

* *Abuzar M. A. Eljelly*

** *Radi S. Al-Haddad*

* King Saud University
- Riyadh

** The Saudi Investment
Bank, Riyadh

FIRM CHARACTERISTICS AND STOCK RETURNS: EVIDENCE FROM AN EMERGING MARKET

Key Words

***Firm Characteristics;
Stock returns;
ROE/PB; Emerging
Market; Portfolio
Performance; Market
Efficiency.***

Abstract

Many studies have documented a significant relationship between various firm characteristics and stock returns. This study, however, documents a relationship between ROE/PB ratio and stock returns in the Saudi banking sector, the one most active and dominating sector in the Saudi stock market. The banking sector is chosen in order to neutralize the problems of illiquidity, fragmentation, and thin trading that are observed in the overall Saudi market. The study formed portfolios based on ROE/PB ratio and examined their performance over an 11 year-period. The results show that high ROE/PB portfolios significantly outperform the low ROE/PB portfolios in terms of risk and return in most periods.

Introduction

A multitude of empirical research has appeared in finance literature aiming at examining whether secondary equity markets are efficient. However, most of this research has been focusing on developed economies. Recently, however, some studies have started to focus on emerging markets (see Chan *et al* (1992), Butler and Malaikah (1992), Dickinson and Muragu (1994), and El-Erian and Kumar (1995)). This

new trend is not without logical reasons. First of all it has been established in the finance academic literature and professional circles that investing in the emerging markets brings about great benefits to the global strategies in terms of returns and diversification (see for e.g. Claessens 1995 and Claessens *et al* 1995). Second, most of the emerging markets are characterized by high growth and potentials. Third, no considerable information is avail-

able on how some of these markets, such as Saudi Arabian market, operate and function

Many studies that are conducted in developed markets have documented significant relations between some firm characteristics and security returns. These characteristics include size, book-to-market ratios as well as leverage. The renowned study by Fama and French (1992) was a case in point. However, many subsequent studies followed the tracks of Fama and French study either to augment its findings or/and search for new firm characteristics that link significantly to security returns. If such anomalies were found in developed economies, which have more efficiency levels than those of less developed markets, it may be tempting to examine such anomalies in the latest markets where their low levels of efficient operations may be prone to such, and probably more, profound anomalies.

Thus, this study is an attempt in the direction of exploring one such anomaly in one of the newly emerging markets - the Saudi Arabian stock market, a market with \$90 billion market capitalization. The study, however, will focus only on the banking sector. This sector is the most active sector in the Saudi economy, dominating the activities of the stock market in terms of volume and value.

More specifically, this study is set out to address the following questions:

- * What role does Return on Equity by Price to Book (ROE/PB hereafter) for the banking sector play in explaining the return for the banking sector index?
- * Do portfolios comprised of bank stocks having high ROE/PB outperform portfolios of bank stocks with low ROE /PB on a regular basis?
- * Can a portfolio based on ROE/PB improve risk adjusted return (measured by Sharpe ratio) of a portfolio?
- * What is the effect of using pre-provision income or net income for calculating ROE on the performance of portfolios in terms of return and risk?
- * Does the banking sector offer higher returns in years when its ROE/PB is higher than its historical average

To answer these questions, this paper is organized as follows. The next section reviews the literature for related work on market efficiency. The third describes data and methodology used to address the issues raised in this study. The fourth discusses the results of the study and summarizes its findings. The fifth presents some implications of the study. The last section concludes the study.

Literature Review

Generating returns in excess of that commensurate with security risk is difficult to reconcile with the concept of efficient market, since it should not be possible to earn excess return above that enough to compensate for inherent risk. Nevertheless, empirical research in finance has unveiled numerous anomalies with respect to fiscal year or firm characteristics and announcement of economic or business news.

With special interest to the study at hand is the relationship found between excess return and some firms characteristics such as size, market value divided by book value, and earnings divided by price. A pioneering study by Banz (1981) documented a significant excess return related to size; in particular smaller firms are found to posit excess returns more than the larger size firms. The market to book relation to excess return was a subject of many studies. Fama and French (1992) examined the determinants of stock returns among a wide cross section of firms that differed with respect to size. The study demonstrated that over 30 years up to early 1990s size and book value to market value provided good explanation of cross sectional stock returns. Similarly, Lakonishok *et al* (1994) used the book to market value as a basis for

forming portfolios of stocks that were classified into different groups according to size (to control for the size effect). The study found significant variation in return between the high book to market stocks and the low book to market ones. Similar results were obtained by Chen *et al* (1991) for Japanese stocks. A study by Barber and Lyon (1997), which expanded Fama and French (1992) study to non-financial firms, provided evidence that the relation between firm size, book-to-market ratios and security returns was similar for financial and non-financial firms.

Another sub-class of studies that examined the relationship between excess returns and firm characteristics is that pertaining to earnings/price ratio. Using the capital asset pricing model (CAPM) as an equilibrium model, Basu (1977, 1983) showed that there was a positive relation between excess return (in excess of that predicted by CAPM) and the earnings/price ratio of the sampled companies. Specifically, Basus study showed that stocks with low P/Es subsequently tended to have higher average returns than stocks with high P/Es. Other studies that followed attempted to find a link between earnings/price ratio and other anomalies that relate to other firms' characteristics. An important study was made by Reinganum (1981), who found a significant

relation between the size anomaly and the earnings/price ratio. Chan, Hamao, and Lakonishok (1991) studied Japanese data and found strong support for the superior performance of value investment strategies. There seems to be agreement on the out-performance of value investment strategies relative to growth investment strategies. However, no similar agreement seems to emerge on the underlying reasons. It should be noted, however, that Fama and French's (1992) study attributed the earnings/price effect entirely to size and market to book relations, although return spreads based on earnings to price ratio were generally lower than the spreads based on BV/MV.

The relationship between book value of equity to the market value of equity was also a subject of research by Rosenberg *et al* (1985), who found a significant positive correlation between the firms historical BV/MV and future stock returns. Higgins (1995) examined the effect of ROE on stock prices by regressing ROE against price to book ratio. The study used market value of equity divided by the book value of equity for two representative groups of companies for 1992, while ROE was measured as a weighted average of most recent five years. The study concluded that high ROE companies tend to have higher stock price to book value and vice versa, i.e.

there is a positive relationship between price-to-book and ROE. Similar results were found in a replication of the study on 65 large corporations from the Fortune 100 list of largest US corporations. The study concluded that ROE may be a useful proxy for share price in measuring financial performance.

In a more recent study on the relation of a firms characteristics to security returns, Jensen *et al* (1997) confirmed that size and price to book value had substantial predictive power in explaining stock returns, and showed that both were significant across all levels of systematic risk. Their study indicated that these factors were also related to monetary policy. Seeking international support for their earlier findings, Fama and French (1998) carried out a comprehensive study to examine the performance of value and growth investment strategies, where value and growth characteristics were defined by a number of indicators (BV/MV, E/P, CF/P, and D/P). The study covered 13 countries including the United States, U.K, Japan, and France among others. The study found that, in almost all countries, the value portfolios generated higher average returns than the growth portfolios across different value-growth indicators and in all countries examined. Barney (2002) developed a disciplined

approach to global equity allocation. The approach was based on 5 factors with specific weight to each factor. Valuation factors, which represented 40% of the model, was based on multiple valuations such as P/E, P/B. Another valuation indicator which was examined by Chan and Lakonishok (1994) is the simplest form of the cash flow to price (CF/P). They concluded that portfolios formed on the basis of this investment strategy generated relatively larger return spread than portfolios based on BV/MV.

In a pioneering study on Arab stock markets, Al-Lougani and Mat-tar (2001) conducted an empirical study on the value and growth strategies in the Kuwait stock market. The study showed that Low P/E shares (value stocks) outperformed high P/E shares (growth stocks). The study took these results as evidence against weak form market efficiency and against the presence of opportunities to make abnormal returns following these trading rules.

In general, the studies on market efficiency represent dual tests of the efficient market hypothesis and the equilibrium model used to estimate the expected returns (CAPM in most cases). Thus some criticism levied against these studies is that the reported abnormal returns are the result

of inefficient markets or misspecified models (Reinganum, 1981, Chan *et al* 1985, and Stoll and Waley 1983). However, the above mentioned studies can be taken, in general, as evidence against the semi-strong form of market efficiency, since these ratios or characteristics are publicly available and are easily observable.

This study examines another publicly available ratio, ROE /PB, to test for the existence of any significant relationship between this ratio and stock returns in a dominating and important sector of the Saudi stock market, an emerging market that has recently been included in the International Finance Corporation (IFC) emerging market index. Few studies on Saudi market efficiency have been conducted during the last decade, for example, Butler and Malaikah (1992) conclude that the Saudi stock market is inefficient citing illiquidity, market fragmentation, and trading and reporting delays as the major causes of the observed inefficiency. Similarly, a study by Almotairy *et al* (1995) shows that the inefficiency of the Saudi market is due to the ignorance of investors about the financial position and profitability of listed companies.

However, this study addresses the question of market efficiency by tracking the performance of constructed portfolios on the basis of publicly

available information, mainly the ROE/ PB. As mentioned previously, the study will focus on the banking sector in Saudi market for various reasons. The banking sector is the most active sector in the Saudi stock market, and has shown strong growth over the last decade. Currently the sector has an asset base of SR 364 billion (\$ 97 billion) with net profits totaling SR 8.2 billion (\$ 2.2 billion), and market capitalization of \$34 billion. Furthermore, the sector comprises around 38% of the Saudi market capitalization. Recently, a study by Eljelly and Algurair (2001) shows that the banking sector is the biggest wealth creator for its shareholders. Another study by Albazai and Diabi (1998), which examined the efficiency of the Saudi stock market with respect to monetary policy, indicates that both anticipated and unanticipated monetary policy have an effect on market returns. However, results using sectors returns show mixed outcomes, with the banking sector emerging as one of the efficient sectors.

Furthermore, the importance of this study emanates from yet other different perspectives. First, it is relevant to practitioners, such as investment bankers, financial analyst and portfolio managers who use multipliers

to value stock price, as well as to academic researchers, in the area of market efficiency. Second, the study attempts to find an answer to a question raised by many investors as to why some banks shares in Saudi stock market trade at a premium relative to the average price to book of the banking sector as a whole. Third, the study sheds some light on how the stock prices of banks in Saudi Arabia are valued. However, a rigorous and thorough analysis of the pricing and valuation mechanism of the Saudi stock market is beyond the scope of this study. Fourth, it offers an opportunity to test the efficiency of the Saudi market without specifying an equilibrium model that may suffer from specification errors. Finally, since the banking sector is the most active sector within the Saudi stock market, the study neutralizes the problems inherent in other sectors of the Saudi stock market such as fragmentation, illiquidity and thin trading.

Data and Methodology

The data for this study represent the stock prices and other relevant financial variables since 1990 for the nine banks listed on the Saudi Stock Exchange⁽¹⁾. These banks may be broadly classified as local banks or joint venture banks. Local banks are

(1) The appendix presents some basic information of the banks included in this study.

mostly or wholly owned and managed by Saudis. They include Riyadh Bank (100% owned by Saudis), Bank Al-Jazira, Saudi Investment Bank, and Al-Rajhi Banking Corporation (100% owned by Saudis). The joint venture banks, on the other hand, have some foreign interests in their ownership and also have management agreements with foreign partners. The latter group includes the Saudi Hollandi Bank, the Saudi French Bank, the Saudi British Bank, the Saudi American Bank and the Arab National Bank. The total number of banks in 1990 was 11, including the Saudi Cairo Bank and United Saudi Bank. These two banks were later merged with the Saudi American Bank and are, therefore, excluded from our study.

For the purpose of addressing the questions set forth in this study, the following methodology is deemed appropriate. First, a simple correlation analysis between the two variables of interest in this study, ROE /PB and total returns, is conducted, in order to test for a possible relationship between the two variables. Second a simple regression is used in order to determine whether a change in the assumed independent variable (ROE/ PB) will bring a change on the assumed dependent variable (total returns of the subsequent year). For example, the ROE/PB for 1990 is

matched against the total returns for the period starting March 1991 to March 1992 to find the relationship between the variables. In case we take the ROE/PB as of December 31st of each year and measure the stock performance (total returns) from January to December of the next year, a look-ahead bias will be encountered. This is due to the simple fact that such a methodology assumes that the results for each bank are available on December 31. As the annual results for all banks are only available by the end of the first quarter of subsequent year, the price at 31st March of corresponding year, ROE and book value as per the year-end figures of previous year are used in the analysis. The performance of the stock is thus measured over the 12-month period starting 1st April of a certain year to 31st March of the following year. End of March is chosen to make the sampled banks comparable in terms of dividend payments. By March 31st all bank stocks go ex-dividend. To that effect, the following simple equation is used:

$$Y_t = A + BX_{t-1} + e_t$$

Where:

Y_t = Total returns for the year starting April 1st to March 31st of the subsequent year. Total returns include both capital gains and cash dividends.

X_{t-1} = ROE/PB (ROE per unit of P/B).

A, B and e_t are the constant, the slope and the random terms of the regression respectively.

The regression relation spans the 11 year period, where the banking sector returns, as defined above, are taken as the dependent variable, while the banking sectors ROE/PB ratio represents the independent variable. This simple structure of the regression equation is intended to serve as a useful guide in assessing the overall relation between the banking sector index returns and its ROE/PB indicator.

The rationale for using ROE /PB² in this study depends on many factors. First of all, the ratio has been tested as indicator of value-growth in many studies, as reviewed in the early part of this paper. Second, the banking sector is the most liquid sector of the Saudi stock market. Most of the assets and liabilities on banks balance sheets are stated close to their fair values as of the balance sheet date. The banks should, therefore, trade at close to their book value, which represents the tangible assets of the banks. There are, however, additional assets which affect the earning capacity of the sector as a whole and justify a higher value of banking stocks as compared

with their book values. These factors include:

- * Lack of competition for the banking sector as licenses for new banks in the Kingdom are difficult to obtain
- * Monopoly on services provided - Only banks can provide commercial banking, investments and most of the financial services in the Kingdom
- * A substantial portion of the deposit base for banks in the Kingdom is non-interest bearing due to a huge market segment placing its deposits in only Islamic based non-interest bearing deposits.
- * Efficiency in managing assets, portfolios and liabilities. Moreover, some banks enjoy specific advantages over other banks justifying yet a higher premium over book value. These advantages include
- * Management expertise/ foreign affiliations resulting in a larger product base and shorter learning cycle for these banks.
- * Islamic banking - e.g. Al-Rajhi trades at a very high Price to Book as it is the only Islamic bank in the region and enjoys cost-free deposits base.

These intangible assets may be broadly classified as the value addi-

(2) It should be noted that ROE/PB ratio is equivalent to the famous E/P ratio, since $NI/BV \div MV/BV = NI/BV * BV/MV = NI/MV = E/P = 1/P/E$. However, the ROE/PB format expresses the relationship in terms of premium paid by unit of ROE.

tion by the management and could be measured by the ROE for each bank. By dividing the ROE of each bank by its Price to Book ratio, we get the ROE per one unit of P/B. A higher ROE /PB relative to the sector indicates a higher value addition by the management and, therefore, justifies a higher price to book for a particular bank stock.

Ranking Methodology and Portfolio Construction

The ranking methodology is based on the hypothesis that banks with higher returns on equity as compared to the sector average should trade at a premium to the market. The banks having a higher ROE per unit of P/B are expected to outperform the banks with a lower ROE per unit of P/B. This factor (ROE/PB) is then used to rank the banks in our sample.

The three banks with the highest tribute and the three banks with the lowest tribute for 1990 are identified and their equal weighted average return for the following year is examined (from the beginning of April 1991 to March 31st, 1992). This process is followed by annual rebalancing for the entire 11-year period. The performance of the portfolio with the highest and lowest ROE/PB are measured and compared with the average return for the sector. Equal weighted returns for all the three portfolios i.e. high ROE/

PB, low ROE /PB and average portfolio containing all the banking stocks are used while comparing performance.

The banks usually adjust their provision for non-performing loans, but they vary widely in carrying out this provisioning policy. Some are quite conservative, i.e. charging higher rates while others follow liberal provisioning policy, i.e. charging lower rates. For example, in 2002 the ratio of the provision to non-performing loans ranges from 71% to 195%. To counter possible effect on quality of earnings we have taken pre-provision net income for each bank to calculate the return on equity ratio. The returns include capital gains calculated by measuring the percentage change in adjusted price for year starting from the beginning of April of each year and ending 31st March of next year. Dividend yield for each year is then added to capital gains to arrive at the total return of the stock.

Results and Analysis

As mentioned earlier, the first question posed by this study is concerned with the relationship between the investment performance of the whole banking sector index and its ROE/PB ratio. Table 1 shows the average ROE/PB of the banking sector calculated using pre-provision income for each year covered in this

study and the corresponding average return on the banking sector index. The corresponding return is calculated for the period starting April 1st of the subsequent year. For comparison purposes, the Table also shows the 3-month Saudi Inter-bank Offering Rate (SIBOR). Over the five years of the study when the ROE/PB ratio was higher than the whole period (11 years) average, the sector index earned a simple average return of 46% p.a. However, in the years of the study when the ROE/PB ratio was lower than the whole period average the

sector index had a simple average return of -4%.

The results in Table 2 further show the magnitude of this relationship and, as it is evident from the Table, the sign of the slope coefficient is as expected. There is a strong and significant positive relationship between the two variables. The high R² and the highly significant F statistic show the power of ROE/PB ratio in explaining the variation in the banking index returns. Similar results are obtained when individual banks stock returns are regressed against their ROE/PB ratios.

Table 1
Banking Sector, ROE /PB (Pre-Provision Income Basis), SIBOR and Index Return (1990-2001)

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Avg.
ROE / PB	10.1%	6.0%	4.9%	5.7%	8.9%	10.1%	8.9%	6.7%	10.0%	6.8%	7.5%	7.4%	7.7%
3- month SIBOR	8.10%	5.9%	3.8%	3.7%	5.3%	6.3%	5.6%	5.9%	6.4%	6.3%	6.7%	4.1%	5.7%
*Banking Index Return	107%	-4%	-28%	-23%	16%	43%	26%	-6%	37%	17%	19%	NA	18.6%
Spearman correlation between ROE by P/B and Index Return													.84

* Return is calculated for each year starting April 1st of next year. For example, for 1990 we use the return for the period starting April 1st, 1991 and ending March 31st, 1992, and so on.

Table 2
Estimation of the Regression: $Y_t = A + B_{X_{t-1}} + e_t$
(Pre-provision Income Basis)

	A	B	R ²	F
1990-2001	-1.098 (-3.88)† .0045*‡	16.40 (4.56) .0011**	.71	21.7 .001*

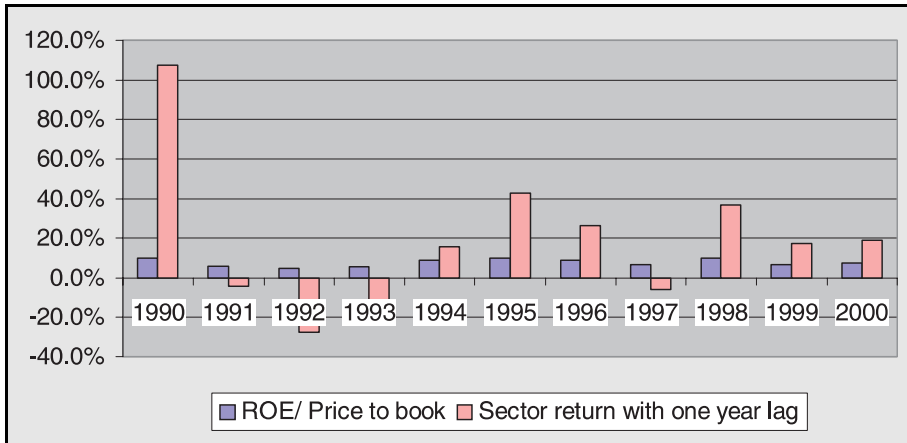
* indicates significance at all levels

** indicates significance at .05 level

† T values between parentheses

‡ P values are in the third row of the table

Figure 1
Banking Sector Return, ROE / PB (Pre-Provision Basis), 1990- 2001



Thus, the results in Tables 1 and 2 depict a strong relationship between the return on the banking sector index and its ROE /PB ratio. Figure 1 also visualizes these results in graphical form. Although, these results so far are clear evidence for the relationship between the ROE/PB and stock returns, the question, however, remains as to the existence of profitable opportunities in this active segment of the market

Table 3 shows the performance of the three portfolios formed on the basis outlined earlier in section 3. The Table shows that the portfolios with high ROE/PB banks have outperformed the average banks and low ROE/PB banks. The last two rows in the Table show the difference between the return on the high ROE/PB portfolios and the Low ROE/PB portfolios and the average index, respectively. The economic signifi-

Table 3
Absolute Average Annual Portfolios Returns (%)
(Pre-Provision Income Basis)

	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02
High (%)	234	26	-21	-19	33	32	29	14	57	30	55
Low (%)	129	-5	-32	-24	0	30	21	-10	30	14	17
Average (%)	167	9	-29	-28	16	37	23	-2	36	22	31
High-Low Premium	105	31	11	5	33	2	8	24	27	16	38
High-Average Premium	67	17	8	9	17	-5	6	16	21	8	24

cance of the premium can be seen quite clearly from both rows.

The average returns, standard deviations and number of out-performance for the three portfolios are shown in Table 4. The portfolio comprising the three banks with the highest Relative ROE/PB has outperformed the sector average as well as the lowest ROE/PB banks. The three banks having the highest ROE/PB earned a geometric average return of 32% p.a. as against the average return for all banks of 18% p.a. This strategy has outperformed the other strategies in 10 out of the 11 years and has also outperformed on a risk-adjusted basis (see Figure 2 also).

Furthermore, Figure three reflects the end values of an initial investment

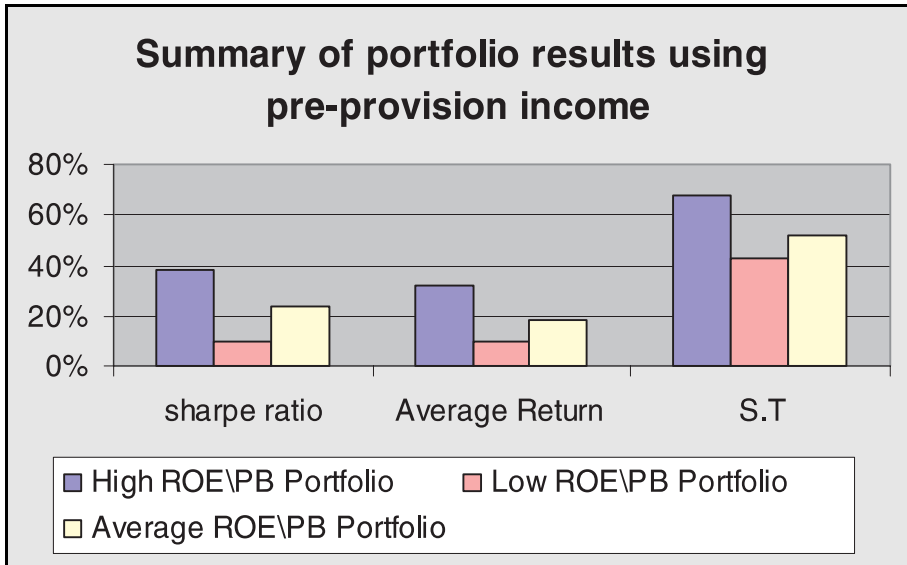
of SR 1000 that tracks the three portfolios. It demonstrates that an SR 1000 invested in the three stocks having highest ROE/PB in March 1991 with annual rebalancing have grown to SR 22,040 giving a compounded annual growth rate of 32% p.a. The standard deviation is, however, higher than the portfolio including all banking stocks and the portfolio including the low ROE/PB stocks. However, the risk adjusted return of this strategy is still higher than both the other alternative strategies. The same amount invested in the three stocks with the lowest ROE/PB grew to SR 2,746 giving a compounded annual growth rate of 10% p.a. The standard deviation of this strategy is lower than the standard deviation of the high ROE/PB portfolio.

Table 4
Average Returns & Standard Deviation for the 11-year period
(Pre-Provision Income Basis)

	Average Return p.a.	Standard Deviation	Out- performance	Sharpe ratio Ψ
High	32%	68%	10/11	0.39
Low	10%	43%	-	0.10
Average	18%	52%	1/11	0.24
High-Low t-value*	22% (3.18)**	N/A	N/A	N/A

- *t with n-1 degrees of freedom is defined as $((\bar{d}-0)/sd\sqrt{n})$, where:
 $\bar{d}$ = the sample mean difference
 sd = the sample standard deviation
 n = the number of paired observations
- **indicates significant difference between the high and low ROE/PB portfolios at all levels of significance
- Ψ Sharpe ratio = $(\bar{R}_p - \text{SIBOR})/\sigma_p$, where:
 $\bar{R}_p$ = average annual return on the portfolio
 σ_p = standard deviation of the portfolio returns
 SIBOR = annualized 3-month SIBOR

Figure 2
Average Returns & Standard Deviation for the 11-year period

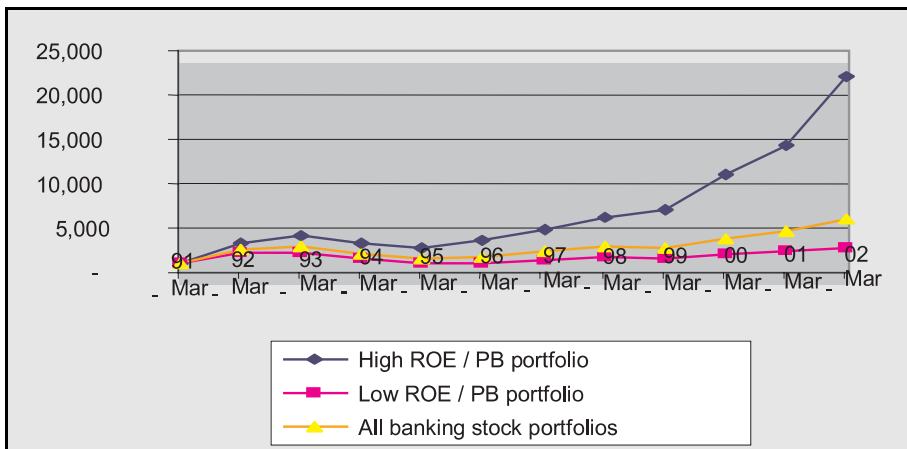


lio. However, its risk-adjusted return is also lower than the strategy following investing in high ROE/PB stocks.

As we stated earlier, the results obtained are based on using the pre-provision income to calculate ROE.

However, similar results are obtained using net income instead of pre-provision income for calculation of ROE. The sector performance results are similar to those obtained using pre-provision income. However, the re-

Figure 3
End Values of an Initial Investment of SR 1000 (Pre-Provision Income Basis)



gression of stock return on ROE based on net income shows relatively different results. Table 5 shows that although the coefficients retain their positive sign and significance, R² and t values are lower than those values obtained when pre-provision income is used in calculating ROE. As mentioned previously, this result may reflect the effect of the subjective and

varying provisioning practice followed by Saudi banks. The results also show that the sector stock returns are more related to ROE based on pre-provision income (cash basis) than to ROE based on net income basis.

Similar conclusions can be deduced from the performance of the three portfolios shown in Table 6. Table 6 shows that the ranking of

Table 5
Estimation of the Regression: $Y_t = A + BX_{t-1} + e_t$
(Net Income Basis)

	A	B	R ²	F
1990-2001	0.749 (-2.00) [†] .096 [‡]	14.38 (5.58) .030**	.425	6.6 .001*

* indicates significance at all levels

** indicates significance at .05 level

[†] T values between parentheses

[‡] P values are in the third row of the Table

TABLE 6
Summary of Results (Net Income Basis)

	Average Return p. a	Standard Deviation	Out-performance	Sharpe Ratio Ψ
High	24%	41%	10/11	0.45
Low	2%	52%	1/11	-0.06
Average	18%	52%	1/11	0.23
High-Low	22%	N/A	N/A	N/A
t-value*	(3.01)**			

- *t with n-1 degrees of freedom is defined as $((\bar{d}-0)/sd\sqrt{n})$, where:

$\bar{d}$ = the sample mean difference

sd = the sample standard deviation

n = the number of paired observations

- **indicates significant difference between the high and low ROE/PB portfolios at all levels of significance

- Ψ Sharpe ratio = $(\bar{R}_p - \text{SIBOR})/\sigma_p$, where:

$\bar{R}_p$ = average annual return on the portfolio

σ_p = standard deviation of the portfolio returns

SIBOR = annualized 3-month SIBOR

individual banking stocks using net income has, however, resulted in a lower total return and lower standard deviation. Risk adjusted performance (measured in terms of sharp ratio) is better in this case.

As Table 6 indicates, when using net income for calculating ROE, the average return for the portfolio of banks having high ROE/PB is lower than that of the portfolio constructed using pre-provision ROE/PB. However, its Sharpe ratio is higher due to its lower standard deviation. The significant difference between the two strategies is established by the magnitude of the difference in percentage terms and the high and significant t-statistic. It is rather imperative that risk as measured by standard deviation be lower in this case because part of the risk is eliminated via provisioning. However, in the case of a low performing portfolio provisioning tends to put further pressure on an already low pre-provision income. This, in turn, adds to risk of the individual stocks and the formed portfolio rather than reduces it.

The results of this study can be summarized as follows:

- * Higher ROE/PB for the banking sector is followed by higher returns for the sector. ROE based on pre-provision earnings (cash earnings) was initially used in the analysis.

- * The Return on equity for a bank explains why a certain bank is traded at higher or lower Price to Book ratio as compared to sector average.

- * The banking sector has higher returns in years when ROE/PB is higher than its historical average.

- * The portfolios comprising banks having high ROE/PB outperformed portfolios having low ROE /PB banks.

- * The portfolios of banks with low ROE/PB have lower standard deviations (Risk) as compared to portfolios having higher ROE/PB banks and the average banking sector, when using pre-provision income.

- * Risk adjusted returns (measured by Sharpe ratio) of portfolios having higher ROE/PB banks were higher than those for the portfolios of banks having lower ROE /PB and the average banking sector.

- * The portfolio of banks with high ROE/PB ratios has outperformed the low ROE/PB in terms of higher return and lower risk. The provision practice followed by Saudi banks results in lower risk for high performing banks while it puts pressure on pre-provision income of the low performing banks.

Implications

This study has many implications for portfolio managers. First, portfolio managers should be aware that ROE plays a major role in determining premium over book value in Saudi market. Specifically, when ROE is high the premium is high, and vice versa. As such, performance can be attributed to an investment along these lines. Second, the results imply that portfolio managers should be aware of the out-performance of value investment strategy vis-à-vis the growth investment strategy. Investment strategy based on this indicator may enhance portfolio performance. Third, the results also imply that portfolio managers should give more attention to the cash earnings (pre-provision income) than to net income (provision income), in order to avoid subjectivity inherent in net income determination. This subjectivity is widely spreading among companies, especially banks, in Saudi Arabia. A close scrutiny of these companies financial statements provides strong evidence for that widely followed practice.

Conclusions

This study is an attempt to examine an observable characteristic in the banking sector in Saudi Arabia. The banking sector is one of the most liquid sectors of the Saudi stock market. Most of the assets and liabilities

on a banks balance sheet are stated at their present values. The banks should, therefore, trade at close to their book value. However, the sector trades at a premium over the book value due to inherent competitive advantages, such as monopoly of financial services and commercial banking, lack of competition and a large pool of no-cost/Islamic deposit base. Further, banks trade at premiums to their book value due to the value addition by their respective management.

The value addition by the management could be measured by the return on equity earned by each bank. Banks with higher ROE are likely to trade at higher premiums over their book values. This study tried to track the performance of banks having higher ROE with reference to the premium they are trading over book value (Higher ROE /PB). Based on this study we have found that banks having higher ROE /PB outperform both the sector average and portfolios with lower ROE/PB.

Although this study is not a direct test of market efficiency but it can be taken as a case against the efficiency of the Saudi stock market. A direct delineation and hence strong conclusions regarding the level and type of market inefficiencies that may exist in the Saudi Stock market warrant more profound and thorough analysis.

References

- Albazai, H. S., and A. Z. Diabi. 1998. Monetary Policy and Stock Market Efficiency: Empirical Evidence from the Saudi Stock Market. *Journal of Business and Economics* (King A/ Aziz University), 11: 89-107.
- Al-Lougani, Nabeel, E., and Mahmoud H. Mattar. 2001. Investment Performance of Value Stocks and Growth Stocks in Kuwaiti Stock Exchange. *Arab Journal of Administrative Sciences*, 8(2): 217-233.
- Almotairy O., M. M. Lenk, and N. Schultz. 1995. The Saudi Equity Investor: a Descriptive survey. *International Journal of Commerce and Management*, 5(3): 73-89.
- Banz, R. 1981. The Relationship between Mean Return and Market Value of Common Stock. *Journal of Financial Economics*, 9: 3-18.
- Barber, B. M., and J.D. Lyon. 1997. Firm Size, Book-to-Market Ratio, and Security Returns: a Holdout Sample of Financial Firms. *Journal of Finance*, 52: 875-883.
- Basu, S. 1977. Investment Performance of Common Stocks in Relation to Their Price-Earnings Ratios: A Test of the Efficient Market Hypothesis. *Journal of Finance*, 32(2), 663-682.
- Basu, S. 1983. The Relationship between Earnings Yield, Market Value and the Return for NYSE Common Stock: Further Evidence. *Journal of Financial Economics*, 12(1): 129-156.
- Butler, K. C and S. J. Malaikah. 1992. Efficiency and Inefficiency in Thinly Traded Stock Markets: Kuwait and Saudi Arabia. *Journal of Banking and Finance*, 16(2): 197-210.
- Chan, K. C., N. F. Chen, and D. A. Hsieh. 1985. An Exploratory Investigation of the Firm Size Effect. *Journal of Financial Economics*, 14: 451-471.
- Chan, K.C., H. Yasushi, and L. Josef. 1991. Fundamentals and Stock Returns in Japan. *Journal of Finance*, 46(5): 1739-1764.
- Chan, K., C., G. E. Benton, and M. S. Pan. 1992. An Empirical Analysis of Stock Prices in Major Asian Markets and the United States. *The Financial Review*, 27(2): 289-307.
- Chan, K. C., and Josef Lakonishok. 2004. Value and Growth Investing: Review and Update. *Financial Analysts Journal*, (January/ February): 71-86.
- Claessens, S. 1995. The Emergence of Equity Investments in Developing Countries Overview. *The World Bank Economic Review*, 9(1): 1-17.
- Claessens, S., D. Susmita, and J. Glen. 1995. Return Behavior in Emerging Stock Markets. *The World Bank Economic Review*, 9(1): 131-151.
- Dickinson, J.P. and K. Muragu. 1994. Market Efficiency in Developing Countries: a Case Study of the Nairobi Stock Exchange. *Journal of Business Finance and Accounting*, 21(1): 133-149.
- El-Erian, A. Mohamed, and M. S. Kumar. (1995). Emerging Equity Markets in Middle Eastern Countries. *IMF Staff Papers*, 42(2): 313-331.

- Eljelly, A. M. A. and K. S. Algurair. 2001 Performance Measures and Wealth Creation in an Emerging Market: The Case of Saudi Arabia. *International Journal of Commerce and Management*, 11(3 & 4): 57-70.
- Fama. E.F, and K.R. French. 1992. Cross Section of Expected Returns. *Journal of Finance*, 47: 427-465.
- Fama. E.F, and K.R. French. 1995. Size and Book-to-Market Factors in Earnings and Returns. *Journal of Finance*, 50: 131-155.
- Fama. E.F, and K.R. French. (1998) Value versus Growth: The International Evidence. *Journal of Finance*, 53(6): 1975-1999.
- Gerald R. J., R. R. Johnson and J. M. Mercer. 1997. New Evidence on Size and Price to Book Effect in Stock Return. *Financial Analyst Journal*, (November/ December): 34 - 42.
- Higgins, R. C. (1995). *Analysis for Financial Management*. Irwin Professional Publications, 4th edition.
- Lakonishok, J., A. Shleifer and R. W. Vishny. 1994. Contrarian Investment, Extrapolation and Risk. *Journal of Finance*, 49: 1541-1578.
- Reinganum, M. R. 1981. Misspecification of Capital Asset Pricing: Empirical Anomalies Based on Earnings Yields and Market Values. *Journal of Financial Economics*, 9: 19-46.
- Rosenberg, B., K. Reid and R. Lanstein. 1985. Persuasive Evidence of Market Inefficiency. *Journal of Portfolio Management*, 9: 18-28.
- Salmon Smith Barney. 2002. Equity Research: Global Assets Allocation, (August, 8, 2002).
- Stoll, H. R., and R. E. Whaley. 1983. Transaction Costs and the Small Firm Effect. *Journal of Financial Economics*, 12(1): 57-79.

Appendix
The Sampled Saudi Commercial Banks
(As of 31/12/2002)

Bank Name	Year of Establishment	Shares (Millions)	Paid-Up Capital (Million Saudi Riyals)	Shareholders Equity (Million Saudi Riyals)
Riaydh Bank	1957	80	4000	8386.204
Bank Al-Jazira	1975	12	600	751.1
Saudi Investment Bank	1976	22	1100	2159.987
Saudi Dutch Bank	1976	18.9	945	2302.9
Al-Bank Al-Saudi Al-Fransi	1977	36	1800	4751.3
Saudi British Bank	1978	40	2000	4283
Arab National Bank	1979	36	1800	3548.302
Saudi American Bank	1980	80	4000	8909.083
Al-Rajhi Banking and Investment Corp.	1987	45	2250	6837.68

* The current exchange rate between the Saudi Riyal (SR) and the U. S. Dollar (\$) is 1 \$ = 3.75 Saudi Riyals.

الملخص

خصائص الشركات وعائدات الأسهم: دراسة في سوق ناشئ

راضي صالح الحداد
البنك السعودي للاستثمار – الرياض

أبوذر محمد أحمد الجلي
جامعة الملك سعود – الرياض

سعت كثير من البحوث لدراسة وضع الأسواق المالية ودرجة كفاءتها؛ لما لهذا الجانب من أثر مهم على التوزيع الكفء للموارد الاقتصادية بين القطاعات والنشاطات الاقتصادية المختلفة. وتكتسب هذه الأبحاث أهمية خاصة في الأسواق الناشئة لدراسة درجة كفاءتها من جهة، ولقلة الدراسات التي أجريت عنها من جهة أخرى. وفي هذا الإطار يقوم هذا البحث بدراسة العلاقة بين نسبة "العائد على الأسهم / القيمة السوقية للقيمة الدفترية" وعائدات الأسهم في قطاع البنوك السعودية الذي هو أهم قطاعات سوق المال السعودي. واعتمد البحث على تكوين محافظ استثمارية على أساس هذه النسبة، ومن ثم على اختبار أدائها خلال أحد عشر عاما. وقد وجدت الدراسة أن المحافظ ذات النسبة العالية تفوقت في أدائها الاستثماري (العائد والمخاطر) على المحافظ ذات النسبة المنخفضة في معظم الفترات الزمنية التي غطتها الدراسة.

Abuzar M. A. Eljelly (Doctor of Business Administration, Finance, Southern Illinois University at Carbondale, 1994). Assistant Professor of Finance, Department of Business Administration, King Saud University, Saudi Arabia. Areas of Interest: Investments, Financial Markets and Institutions, Corporate Finance.

Radi S. Alhaddad (Master of Business Administration, King Aziz University, Kingdom of Saudi Arabia, 1990, Certified Financial Analyst (CFA), Deputy Group General Manager, Investment Services and Financial Planning, The Saudi Investment Bank. Areas of interest: Asset Management, Investment Services and Financial Sector Performance, and Market Efficiency.