Factors Affecting Business Performance: Evidence from Listed Aviation Enterprises in Vietnam

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ABSTRACT: This study aims to determine and analyze the influence of internal factors on business performance of aviation enterprises in Vietnam. The article uses data collected from financial statements from 2013 to 2022 of 11 aviation enterprises listed on the Vietnam stock market. Applying SPSS 26 software in quantitative analysis, research results show that the factors solvency, total asset turnover, and enterprise size have a positive influence, while capital structure has a negative influence. on the business performance of the enterprise, the factors of business time and the proportion of fixed assets are not enough basis to consider the impact on the business performance of the enterprise. Using the research results, the author proposes some solutions to improve business efficiency of aviation enterprises in the future.

KEYWORDS: Aviation enterprises, business efficiency, influencing factors, ROA

I. INTRODUCTION

The raging Covid-19 pandemic has caused a huge negative impact on the global economy and is likened to a great recession, greatly affecting the business activities of aviation businesses. After nearly three years of almost complete freeze due to the impact of the Covid-19 pandemic, the business performance of businesses has been severely affected. Faced with the current business situation of aviation enterprises, in order to improve the business efficiency of the enterprise, financial administrators must design a system of indicators to measure and evaluate business efficiency, understanding the mechanism of impact of factors on business efficiency, thereby providing the right solutions to improve business efficiency. Enterprises in Vietnam’s aviation industry include 3 groups: Air transport enterprises; Enterprises supporting air transport on the ground; Businesses supporting aerial air transport (Anh, 2017) (Nam, 2021). Although there have been many studies in the world on business performance of enterprises, the results of these studies are not really consistent with the current situation of aviation enterprises in Vietnam in recent times. Therefore, this article aims to analyze and find internal factors that affect business performance and quantify the level of influence of those factors on aviation businesses in recent times. Researching factors affecting business efficiency in the current context is an important basis for proposing appropriate and synchronous solution systems that contribute to improving business efficiency of aviation enterprises. in the near future is extremely necessary.

II. LITERATURE REVIEW AND HYPOTHESES

Business performance of a business can be reflected through many indicators, such as Tobin's Q, price-to-earnings ratio (P/E), market value of the business (Phillips & Sipahioğlu, 2004) (Zeitun & Tian, 2007) (Jiraporn & Liu, 2008) or profitability ratios such as profit after tax ratio on assets (ROA), profit after tax ratio on equity (ROE) (Abor, 2005; Ahmad & Abdullah, 2013; Cheng et al., 2010). However, in general, it can be seen that the business performance of an enterprise reflects the relationship between profits earned and costs spent.

From the above studies, the author chooses the ratio of profit after tax to total assets (ROA) as the dependent variable, representing the business efficiency of aviation enterprises.

Regarding factors affecting business performance of enterprises, previous studies have mentioned many different factors:
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**Solvency**
(Saeedi & Mahmoodi, 2011) measured the factors affecting business performance of public sector enterprises during the period from 1994 to 2007. The results for found that the increase in liquidity levels had a strong impact on financial performance, thereby improving the company's business performance. In fact, short-term debt solvency ratio and quick ratio are two indicators chosen by many researchers to include in research models. Aviation businesses have a small proportion of inventory value and are highly dependent on the season. Therefore, the short-term debt solvency coefficient will be chosen as a representative of solvency in the research model of factors affecting business performance of enterprises. (Syukhandri & Rahayu, 2022) researched factors affecting the profits of insurance businesses in Indonesia. The results show that the current ratio has a negative and significant impact on profitability when the R² value is 0.770904, meaning 77% of profitability is affected by liquidity and liquidity. payment, the remaining 23% is influenced by other variables not considered in this study. Research by (Nguyen & Nguyen, 2020) researches the factors that determine the financial performance of 1,343 Vietnamese companies classified into six different specialties listed on the Vietnam Stock Exchange from 2014 to 2017. Research results show that: (1) Enterprise size has a positive impact on both ROA and ROS, especially ROA but has the opposite impact on ROE, (2) Safety ratio has a positive impact on ROE. ROA and ROS but have a negative impact on ROE, (3) Financial leverage has a significant negative impact on ROE and ROS but a positive impact on ROA, (4) Liquidity has a positive impact on both ROA and ROE but has a significant negative impact on ROA. negative impact on ROS and (5) Solvency has a positive impact on ROA and ROS but a negative impact on ROE.

From the above studies, solvency is measured by short-term assets divided by short-term liabilities and has the following hypothesis:

H₁: Solvency positively affects business performance

**Total asset turnover**
Research by (Qamara et al., 2020) on factors affecting the profitability of Transportation Companies listed on the Indonesia Stock Exchange. Using quantitative methods with a research sample of 71 transportation companies listed on the Indonesia Stock Exchange, data collected from financial statements from 2014 to 2018. The analytical method used is multiple linear regression analysis. The research results show that Current Ratio and Debt-to-Equity Ratio do not partially affect ROA, while Total Asset Turnover partially affects ROA. And three independent variables (CR, DER and TATO) simultaneously affect the dependent variable, profitability (ROA). (Gunawan et al., 2022) analyzes the impact of current ratio (CR), total asset turnover (TATO), debt-to-asset ratio (DAR) and debt-to-equity ratio (DER) to (ROA). The subjects in this study are 21 plantation companies, data were collected from financial reports published on the website www.IDX.co.id. The results of this study show that Current Ratio does not affect ROA, TATO has a positive and significant impact on ROA, DAR has a negative and significant impact on ROA, DER has a positive impact and significantly to ROA.

Total asset turnover is measured by revenue divided by average total assets and has the following hypothesis:

H₂: Total asset turnover positively affects business performance

**Capital structure**
According to the theory of capital structure, businesses use debt capital to benefit from tax shields. At a high debt-to-equity ratio, the cost of debt also increases. If the business uses debt capital ineflectively, the increase in debt ratio will have a negative impact, reducing the business efficiency of the business. Can lead to bankruptcy if the business is unable to pay interest and debt when due. The capital structure of a business is an important factor affecting business performance. Some studies suggest that capital structure has a negative impact on businesses. Research by (Kester, 1986) shows a negative relationship between capital structure and profitability of companies in the US and Japan. Results of research by (Ahmad & Abdullah, 2013) on 58 enterprises in Malaysia or research by (Tsuji, 2013) on a sample of 73 manufacturing industry companies listed on the stock market Tokyo stock exchange period 1981-2011 also showed similar results. (TITMAN & WESSELS, 1988) collected panel data of 469 US listed companies in the manufacturing sector from 1972 to 1982, the authors found a negative correlation between profit and debt ratio. (Rajan & Zingales, 1995) pointed out the negative relationship between leverage and company business performance and this relationship will appear more clearly as the size of the company increases.

Capital structure is measured by liabilities divided by total assets and has the following hypothesis:

H₃: Capital structure negatively affects business performance

**Enterprise scale**
Enterprise scale plays an important role in business efficiency because it represents the business's resources. (Majumdar, 1997) said that larger businesses have higher business efficiency than small businesses and vice versa (Aydın Unal et al., 2017)
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found a positive relationship between business size and profits. (Gleason et al., 2000) argue that business size has a positive and significant impact on business performance measured by ROA. (Wu & Chua, 2009) argue that larger-scale businesses have better competitiveness due to their advantage in accessing resources. Some other empirical studies around the world also confirm that business size is the most important factor affecting the financial performance of businesses (Marte Uadiale, 2010). Research by (Pouraghajan et al., 2012) all show that business size has a positive and significant impact on business performance. Enterprise size is measured by the natural logarithm of total enterprise assets.

Enterprise size is measured by the natural logarithm of total enterprise assets and has the following hypothesis:
H₄: Enterprise size positively affects business performance

Business time

Business duration is calculated by the number of years from the time the business was established to the time of research. Time in business represents the experience of companies, and is a decisive factor in the company's business performance. In theory, investors will trust an established company more than a startup. This is because a more established company is considered to offer greater profit margins than a newly established company. However, according to the research results of (Majumdar, 1997) concluded that age gradually reduces performance. New companies are best, but then profits will start to decline and eventually they won't be able to compete with smaller companies. (Kalbuana et al., 2022) researched on data collected from 18 listed Indonesian wholesale and retail trading companies during the period 2016-2020. This study shows that firm age has a significant positive impact on earnings management.

Business time is measured by the time from the establishment of the business to the year of study and has the following hypothesis:
H₅: Business time positively affects business performance

Proportion of fixed assets

According to research by (Zeitun & Tian, 2007), the proportion of fixed assets negatively impacts business performance. However, (Pouraghajan et al., 2012) argued that increasing the proportion of fixed assets has a positive impact on business performance. Aviation businesses are characterized by very large fixed assets (Nam, 2021). Investing in fixed assets with modern technology will help businesses reduce costs as well as save time, contributing to improving business profits.

The proportion of fixed assets is measured by the value of net fixed assets divided by total assets and has the following hypothesis:
H₆: The proportion of fixed assets positively affects business performance

III. RESEARCH METHODS

The research sample includes data over a 10-year period (from 2013 to 2022) of 11 aviation enterprises in Vietnam. The source of data collected is from information on the financial statements of aviation businesses listed on the stock exchange. The financial statements of these enterprises are established on the basis of compliance with the Vietnamese accounting standards system and have been audited.

Based on the research of (Bokpin & Onumah, 2009)(Prabhakaran Nair, 2011) the econometric model is selected to test the impact of factors. Intrinsic to the business efficiency of Vietnamese aviation enterprises are:

Overall regression model:

\[ \text{ROA}_i = \beta_1 + \beta_2 \text{LIQ}_i + \beta_3 \text{TM}_i + \beta_4 \text{TDR}_i + \beta_5 \text{SIZE}_i + \beta_6 \text{TIME}_i + \beta_7 \text{TANG}_i + u_i \]

The article runs the model using SPSS 26 software and uses the least squares (OLS) method to determine the regression coefficient \( \beta \). Based on the results obtained when running the program, we will write equations for factors affecting the business performance of the enterprise. Then test the model's suitability, which means testing \( \beta \) to know whether the independent variable can explain the dependent variable or not. Evaluate the model's suitability through the adjusted coefficient of determination \( R^2 \) (Adjusted R Square) to determine the model's ability to explain in practice.

In the specific regression model of the study, the dependent variable is measured by the ratio of profit after tax to average total assets and coded as ROA.

The independent variables are coded as follows:

LIQ: Solvency
TM: Total asset turnover
TDR: Capital structure
SIZE: Enterprise scale
TIME: Business time
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TANG: Proportion of fixed assets

IV. RESEARCH RESULTS

Descriptive statistical analysis

Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>-.514359</td>
<td>.716831</td>
<td>.120110</td>
<td>.18179671</td>
</tr>
<tr>
<td>LIQ</td>
<td>.2317642</td>
<td>10.18653</td>
<td>2.17807</td>
<td>1.877191</td>
</tr>
<tr>
<td>TM</td>
<td>.0864328</td>
<td>4.630285</td>
<td>1.44071</td>
<td>.9170681</td>
</tr>
<tr>
<td>TDR</td>
<td>.083954</td>
<td>1.168364</td>
<td>.512834</td>
<td>.2382237</td>
</tr>
<tr>
<td>SIZE</td>
<td>10.72555</td>
<td>18.38484</td>
<td>13.9607</td>
<td>2.465582</td>
</tr>
<tr>
<td>TIME</td>
<td>1</td>
<td>44</td>
<td>17.05</td>
<td>10.402</td>
</tr>
<tr>
<td>TANG</td>
<td>.002404</td>
<td>.7630858</td>
<td>.296153</td>
<td>.2291658</td>
</tr>
</tbody>
</table>

Source: Calculated results from SPSS 26 software

The authors put the data set collected from 11 aviation enterprises in the period 2013–2022 with 110 observations into SPSS software version 26 to run descriptive statistics and obtain the results in Table 2.

- Return on business capital (ROA) has an average value of 0.1201 (12.01%) with a standard deviation of 0.18. The above results show that the business efficiency of aviation enterprises is quite high, however in the years affected by the Covid 19 pandemic ROA decreased sharply, in which the smallest value was -0.514 and The highest value is 0.716.
- Solvency ability (LIQ) has an average value of 2.17 with a standard deviation of 1.87. This index is greater than 1, showing that the short-term solvency of aviation businesses is in good condition.
- Total asset turnover (TM) has an average value of 1.44. This result shows that the total asset turnover of aviation businesses is quite good.
- Capital structure (TDR) or debt ratio of airline businesses is at 0.512 (51.2%) with a standard deviation of 0.238. This coefficient shows that of its total assets, 51.2% is loan capital. This is a relatively high coefficient in the capital structure.
- Enterprise size (SIZE) is measured by the logarithm of total asset value, with an average value of 13.96, equivalent to more than 1,000 billion VND. Because the business characteristic of the aviation industry is to invest heavily in facilities, most aviation businesses have quite large-scale business capital.
- The average time in business (TIME) of an airline business is 17 years, of which the longest business time is 44 years. Thus, in the research sample, the selected aviation businesses are mostly businesses that have been established for many years, have been in business for a long time, and have experience in aviation business activities.
- The proportion of fixed assets (TANG) has an average value of 0.2961, standard deviation is 0.229, this is a suitable result for businesses with aviation business activities.

Correlations

Table 2. Correlations

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>LIQ</th>
<th>TM</th>
<th>TDR</th>
<th>SIZE</th>
<th>TIME</th>
<th>TANG</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
<td>.534*</td>
<td>.327*</td>
<td>-.605*</td>
<td>-.216</td>
<td>-.113</td>
<td>-.119</td>
</tr>
<tr>
<td>LIQ</td>
<td>.000</td>
<td>1</td>
<td>-.233*</td>
<td>-.819*</td>
<td>-.008</td>
<td>-.378*</td>
<td>-.179</td>
</tr>
<tr>
<td>TM</td>
<td>.014</td>
<td>.066</td>
<td>1</td>
<td>.492</td>
<td>.021</td>
<td>.000</td>
<td>.179</td>
</tr>
<tr>
<td>TDR</td>
<td>.000</td>
<td>.000</td>
<td>.935</td>
<td>.219*</td>
<td>1</td>
<td>-.026</td>
<td>.000</td>
</tr>
<tr>
<td>SIZE</td>
<td>.153</td>
<td>.033</td>
<td>.788</td>
<td>1</td>
<td>-.278*</td>
<td>.009</td>
<td>.923</td>
</tr>
<tr>
<td>TIME</td>
<td>.003</td>
<td>.368*</td>
<td>.368*</td>
<td>1</td>
<td>1</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>TANG</td>
<td>.296</td>
<td>.296</td>
<td>.296</td>
<td>.296</td>
<td>.296</td>
<td>.296</td>
<td>.296</td>
</tr>
</tbody>
</table>

Source: Calculated results from SPSS 26 software.
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Correlation is significant at the 0.01 level (2-tailed).
Correlation is significant at the 0.05 level (2-tailed).

Source: Calculated results from SPSS 26 software

The correlation coefficient between variables shows the relationship between variables. The correlation between variables is evaluated through the Pearson coefficient (r) with a significance level of 5% (Sig≤0.05). From Table 5, the correlation test between the independent variables and the dependent variable ROA shows that the LIQ variables; TM; TDR; SIZE has sig all smaller than 0.05. Thus, there is a linear relationship between these independent variables and the ROA variable. What about TIME variables; TANG has a sig value greater than 0.05 so it does not have a linear relationship with ROA. Between independent variables, there is no too strong correlation when the absolute value of the correlation coefficient between pairs of variables is less than 1, the possibility of collinearity and multicollinearity is also lower.

Analyze regression results

To consider the impact of the cash conversion cycle on profitability, the study applied a linear regression model and had the following results:

According to Table 3. ANOVA gives us F-test results to evaluate the appropriateness hypothesis of the regression model. The F-test Sig value is 0.000 < 0.05, meaning R² ≠ 0. The regression model is appropriate.

Table 3. ANOVA

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.079</td>
<td>6</td>
<td>.346</td>
<td>23.424</td>
<td>.000b</td>
</tr>
</tbody>
</table>

Source: Calculated results from SPSS 26 software

Table 4. Model Summary

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>.760a</td>
<td>.577</td>
<td>.552</td>
<td>.1216219</td>
<td>.808</td>
</tr>
</tbody>
</table>

Source: Calculated results from SPSS 26 software

With R² value = 0.552, it shows that the independent variables included in the regression analysis affect 55.2% of the variation of the dependent variable, the remaining 44.8% is due to variables outside the model and random errors. With the Durbin Watson statistical value = 0.808 ranging from 0 to 4, there is no first-order serial correlation phenomenon.

Regression results

Table 6. Regression coefficients

<table>
<thead>
<tr>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-.880</td>
<td>.290</td>
<td>-3.035</td>
<td>.003</td>
</tr>
<tr>
<td>LIQ</td>
<td>.101</td>
<td>.032</td>
<td>.422</td>
<td>3.148</td>
</tr>
<tr>
<td>TM</td>
<td>.150</td>
<td>.023</td>
<td>.647</td>
<td>6.460</td>
</tr>
<tr>
<td>TDR</td>
<td>-.111</td>
<td>.039</td>
<td>-.352</td>
<td>-2.850</td>
</tr>
<tr>
<td>SIZE</td>
<td>.314</td>
<td>.102</td>
<td>.294</td>
<td>3.071</td>
</tr>
<tr>
<td>TIME</td>
<td>.011</td>
<td>.019</td>
<td>.046</td>
<td>.589</td>
</tr>
<tr>
<td>TANG</td>
<td>.005</td>
<td>.013</td>
<td>.032</td>
<td>.418</td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA

Source: Calculated results from SPSS 26 software

The results in Table 6 show that the variables TIME and TANG have Sig values of 0.557, respectively; 0.677 is greater than 0.05, so this variable is not meaningful in the regression model, or in other words, has no impact on the dependent variable ROA. The remaining variables LIQ; TM; TDR; SIZE all have a t-test Sig of less than 0.05, so these variables are all statistically significant and impact the ROA variable. The regression coefficient of the TDR variable has a negative sign so it has a negative impact, the remaining variables all have a positive sign so they have a positive impact on the ROA variable. Also according to Table 6, the
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variance magnification factor VIF of the independent variables ranges from 1 to 5, this result indicates that there is a moderate correlation between a certain independent variable and other independent variables in the sample model.

From the regression coefficient results, a standardized regression equation can be built as follows:

\[ \text{ROA} = 0.422*\text{LIQ} + 0.647*\text{TM} - 0.352*\text{TDR} + 0.294*\text{SIZE} + \epsilon \]

Based on the magnitude of the standardized regression coefficient Beta, the order of impact from strongest to weakest of the independent variables on the ROA variable is: TM (0.647) > LIQ (0.422) > TDR (-0.352) > SIZE (0.294). This result is consistent with hypotheses H2, H3, H4 in the theoretical research model.

V. CONCLUSION AND POLICY IMPLICATIONS

Conclude

The research results have evaluated the factors affecting the business performance of aviation enterprises in Vietnam, including: Solvency, total asset turnover, and business size have a positive influence and capital structure has a negative effect. This result has helped the author synthesize and propose solutions to enhance business efficiency for aviation businesses in the future. Although certain results have been achieved, the research still has limitations: The research sample only collected data from the financial statements of 11 aviation enterprises listed on the Vietnamese stock market. On the other hand, aviation businesses listed on the Vietnamese stock market often operate in a combination of other business lines, so it is difficult to evaluate aviation business activities separately. These are gaps for further research on the business efficiency of aviation businesses in Vietnam.

Policy implications

From the research results, it shows that aviation enterprises with good ability to pay short-term debt will improve business efficiency and the faster the total asset turnover, the higher the business efficiency. The lower the debt ratio, the higher the business efficiency of the business. Although the variables of time in business and proportion of fixed assets had an initial impact in the same direction, they were not statistically significant. Therefore, the results of this study are not enough basis to conclude the impact of these factors on the business performance of aviation businesses in Vietnam.

Aviation businesses have just experienced the Covid-19 pandemic, which has severely affected their business performance. To further improve business efficiency, overcome competition challenges and overcome the consequences of the pandemic, aviation businesses need to implement the following solutions:

First, control solvency. Aviation businesses need to control the short-term debt solvency ratio at a reasonable level by effectively using short-term assets, including receivables and cash. Develop and implement receivable debt management policies, create a table to monitor cash receipts and expenditures, avoid the situation of too much idle cash, and strengthen debt collection. Aviation is a highly seasonal industry, relying heavily on changes in air travel demand, as well as on aircraft maintenance cycles, so carriers are often the busiest and most beneficial in the summer. Meanwhile, aircraft inspection, maintenance, repair and overhaul procedures are often scheduled to be performed in winter. Therefore, when airlines are undercapitalized, this leads to cash flow gaps that affect the entire industry, including suppliers.

Second, increase total asset turnover by many measures to increase revenue such as credit policies, promotions, introducing green and safe products, and promoting electronic marketing. There are solutions to save capital, preserve and maintain aviation facilities to effectively exploit business capital.

Third, choose a reasonable capital structure, adjust the capital structure in the direction of gradually reducing debt ratio and increasing equity. With the current debt ratio of over 50% being quite high, if there is instability in business, the negative impact of financial leverage and business risks will greatly reduce the business efficiency of the enterprise. If a business enters a difficult period, with poor business performance and rapidly increasing pressure to repay loans, the optimal solution is to prioritize the use of equity financing, following the pecking order theory in capital mobilization. Therefore, businesses need to maintain business efficiency, control incurred costs, lower product costs, improve product quality, and accelerate project completion to minimize costs. arising fees..., especially restructuring loan portfolios to minimize financial costs for businesses.

Fourth, aviation businesses that have been in business for a long time and are large in scale should take advantage of their advantages to increase competitiveness by many measures such as reducing prices, expanding systems and distribution channels, improve marketing efficiency, market research, brand promotion and positioning to expand market share. Enterprises take advantage of their scale strengths to seek commercial credit capital, issue shares, increase debt security ratios and increase credit levels, reducing financial risks for businesses.
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REFERENCES


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