Macroeconomic Impacts on Bank Performance and Evaluating Relationship Between Beta CAPM and Bank Cost of Equity – A Case of ACB BANK in 2 Stages

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ABSTRACT

There are 2 special stages of Vietnam economy during time 2011–2020: first is pre-Low (L) inflation stage 2011–2016 and second is post-L inflation stage (2015–2020). Our paper's objective is to analyze and measure effects of multi factors (internal and external) on both beta CAPM and cost of equity of CB commercial bank in Vietnam market. By using OLS regression which is a reliable method, our research results tell that firstly, A reduction of Rf and beta will reduce cost of equity and expected return. Last but not least, because ex rate and trade balance have positive impact on beta in pre-L inflation time, but negative impact in post-L inflation stage: we recommend increase trade balance to reduce risk in post-L inflation time. Therefore, our study can be expanded for other markets.

Keywords: Effects; Market risk premium; Risk policies; Vietnam banks; Beta CAPM; Market risk comparison.

1. Introduction

First, we recognize the importance of digital data in risk management function in banking also increase to a new level in recent years.

Next, Many economic experts have said that a bank that is too cautious with risks will create barriers to growth. However, this is probably not true for the Asia Commercial Joint Stock Bank (ACB).

In fact, the financial numbers show ACB's growth rate. Specifically, the bank's second-quarter 2023 report recorded consolidated pre-tax profit of nearly 10,000 billion VND, growing nearly 11% over the same period and completing 50% of the plan set at the beginning of the year.

Recently, ACB was also recognized in the TOP 50 Most Effective Business Companies in Vietnam 2023, TOP 3 Banking Industry voted by Investment Bridge Magazine and TOP 50 Best Listed Companies in Vietnam by the Magazine Forbes Vietnam honored (source: nld.com.vn).

In this paper we will consider to measure effects of market return and market risk premium on beta CAPM and cost of equity of a single big listed bank, Asia Commercial Bank (ACB) in Vietnam.

Research Questions:

Question 1: Explain the econometric model of measuring multi-factor effects on the beta CAPM of ACB bank?

Question 2: Measuring effects of market risk premium, beta and other factors on cost of equity of the selected bank?

Question 3: Present any risk policies we can derive?
2. Literature review

First, Gupta (2019) specified that Information system (IS) is important in almost all the functional areas of any bank i.e. HR, Marketing, Finance, etc. It also helps in risk management and cash management along with maintaining long-run customer relationship.


And we summarize previous studies as follows (Figure 1):

![Figure 1. Summary of previous studies (SOURCE: Author Synthesis)](image)

Next, Imran et al (2021) found that the market premium and the interest rate factors are significantly affecting the industry equity premium of all the nonfinancial sectors.

3. Methodology

3.1. Method and Data

This study mainly use combination of quantitative methods via multi-factor econometric model and qualitative methods including synthesis, inductive and explanatory methods.

Authors also use experiences and observations for conducting analysis.

For quantitative analysis, the study is supported with OLS regression.

Data is collected from reliable internet sources and websites.

Looking at descriptive statistics below, we see that:

Figure 2 shows correlation between market risk premium and beta higher than between beta and CPI.
4. Main Results

4.1. Overall results

We analyze from below charts that:

- **Chart 1:** between cost of equity and CPI, positive corr in both post-L inflation time and in pre-L inflation period.

- **Chart 2:** in post-L time, negative corr between G and cost of equity but slightly positive corr between beta and G.

**Chart 1.** CPI and cost of equity in 2 stages

**Chart 2.** Corr with GDP growth G
4.2. OLS Regression results

4.2.1. OLS results for Beta ACB

We analyze from below figures:

Figure 3: IM has positive impact on beta, but IM and R has negative impact on cost of equity.

**Figure 3. Single OLS for Beta**

(SOURCE: Author Analysis with Eview)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM</td>
<td>0.007452</td>
<td>0.005408</td>
<td>1.377030</td>
<td>0.1983</td>
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<tr>
<td>C</td>
<td>-0.252127</td>
<td>0.927583</td>
<td>-0.271810</td>
<td>0.7913</td>
</tr>
</tbody>
</table>

R-squared: 0.159552
Adjusted R-squared: 0.075507
S.E. of regression: 0.756602
Sum squared resid: 5.722947
Log likelihood: -12.58473
Durbin-Watson stat: 3.085762

**Figure 4. Multi factors impact on cost of equity pre-L inflation time**

(SOURCE: Author Analysis with Eview)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETAACB</td>
<td>0.334029</td>
<td>0.140357</td>
<td>2.379854</td>
<td>0.2532</td>
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<tr>
<td>CPI</td>
<td>-0.997856</td>
<td>0.090919</td>
<td>-0.097720</td>
<td>0.9704</td>
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<tr>
<td>G</td>
<td>-0.788015</td>
<td>2.515693</td>
<td>-0.107454</td>
<td>0.4766</td>
</tr>
<tr>
<td>MARKETRETURN</td>
<td>-0.439475</td>
<td>1.152174</td>
<td>-0.053909</td>
<td>0.0657</td>
</tr>
<tr>
<td>MRFREMIUM</td>
<td>0.434635</td>
<td>0.165774</td>
<td>0.053220</td>
<td>0.9662</td>
</tr>
<tr>
<td>R</td>
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<td>RF</td>
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<tr>
<td>TAXRATE</td>
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<td>0.947979</td>
<td>0.6170</td>
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<tr>
<td>VNINDEX</td>
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</tr>
<tr>
<td>C</td>
<td>-0.673747</td>
<td>1.020082</td>
<td>-0.660483</td>
<td>0.2684</td>
</tr>
</tbody>
</table>

R-squared: 0.998635
Adjusted R-squared: 0.984982
S.E. of regression: 0.028703
Log likelihood: -40.49137
Durbin-Watson stat: 2.817969
Figure 5. Muti-factors impact on cost of equity in Post-L inflation

(SOURCE: Author Analysis with Eview)

5. Discussion

- For external factors, there is an opposite trend: negative corr in post-L time and positive corr in pre-L time, for trade balance and exchange rate impact on the cost of equity.

- In post-L inflation: coefficient 8.1 positive corr, while in pre-L inflation; coefficient -0.4 negative corr.

Next, when we consider the impact of the tax rate on the cost of equity:

- In post-L inflation: coefficient 2.6 > In pre-L inflation; coefficient 2.4.

6. Conclusion

Risk Management Information System (RMIS) implications

Because R, IM and Rf have positive impact on beta ACB while G and MR Premium have positive corr in pre-L inflation time but negative corr in post-L inflation stage: we suggest increasing industrial manufacturing (IM) and Rf to reduce market risk (beta) during post-L inflation stage.

Last but not least, because ex rate and trade balance have positive impact on beta in pre-L inflation time, but negative impact in the post-L inflation stage: we recommend increase trade balance to reduce risk in post-L inflation time.

Mukhamadeev, et al. (2019) stated the role of information systems for entrepreneurship education in developing countries in the example of the Azerbaijan education system and Internet banking.
7. Limitation of Research

We can expand our research model for other industries and other markets.

Declarations

Source of Funding

The study has not received any funds from any organization.

Competing Interests Statement

The authors have declared no competing interests.

Consent for Publication

The authors declare that they consented to the publication of this study.

References


