



EARNINGS RESPONSE OF BANK STOCKS AND THEIR FACTOR-ANALYSED RISKS IN ASIA PACIFIC ECONOMIES

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Introduction

An important question in the study of banking and finance is "Do Modigliani and Miller propositions on capital structure apply to banks?" Miller (1995) answered, "Yes and no." Miller says that it is hard to see anything about demand securities (bank deposits) being so special as to rule out the applications of MM propositions to banks. What makes banks special, however, are not the securities they issue but the government guarantees that protect those securities. Government guarantees for bank deposits and other liabilities, do affect the cost of capital. One development that has affected the cost of bank capital has been the BASEL ACCORD of 1991. The same can be said of the BASEL ACCORD 2 that is coming on board next year in most countries. Therefore, if the cost of capital is different between banks and non-bank institutions, then will the banks, by taking higher risks in their assets liabilities management, experience a market reaction in tests of returns-to-earnings relations?

There is strong evidence that the earnings response coefficients are highly significant in several investigations over 40-years on the relation between abnormal returns of stocks and accounting earnings. Attempts to include non-earnings accounting variables in such research have led to mixed results. This paper takes a new approach using factor analysis to identify potential bank-relevant factors to examine if these factors, in addition to earnings, are also correlated with abnormal returns of bank shares. Factor analysis is used to reduce as many as 21 accounting and financial ratios into four factors, which were then input in the regressions. The results for Malaysia in Cheng and Ariff (2007), show high R-square in the regression between abnormal returns and (a) earnings change factor, which indicates a better fit than in studies of non-banks on the earning-to-price relation. Further evidence found is that (b) credit risk factor has significant information content beyond earnings change in the regression with abnormal returns of bank shares. These two factors are not found to be significant. Therefore, this paper proposes to extend the research to Asia-Pacific economies to differentiate the influence of various factor analyzed risks and their effects on the earnings response coefficients.

Theory and Evidence

A body of generally accepted findings has emerged in the institutionally more developed capital markets from the research following the lead of two pioneering studies (Ball and Brown 1968, and Beaver, Clarke and Wright, 1979) about the common stock *price revaluation effect from changes in accounting earnings*. The former study examined common stock price direction while the latter documented the magnitude of common stock price changes arising from the magnitude of earnings changes. There appears to be a very strong and significant response in the form of risk-adjusted share price changes in studies using quarterly earnings changes immediately around the date of announcement of earnings changes. The strength of the relation is indicated by a very high rank correlation ranging from 0.85 to 1.00 in the US capital market. The findings in other developed capital markets also reveal similar findings with substantial revaluation effect contingent on accounting earnings changes.

Cheng *et al.* (2001) is a modest attempt to answer whether the accepted findings in several *institutionally more developed* capital markets about the relevance of accounting earnings is applicable also to emerging markets: there are some 70 emerging markets in the world, and the literature on these markets is growing steadily. In that study, the relation between changes in unexpected earnings and share price changes in emerging markets was measured using a large number of firms. Necessary refinements, such as thin-trading correction, controlling for firm specific variables, separating earnings into components and related announcement trimming, were made to produce robust results. While a significant price-to-earnings relation is evident, the strength, consistency and magnitude of the relation were not as large as those reported in any institutionally more developed markets. The price adjustment is stronger if price reaction is measured over long periods, which shows that emerging markets may be a place of speculative trading. Firm-specific variables - revenue, firm size, debt-equity and auditor choice - do not appear to affect the price-to-earnings relation. Only the extraordinary earnings item has significant information content beyond unexpected earnings.

The traditional theory of financial intermediation is based on the critical function of commercial banks as the creators of financial contracts between deficit units and surplus units. More recent theories stress the role of commercial banks as risk managers and liquidity providers. The theoretical foundation of the banking industry is the systemic high leverage exposure of banks. There were many studies about the various risks in bank asset-liabilities management. Among them are, regulatory risk management of commercial banks. The empirical tests on these studies suggest that financial intermediaries coordinate different aspects of risk (e.g. credit and interest rate risk) in order to maintain a certain level of total risk. Other studies of similar theme used optimal gap and the loan loss disclosure.

Research Design

Regression Model

$$CAR_i = a_1 + a_2 SUE_i + a_3 Ir_i + a_4 Lr_i + a_5 Cr_i + a_6 Sr_i + \varepsilon_i \quad (1)$$

CAR_{it} = Cumulative risk adjusted abnormal returns for firm i in period t,

SUE_{it} = Standardized unexpected earnings for firm i in period t,

The relation between abnormal returns as the dependent variable and standardized unexpected earnings, interest rate risk (Ir), liquidity risk (Lr), credit risk (Cr) and solvency risk (Sr) as independent variables is tested in the regression:

The research question is whether these four identified "accounting-financial factors" have information content over and above the information from earnings disclosures (SUE).

Hypotheses Expected Result

Changes in stock prices are not explained/determined as shown by the sign and the magnitude of the unexpected annual earnings changes in banks.

Interest rate risk, liquidity risk, credit risk and solvency risk (capital adequacy ratio) factors do not effect the returns-to-earnings relation.

(i) Returns-to-earnings relation for banks

The expected result for this paper is that banks should have a strong returns-to-earnings relation. In fact, evidence in Malaysia (Cheng and Ariff, 2007) suggests that investors revalued bank share prices in response to earnings changes much more strongly than they did in the cases of non-banks as shown in this original returns-to-earnings relation.

(ii) Risk determinants of the returns-to-earnings relation for banks

- The factor analysis is expected to generate four main financial risk factors. The factors are credit risk, interest risk, leverage risk, and solvency risk factors.
- The coefficient of the credit risk factor is expected to be significant consistent with theory, the coefficient of the credit risk factor has a positive sign. The positive sign for the coefficients of the credit risk factor shows that a higher bank credit risk factor means that the banks have a higher provision for default.

- In other words, for banks having the same unexpected earnings where one has higher provision for defaults, the higher is the investors' valuation of that bank's share prices in response to earnings changes.

Significant of this Study

The findings in this paper suggest that accounting earnings is a price relevant variable for banks also (so, Miller's insight is correct) in other Asia Pacific economies and that earnings have a *contemporaneous* impact on share prices for banks in emerging and developed markets. That risk determinants affect the magnitude of the earnings response coefficients that stock prices change ordinarily in a statistically significant manner in response to earnings increases and decreases is quite evident, as is the case of existing findings. The credit risk factor of banks contributed significantly to the returns-to-earnings relation, which suggests that this is an important factor (we used a number of ratios) that influences the investors' revaluation of bank share prices.

- When compared these results to other banking's interest rate sensitivity, their findings are that stock returns of banks appear to be more responsive to rising interest rates. The study on information content of bank loan loss disclosure found evidence that is consistent with the signaling model, that banks taking the largest write-offs turn out later to be the strongest banks, with the fewest restructured loans. Such studies however are looking at only one aspect of total risk.
- This paper moved a step further by analyzing twenty-one financial ratios that covered all risk factors faced by banks in Asia-Pacific economies.
- The findings in this study led to the discovery that the risk factor certainly does enter banks share valuation in addition to earnings changes. Finally, this paper was able to identify the other bank risk factors that were significant.

References

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