**.

5. **Lower debt than the previous year (Long-Term Debt/Total Assets [now] < Long Term Debt/Total)**

Assets [1 year ago]: This ratio targets capital structure. Piotroski was **looking for stocks that were decreasing their debt, increasing their assets, or both**. In other words, cases where the ratio of long-term debt to total assets would be decreasing. Taking on more debt, while not an inherently bad sign, increases its financial risk and may signal that the company is not generating adequate cash flow.

6. **Higher current ratio than the previous year** (**Current Ratio [now] > Current Ratio [1 year ago])**

The Current Ratio is the Current Assets divided by Current Liabilities, and is **used to gauge the liquidity of the firm**. If a company is liquid, then it can easily pay its debts. The **higher the ratio, the more liquid the firm** (though if it's too high, that can signal other issues, like an inefficient use of capital.) Like every accounting ratio, this one does not tell the whole story, but by requiring an improving current ratio, this **criterion ensures that passing companies will have an increased ability to meet its financial obligations**.

At this point, point 5 and point 6 seems similar dealing with assets and liabilities, so why are they both needed? Essentially, they **deal with different timelines of financial security**. **Point 5** (Long-Term Debt/Total Assets) **looks at a longer time line**, and thus **deals with solvency**, whereas **point 6** (Current Assets/Current Liabilities) uses a **shorter timeline**, and thus **deals with liquidity**. A solvent firm has a positive net worth, whereas a liquid firm is able to pay all of its current bills, and both are important for financial health.

A company can be solvent (total assets greater than long-term debt) but still have a liquidity problem, meaning it doesn't have enough cash (or easily sellable assets) on hand in order to pay its bills. However, because a solvent company has a more manageable debt load, it's better able to borrow against its assets to raise cash in the short term. On the other hand, a company can be insolvent (long-term debt greater than assets), but still have enough cash or liquid assets on hand to meet all its short-term obligations. While this company would be able to carry on with business as usual, it could be headed for financial distress further down the road. **Piotroski was looking for companies that had a low degree of financial risk in both the short and long runs**.

7. **Less stock dilution than the previous year** (**Shares [now] < Shares [1 year ago]**)

   This criterion also targets the capital structure by only letting in **companies that have not issued any common stock in the past year**. In addition to reducing the value of an investment, **share dilution can signal that the company can't cover its current liabilities**, which is another sign of financial distress.

Efficiency

The **remaining two elements examine the changes in the efficiency of operations**. Companies gain one point for showing an **increase in their gross margin** and another point if their **asset turnover has increased over the last fiscal year**. The ratios reflect two key elements impacting return on assets.

8. **Higher gross margin than the previous year (Gross Margin [now] > Gross Margin [1 year ago])**

   Gross Margin (or Gross Profit Margin) is the percentage of revenue that's left over after paying the costs of producing the goods sold. By **weeding out companies that weren't able to increase their gross margins in the past year**, this **criterion selects companies that are becoming more efficient** and **thus are expected to be more profitable**.

9. **Higher asset turnover than the previous year (Sales/Total Assets [now] > Sales/Total Assets [1 year ago])**

   The final criterion in Piotroski's score screens for an **increase in Sales/Total Assets**, also known as asset turnover. An increasing asset turnover ratio **signals that the company is able to generate more sales with their assets**, and thus is also a measure of efficiency.

   Screening for both measures in the form of an **increasing gross margin ensures that the company is able to keep costs under control**, whereas screening for **increasing asset turnover ensures that the company is able to grow their sales relative to their assets**.

It's **important to note that rather than screen for stocks against a hard value (Gross Margin > 10%, for example), most of this screener's criteria compare metrics against their values from a year prior**. This is **advantageous because many metrics have wildly different ranges depending on the industry or sector of the company**, but by **using criteria based on relative values, this Piostroski screener is able to pull from all corners of the market**.

Also note that stocks that do not pass the above criteria are not necessarily financially unsound - for example, strong companies that are investing in growth may not pass - but this screener is taking no chances.

Screener Performance

The logic behind this screener seems reasonable: financially healthy companies perform better and this all makes sense. **All of the Piotroski criteria target stocks are increasing their profitability, increasing their efficiency, and reducing their debt**. More efficiency means more profit, and more profit means higher earnings, and those are rewarded with a high stock price. Combine this with improving capital structure, and you have all the workings of a fundamentally strong company.

Strategy Studies : Piotroski's research in the US does suggest **that this type of fundamental analysis can be an effective value filter**. **By investing in the top performers**, he showed that, over a 20-year test period from 1976 through 1996 that "the **mean return** earned by a high book-to-market investor **can be increased by at least 7.5% annually**". Furthermore, he found that buying the top stocks in the market and shorting those that got the worst scores would have resulted in 23% annualized gains, more than double the S&P 500 broad market index return. **Piotroski also found that weak stocks, scoring two points or less, were five times more likely to either go bankrupt or delist due to financial problems.**

The American Association of Individual Investors (AAII) revealed that the F Score was the only one of its 56 screening methodologies that had positive results in 2008 (up 32.6% on average across 5 stocks, versus -41.7% for all of the AAII strategies over the same period).

The Piotroski F-Score is not intended to be used on its own, but rather as an additional filter for a value screen.

Studies:-

1. The original 2002 paper can be found here: Value Investing: The use of historical financial statement information to separate winners from losers. It is well, well worth the read.

2. 2008 AAII Stock Screen Roundup: Piotroski Strategy Defeats the Bear

Piotroski also notes that analysts do not typically recommend value stocks. His interesting explanation for this is that analysts are typically stock-pickers whereas, on an individual stock basis, the typical value firm will underperform the market and analysts probably recognize that a value strategy relies on purchasing a complete portfolio of stocks**.**

This Study Rationale : The objective of this study is to gauge the Piotroski F Score using simple accounting ratios will also on the Malaysian equities. This study is limited to the 30 largest companies listed on the Bursa Malaysia.

1. Positive net income
2. Positive operating cash flows
3. Higher return on assets than the previous year
4. Operating cash flows greater than net income
5. Lower debt than the previous year
6. Higher current ratio than the previous year
7. Less stock dilution than the previous year

8. Higher gross margin than the previous year

9. Higher asset turnover than the previous year

From the list above, the highest F-Score a stock can receive is 9 if it passes all the above tests. The use of previous year data actual refers to comparing the current trailing twelve months versus the year ago trailing twelve months data from the income statement or statement of cash flows. If it was a balance sheet item, the F-Score compares the current quarter number to the previous year quarterly number.

Let's take a look at a backtest of Piotroski F-Score to see how it works.

1. This backtest uses the FBMKLCI Index 30 stock.
2. The date used to screen the stock is Jan 1, 2017
3. The returns were calculated every month cumulative from Jan 1, 2017 up to October 11, 2017.
4. The returns were put in buckets according to Piotroski Score, that is, how did all the top stocks with scores of 7, 6 and 5 weeded by Piotroski score perform against the KLCI Index.
5. The stocks were purchased as a Portfolio basket according to their Piotroski F Score.

OVERALL FINDINGS : There were no stocks in the FBMKLCI Index that met the 8 and 9 criteria. There were all together 18 stocks that populated the Category 4 to 7 making up 60% of the stocks in the FBMKLCI Index that met the Piotroski F Score valuation criteria. Scores below this category 4 are not looked at in this study because as mentioned by Piotroski's literature these companies are usually not financially sound in one way or another.

1. **F Score 7 and above stocks performance.**

Purchase Date	1-Jan-17	Total Return on Date						
	Piotroski Score	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17	31-Aug-17	30-Sep-17
	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	13.82	12.21	13.61	8.01	8.83	14.78	11.75
	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. Stks outperformed Index		0	0	0	0	0	0	0
	% Of	0%	0%	0%	0%	0%	0%	0%
		5.99	7.69	7.56	7.43	7.21	8.01	6.93

Name	Piotroski F Score	2 Mths Return	3 Mths Return	4 Mths Return	5 Mths Return	6 Mths Return	7 Mths Return	8 Mths Return
BRITISH AMERICAN TOBACCO BHD	7	4.90	4.53	3.50	0.76	2.10	3.56	2.53
IOI CORP BHD	7	6.69	5.31	4.39	2.10	2.56	5.33	5.33
MISC BHD	7	2.23	2.37	5.72	5.16	4.17	5.89	3.90

There were 3 stocks of the FBMKLCI Index that met this score. From the table it is observed that the 3 stocks with 7 scores outperform the index in all 8 months while the score of six out performed only in month 8.

2. **F Score 6 and above stocks performance.**

Purchase Date	1-Jan-17	Total Return on Date							
	Piotroski Score	28-Feb-17	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17	31-Aug-17	30-Sep-17
	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	13.82	12.21	13.61	8.01	8.83	14.78	11.75	8.17
	6	2.54	2.84	3.36	4.70	4.49	7.54	6.71	7.44
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. Stks outperformed Index		1	0	0	0	0	0	0	1
	% Of	25%	0%	0%	0%	0%	0%	0%	25%
		5.99	7.69	7.56	7.43	7.21	8.01	6.93	7.05
Name	Piotroski F Score	2 Mths Return	3 Mths Return	4 Mths Return	5 Mths Return	6 Mths Return	7 Mths Return	8 Mths Return	9 Mths Return
BRITISH AMERICAN TOBACCO BHD	7	4.90	4.53	3.50	0.76	2.10	3.56	2.53	0.37
IOI CORP BHD	7	6.69	5.31	4.39	2.10	2.56	5.33	5.33	5.33
MISC BHD	7	2.23	2.37	5.72	5.16	4.17	5.89	3.90	2.47
PUBLIC BANK BERHAD	6	2.54	2.84	3.36	4.70	4.49	7.54	6.71	7.44

There were 4 stocks of the FBMKLCI Index that met this score. From the table it is observed that the same the 3 stocks as in earlier table with an addition of 1 stock in the 6 F Score category. From the table it is observed that the score of six out performed only in month 8. Need to check further why the underperformance despite being a value stock captured by Piotroski F Score.

3. **F Score above 5 stocks performance.**

Purchase Date	1-Jan-17	Total Return on Date							
	Piotroski Score	28-Feb-17	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17	31-Aug-17	30-Sep-17
	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	18.74	13.82	12.21	13.61	8.01	8.83	14.78	11.75
	6	2.84	2.54	2.84	3.36	4.70	4.49	7.54	6.71
	5	35.92	53.50	57.94	53.04	41.46	52.73	57.72	58.59
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. Stks outperformed Index		7	4	2	2	2	2	2	4
	% Of	58%	33%	17%	17%	17%	17%	17%	33%
		3.17	5.99	7.69	7.56	7.43	7.21	8.01	6.93
Name	Piotroski F Score	2 Mths Return	3 Mths Return	4 Mths Return	5 Mths Return	6 Mths Return	7 Mths Return	8 Mths Return	9 Mths Return
BRITISH AMERICAN TOBACCO BHD	7	8.74	4.90	4.53	3.50	0.76	2.10	3.56	2.53
IOI CORP BHD	7	6.36	6.69	5.31	4.39	2.10	2.56	5.33	5.33
MISC BHD	7	3.63	2.23	2.37	5.72	5.16	4.17	5.89	3.90
PUBLIC BANK BERHAD	6	2.84	2.54	2.84	3.36	4.70	4.49	7.54	6.71
ASTRO MALAYSIA HOLDINGS BHD	5	9.62	5.38	5.00	(1.22)	(0.28)	1.69	5.63	12.38
GENTING MALAYSIA BHD	5	14.63	20.61	29.91	25.51	23.05	34.23	31.32	21.19
KUALA LUMPUR KEPONG BHD	5	2.02	4.30	3.62	4.64	5.15	5.45	4.34	4.43
PETRONAS CHEMICALS GROUP BHD	5	3.87	12.11	6.29	6.72	3.37	1.19	6.01	7.94
PETRONAS DAGANGAN BHD	5	2.94	2.06	2.32	5.22	3.08	1.72	4.37	4.63
SIME DARBY BERHAD	5	10.62	14.57	15.93	15.81	18.05	17.43	11.83	12.08
TENAGA NASIONAL BHD	5	(2.59)	(1.29)	0.29	0.36	2.98	2.84	4.00	4.29
WESTPORTS HOLDINGS BHD	5	(5.18)	(4.24)	(5.42)	(4.00)	(13.93)	(11.80)	(9.79)	(8.35)

There were 12 stocks of the FBMKLCI Index that met this score this time. From the table it is observed that the same the 4 stocks as in above table with an addition of 8 stock in the 5 score category. Again as a group their performance are impressive beating the FBMKLCI Index Hands down. Only 2 stocks Westports Holdings & Tenaga Nasional in the 5 score category underperformed consistently throughout the 8 months observed. Thus, need to check further why the underperformance of these 2 stocks despite being a value stock captured by Piotroski F Score. But buying the category 5 F Score as a portfolio still gave overwhelming returns.

4. **F Score above 4 stocks performance.**

Purchase Date	1-Jan-17	Total Return on Date							
	Piotroski Score	28-Feb-17	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17	31-Aug-17	30-Sep-17
	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	18.74	13.82	12.21	13.61	8.01	8.83	14.78	11.75
	6	2.84	2.54	2.84	3.36	4.70	4.49	7.54	6.71
	5	35.92	53.50	57.94	53.04	41.46	52.73	57.72	58.59
	4	13.04	32.72	41.59	46.40	35.93	31.86	34.06	35.26
No. Stks outperformed Index		10	8	6	6	5	5	4	7
	% Of	56%	44%	33%	33%	28%	28%	22%	39%
		3.17	5.99	7.69	7.56	7.43	7.21	8.01	6.93
Name	Piotroski F Score	2 Mths Return	3 Mths Return	4 Mths Return	5 Mths Return	6 Mths Return	7 Mths Return	8 Mths Return	9 Mths Return
BRITISH AMERICAN TOBACCO BHD	7	8.74	4.90	4.53	3.50	0.76	2.10	3.56	2.53
IOI CORP BHD	7	6.36	6.69	5.31	4.39	2.10	2.56	5.33	5.33
MISC BHD	7	3.63	2.23	2.37	5.72	5.16	4.17	5.89	3.90
PUBLIC BANK BERHAD	6	2.84	2.54	2.84	3.36	4.70	4.49	7.54	6.71
ASTRO MALAYSIA HOLDINGS BHD	5	9.62	5.38	5.00	(1.22)	(0.28)	1.69	5.63	12.38
GENTING MALAYSIA BHD	5	14.63	20.61	29.91	25.51	23.05	34.23	31.32	21.19
KUALA LUMPUR KEPONG BHD	5	2.02	4.30	3.62	4.64	5.15	5.45	4.34	4.43
PETRONAS CHEMICALS GROUP BHD	5	3.87	12.11	6.29	6.72	3.37	1.19	6.01	7.94
PETRONAS DAGANGAN BHD	5	2.94	2.06	2.32	5.22	3.08	1.72	4.37	4.63
SIME DARBY BERHAD	5	10.62	14.57	15.93	15.81	18.05	17.43	11.83	12.08
TENAGA NASIONAL BHD	5	(2.59)	(1.29)	0.29	0.36	2.98	2.84	4.00	4.29
WESTPORTS HOLDINGS BHD	5	(5.18)	(4.24)	(5.42)	(4.00)	(13.93)	(11.80)	(9.79)	(8.35)
AXIATA GROUP BERHAD	4	(6.14)	7.20	9.11	7.63	2.95	(1.32)	5.08	11.68
GENTING BHD	4	15.63	20.70	23.85	25.49	19.15	23.08	22.95	21.97
IJM CORP BHD	4	4.69	6.25	9.38	8.75	9.57	9.89	5.77	4.50
MALAYAN BANKING BHD	4	4.88	8.78	16.83	19.10	21.49	20.36	19.35	23.12
PETRONAS GAS BHD	4	(6.01)	(6.34)	(12.41)	(11.33)	(11.43)	(10.47)	(11.35)	(13.76)
YTL CORP BHD	4	0.00	(3.87)	(5.16)	(3.23)	(5.81)	(9.68)	(7.74)	(12.26)

There were 18 stocks of the FBMKLCI Index that met this score this time. From the table it is observed that the same top 3 categories consisting of 12 stocks were still up there. There were 6 category 4 F Score stocks as in above table. Again as a portfolio group their performance are impressive beating the FBMKLCI Index Hands down. As in the category 5, there were 2 stocks, Petronas Gas and YTL Corp in this score category underperformed consistently throughout the 8 months observed. Thus, as in prior table, need to check further why the underperformance of these 2 stocks despite being a value stock captured by Piotroski F Score. But buying the category 4 F Score as a portfolio still gave overwhelming returns.

CONCLUSIONS

1. **Detailed results above shows that the Piotroski F Score Value strategy is able to steadily generate results exceeding the return of the FBM KLCI Index most of the time in the periods tested.** It is observed that for the period tested 18 stocks or 60% of the FBMKLCI Index met the Piotroski F Score as financially sound companies. The results again proved as per our previous report on ERP5 Modified that the strategy advocated by Columbia University Professor Benjamin Graham (known as "the father of value investing" and the "Dean of Wall Street," that **"investors should FORM A DIVERSIFIED PORTFOLIO BASED ON A FEW SIMPLE CRITERIA FOCUSING ON THE RESULTS OF THE GROUP INSTEAD OF INDIVIDUAL STOCKS"** also applicable in the Malaysian context.
2. Nonetheless, **buying stocks with deep intrinsic value on fundamental strength has historically proven to be a superior system** than simple stock market averages.
3. There are many more ways to slice and dice these results, and **this study only takes a largely aerial view of the stocks as a whole**. However, I believe that recognizing overall patterns in the screener results can better inform how to proceed with further research.
4. Based on the backtest and literature confirmation, it **is recommended to stay away from a stock that's been underperforming in the past** - **even with the strong financials that the Piotroski screener demands**, they're not enough to predict a turnaround with a chronically weak stock as per the 4 stocks (Tenaga Nasional, Wesports Holdings, Petronas Gas and YTL Corp) observed above.
5. If Fund Managers use Piotroski results and weed out the underperformers and the expensive stocks, they should still be left with a handful of solid stocks with which can be used with another strategy like the ERP5 Modified (last report) or do more in-depth research on those stocks selected by Piotroski F Score.
6. Therefore, Piotroski's **segmentation of firms by financial strength continues to look helpful in identifying both potentially attractive stocks as well companies to avoid**. Generally, the higher the F-Score, the greater the average portfolio return.

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MIDF AMANAH INVESTMENT BANK : GUIDE TO RECOMMENDATIONS	
STOCK RECOMMENDATIONS	
BUY	Total return is expected to be >15% over the next 12 months.
TRADING BUY	Stock price is expected to *rise* by >15% within 3-months after a Trading Buy rating has been assigned due to positive newsflow.
NEUTRAL	Total return is expected to be between -15% and +15% over the next 12 months.
SELL	Total return is expected to be <-15% over the next 12 months.
TRADING SELL	Stock price is expected to *fall* by >15% within 3-months after a Trading Sell rating has been assigned due to negative newsflow.
SECTOR RECOMMENDATIONS	
POSITIVE	The sector is expected to outperform the overall market over the next 12 months.
NEUTRAL	The sector is to perform in line with the overall market over the next 12 months.
NEGATIVE	The sector is expected to underperform the overall market over the next 12 months.