EXTERNAL DETERMINANTS OF THE STOCK PRICE PERFORMANCE OF TOURISM, TRAVEL, AND LEISURE FIRMS: EVIDENCE FROM ASEAN5

BY

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ABSTRACT

This study examines the impact of external macroeconomic determinants on the stock price performance of tourism, travel, and leisure firms in ASEAN5 countries over the period 2010 to 2023. Using the Arbitrage Pricing Theory framework, the analysis incorporates five external variables: market return, exchange rate, industrial production, commercial and industrial loans, and international tourist arrivals. Panel regression models are estimated at both the aggregate and disaggregate levels, including an extended analysis of tourism-linked firms in the healthcare sector, reflecting the rise of medical tourism. The findings reveal that market return are consistently significant drivers of stock performance, while the impact of other variables varies by sub-sector.

Keywords: Tourism stock performance, ASEAN5, External determinant

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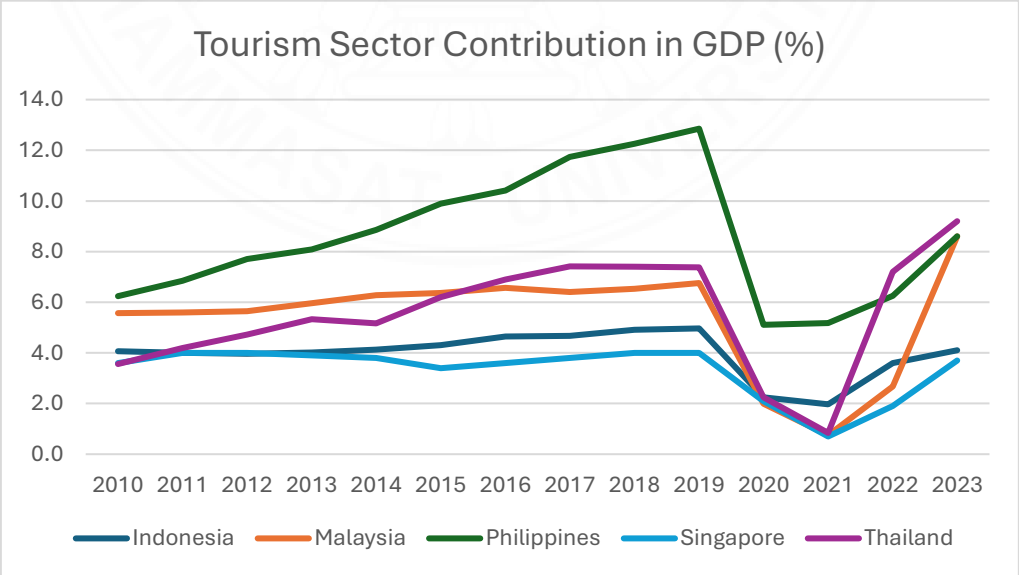
CHAPTER 1
INTRODUCTION

Tourism is one of the most significant sectors in the global economy, consistently ranked among the top four export industries worldwide, following fuel, food, and chemicals. Within ASEAN5 countries, Thailand, Malaysia, Singapore, Indonesia, and the Philippines, tourism plays an indispensable role in driving economic growth. The sector not only generates foreign exchange earnings but also supports job creation and infrastructural development, making it a cornerstone of national economies.

The importance of tourism in the country could be seen from the percentage of tourism sector contribution in GDP and inbound tourism expenditure over export goods and services, as shown in the graph tourism sector has a contribution of 3-13% to GDP and the revenue from inbounds tourism expenditure has a contribute of 3-20% of exports goods and services before COVID-19.

Figure 1.1

Tourism sector contribution in GDP (%) from 2010-2023



The two major segments of target groups for tourism are domestic and international tourists. Since they have different motivations and financial behaviors, it is likely that external factors like exchange rates, industrial production indices, commercial loans or tourist arrivals results will affect them differently. Additionally, the rise of emerging trends, such as medical tourism, has introduced new complexities to the industry. In recent years, medical tourism has grown rapidly across the ASEAN5 countries, attracting international visitors looking for affordable or specialized healthcare services. While it doesn't fall under the traditional definition of tourism, this trend is closely connected to the sector, as it can indirectly influence the performance of tourism-related stocks.

Tourism plays a crucial role in the economies of ASEAN5 countries, there is still limited research on how external macroeconomic factors shape the stock price performance of tourism-related firms. Factors such as exchange rate fluctuations, industrial production changes, commercial lending, and tourist arrivals can affect the financial health of tourism firms. However, their effects may vary depending on the target group within the sector. For instance, while international tourists may be more sensitive to currency movements, domestic tourists are likely influenced by local economic conditions. Moreover, the emergence of trends like medical tourism adds another layer of complexity, as these non-traditional tourist segments may react differently to external shocks compared to conventional travelers.

Given these complexities, it is essential to conduct both aggregate and disaggregate analyses to fully capture how different segments of the tourism industry respond to external factors. This dual approach enables a more comprehensive understanding of the unique stock price dynamics affecting tourism, travel, and leisure firms operating within the ASEAN5 region.

This study aims to identify the effect of important external factors on the stock price performance of tourism, travel, and leisure firms within the ASEAN5. The study will also consider differences between domestic and international tourists, in addition to conducting an analysis at aggregate and disaggregate levels as well as the new trends like medical tourism. The study also aims to examine how these external factors influence the financial performance of tourism-related stocks and to identify any differential effects across segments of the tourism industry. To achieve the objectives,

this study's key research questions is How do key external determinants, such as exchange rates, industrial production, loans, and tourist arrivals, impact the stock price performance of tourism, travel, and leisure firms in ASEAN5?, What differences can be observed in the effects of these determinants when analyzing the tourism sector at aggregate and disaggregate levels, considering the separate impacts on domestic and international tourist target groups?, and How do emerging trends like medical tourism influence the stock performance of tourism-related firms in ASEAN5? The findings from this study are expected to offer insights to portfolio managers, investors, policymakers, and managers of tourism-related companies in ASEAN5 countries.

This study is limited to the publicly listed firms in tourism, travel, and leisure sector in ASEAN5 countries and covers period from 2010 to 2023. The external determinants examined in this research include exchange rates, industrial production, commercial and industrial loans, and international tourist arrivals, all of which are critical indicators of economic and financial conditions.

CHAPTER 2
REVIEW OF LITERATURE

2.1 Capital Asset Pricing Model and Arbitrage Pricing Theory

The Capital Asset Pricing Model (CAPM) The Capital Asset Pricing Model (CAPM), which Sharpe (1964) introduced, is one of the most renowned models for estimating the expected return on an asset. It is based on a single factor: market return. According to CAPM, an asset's return is primarily determined by its sensitivity to market risk, represented by the market return, and does not reflect the influence of other macroeconomic variables. However, for simplifying the complexities of asset return, CAPM has been blamed for relying on a single risk factor. The CAPM formula is expressed as:

$$\mathrm{E}(R_i) = r_f + \beta_i(\mathrm{E}(R_m) - r_f) \quad \ldots(1)$$

where $\mathrm{E}(R_i)$ denotes expected return on the asset; r_f denotes risk-free rate; β_i denotes sensitivity of the asset to market risk; $\mathrm{E}(R_m)$ denotes expected return on the market. The Arbitrage Pricing Theory (APT), Stephen Ross first put forth the arbitrage pricing theory in 1976. It offers a way to comprehend the returns of financial assets that is rooted in multiple macroeconomic factors unlike the CAPM, which is grounded in just one. APT proposes that a host of systematic risks can and do affect the returns on an asset, and every factor in the model has its commensurate risk. Analyzing the impact of a macroeconomic variable such as tourism arrivals on stock returns of stocks in the tourism sector can be done using the APT. The APT formula can be expressed as:

$$R_i = E(R_i) + \beta_{i1}F_1 + \beta_{i2}F_2 + \ldots + \beta_{ik}F_k + \tilde{\varepsilon}_i \quad \ldots(2)$$

where R_i denotes the return on asset i; β_{ij} denotes the sensitivity of the asset i's return to the k-th factor; $F_k$denotes the k-th zero mean common factor; $\tilde{\varepsilon}_i$ denotes the noise term or error term for asset i. APT can be used to analyze the impact of a

macroeconomic variable such as tourism arrivals on the stock market return of stocks that are specific to the tourist sector. Previously, APT has been used to assess how many different factors affect stock returns of companies in the same sector. Furthermore, APT has been applied to analyze the effects of certain variables such as oil price on stock returns in energy sector. For example, Uwubanmwen and Obayagbona (2012); Masood et al. (2019); and Dada et al. (2021) have shown that prices of oil with other macroeconomic factors affect returns of energy stocks significantly. This shows that APT can be used in sectors that are influenced significantly by external economic factors. Therefore, this study employs APT to provide empirical data on how tourist arrival and other macroeconomic factors influence stock market performance of stocks that rely on tourism in the ASEAN-5 countries.

2.2 Impact of External Determinants on Tourism Stock Performance

The market return is a proxy for overall fund flow within the capital market, reflecting investment activity and cost of capital. A positive market return suggests favorable market conditions, attracting more investments and impacting tourism stock performance as investor sentiment improves. For tourism firms, market return can indicate broader economic stability, which can drive capital investment and cost of capital. Previous studies show that market return has a positive impact on tourism-related stocks, with higher market risk often prompting higher investor demand for returns, thereby driving up stock prices (Siregar, 2019). However, the sensitivity to market return can vary, as findings in New Zealand's tourism sector suggest that market risk premiums may be negative sometimes, underscoring the importance of including macroeconomic factors alongside market returns when evaluating stock performance (Lim & Chan, 2013).

Commercial and Industrial Loans provide a more focused view of liquidity within the money market. While market return captures capital market movements, commercial and industrial loans reflects available credit and liquidity within the economy, impacting firms' operational cash flows and capacity for investment. For tourism firms, financial liquidity is crucial in order to sustain operations when the demand is uncertain and in enabling growth strategies to meet tourism trends and

market demands. Hadi et al. (2022) highlight the significance of commercial and industrial loans as a determinant of stock price performance for U.S. tourism, travel, and leisure firms. The study identifies commercial and industrial loans as a crucial factor in influencing stock prices, providing necessary working capital and cash flow to support business expansion, equipment acquisition, and overall firm performance. This positive influence on firm operations subsequently impacts stock prices. Empirical evidence presented in the study demonstrates a long-run equilibrium relationship between commercial and industrial loans and stock prices of tourism-related firms, with causal links suggesting that changes in commercial and industrial loans can directly affect stock market performance.

The tourism sector itself can be broadly divided into demand from domestic and international tourists, each influenced by distinct economic drivers. For domestic tourism, consumer income levels are a primary factor, as domestic tourists are less influenced by international factors like exchange rates. However, since gross domestic product (GDP), which reflects income levels, is only available quarterly, Industrial Production is used as a monthly proxy for domestic economic activity. Due to its strong correlation with GDP growth, industrial production effectively tracks shifts in domestic economic conditions that influence consumer spending on tourism. (Gokmenoglu et al., 2015) This makes it a relevant external determinant for understanding domestic tourism demand. Previous research examining the role of industrial production on stock market performance reveals its significant influence across various sectors. Tursoy (2008) found that industrial production is a key determinant for multiple manufacturing sectors in Turkey, with a strong relationship to stock market dynamics as part of a broader set of macroeconomic variables, aligning with the Arbitrage Pricing Theory framework. In the context of tourism, Irani et al. (2021) identified a significant and positive effect of industrial production on tourism stock indices (TSIs), demonstrating a causal link between industrial production and stock returns for tourism-related firms. Similarly, Hadi et al. (2022) found a positive relationship between industrial production and tourism firm stock prices, where increased industrial production drives opportunities for higher sales and earnings.

In contrast, international tourism is more sensitive to external economic conditions. International Tourist Arrivals is a direct measure of the volume of foreign

tourists entering the country, making it an essential determinant for understanding tourism demand from abroad. International tourist arrivals reflects fluctuations in international travel patterns and provides a clear indicator of foreign demand for tourism services. An increase in international arrivals generally leads to higher demand for tourism services, such as accommodation, travel, leisure, and entertainment, thereby boosting the stock performance of tourism firms. Previous studies present varies perspective about the significance of tourist arrivals. Hadi et al. (2022) emphasizes that that international tourist arrivals do significantly influence the stock prices of U.S. tourism-related firms. They establish a unidirectional causal relationship, one in which tourist numbers directly affect the financial performance of U.S. tourism-related firms. Irani et al. (2021) also underscores the importance of tourist arrivals as the most influential factor affecting tourism stock prices. Demir et al. (2017) supports these findings by indicating that increased tourist arrivals positively impact tourism index returns, reflecting the financial benefits of tourism industry expansion. While, Chen (2010) finds that the growth in foreign tourist arrivals is a critical determinant of the financial performance of Taiwanese tourist hotels, significantly affecting metrics such as occupancy rates, return on assets (ROA), and return on equity (ROE) but not their stock returns. Usmani et al. (2021) presents a different perspective, finding that tourist arrivals do not significantly impact GDP growth in the BRIC countries. Contrary to many other studies, the research demonstrates no causality between tourist arrivals and GDP growth, attributing the lack of impact to factors such as political instability, poor infrastructure, and high lending rates. Despite the volatility observed in tourist arrivals, it does not translate into significant economic growth.

Exchange Rate movements also play a crucial role in shaping international tourism demand, as they directly impact the purchasing power of foreign tourists. A stronger local currency increases travel costs for international visitors, potentially reducing tourism demand and negatively impacting tourism firms' revenue. Conversely, a weaker local currency makes the destination more attractive, leading to higher tourism demand and improved financial performance for tourism-related firms. For stock performance, this means that exchange rate volatility directly affects the profitability and valuation of tourism firms. But previous research on the impact of exchange rates on stock returns and tourism-related sectors presents diverse findings. Demir et al.

(2017) finds a significant negative relationship between exchange rates and tourism stock returns in Turkey, suggesting that an increase in exchange rates leads to lower stock returns as investor interest shifts from the stock market to the foreign exchange market. However, Amtiran et al. (2017) report a positive effect of exchange rates on stock returns in Indonesia, particularly when the local currency depreciates against the U.S. dollar, which enhances exports and reduces imports, thus boosting stock prices. Harb Sayed Ahmed (2019) also identifies a positive but weak relationship between exchange rate changes and tourism stock prices in Egypt, noting that exchange rate volatility significantly impacts stock return variance. The study establishes a unidirectional causal relationship from exchange rates to stock prices, highlighting the importance of favorable exchange rates for tourism firm profitability. Goh et al. (2022) find that the exchange rate positively impacts tourism stock prices in Indonesia, as local currency depreciation enhances competitiveness and increases tourist demand, thereby boosting tourism stock prices in both short and long terms. However, Hadi et al. (2022) find no significant impact of the exchange rate on stock prices of U.S. tourism, travel, and leisure firms.

H1a: Market returns have a positive relationship with tourism stock performance.

H1b: Availability of commercial and industrial loans has a positive relationship with tourism stock performance.

H1c: Industrial production has a positive relationship with tourism stock performance.

H1d: International tourist arrivals have a positive relationship with tourism stock performance.

H1e: Exchange rate fluctuations have a positive relationship with tourism stock performance.

2.3 Aggregate Analysis

Aggregate analysis involves examining the tourism sector, focusing on how external macroeconomic factors influence the overall stock performance of tourism-related firms, by aggregating all the sub-sectors within the tourism industry,

including Airlines, Casinos and gaming, Hotels, Recreational Services, Restaurants and bars, and Travel & Tourism. Aggregate analysis is precious when the goal is to capture the overall impact of external determinants on the entire tourism industry. This method offers insights into how macroeconomic conditions drive trends in tourism stock performance, helping to identify the primary drivers of market movements. Additionally, treating the tourism sector as a unified entity makes it practical for understanding broad economic influences, as it simplifies the data into sector-wide assessments. Aggregate analysis may provide a comprehensive view of the sector, but it has inherent limitations. When we consider the sector at such a high level, we can sometimes obscure the unique behaviors and sensitivities of individual sub-sectors like airlines or restaurants that we know may react in very different ways to the same set of external forces. For instance, we could be in a situation where the overall tourism sector is showing positive performance during an economic expansion, while certain individual sub-sectors of basically the same sector might be experiencing negative performance during the same period because the profitability of those businesses is sensitive to a different set of overall macroeconomic forces.

2.4 Disaggregate Analysis

The disaggregate analysis takes a more granular approach by examining the individual sub-sectors within the tourism industry rather than treating the sector as a single entity. This is vital because the different sub-sectors within the tourism industry respond to external macroeconomic forces in ways that can be very, even uniquely, different. while international exchange rate fluctuations may broadly impact international tourism, specific segments like airlines may be far more sensitive to fuel costs and to global travel restrictions, while the local conditions and domestic tourism trends may hit hotels far more than the average. The gap between local and foreign tourism is becoming very important in how the smaller parts of the tourism industry react to big economic changes. Local tourism usually survives better during global money problems and changes in currency value since local travelers don't feel the exchange rate changes as much. On the other hand, international tourism feels these factors very strongly. By looking at smaller parts separately, break down analysis helps

find risks, chances, and feelings that are unique to a sector but might be missed in a combined look. Break down analysis gives a more detailed view of the tourism field, helping to better understand how big economic factors affect different parts of the sector in various ways. This way is very important for making plans aimed at each smaller part's special needs and problems within the wider tourism field.

H2: The impact of external determinants on stock performance differs across disaggregated levels of the tourism sector.

2.5 Emerging Trends and Tourism-Linked Firms

Over the last few years, the change that hit the tourism sector was huge, bringing in different other fields to make new types of tourism that exceed the old leisure and work trips. New tourism trends have brought up medical tourism, for example, when people travel to different countries to get medical treatments particularly in ASEAN5 nations where healthcare services are competitively priced and international patients are attracted. In the Asia-Pacific region, Thailand is leading affordable good-quality healthcare services besides the support of its government which has come up with different initiatives to help drive the contribution of medical tourism to the economy (Dang et al., 2020; Noree et al., 2016). This trend is further strengthened by Thailand’s very big healthcare infrastructure and the growing choice of international patients for its medical services, causing a lot of non-medical spending that helps the wider tourism industry. These new trends have brought in fresh money makers into the tourism field, making it bigger to include companies outside the normal tourism business, like healthcare providers. As these tourism-related companies become more and more connected with the tourism sector, they help a lot in its growth and financial performance.

H3: External macroeconomic determinants have a significant effect on the stock performance of tourism-linked firms

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Model Specification

The relationship between the Return on Tourism Stock Index (TSI) and the key macroeconomic variables is explored through a APT that aims to identify the factors driving stock price performance in the tourism sector. The model captures the influence of exchange rates, industrial production, commercial loans, and tourist arrivals on the return of TSI. The model is specified as follows:

$$R_{TSI_t} = \alpha_0 + \alpha_1 R_{m,t} + \alpha_2 TA_t + \alpha_3 \Delta CIL_{t-3} + \alpha_4 \Delta REER_t + \alpha_5 IP_t + \alpha_6 \text{YearDummy} + \varepsilon_t \quad \ldots(3)$$

To make the data more manageable, the model applies a logarithmic transformation to TA, as this variable are in large magnitudes. Rescaling them through a log transformation facilitates analysis and interpretation by bringing their values to a more consistent scale with other variables in the model. The model is specified as follows:

$$R_{TSI_t} = \alpha_0 + \alpha_1 R_{m,t} + \alpha_2 lnTA_t + \alpha_3 \Delta CIL_{t-3} + \alpha_4 \Delta REER_t + \alpha_5 IP_t + \alpha_6 \text{YearDummy} + \varepsilon_t \quad \ldots(4)$$

where R_{TSI_t} denotes return on tourism index; R_m denotes market return; CIL denotes commercial and industrial loans; IP denotes industrial production index; TA denotes tourist arrival; REER denotes real effective exchange rate; YearDummy is the dummy that control variables affecting economic cycles; ε_t denotes error term at time t. Given the macroeconomic nature of the data and time series analysis, an Augmented Dickey-Fuller (ADF) test will be conducted on all variables, checking for the stationary of the data to avoid spurious problem. If the data is found to be non-stationary, differencing may be applied to ensure that the data is suitable for regression analysis

3.2 Data Description

This study utilizes monthly data from January 2010 to December 2023 across the ASEAN5 countries: Thailand, Malaysia, Singapore, Indonesia, and the Philippines. The data includes sector-specific information on the tourism sector and its sub-sectors including Airlines, Casinos & Gaming, Hotels, Recreational Services, Restaurants & Bars, and Travel & Tourism. Additionally, the analysis incorporates key macroeconomic determinants impacting tourism stock performance: Market Return, Commercial and Industrial Loans (CIL), Industrial Production (IP), International Tourist Arrivals (TA), and Exchange Rates (ER). This comprehensive coverage enables a nuanced examination of how these determinants influence both aggregate and disaggregate levels of tourism stock performance within each ASEAN5 country over time.

3.2.1 Dependent Variable

The dependent variable for this study is the Return on Tourism Stock Index (RTSI), which represents the aggregated stock price performance of publicly listed tourism, travel, and leisure firms in the ASEAN5 countries. The firms included in the TSI are selected according to Dow Jones Travel and Leisure index including Airlines, Casinos & Gaming, Hotels, Recreational Services, Restaurants & Bars, and Travel & Tourism firms within ASEASN5 countries, and the availability of consistent stock price data from 2010 to 2023. TSI is considered to represent the performance of tourism, travel, and leisure firms (Hadi et al., 2020) The data is secondary data sourced from Thomson Reuters DataStream and EIKON.

3.2.1.1 Tourism Stock Index Calculation (TSI)

Tourism Stock Index (TSI) will be computed for each country from the stock price data of the selected firms. TSI is calculated using a base-weighted aggregative method, where the weights are based on the market capitalization of the firms. The index is calculated as follows:

$$Index\ level = \frac{Total\ Markert\ Capitalisation}{Based\ Market\ Capitalisation} \times\ Base\ \ Index \qquad \ldots(5)$$

To ensure consistency and comparability, the base market capitalization will be set at the beginning period of the study, and the base index will be standardized at 1,000 which will helps to guarantee that the index accurately mirrors the larger company's significance for the tourism sector, which in turn leads to a reliable measurement of the stock performance at an industry level.

3.2.3 Independent Variables

The independent variables in this study are selected to represent the key macroeconomic factors influencing tourism stock performance, as identified in the literature. Each variable reflects specific aspects of economic activity, liquidity, and international demand, providing a comprehensive view of the external determinants affecting tourism firms in ASEAN5.

First, Market return represents the overall movement of the stock market, serving as a proxy for fund flow, capital investment, and cost of capital within the economy. Monthly market returns are calculated based on the respective country's main stock index, capturing changes in investor sentiment and general market conditions that impact tourism stocks.

Second, Commercial and Industrial Loans provides a measure of liquidity within the economy, reflecting the availability of credit for businesses. For tourism firms, CIL is crucial as it affects their ability to finance operations and expansions. However, the effect of credit availability on firm performance may not be immediate. This study includes the third lag of CIL to capture the delayed transmission mechanism between changes in credit conditions and their eventual influence on stock performance according to Bayoumi and Melander (2008) who provide empirical evidence that the effects of credit shocks on macroeconomic outcomes like GDP occur with a time lag. Monthly CIL data is sourced to capture fluctuations in loan availability and its influence on the financial stability and growth of tourism-related firms.

Third, Industrial production is used as a monthly proxy for GDP, representing domestic economic activity and consumer income levels. IP is particularly relevant for domestic tourism demand, as it reflects the overall economic health that can drive consumer spending within the tourism sector. Monthly IP data is obtained for each ASEAN5 country to assess how domestic economic conditions influence tourism stocks.

Fourth, TA reflects the volume of foreign visitors to each country, serving as a direct indicator of international tourism demand. Monthly TA data provides insight into fluctuations in tourist arrivals, helping capture the demand-driven impact on tourism firms reliant on foreign tourism.

Lastly, the exchange rate represents the purchasing power of international tourists. Favorable exchange rates make a country more affordable for foreign visitors, boosting demand, while unfavorable rates can deter international travel. Monthly real effective exchange rate data is used to assess its impact on tourism stock performance by measuring international tourists' relative spending power.

The data for these variables is sourced from several established databases. Exchange rate, industrial production, and loans data is sourced from Thomson Reuters DataStream and EIKON. and information on tourist arrivals is sourced from World Tourism Organization (UNWTO).

Table 3.1

Factors used in analysis

Variable	Definition	Measurement	Source	Expected Sign
RTSI	Monthly return of tourism stock index in ASEAN-5 countries	Monthly tourism Stock Index	Thomson Reuters DataStream and EIKON	Dependent Variable
RM	Overall stock market return	Monthly market return of each country's main stock index	Thomson Reuters DataStream and EIKON	Positive

Table 3.1

Factors used in analysis (Cont.)

Variable	Definition	Measurement	Source	Expected Sign
ΔCIL	Availability of credit to businesses, including tourism-related companies	Percentage changes of monthly value of commercial and industrial loans	Thomson Reuters DataStream and EIKON	Positive
IP	Economic output of industrial sector	Monthly industrial production index	Thomson Reuters DataStream and EIKON	Positive
lnTA	The number of international visitors traveling to a ASEAN-5 countries	Log of monthly count of international tourist arrivals	World Tourism Organization (UNWTO)	Positive
ΔREER	Real effective exchange rate	Percentage change of monthly real effective exchange rate	Thomson Reuters DataStream and EIKON	Positive

3.2.4 Descriptive Statistics

The descriptive statistics presents the overview of the data. These will include arithmetic mean, median, standard deviation and minimum/maximum values for each of the variables. We will examine the correlation matrix for the multicollinearity problem between our independent variables. These are useful for understanding the basic characteristics of the data and frame the interpretation of our regression results.

3.3 Estimation Method

3.3.1 Estimation at Aggregate Level

At the aggregate level, the model will first estimate the Return on Tourism Stock Index (TSI) for each country in ASEAN5 individually. By doing this, we can analyze how the macroeconomic factors affect the stock price performance of tourism firms in each country separately. Once the individual estimations for each country are completed, the data from all countries will be combined into a panel dataset, allowing for a comprehensive analysis of the entire ASEAN5 region.

3.3.2 Estimation at Disaggregate Level

After the aggregate approach, a model will be applied at the disaggregate level, estimating stock price performance for individual sub-sectors within the tourism industry using a panel data framework. This analysis considers variations across both firms and sectors, allowing for more precise insights into the dynamics of individual sub-sectors including Airlines, Casinos & Gaming, Hotels, Recreational Services, Restaurants & Bars and Travel & Tourism. The disaggregate model is specified as:

$$R_{it}^{j} = \lambda_0 + \lambda_1 R_{m,t} + \lambda_2 lnTA_t + \lambda_3 \Delta CIL_{t-3} + \lambda_4 \Delta REER_t + \lambda_5 IP_t + \lambda_6 \text{YearDummy} + \lambda_7 \text{CountryDummy} + \varepsilon_{it} \quad \ldots(6)$$

where R_{it}^{j} denotes return on the stock price of firm i within sector j at time t; R_m denotes market return; CIL denotes commercial and industrial loans; IP denotes industrial production index; TA denotes tourist arrival; REER denotes real effective exchange rate; YearDummy is the dummy that control variables affecting economic cycles; CountryDummy is the dummy that control variables affecting each country specific economic; ε_t denotes error term at time t. By using this disaggregate approach, the analysis can identify specific sensitivities and trends that may not be visible in the aggregate model, thus offering a more detailed understanding of each sector dynamics.

3.3.3 Estimation including tourism linked firm

The Eq.(6) will be extended to include firms which are not traditionally classified under the tourism, sector but are related through their operations and revenue concentration to explore the impact of emerging trends such as medical tourism on the variables related with tourist stocks. These tourism-linked firms cover sectors which are directly or indirectly beneficiaries of Tourism-related activities, including emerging trends like medical tourism, eco-tourism etc. that have experienced rapid growth in recent years. For example, healthcare providers, wellness centers, and specialized clinics are integral to the medical tourism industry. By incorporating the stock price performance of these linked firms, the model aims to capture the broader influence of emerging trends on tourism-related stocks beyond traditional tourism firms. The analysis will consider both aggregate and disaggregate levels to explore how macroeconomic factors and specific emerging trends impact stock performance across various segments.

CHAPTER 4
RESULTS

4.1 Descriptive statistics

Table 4.1 displays the descriptive statistics of the variables over the period 2010-2023 with a total of 820 observations. The sample mean of RTSI is 0.756% with a high volatility of 8.015%. The market return is relatively consistent across countries, with mean values of 0.37% and the moderate standard deviation of 4.266%. The international tourist arrivals in thousands are vary substantially across countries ranging from 0 to 3947.337 with the mean of 1139.202. The overall standard deviation is 888.957 reflects seasonality and shocks like COVID-19 affecting tourist flows. The percentage changes of commercial and industrial loans mean is 0.75% ranging from -3.363% to 12.64% with the standard deviation of 1.245%. The exchange rate change fluctuations ranging from -8.212% to 7.397% with mean and standard deviation of 0.008% and 1.464% respectively. The industrial production index ranging from 13.09 to 126.67 with mean and standard deviation of 103.4752 and 21.1401 respectively.

Table 4.1

Descriptive statistics

Country	Variable	N	Mean	Median	SD	Min	Max	Skew	Kurt
Singapore	RTSI	164	0.090%	-0.089%	5.404%	-23.327%	23.060%	0.017	6.578
Malaysia	RTSI	164	-0.124%	-0.245%	5.536%	-21.668%	24.230%	0.080	5.750
Thailand	RTSI	164	0.909%	0.771%	7.248%	-28.132%	29.453%	0.134	6.639
Indonesia	RTSI	164	1.605%	0.356%	11.504%	-16.896%	57.146%	5.707	18.718
Philippines	RTSI	164	1.299%	-0.352%	8.703%	-28.162%	50.555%	1.955	11.996
Total	RTSI	820	0.756%	0.030%	8.015%	-28.162%	57.146%	4.007	13.818
Singapore	RM	164	0.537%	1.318%	4.897%	-19.865%	14.431%	-0.505	4.383
Malaysia	RM	164	0.099%	0.398%	2.965%	-9.835%	9.260%	-0.178	3.902
Thailand	RM	164	0.448%	0.587%	4.807%	-18.690%	18.193%	-0.141	6.128
Indonesia	RM	164	0.117%	0.534%	4.158%	-18.866%	15.185%	-0.506	5.791
Philippines	RM	164	0.650%	0.950%	4.244%	-16.698%	13.134%	-0.729	5.174
Total	RM	820	0.370%	0.654%	4.266%	-19.865%	18.193%	-0.408	5.660
Singapore	TA	164	803.345	902.833	384.825	1.732	1397.737	-1.074	3.146
Malaysia	TA	164	1737.120	2071.158	792.726	5.411	2806.565	-1.425	3.549
Thailand	TA	164	1985.068	2144.249	1058.749	0.000	3947.337	-0.532	2.468
Indonesia	TA	164	791.622	781.592	370.768	105.788	1547.231	-0.195	2.494
Philippines	TA	164	378.854	399.298	198.477	0.948	796.164	-0.397	2.678
Total	TA	820	1139.202	903.723	888.957	0.000	3947.337	0.703	2.674

Table 4.1

Descriptive statistics (Cont.)

Country	Variable	N	Mean	Median	SD	Min	Max	Skew	Kurt
Singapore	ΔCIL	164	0.705%	0.483%	1.628%	-2.545%	12.640%	2.612	19.215
Malaysia	ΔCIL	164	0.583%	0.536%	0.502%	-1.389%	2.885%	0.995	7.856
Thailand	ΔCIL	164	0.473%	0.358%	0.997%	-1.619%	4.926%	1.094	5.435
Indonesia	ΔCIL	164	0.951%	1.097%	1.185%	-2.061%	3.420%	-0.377	3.077
Philippines	ΔCIL	164	1.036%	1.041%	1.504%	-3.363%	5.444%	0.079	3.748
Total	ΔCIL	820	0.750%	0.612%	1.245%	-3.363%	12.640%	1.401	13.562
Singapore	ΔREER	164	0.126%	0.139%	0.762%	-2.107%	2.670%	-0.045	4.345
Malaysia	ΔREER	164	-0.148%	-0.082%	1.230%	-5.211%	3.458%	-0.973	6.154
Thailand	ΔREER	164	0.029%	0.067%	1.412%	-7.349%	7.170%	-0.240	10.105
Indonesia	ΔREER	164	-0.036%	0.000%	1.756%	-8.212%	6.505%	-0.585	7.353
Philippines	ΔREER	164	0.070%	-0.164%	1.884%	-4.556%	7.397%	1.316	6.258
Total	ΔREER	820	0.008%	0.000%	1.464%	-8.212%	7.397%	0.190	9.005
Singapore	IP	164	97.296	92.500	16.122	68.400	136.600	0.606	2.138
Malaysia	IP	164	105.860	106.200	13.546	79.800	130.700	0.074	1.882
Thailand	IP	164	99.581	99.814	7.285	67.104	119.116	-0.872	6.627
Indonesia	IP	164	130.284	131.275	17.685	92.320	162.670	-0.175	1.916
Philippines	IP	164	84.355	86.115	16.908	13.090	112.580	-2.163	9.384
Total	IP	820	103.475	100.544	21.140	13.090	162.670	0.162	4.504

Note: RTSI is return on tourism stock index; RM is market return; TA is tourist arrivals in thousands; ΔCIL is percentage changes of commercial and industrial loans; ΔREER is percentage changes of real effective exchange rates; IP is industrial production index

Table 4.2 shows the correlation coefficients between variables. The correlation matrix show that RM, dCIL and dREER has a positive relation correlation with RTSI while lnTA and IP has a negative correlation with RTSI. Among the independent variables, RM and dREER has the highest positive correlation of 0.175 while dCIL and dREER and a negative correlation of -0.187 which the low correlations suggest no serious multicollinearity issues in the dataset.

Table 4.2

Correlation matrix

	RTSI	RM	lnTA	ΔCIL	ΔREER	IP
RTSI	1					
RM	0.442	1				
lnTA	-0.012	-0.022	1			
ΔCIL	0.035	0.049	0.006	1		
ΔREER	0.107	0.175	0.005	-0.187	1	
IP	-0.006	-0.077	0.102	-0.052	-0.024	1

Note: RTSI is return on tourism stock index; RM is market return; lnTA is log of tourist arrivals; ΔCIL is percentage changes of commercial and industrial loans; ΔREER is percentage changes of real effective exchange rates; IP is industrial production index

4.2 Panel Regression Results

4.2.1 Aggregate Level

Table 4.3 show panel regression at the aggregate level investigates how external macroeconomic factors influence the return on the tourism stock index (RTSI) across ASEAN5 countries. The model is estimated using the random effect estimator which is appropriated based on Hausman test of 2.25 ($p > 0.05$) indicating no significant systematic difference between the fixed and random effects estimates.

The chi-squared (χ^2) value of 234.30 which is statistically significant ($p < 0.01$), confirms that the independent variables collectively explain return of tourism stock index (RTSI) across countries. The model's explanatory power is reflected in the overall R^2 of 0.226, meaning that 22.6% of the variation in tourism stock

performance across countries is explained by market return, international tourist arrivals, exchange rates, industrial production, and loan availability. Similarly, the within R^2 of 0.226 indicates that 22.6% of the variation in tourism stock returns within each country over time is accounted for by the model. Additionally, year dummies are included in the model to control for business cycle effects that the estimated relationships are not distorted by global economic fluctuations such as recessions, financial crises, or tourism boom.

Table 4.3

The result of panel regression at aggregate level

Variable	Country Level	
	Aggregate Fixed Effect	**Aggregate Random Effect**
RMt	0.7367***	0.7385***
ΔlnTAt	0.0137***	0.0137***
ΔCILt-3	0.0337	0.0923
ΔREERt	0.1656	0.0002
IPt	0.0003	0.0003*
Constant	0.0123	0.0156
YearDummy	Yes	Yes
CountryDummy	-	-
Observation	820	820
Country/Firm	5	5
Chi-squared	-	234.3002***
Overall R-squared	0.2261	0.2263
Within R-squared	0.2258	0.2261
Hausman Test		2.2500

Note: RM is market return; lnTA is log of tourist arrivals; ΔCIL is percentage changes of commercial and industrial loans; ΔREER is percentage changes of real effective exchange rates; IP is industrial production index; The symbols *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

The coefficient for market return (RM) is 0.7385 and is statistically significant at the 1% level that 1% increase in market return leading to a 0.7385% increase in the tourism stock index return. This finding confirms that stock returns in the tourism sector tend to move closely with the overall market, reflecting sensitivity to broader economic and financial conditions. This result support hypothesis H1a, which propose a positive relationship between market returns and tourism stock performance.

The log of international tourist arrivals(lnTA) is differenced since it's not stationary at level and its coefficient is 0.01373 and is statistically significant at the 1% level that 1% increase in inbound tourists leading to a 0.013% increase in tourism stock index return. This result supports the relevance of tourism demand as a key external driver of firm performance within the sector. Higher tourist arrivals are likely to boost revenues, occupancy rates, and overall activity in travel, hospitality, and related services, which translates into improved stock performance at the aggregate level. This result support hypothesis H1d, which proposes a positive relationship between international tourist arrivals and tourism stock performance.

The effect of commercial and industrial loans changes(ΔCIL), lagged by three periods is found to be statistically insignificant in the aggregate model**.** The use of the third lag reflects the assumption of a delayed transmission mechanism from credit availability to actual firm performance and stock prices, but the result indicates that this transmission may not be strong enough to detect a clear aggregate-level effect within the panel framework. This result does not support hypothesis H1b, which proposed a positive and significant relationship between loan availability and tourism stock performance.

The exchange rate fluctuations(ΔREER) is not statistically significant at aggregate levels. This result suggests that short-term changes in the real effective exchange rate do not have a meaningful impact on the aggregate stock performance of tourism-related firms in ASEAN5 during the sample period. This result not support hypothesis H1e, which proposed a positive relationship between exchange rate movements and tourism stock performance.

The coefficient for industrial production (IP) is 0.00025, and it is statistically significant at the 10% level that one-unit increase in industrial production

leads to a 0.00025% increase tourism stock index return. The small magnitude of this effect suggests that domestic economic activity plays a minor role in influencing tourism stock performance. This reinforces the idea that the tourism sector is more globally oriented, with stock performance being shaped by external factors such as market condition and international tourist arrivals rather than local industrial output. This result provides weak confirmation of hypothesis H1c, which expects a positive relationship between industrial production and tourism stock performance.

Table 4.4

The result of panel regression at disaggregate level

Variable	Firm Level				
	Airline& Hotel	**Casino& Gambling**	**Recreational Services**	**Travel& Tourism**	**Restaurant &Bars**
RM_t	0.5524***	0.7892***	0.3856***	0.7560***	0.8814***
$\Delta lnTA_t$	0.0068***	0.0200**	0.0082	0.0071	0.0081
ΔCIL_{t-3}	0.1265	-0.4975	0.1298	-0.4610	1.3652*
$\Delta REER_t$	0.1551	-0.1080	0.3548	-0.2335	-0.0747
IP_t	0.0003*	0.0006	-0.0002	0.0001	-0.0007
Constant	-0.0329**	-0.0549	0.0189	-0.0264	0.0624
YearDummy	Yes	Yes	Yes	Yes	Yes
CountryDummy	Yes	Yes	Yes	Yes	Yes
Observation	11432	2200	1781	3018	5593
Country/Firm	92	14	17	23	52
Chi-squared	289.735***	94.294***	32.373*	91.171***	38.206**
Overall R-squared	0.0248	0.0415	0.0181	0.0295	0.0068
Within R-squared	0.0244	0.0415	0.0158	0.0275	0.0066

Note: RM is market return; lnTA is log of tourist arrivals; ΔCIL is percentage changes of commercial and industrial loans; ΔREER is percentage changes of real effective exchange rates; IP is industrial production index; The symbols *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

4.2.2 Disaggregate Level

Eq.(6) further investigate effects of external determinants vary across different segments of the tourism sector. The five sub-sectors analyzed are: Airline & Hotel, Casino & Gambling, Recreational Services, Travel & Tourism, and Restaurant & Bars shown in Table 4.4. All models are estimated using the random effects estimator. Additionally, the model includes year dummies to control for business cycle effects and country dummies to account for each country economic conditions across ASEAN5 economies.

The chi-square value for all sub-sector regressions are statistically significant at 1%, 5%, and 10% level, confirming that independent variables collectively explain return of tourism stock across countries and subsectors. Regarding model fit, the within R-squared and overall R-squared value range from 0.006 to 0.041 are lower compared to the aggregate model which is typical for models involving monthly firm-level returns, given their high volatility and the presence of firm-specific noise not captured by macro variables.

In the Airline & Hotel sector, the regression results indicate that market return, log of international tourist arrivals, and industrial production are statistically significant predictors of stock performance. Market return and tourist arrivals are both significant at the 1% level, while industrial production is significant at the 10% level.

For Casino & Gambling firms, the results show that market return and tourist arrivals are the only significant variables. Market return is significant at the 1% level, while tourist arrivals are significant at the 5% level. Other variables, including financial liquidity, exchange rate, and industrial production, do not appear to have a statistically significant influence in this subsector.

In both the Recreational Services and Travel & Tourism sub-sectors, only the market return variable is statistically significant, at the 1% level in both cases. This suggests that stock performance in these segments is primarily influenced by broad capital market conditions, while other macroeconomic variables do not show statistically significant effects.

For Restaurant & Bars, the analysis shows that both market return and commercial and industrial loans are statistically significant. Market return is

significant at the 1% level, while the lagged loan variable is significant at the 10% level. This implies that in addition to market-wide factors, access to financial liquidity may also play a meaningful role in shaping stock performance in this segment.

The variations in significance across sub-sectors highlight the differing sensitivities of tourism-related industries to external macroeconomic determinants. While market return is consistently significant in all five sub-sectors, the importance of other variables such as tourist arrivals, industrial production, and credit conditions varies by segment. These findings confirm hypothesis H2, which posits that the impact of external determinants on stock performance differs across disaggregated levels of the tourism sector.

Table 4.5

The result of panel regression of tourism linked firms

Variable	Firm Level
	Healthcare service Provider
RM_t	0.4507***
$\Delta lnTA_t$	0.0067***
ΔCIL_{t-3}	-0.3648**
$\Delta REER_t$	-0.1120
IP_t	-0.0002
Constant	0.0224
YearDummy	Yes
CountryDummy	Yes
Observation	6772
Country/Firm	66
Chi-squared	268.5627***
Overall R-squared	0.0383
Within R-squared	0.0376
Hausman Test	-

Note: RM is market return; lnTA is log of tourist arrivals; ΔCIL is percentage changes of commercial and industrial loans; ΔREER is percentage changes of real effective exchange rates; IP is industrial production index; The symbols *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

4.2.3 Tourism linked firms

This section extends the analysis of Eq.(6) to include tourism-linked firms, specifically those involved in medical tourism, such as private hospitals and healthcare service providers. While these companies are not generally defined as tourism, they receive a significant part of their revenue from international patients and are becoming part of the broader ecosystem of tourism in ASEAN5 countries. The panel regression model for tourism-linked firms is estimated using the random effects estimator, with year dummies and country dummies included to control for time-specific macro shocks and cross-country differences. Table4.5 show that model is statistically significant, with a chi-square value of 268.56 ($p < 0.01$). The within R-squared is 0.0376, and the overall R-squared is 0.0383, indicating a relatively higher explanatory power compared to other sub-sectors.

Three variables are found to be statistically significant in explaining the stock returns of healthcare service provider firms. Market return and log of tourist arrivals are significant at 1% level confirming a strong influence of overall market trends on firm performance and importance of international patient flows and the link between healthcare demand and tourism activity. In addition, commercial and industrial loans are also statistically significant at the 5% level, but the coefficient is negative (−0.3648), which is contrary to the expected positive relationship. This suggests that in the case of healthcare firms, an increase in business credit may not translate into improved stock performance. A potential explanation is that capital injection into the healthcare sector may raise fixed obligations or reflect riskier financial conditions, especially if driven by short-term borrowing or external pressure to expand. These results confirm Hypothesis H3 only in part. While market return and tourist arrivals behave as expected, the negative sign of CIL indicates a more complex relationship between liquidity conditions and stock performance in the healthcare sector. Overall, the findings show that tourism-linked healthcare firms are significantly influenced by

external macroeconomic determinants and respond to a combination of financial, tourism-related, and credit market conditions, reflecting their dual role as healthcare providers and tourism service participants.

CHAPTER 5
CONCLUSION

5.1 Conclusion

This study investigates the impact of external determinants of tourism stock in ASEAN5 countries using data from January 2010 to December 2023. The study employs Arbitrage Pricing Theory framework to include macroeconomic factors to explain the assets return including market return, tourist arrivals, commercial and industrial loans, exchange rates, and industrial production index.

5.1.1 Aggregate level

At aggregate level, the results reveal that RM,TA, and IP appears to be a significant determinants of tourism stock index in ASEAN5. These findings indicate that investor sentiment, inbound tourism demand, and domestic economic activity are external drivers of firms return in the sector while commercial and industrial loans and exchange rate fluctuations are found to be statistically insignificant, suggesting that their short term effects are not impact the stock performance

5.1.2 Disaggregate level

By disaggregating into five subsectors, Airline & Hotel, Casino & Gambling, Recreational Services, Travel & Tourism, and Restaurant & Bars. The results reveal distinct patterns in sensitivity to macroeconomic factor among subsectors. While RM is significant across all subsectors, TA are significant in Airline & Hotel and Casino & Gambling, IP is significant only in Airline & Hotel, and CIL are significant only in Restaurant & Bars. These differences confirm that macroeconomic influences on tourism stocks are not uniform across industry segments.

5.1.3 Tourism linked firms

When the analysis is extended to include tourism-linked firms, specifically healthcare service providers involved in medical tourism, the model shows relatively higher explanatory power compared to traditional tourism sub-sectors. RM, TA, and CIL are found to be statistically significant, suggesting that tourism-linked

healthcare firms are influenced by both tourism demand and financial market conditions. These results highlighting the need to consider emerging trends such as medical tourism in tourism-sector.

5.2 Discussion

This study investigates how external macroeconomic factors affect the stock price performance of tourism-related firms in ASEAN5, distinguishing between aggregate and disaggregate levels. At aggregate level, the tourism stock index performance is found to be significantly linked to changes in market condition, inbound tourist demand, and domestic economic conditions. Market return which are the proxy of fund flow within capital market reflecting investors activity and capital market condition. Market return is one of profit indicators, higher market return also higher in market risk premium which investor will require the higher level of return as a compensation of market risks resulting in higher stock prices and higher tourism stock index return. In this study market returns are found to be positively significance and has largest coefficient value among other dependent variables showing that tourism stock index moves closest to the market return. This finding in line with previous study of Siregar (2019) but contradicts the findings of Lim and Chan (2013) who found that that the premium in market returns negatively impact tourism stock returns of New Zealand's tourism stocks.

Tourist arrivals is the direct measures of international demand of tourism sectors. The increasing in numbers of foreign visitors can boost the earnings of tourism firms. In this study found that tourist arrival has significantly positive effect on tourism stock index which are in line with previous study that tourist arrivals and its growth has positive impact on tourism stock returns (Hadi et al., 2022; Irani et al. 2021; Demir et al. 2017; Goh et al. 2022) but contradicts the finding of Chen (2007b), who found no evidence of tourist arrivals impacting hotels stocks return in China. Industrial production which can effectively tracks shifts in domestic conditions that influence consumer spending on tourism also found to be positively significant even in a relatively small in coefficient value. This finding can imply that even though the tourism sector relies on both domestic and international conditions, the international

conditions in term of tourist arrival has more impact on the sector performance. This positive significance also in line with those previous study of Hadi et al. (2022) and Irani et al. (2021) who found that industrial production has positive impact on tourism stock performance.

In addition, commercial and industrial loans and exchange rate fluctuations is found to be not significantly linked to tourism stock performance in ASEAN5 which contradict the findings of previous studies that the credit availabilities and depreciation in local currency positively impact the tourism stock performance. (Hadi et al., 2022; Harb Sayed Ahmed, 2019; Goh et al., 2022).

At disaggregate level, the influence of external factors is not uniform across sub-sectors. Even within the same broad sector, firms often operate under distinct business models, revenue structures, or target customer segments, which can expose them to different types of macroeconomic risks. In Airline & Hotels subsector, market return, tourist arrivals and industrial production appear to have positive significant effect on stock return. This suggest that these two sub sectors are driven by both international demand and domestic economic conditions. Both airline and hotel firms' performance generally sensitive to its demand which can divide into international and domestic, which can reflect in tourist arrival and industrial production explaining its significance in the model. The relatively higher in magnitude of tourist arrival than industrial production can also suggest that in this sub sector are more sensitive to international demand. This finding contrasts with Chen (2007b), who found that tourist arrivals did not significantly affect hotel stock performance, and Chen (2010), who reported that tourist arrivals influenced hotel firms' ROA but not their stock returns. While in Airline sectors, previous studies have emphasized the role of oil prices and other cost-side factors in determining stock performance which reflect their cost structure (Alıcı, 2024, Mollick & Amin, 2021) instead of tourist arrivals on their demand side.

In Casino & Gambling subsector, market return and tourist arrival appear to be significant which reflect the heavy dependence on both investors' sentiment and international demand as its main customer targets. Casinos also often operates in specific destination zones making them sensitive to changes in international tourist flows. This finding in line with Pham et al. (2024) who found that market return and the

percentage changes of total tourist arrivals have positive impact on casino stock return with insignificant effect of exchange rate.

In Recreational Services and Travel & Tourism subsectors, only market return appears to be significant indicating that these particular firms' performance are influenced by broad investor sentiment and overall capital market condition rather than others macroeconomic factors. In Restaurant & Bars subsectors, market return and commercial and industrial loans appear to be significant indicating that this subsector is more locally oriented and financially sensitive unlike other subsectors that rely more on international tourist. This sector's firm generally serve a domestic customer base and depend on credit access to finance daily operation or expansions explaining that explain the significance of credit availability over international demand or exchange rate.

Additionally, this study further extends the analysis to include tourism-linked firms, particularly those in the healthcare service provider sector, to capture the rising trend of medical tourism. While medical tourism has gained attention in public health and service industry research, capital market studies that explore the stock price performance of firms exposed to medical tourism remain very limited. Unlike previous studies that rely on firm-level fundamental to assess its profitability (Khan & Obiosa, 2024), this study focuses on their role as emerging actors within the broader tourism ecosystem. The significant effect of market returns, tourist arrivals, and commercial and industrial loans indicate that these subsectors are influenced not only by capital market conditions but also by cross-border patient inflows and financing conditions reflecting their dual identity as both healthcare providers and tourism service firm. Commercial and industrial loans' coefficient is negative which contrasts with the original hypothesis. This result suggests that higher credit expansion may not always benefit healthcare tourism firms possibly due to over-leveraging, rising costs of capital, or increased borrowing in times of financial strain. It highlights the possibility that in this sector additional liquidity might coincide with operational challenges or delayed returns on investment. In particular, the significance of tourist arrivals supports the idea that tourist arrivals should not be interpreted as representing only leisure travel but also flow of international patients who seeking for medical treatment abroad. These patients contribute to the same channels of expenditure as traditional tourists, including

accommodation, food services, and transport, and their arrivals directly influence the financial performance of healthcare-related tourism firms.

5.3 Recommendations

The results introduce the RM, TA, and IP as external determinant affect the tourism stock index performance in ASEAN5 countries and not uniform across subsectors. The empirical findings of this study can provide the useful insights to fund manager and investors should monitor these indicators closely when forming sectoral strategies. Airline, hotel, and casino firm sensitive to inbound tourism while restaurant sensitive to credit conditions. Furthermore, medical tourism firms, such as private hospitals, have shown responsiveness to both tourism demand and capital availability, making them attractive for long-term thematic investment. Tourism and tourism-linked firms' manager should proactively track macroeconomic trends, including tourist arrivals, industrial production, and loan market conditions, to to guide strategic decisions. The significant role of tourist arrivals in driving tourism stock performance underlines the importance of promoting international tourism flows, through infrastructure investment, simplified visa procedures, or destination branding and the rising of medical tourism, policymakers should also support healthcare infrastructure and coordinate marketing strategies that position countries as a preferred medical tourism hub. To further support more informed investment and transparency, regulators should encourage tourism firms and tourism linked firms to disclose revenue breakdowns by customer type (domestic vs. international) and geographic markets. The development of thematic indices that include tourism-linked sectors such as medical and wellness tourism could facilitate investor access to emerging trends and improve capital formation in the sector. Future research should explore more on non-traditional tourism activities such as retirement migration or educational tourism which are influenced by international demand but remain underrepresented in tourism finance research. Additionally, should examine the role of crisis events and long-term shifts such as post-COVID behavioral shift to deepen understanding of stock market responses to shocks in tourism-related industries.

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