

**DISCOUNTED CASH FLOW VALUATION OF
BANGKOK AIRWAYS PUBLIC COMPANY LIMITED**



**A THEMATIC PAPER SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR
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entitled
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BANGKOK AIRWAYS PUBLIC COMPANY LIMITED**

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.....
Mr. Pattaramon Bovornkraisri
Candidate

.....
Simon M. Zaby,
Ph.D.
Advisor

.....
Asst. Prof. Piyapas Tharavanij,
Ph.D.
Chairperson

.....
Asst. Prof. Duangporn Arbhasil,
Ph.D.
Dean
College of Management
Mahidol University

.....
Assoc. Prof. Tatre Jantarakolica,
Ph.D.
Committee member

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Pattaramon Bovornkraisri

DISCOUNT CASH FLOW VALUATION OF BANGKOK AIRWAYS PUBLIC COMPANY LIMITED

PATTARAMON BOVORNKRAISRI 6149012

M.M. (FINANCIAL MANAGEMENT)

THEMATIC PAPER ADVISORY COMMITTEE: SIMON M. ZABY, Ph.D., ASST. PROF. PIYAPAS THARAVANIJ, Ph.D., ASSOC. PROF. TATRE JANTARAKOLICA, Ph.D.

ABSTRACT

This thematic paper demonstrated how to value the stock price of Bangkok Airways Public Company Limited which applied the concept of the free cash flow to firm (FCFF) model. It reflected the company's ability generate free cash flow for all investors.

As a result, the one-year target share price of Bangkok Airways, based on information available publicly, is 0 baht. There company has no value. The recommendation is to Hold or Sell, depends on investors' perspective and risks preferences.

KEY WORDS: Bangkok Airways / Valuation / Discounted Cash Flow Valuation / Airline

84 pages

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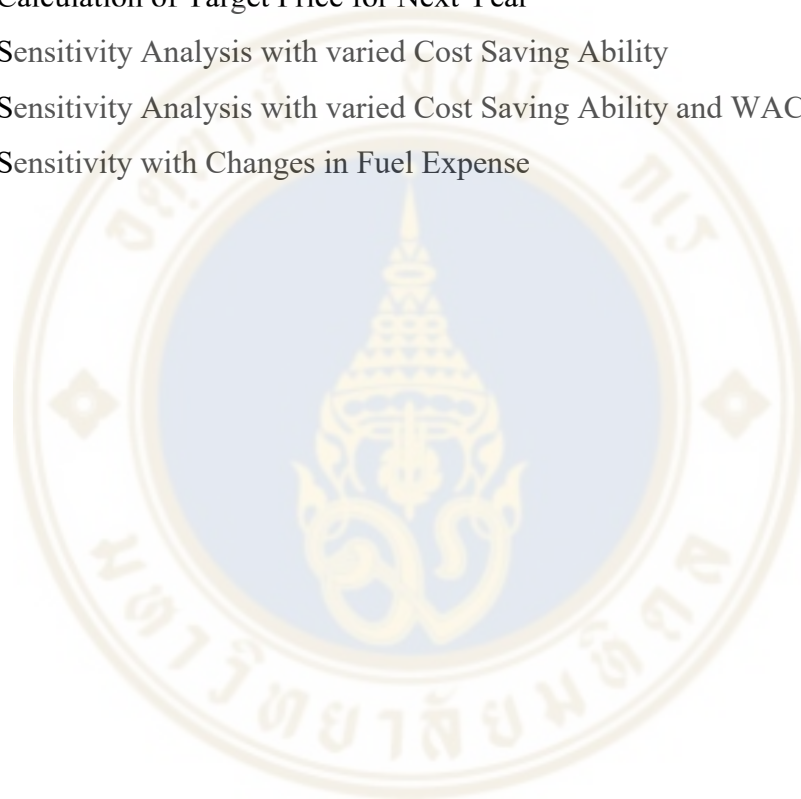
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CHAPTER I

HIGHLIGHT

Over the past two years, Thailand's economic was not in its very best situation. By the end of 3rd quarter 2019, SET Index was at 1624.09 which reflects the slower growth rate compare to the historical performance. Since 2017, SET Index has grown around 1.02% per year which is a lot lower if compare to 10 years average, 9.32% per year

Furthermore, by looking at nominal effective exchange rate and real effective exchange rate, the Thai baht has been appreciating and the price of goods and services in Thailand are considered more expensive. This is one of the reasons that affected the slowdown in tourism which contribute to the depressing performance of Thai airlines industry.

Since the tourism industry in Thailand seem not as good so there is an intense competition within airlines industry. Most of the airlines in Thailand have few alternative choices. Major one is price strategy. Turn the airlines industry to the red ocean.

Bangkok Airways' share price has dropped from 16.20 baht per share at the beginning of 2018 to 7.10 baht (Finance, n.d.), at the time of the valuation, 15th November 2019. The price drop is the result of poor financial performance and the expectation that investors have about the future of Bangkok Airways. In this report, there are two scenarios which different assumptions. The base case assumed that the Bangkok Airways will continues its operation as it has been doing for the 5 years which will result in continuously making operating losses and negative free cash flow. According to these assumptions, the intrinsic value of Bangkok Airways' operating assets will be negative, -20,481 million baht. However, Bangkok Airways still has a relatively large number of shares in Samui Property Fund (SPF) and Bangkok Dusit Medical Service (BDMS). Because of these long-term investments, available-for-sales securities, it could raise the value of Bangkok Airways up from less than zero to 17,293 million baht. Unfortunately, after deducting the value of debt, the value of equity is negative, -595 million baht or -0.28 baht per share. Since, the share price cannot be lower than zero, so the target price

of Bangkok Airways' is 0 baht per share. Under this assumption, the company has no value. This assumption is considered a very conservative perspective. So, the recommendation based on this assumption is to HOLD or SELL, depends on investors' risks preferences.

There are many analysts who believe that Bangkok Airways might be able to recover from its severe situation. The IAA Consensus page in Settrade's website (Settrade, n.d.) shows target price of Bangkok Airways ranges from 10.30 to 15.60 baht per share. So, I have done an alternative case with different assumptions to see in what circumstance that the share price of Bangkok Airways could be in that range.

The result from the study shows that one of a few ways to improve the value of the company is to reduce the costs and turn the company back to be profitable. If the company can successfully reduce the costs by 12-18% per year, the share price would be in the range between 10.64-16.10 baht per share. However, there is no solid evidence regarding the strategy or any plan that we could use to support the cost saving ability. So, based on the information available publicly, the target price of Bangkok Airways should be zero.

CHAPTER II

COMPANY OVERVIEW

2.1 Brief History

Bangkok Airways Public Company Limited, a Boutique Airlines, is one of the only 4 airlines listed in The Stock Exchange of Thailand (SET). Apart from the main business-the airline business-the company has been operating on some other businesses, such as airport businesses and airport related businesses as well. (Bangkok Airways, 2018a)

The company was originally founded in 1968 under the name “Krungthep Sahakol” by Mr. Prasert Prasarttong-Osoth. In 1984, Mr. Prasert founded “Sahakol Air” and took over the airline business and later changed the name to “Bangkok Airways”.

The company went public February 2013 and became Bangkok Airways Public Company Limited, BA. The company raised 13 billion baht from the initial public offering (IPO) by offering 520 million new shares. The initial offered price range of 23-27 THB per share.

2.2 Bangkok Airways’ Businesses

2.2.1 Airline Businesses

“Bangkok Airways is a regional airline which provides full-service flights to both business and leisure travelers under the International Air Transport Association (IATA) code “PG”. PG flights focuses on Short-haul routes to airports in and around major cities within the radius of up to 3,120 kilometers and flight duration of up to 5 hours from its hubs at the Suvarnabhumi International Airport, Samui Airport and Chiang Mai Airport. (Bangkok Airways, 2018b)

As of October 2019, the operated routes covering 28 scheduled destinations in 12 countries (including Thailand) as following,

“Bangkok, Samui, Ching Mai, Phuket, Krabi, Sukhothai, Trat, Lampang, Chaing Rai, Mae Hong Son, Hat Yai, Pattaya (U-Tapao), Luang Prabang, Phnom Penh, Siem Reap, Yangon, Mandalay, Nay Pyi Taw, Vientiane, Danang, Phu Quoc, Cam Ranh, Sihanoukville, Singapore, Kuala Lumpur, Maldives, Mumbai and Hong Kong.” (Bangkok Airways, 2018a)

Additionally, the airline has completely established code-share agreement with other 27 international airlines. The code-share agreement would create more route networks and increase the number of passengers of PG flights, and also extend the destinations to cover 27 more international destinations in 19 countries (excluding Thailand).

This following table shows the list and quantity of the aircrafts that Bangkok Airways has been using in its operation,

Table 2.1 The list and quantity of the aircrafts that Bangkok Airways has been using in its operation

Fleet Type	As of December, 2018	As of December, 2017
Airbus A320	9	9
Airbus A319	15	14
ATR72-500	5	6
ATR72-600	11	9
Total	40	38

Source: Bangkok Airways' 2018 Annual Report

2.2.2 Airport Businesses

“Most of the airports in Thailand owns and operates by Airport of Thailand (AOT) However, Bangkok Airways is the only airlines in Thailand that also owns and operates a few airports too, namely Samui International Airport, Trat Airport and Sukhothai Airport.

Samui Airport operates 16 hours a day on the total area of approximately 600 rai. The airport has one 2,060 meters runway, four taxiways with an area of approximately 28,000 square meters and six terminals which cover an area of 12,113

square meters. During 2018, Samui Airport recorded 2.6 million passengers in and out and over 30,000 flights. In November 2006, Bangkok Airways leased out Samui Airport to the Samui Property Fund for a period of 30 years from November 2006. However, the company continues to act as the operator of the airport under the Sub-lease Agreement. The company also has the ability to sub-lease the Samui Airport for aggregate term of not exceeding 30 years. Bangkok Airways agrees to pay rent in an amount of 26 million baht per month and also fixed service fee in an amount of 21 million baht along with variable service fee to Samui Property Fund. The company granted PGGS the right to provide ground services for other airlines at Samui Airport, revenue from ground service gained from this service will be paid to PGGS but Bangkok Airways gains revenue from granting PGGS the right instead and Bangkok Airways owns 99.99% of PGGS's shares. Part of the revenue generated from Airport Operation will be paid to Samui Property Fund as rent and service fee. In turn, the company will receive dividend from the fund because the company hold 30% (Phatra Asset Management Company Limited, 2019) ownership in the fund.

Trat Airport is used exclusively by Bangkok Airways. This airport operates 13 hours a day, starts from 06.00 hrs. to 19.00 hrs. The airport's premise has an area of approximately 1,300 rai. There is only one runway which is the shortest of all their airports, with a length of 1,800 meters. In 2018, in and out traffic recorded 96,000 passengers with more than 2,300 flights.

Sukhothai Airport operates 12 hours a day. Total area of the airport's premises is around 1,018 rai, one runway with a length of 2,100 meters. In 2018, in and out traffic recorded 84,000 passengers with more than 1,700 flights and Bangkok Airways is the only airline that flies to this destination." (Bangkok Airways, 2018a)

2.2.3 Airport-Related Businesses

"The company also provide some other services, such as cargo terminal services, ground and passenger services and in-flight catering services to its own flights and other airlines through its subsidiaries and associated companies.

Ground services include passenger services and ground equipment services. These services have been operated by BFS ground which 98.8% of its share owned by Bangkok Airways. BFS Ground provides the services to Bangkok Airways' scheduled

and chartered domestic and international flights and also provides the services to other airlines as well.

In-flight catering is operated through BAC which is Bangkok Airways' subsidiary. Bangkok Airways own 90% of the share in BAC (see figure 2.1). BAC produces all meals in international standards, such as Good Manufacturing Practice (GMP) and Hazard Analysis Critical Control Point (HACCP) global standards, and also capable of producing Halal meals and Kosher meals and it has been preparing meals for Bangkok Airways and 23 other airlines as well. Apart from In-flight catering, BAC also provides meals and refreshments at Bangkok Airways' lounge, both in Business and Economic Class, as well as the Business Class Lounges for other airlines at Suvarnabhumi International Airport.

Cargo Services is operated through BFS Cargo which is Bangkok Airways' associate company. Bangkok Airways owns 50% of BFS Cargo's shares. BFS Cargo provides international cargo service a Suvarnabhumi International Airport. BFS Cargo also has an ability to handle premium cargo, including perishable goods and valuable cargo which give relatively high margins. In 2018, BFS Cargo had more than 60 clients under two to three years contracts and the service fee is charged in Thai Baht." (Bangkok Airways, 2018a)

This following table shows the list of Bangkok Airways' subsidiaries along with the nature of its business,

Table 2.2 Bangkok Airways' Lists of Subsidiaries

Company's name	Nature of business	Percentage of shareholding	
		2018 (%)	2017 (%)
Held by the Company			
Bangkok Air Catering Co., Ltd.	Catering services	90.00	90.00
Bangkok Airways Ground Services Co., Ltd.	Ground services	99.99	99.99
Worldwide Flight Services Bangkok Air Ground Handling Co., Ltd.	Ground services	99.88	98.88
Bangkok Airways Holding Co., Ltd.	Holding	99.99	99.99

Table 2.2 Bangkok Airways' Lists of Subsidiaries (cont.)

Company's name	Nature of business	Percentage of shareholding	
		2018 (%)	2017 (%)
Held by subsidiary companies			
BAC Gourmet House Co., Ltd. (99.99% held by Bangkok Air Catering Co., Ltd.)	Restaurant	89.99	89.99
Bangkok Air Catering Phuket Co., Ltd. (99.96% held by Bangkok Air Catering Co., Ltd.)	Catering services	89.96	89.96
Bangkok Air Catering Samui Co., Ltd. (99.99% held by Bangkok Air Catering Co., Ltd.)	Catering services	89.99	89.99
Bangkok Air Catering Chiang Mai Co., Ltd. (99.99% held by Bangkok Air Catering Co., Ltd.)	Catering services	89.99	89.99
SA Services Co., Ltd. (99.99% held by Worldwide Flight Services Bangkok Air Ground Handling Co., Ltd.)	Ground services	98.87	98.87
BFS Cargo DMK Co., Ltd. (51.00% held by Worldwide Flight Services Bangkok Air Ground Handling Co., Ltd.)	Cargo	50.43	50.43
Gourmet Primo Co., Ltd. (99.99% held by Bangkok Airways Holding Co., Ltd.)	Produce and process food for distribution	99.98	99.98
More Than Free Co., Ltd. (100.00% held by Bangkok Airways Holding Co., Ltd.)	Distribution of souvenirs in duty free shop	99.99	-
Bangkokair Aviation Training Center Co., Ltd. (100.00% held by Bangkok Airways Holding Co., Ltd.)	Aviation training business	99.99	-

Source: Bangkok Airways' 2018 Annual Report

CHAPTER III

MACROECONOMIC AND INDUSTRY ANALYSIS

3.1 Macroeconomic Overview

Thailand's Nominal Gross Domestic Product (GDP) was at 504 billion USD in 2019. In the third quarter of 2019, it reached 133.5 billion USD. It has been increased 2.3% YoY. The Real GDP Growth in Thailand is expected to grow at 4.1% per year, on average (from March 1994- June 2019) (CEIC Data, 2019a). By the end of 2019, Thailand's Real GDP Growth is expected to be 2.871% and projected to stand at 3.649% in December 2024 (CEIC Data, 2019b)

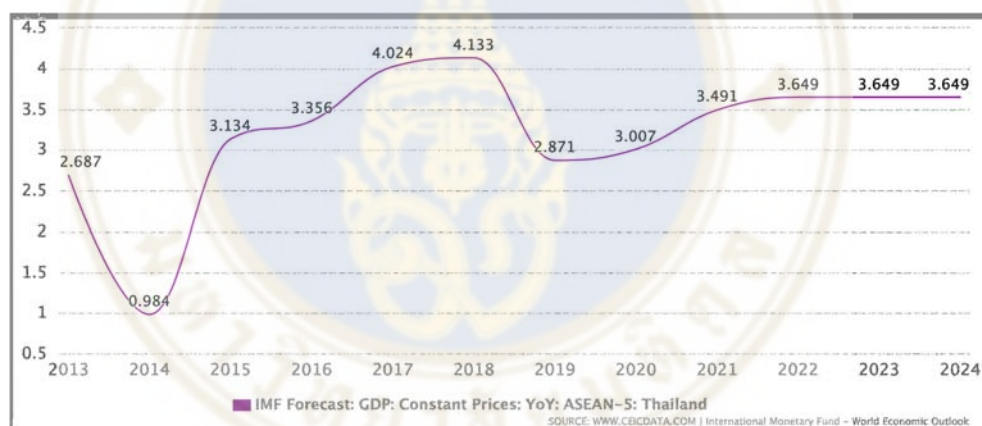


Figure 3.1 Thailand's GDP Growth Rate

Source: CEIC Data

While there are several trade wars going on, the major one would be the trade war between United States and China. Resulting in slower economic growth in both countries. According to International Monetary Fund (IMF) – World Economic Outlook, the economic is now growing at the slowest pace since the global financial crisis (IMF, 2019). United States' GDP growth rate which is 2.0% YoY in September 2019 which is lower than its average of 3.1%, from 1948 to 2019 (CEIC Data, 2019c). United States' GDP is forecasted to be at 2.35% by the December of 2019 and the growth

rate is seemed to be decreasing over the next 5 years (CEIC Data, 2019d). While China's GDP growth dropped from 6.7%, same period last year, to 6.2% (CEIC Data, 2019e) and it has been forecasted to keep decreasing to 5.5% in 2024 (CEIC Data, 2019f). Thailand is one of many countries that has been impacted by it. Resulting in significant reduction in Thailand's GDP growth rate in 2019, Thailand's export values dropped 5.8% YoY, Service exports contracted from the dropping in tourists' number and transportation income at -7.0% YoY. This directly affected the airline industry, in other word, affected Bangkok Airways' performance. Other than that, private consumption, private investment also has been slowing down (Thailand Business News, 2019). From the figure 3.1, the analyst from believes that after the trade wars have resolved, Thailand's GDP growth rate will slowly come back to its average.

While in Europe, the Brexit has been going on for about 2 years and has not been resolved, many airlines and companies claimed that they have been affected by it. Fortunately, Thailand's tourism is not severely affected by it. Figure 3.2 shows the number of arrivals to Thailand. The graph shows the that after the Brexit has started in 2016, the number of tourists from both United Kingdom and Europe remain constant. Figure 3.3 shows the amount of spending of tourism from the Europe, UK, USA and China, in million USD, which also telling the same story that after that Brexit has started the tourist receipts was also constant with some seasonality affects.

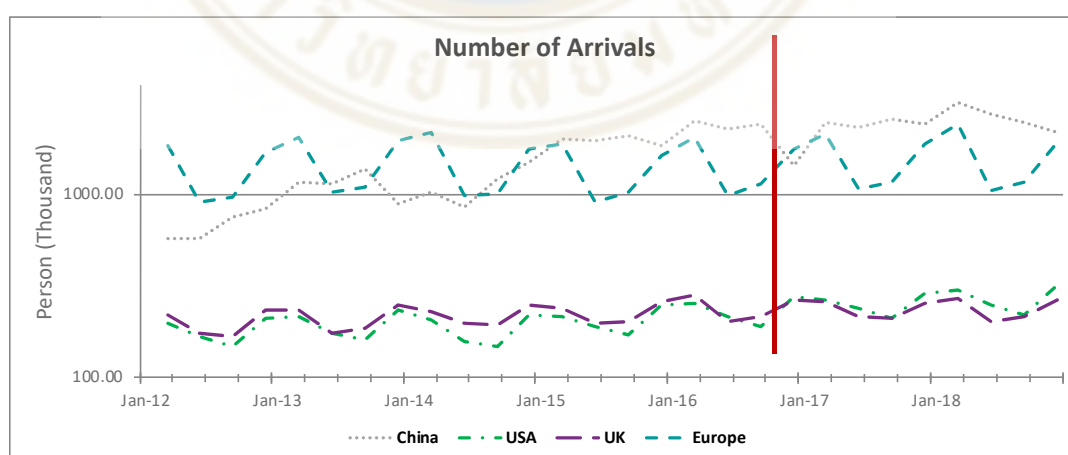


Figure 3.2 Number of Arrivals

Source: CEIC Data: TAT Intelligence Center

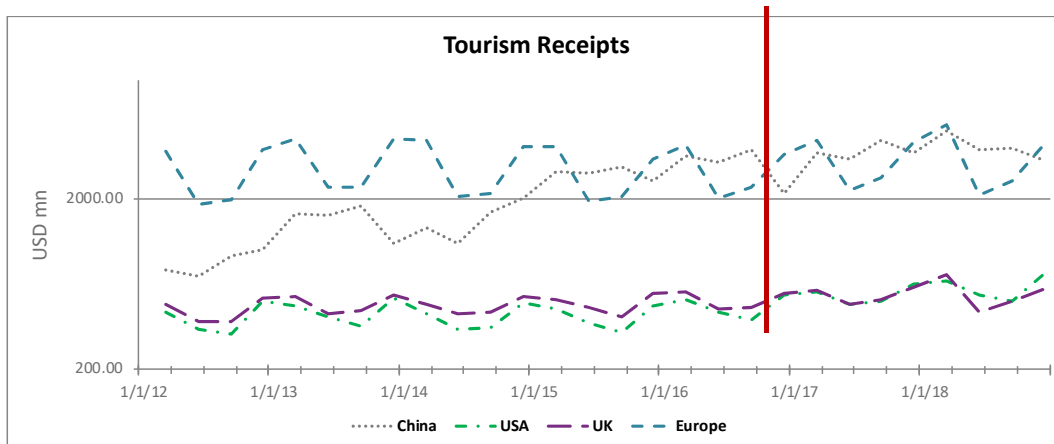


Figure 3.3 Tourism Receipts

Source: CEIC Data, TAT Intelligence Center

Apart from the reasons mentioned earlier, another factor that also has an impact on Thai economy is the appreciation of the Thai Baht. The Thai Baht has been continuously appreciating over the past two decades. At the end of August 2019, NEER was reported at 125.18 and REER was at 114.67 (Bank of Thailand, 2019). Figure 3.4 shows the historical Nominal Effective Exchange Rate and the Real Effective Exchange Rate of Thai Baht. The appreciation of Thai Baht causes Thai exporters to lose their competitive advantages. The REER shows that Thai goods is becoming more expensive as compared to other countries and that has negatively impacted Thai economic.

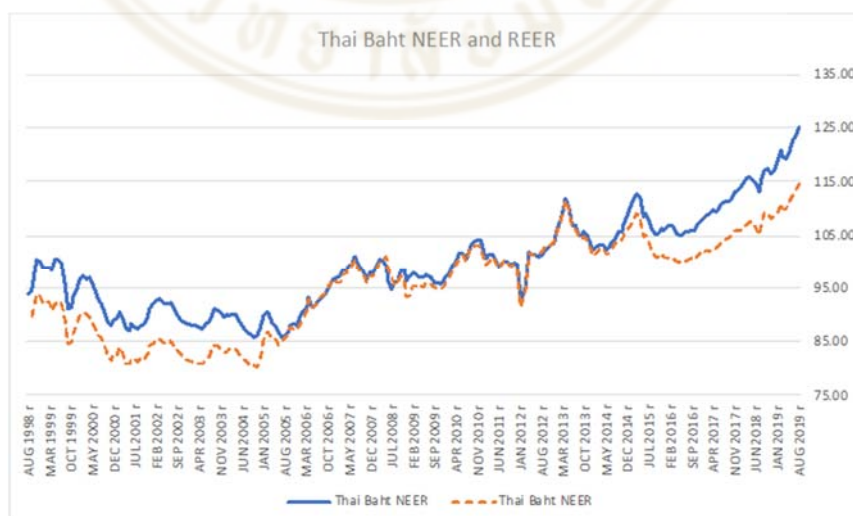


Figure 3.4 The appreciation of Thai Baht

Source: Bank of Thailand

3.2 Microeconomic and Industry Overview

Bangkok Airways is operating in Thailand's Airlines Industry which is reported sales value of approximately 333 billion baht by the end of 2018. Thailand's Airline Industry has been continuously growing at around 4% CAGR. The growth of airline industry is driven by the growth in tourism, both inbound and outbound. Low cost airlines have the advantage and also influencing an airlines industry in Thailand as the Free Independent Tourist (FIT) has been rising among middle-class people in China and India. Additionally, the government's campaign to promote domestic tourism in 55 secondary cities is another factor that feed the growth of Low-cost airlines. Tables 3.1-3.2 and figure 3.5 show that the sales value of airline industry has been steadily increasing over the past 5 years. (Euromonitor International, 2019)

Table 3.1 Airlines Historical Sales Value (In Million Baht)

Airlines: Sales Value 2014-2019						
	2014	2015	2016	2017	2018	2019 E
Charter	9,762	11,128	11,685	12,245	13,290	14,190
Low Cost Carriers	42,008	48,309	55,072	61,956	68,342	75,246
Scheduled Airlines	239,275	239,514	244,305	247,969	251,689	255,389
Airlines	291,044	298,951	311,061	322,171	333,321	344,825

Source: Euromonitor

Table 3.2 Airlines Historical Sales Growth Rate

Airlines: Sales Growth 2014-2019						
	2015	2016	2017	2018	2019 E	CAGR
Charter	14.00%	5.00%	4.80%	8.53%	6.77%	7.77%
Low Cost Carriers	15.00%	14.00%	12.50%	10.31%	10.10%	12.36%
Scheduled Airlines	0.10%	2.00%	1.50%	1.50%	1.47%	1.31%
Airlines	2.72%	4.05%	3.57%	3.46%	3.45%	3.45%

Source: Euromonitor

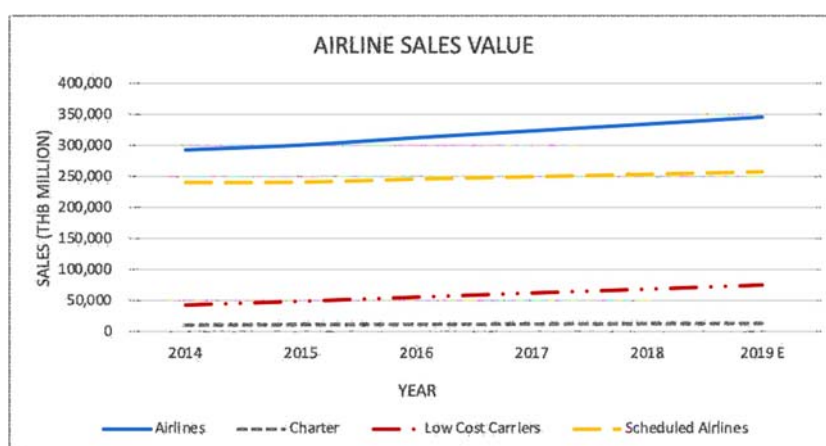


Figure 3.5 Airlines Historical Sales Trend

Source: Euromonitor

As mentioned earlier, Low cost airlines have had advantages from government's campaign and also other factors, the growth rate of Low-cost airlines were higher than the other segments, 12.36% CAGR. In contrast, Bangkok Airways' main source of income came from scheduled flights which has not been growing very fast, only 1.31% CAGR.

Overall, CAGR of Thailand's airline industry is around 3.45% which is in the same range with the growth of Thailand's GDP. From these data, plus the outlook of the industry, including high competition in every segment, we can assume that Thailand's airline industry is quite saturated. There is no room for extraordinary growth. Every segment of this industry has been fully filled and there are more than one companies, competing against one another. Hence, the growth of airline industry is likely to be in line with the growth of the Thailand's GDP for over the forecast period. Table 3.3-3.4 and figure 3.6 how that the forecasted sales value of airline industry in the next 5 years.

Table 3.3 Airlines Forecast Sales Value (In Million Baht)

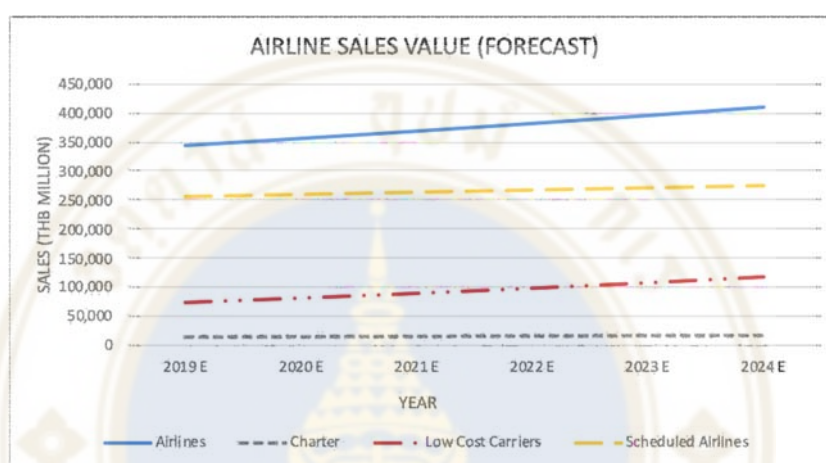
Airlines: Sales Value Forecasted 2019-2024						
	2019 E	2020 E	2021 E	2022 E	2023 E	2024 E
Charter	14,190	15,056	15,882	16,666	17,407	18,103
Low Cost Carriers	75,246	82,695	90,717	99,342	108,598	118,514
Scheduled Airlines	255,389	259,068	262,725	266,360	269,972	273,559
Airlines	344,825	356,818	369,324	382,368	395,976	410,176

Source: Euromonitor

Table 3.4 Airlines Forecast Growth Rate

Airlines: Sales Value Forecasted 2019-2024						
	2019 E	2020 E	2021 E	2022 E	2023 E	2024 E
Charter	14,190	15,056	15,882	16,666	17,407	18,103
Low Cost Carriers	75,246	82,695	90,717	99,342	108,598	118,514
Scheduled Airlines	255,389	259,068	262,725	266,360	269,972	273,559
Airlines	344,825	356,818	369,324	382,368	395,976	410,176

Source: Euromonitor

**Figure 3.6 Airlines Forecast Sales Trend**

Source: Euromonitor

Thailand's airline industry is expected to grow at around the same rate in every segment. Scheduled airlines will remain its growth rate at around 1.33%-1.47% between 2019 to 2024. Low cost airlines' growth rate will decrease as they are competing each other in the red ocean with pricing strategy and it will be difficult to growth in the long run. One of the main factors that have a big impact on the profitability of every airline is the fuel price. A small change of fuel price could greatly change the profitability of an airline. On October 21, 2019, the jet fuel price was reported at 1.87 USD per gallon (Index Mundi, n.d.).

Since the price of jet fuel dropped in 2016, the trend in Figure 3.7 shows that it has been increasing continuously and it is expected to be increasing over time. Jet fuel is the product from Crude Oil and the price of Jet Fuel and Crude Oil tends to move together in the same direction, as shown in Figure 3.8.

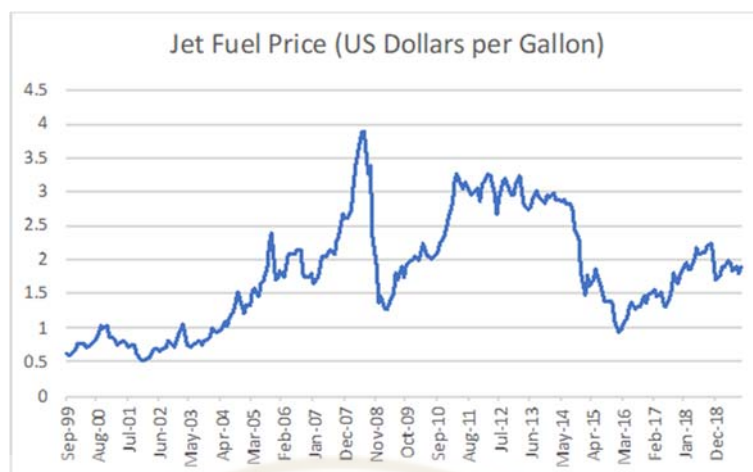


Figure 3.7 Jet Fuel Price (USD per Gallon)

Source: IndexMundi

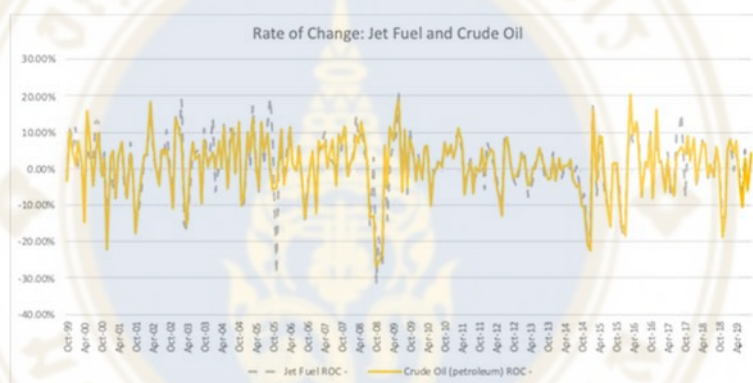


Figure 3.8 Jet Fuel and Crude Oil Relationship

Source: IndexMundi

Furthermore, the U.S. Energy Information Administrative (EIA), has published an Annual Energy Outlook of 2019 and in the report also includes the crude oil that is likely to be increasing continuously overtime. In result, the Jet Fuel price is also expected to be increasing as we (U.S. Energy Information Administration, 2019), as shown in Figure 3.9.

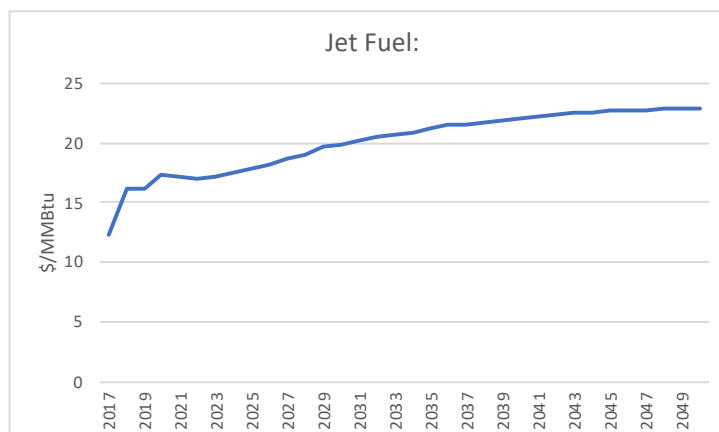


Figure 3.9 Jet Fuel Price Forecast (\$/MMBtu)

*MMBtu stands for One million British thermal units; a measurement of heating value.

Source: U.S. Energy Information Administration

We can safely assume that airlines industry will have to continue facing the rise of jet fuel price and will also drive the cost of rendering services up. Although, some airlines might have hedging policy to reduce the exposure to the fluctuation of oil price, but the higher volatility of oil price will affect the cost of hedging too. In conclusion, the rising of oil price will have a significant effect on the airlines' financial performance anyway.

3.3 Competition Analysis

The competition of airlines industry in Thailand is relatively high. Although, Bangkok Airways is the one and only boutique airline in Thailand. The airline differentiated itself from its competitors by having its lounges that are serving snacks and soft drinks available for every Bangkok Airways' passenger in every airport in Thailand. However, travelers can easily substitute it with some other airlines anyway. For domestic travelers, there are several airlines that offer domestic flights, such as Nok Air, Thai Air Asia, Thai Smile, Thai Lion Air and Orient Thai. Bangkok Airways has some advantages over the competitors if customers want to travel so some specific destinations, like Koh Samui and Sukhothai, Bangkok Airways is the only airline that flies these routes, but the amount of travelers of these routes are relatively low compared to other routes. Other than these routes, customers are more likely to substitute it with other airlines

over a better flights schedule, price and their preferred airports. For international routes, Bangkok Airways also offers some destinations on its PG flights and Bangkok Airways has code-share agreements with several airlines to expand its destinations. However, the competition in international routes is even more competitive as there are huge number of airlines that fly to and from Thailand to many destinations around the world.

Table 3.5 shows the historical market share of major airlines that have been operating in Thailand since 2015 to 2018 and also the forecasted market share of the total sales of the airline industry in 2019. We can see that the market share of each airline is quite stable and not really fluctuated. The only one that seems to have gain more market share of the years is Asia Aviation, Thai Air Asia while the big player, Thai Airways maintains the same market shares for over the past 4 years. As well as Bangkok Airways, it has been holding around 6% market share over the same period.

Table 3.5 Thai Airlines' Market Share of Total Sales

	Thai Airlines' Market Share				
	2019 E	2018	2017	2016	2015
Thai Airways International PCL	12.6%	12.7%	12.8%	12.9%	12.6%
Asia Aviation PCL	9.4%	9.1%	8.7%	8.1%	7.8%
Bangkok Airways PCL	6.1%	6.1%	6.3%	6.0%	5.8%
Nok Airlines PCL	4.3%	4.2%	4.6%	3.9%	4.2%
Qatar Airways Group Plc	1.7%	1.6%	1.5%	1.5%	1.3%
Emirates Group Plc	1.6%	1.7%	1.6%	1.6%	1.7%
Cathay Pacific Airways Ltd	1.4%	1.4%	1.4%	1.6%	1.9%
Orient Thai Airlines Co Ltd	-	0.5%	0.5%	0.6%	0.7%
Business Air Centre Co Ltd	-	-	-	-	0.6%
Sky Asia Co Ltd (Nok Air)	-	-	-	-	-
Others	62.9%	62.8%	62.6%	63.8%	63.5%

Source: Euromonitor

Most of the airlines have their own loyalty program and it might seem like the program has been working very well because they were able to retains its customers, but there is more than the loyalty program that the airlines have to do to retain its customers.

Over the past period, there have been competitions going on in airlines industry, in term of the quality and also the price. Many airlines have been continuously making loss in the past period because of the price strategy. It also seems like the majority of airlines' customers are sensitive to the price. The disruption of technology has made

information more reachable, easier to access. Majority of the individual customers are very likely to do some researches and compare information to get the best deal for themselves. Finally, the price strategy drove the airlines industry into the red ocean and most of the airlines ended up with making loss even they have had higher passengers.



CHAPTER IV

INVESTMENT SUMMARY

Bangkok Airways is a regional airline, based in Thailand. The company has positioned themselves in the boutique airline segment. Despite the fact that Bangkok Airways is the only boutique airline in Thailand, the company has been facing intense competition because of the behavior of consumers. In my opinion, majority of the consumers are sensitive to the price and often choose the flight with lowest price with the acceptable flight schedule rather than the brand.

Apart from airline business, Bangkok Airways operates in a several more businesses through its subsidiaries such as airport business, in-flight catering, cargo and etc. However, these businesses are relatively small in revenue contribution compare to the airline business.

The company also hold a relatively large number of long-term investments; available-for-sales securities which are shares in Samui Property Fund (SPF) and Bangkok Dusit Medical Service (BDMS).

With a slowdown in tourism industry and intense competitions among Thai airlines. The profitability of many airlines has been very depressing. Bangkok Airways was also affected by it. The Travel Authority of Thailand (TAT) also acknowledged the downturn in tourism and will try to come up with campaigns to recover Thailand's tourism. As well as Bangkok Airways, the company has plans to attract more tourists from so-called "CLMV" countries.

Moreover, the company will expand many of its existing businesses such as Bangkok Airways has signed code-share agreement with a few more airlines in 2019, BAC announced professional airline catering unit at Chiang Mai International Airport, and the in-flight service provider at Don Mueang Airport. There is also a plan for new business for aviation Training Centre in Sukhothai in early 2020.

However, the preliminary financial analysis has shown that Bangkok Airways performance and profitability are getting worse than it used to be. By the end of 2018, the company net profit was only 249 million baht which is very low compare to 1,797 million baht in 2015. The riskiness of Bangkok Airways has been increasing over the past 5 years since the operating income keeps reducing, resulting ICR less than 1, meaning that the revenue from the operation will no longer cover the finance costs.

The trailing 12 months financial statement shows net loss of 546 million baht. Yet the company has spent a lot in capital expenditure. Resulting in huge number of negative free cashflow to the firm, -4,338 million baht. The base case is assuming that from 2018 and until the 3rd quarter of 2019 was a very bad years for Bangkok Airways, but everything will be back to average. The revenue will continue to grow and eventually grow at the same rate as the industry. The costs or revenue will grow proportionally as a 5 years average percentage of their related revenue and further assumptions will be provided in discounted cashflow valuation section. The free cashflow of the firm will continuously be negative. The result is that the intrinsic value of Bangkok Airways' operating assets will also be negative. Since, the share price cannot be lower than zero, the price per share of Bangkok Airways is zero baht, as of 15th November 2019. For conservative investors, I would recommend HOLD or SELL.

After every airline in Thailand have reported net loss in the 3rd quarter of 2019, there is a demand to Excise Department for the discount in jet fuel excise tax. The excise tax is willing to discuss further detail, but so far, there is no official announcement or promise from the Excise Department yet.

In Settrade's website, on the IAA consensus page, many analysts have valued Bangkok Airways and the price ranging from 10.30 to 15.60 baht per share. So, I have done some experiments to find under what circumstance that the intrinsic value of Bangkok Airways could be in that range. From my experimental, one of the ways that the share price of Bangkok Airways could improve is to improve its efficiency, reducing the costs. In the Discounted Cashflow Valuation section, there are sensitivity analyses showing variation of Bangkok Airways' share price if fuel expense, overall cost of sales and services and weighted average cost of capital were to change.

If the company could successfully reduce the costs by 12%-18% each year. The share price of Bangkok Airways could be in the range from 10.64 to 16.10 baht. But there is no solid evidence regarding the cost saving strategy yet. Therefore, using this information to make a decision would be just a speculation. Hence, based on the evidence available publicly, the target price of Bangkok Airways is 0 baht per share, the company has no value under this assumption.



CHAPTER V

FINANCIAL STATEMENT ANALYSIS

5.1 Preliminary Financial Statement Analysis

This section is the analysis of Bangkok Airways' consolidated financial statement (Thomson Reuters Eikon, n.d.) as of 31 December 2018.

5.1.1 Income Statement

By briefly look through the income statement, we can see that the bottom line has been showing down trend. Net income has dropped from 1,768 million baht in 2016 to only 249 million baht in 2018. Although the company's revenue has been growing but the cost of revenue has grown much faster, the situation causes the gross profit of the company to be narrower in the past couple years, see table 5.1 and 5.2.

From table 5.2, we can clearly see that the main source of Bangkok Airways' income came from the Passenger Revenue, which is the company main business, airline business, contributed up to 80.52% of the total revenue in 2018. The second largest portion of income came from the Sales and Service Income which operated by its subsidiaries, contributed up to 16.23% in 2018. From the data of 2014 to 2018, total revenue has grown at 3.64% CAGR. As mentioned earlier, the cost of revenue has grown slightly faster, 4.90% CAGR. Therefore, the gross profit margin has been decreasing at 4.09% CAGR. Apart from that, Selling General and Administration expenses also grow faster than the revenue as well, 6.39% CAGR

Table 5.1 Bangkok Airways' Standardized Consolidated Income Statement

Income Statement					
Bangkok Airways					
(in million baht)	2018	2017	2016	2015	2014
Revenue	25,156	24,932	24,692	23,113	21,033
Passenger	20,259	20,249	20,431	19,104	17,513
Passenger service Charge	598	593	564	535	504
Freight	216	242	282	326	332
Sales and service income	4,082	3,848	3,415	3,148	2,684
Total Revenue	25,156	24,932	24,692	23,113	21,033
Cost of Revenue, Total	22,339	22,092	19,083	18,228	17,563
Gross Profit	2,816	2,839	5,609	4,885	3,470
Selling/General/Admin. Expenses, Total	4,045	3,941	3,836	3,464	2,967
Depreciation/Amortization	129	111	0	0	0
Other Operating Expenses, Total	(1,704)	(1,254)	(1,278)	(922)	(837)
Total Operating Expense	24,810	24,890	21,642	20,771	19,693
Operating Income (EBIT)	346	42	3,050	2,342	1,339
Interest Inc.(Exp.), Net-Non-Op., Total	11	1,277	(274)	(243)	(953)
Net Income Before Taxes (EBT)	357	1,318	2,776	2,099	386
Provision for Income Taxes	93	472	939	250	1
Net Income After Taxes	264	846	1,837	1,849	386
Minority Interest	(14)	(58)	(69)	(52)	(35)
Net Income Before Extra. Items	249	788	1,768	1,797	351
Net Income	249	788	1,768	1,797	351

Source: Thomson Reuters Eikon

Table 5.2 Bangkok Airways' Income Statement – Trend Analysis

Income Statement (Trend)							
Bangkok Airways							
(in million baht)	2018 CMS	CAGR	2018	2017	2016	2015	2014
Revenue	100.00%	3.64%	120%	119%	117%	110%	100%
Passenger	80.53%	2.96%	116%	116%	117%	109%	100%
Passenger service Charge	2.38%	3.48%	119%	118%	112%	106%	100%
Freight	0.86%	(8.24%)	65%	73%	85%	98%	100%
Sales and service income	16.23%	8.75%	152%	143%	127%	117%	100%
Total Revenue	100.00%	3.64%	120%	119%	117%	110%	100%
Cost of Revenue, Total	88.80%	4.93%	127%	126%	109%	104%	100%
Gross Profit	11.19%	(4.09%)	81%	82%	162%	141%	100%
Selling/General/Admin. Expenses, Total	16.08%	6.39%	136%	133%	129%	117%	100%
Depreciation/Amortization	0.51%						
Other Operating Expenses, Total	(6.77%)	15.28%	204%	150%	153%	110%	100%
Total Operating Expense	98.62%	4.73%	126%	126%	110%	105%	100%
Operating Income (EBIT)	1.38%	(23.71%)	26%	3%	228%	175%	100%
Interest Inc.(Exp.),Net-Non-Op., Total	0.04%	(140.97%)	(1%)	(134%)	29%	25%	100%
Net Income Before Taxes (EBT)	1.42%	(1.55%)	92%	341%	719%	544%	100%
Provision for Income Taxes	0.37%	147.57%	9300%	47200%	93900%	25000%	100%
Net Income After Taxes	1.05%	(7.32%)	68%	219%	476%	479%	100%
Minority Interest	(0.06%)	(16.74%)	40%	166%	197%	149%	100%
Net Income Before Extra. Items	0.99%	(6.64%)	71%	225%	504%	512%	100%
Net Income	0.99%	(6.64%)	71%	225%	504%	512%	100%

Source: Thomson Reuters Eikon

5.1.2 Balance Sheet

Table 5.3 and 5.4 shows the balance sheet of Bangkok Airways in number and trend respectively. The total assets of Bangkok Airways in 2018 were 62,067 million baht and it has been growing at 5% CAGR, since 2014. 50.52% of the assets were liabilities, 31,356 million baht and another 49.48% were the shareholders' equity, 30,711 million baht. The majority part of total assets is non-current assets, 81.58% of the total assets. The non-current assets consisted of 15,520 million baht of Property, Plant and Equipment (PP&E), 39.59% of total assets and 33,451 million baht of Long-Term Investment, 53.89% of the total assets. The current assets recorded only 18.42% of total assets or 11,430 million baht. Majority part of the current assets are cash and cash equivalents, 12.32% of total assets or 7,643 million baht. The Account Receivable and Inventory are relatively low as compare to other type of businesses, but it is normal for airlines business which we will see clearer when comparing to peer competitor.

Most of the liabilities were the debt. Total debt recorded 17,595 million baht or 28.35% of the total liabilities and shareholders' equity. The company also have other

kinds of liabilities, but those items are relatively small, such as Account Payable 3.43% and Customer Advance 4.08% of the total liabilities and shareholders' equity.

Shareholders' Equity was recorded 30,711 million baht or 49.48% of the total liabilities and shareholders' equity. The company has only 2,100 million share outstanding since 2014 at the par of 1 baht. The additional paid-in capital was 9,319 million baht and the biggest one was called "Other Equity" which the company does not disclose the information regarding this item, recorded 19,625 million baht or 31.62% of the total liabilities and shareholders' equity.

During the past five years, the company has been shifting toward debt financing. As we can see in figure 5.4, total debt has grown 131% since 2014 while the total equity has grown only 121% within the same timeframe.

Table 5.3 Bangkok Airways' Standardized Balance Sheet

Balance Sheet					
Bangkok Airways					
Assets (THB Millions)	2018	2017	2016	2015	2014
Cash and Short Term Investments	7,648	9,996	10,670	13,243	13,700
Cash	54	58	68	125	168
Cash & Equivalents	4,294	3,487	2,983	4,503	2,007
Short Term Investments	3,300	6,451	7,618	8,615	11,525
Accounts Receivable - Trade, Net	1,710	1,704	1,846	1,634	1,502
Total Receivables, Net	1,713	1,854	1,966	1,847	1,705
Receivables - Other	4	150	119	213	203
Total Inventory	542	479	369	306	272
Prepaid Expenses	261	218	338	193	218
Other Current Assets, Total	1,266	1,834	850	256	665
Total Current Assets	11,430	14,381	14,192	15,846	16,561
Property/Plant/Equipment, Total - Gross	24,570	22,950	20,167	16,119	12,894
Property/Plant/Equipment, Total - Net	15,520	14,503	12,793	9,559	7,034
Accumulated Depreciation, Total	(9,050)	(8,447)	(7,374)	(6,560)	(5,860)
Goodwill, Net	26	0	0	0	0
Intangibles, Net	597	663	708	759	829
Long Term Investments	33,451	27,568	31,688	29,708	23,101
Other Long Term Assets, Total	1,043	828	907	1,141	1,055
Total Assets	62,067	57,942	60,289	57,013	48,579

Table 5.3 Bangkok Airways' Standardized Balance Sheet (cont.)

Liabilities (THB Millions)	2018	2017	2016	2015	2014
Accounts Payable	2,130	2,113	2,094	1,637	1,686
Accrued Expenses	418	492	0	0	0
Current Port. of LT Debt/Capital Leases	726	553	465	500	1,119
Other Current liabilities, Total	5,031	5,127	4,769	4,388	3,930
Customer Advances	2,531	2,626	2,369	2,328	2,151
Income Taxes Payable	13	214	41	31	57
Other Payables	753	703	594	624	754
Other Current Liabilities	1,734	1,585	1,766	1,406	967
Total Current Liabilities	8,340	8,315	7,328	6,525	6,734
Total Long Term Debt	16,834	16,016	15,060	13,858	12,299
Total Debt	17,595	16,599	15,525	14,358	13,418
Deferred Income Tax	5,330	4,576	5,295	5,040	3,712
Minority Interest	67	73	76	139	123
Other Liabilities, Total	785	649	617	494	402
Total Liabilities	31,356	29,629	28,376	26,056	23,270
Shareholders Equity (THB Millions)					
Common Stock, Total	2,100	2,100	2,100	2,100	2,100
Additional Paid-In Capital	9,319	9,319	9,319	9,319	9,319
Retained Earnings (Accumulated Deficit)	33	448	664	431	(363)
Treasury Stock - Common	(367)	0	0	0	0
Unrealized Gain (Loss)	0	16,657	20,041	19,261	14,407
Other Equity, Total	19,625	(211)	(211)	(155)	(155)
Total Equity	30,711	28,313	31,913	30,956	25,309
Total Liabilities & Shareholders' Equity	62,067	57,942	60,289	57,013	48,579

Source: Thomson Reuters Eikon

Table 5.4 Bangkok Airways' Standardized Balance Sheet – Trend Analysis

Balance Sheet (Trend)							
Bangkok Airways							
Assets (THB Millions)	CMS	CAGR	2018	2017	2016	2015	2014
Cash and Short Term Investments	12.32%	-11.0%	56%	73%	78%	97%	100%
Cash	0.09%	-20.3%	32%	35%	40%	74%	100%
Cash & Equivalents	6.92%	16.4%	214%	174%	149%	224%	100%
Short Term Investments	5.32%	-22.1%	29%	56%	66%	75%	100%
Accounts Receivable - Trade, Net	2.76%	2.6%	114%	113%	123%	109%	100%
Total Receivables, Net	2.76%	0.1%	100%	109%	115%	108%	100%
Receivables - Other	0.01%	-54.4%	2%	74%	59%	105%	100%
Total Inventory	0.87%	14.8%	199%	176%	136%	113%	100%
Prepaid Expenses	0.42%	3.7%	120%	100%	155%	89%	100%
Other Current Assets, Total	2.04%	13.7%	190%	276%	128%	38%	100%
Total Current Assets	18.42%	-7.1%	69%	87%	86%	96%	100%
Property/Plant/Equipment, Total - Gross	39.59%	13.8%	191%	178%	156%	125%	100%
Property/Plant/Equipment, Total - Net	25.01%	17.1%	221%	206%	182%	136%	100%
Accumulated Depreciation, Total	-14.58%	9.1%	154%	144%	126%	112%	100%
Goodwill, Net	0.04%						
Intangibles, Net	0.96%	-6.4%	72%	80%	85%	92%	100%
Long Term Investments	53.89%	7.7%	145%	119%	137%	129%	100%
Other Long Term Assets, Total	1.68%	-0.2%	99%	78%	86%	108%	100%
Total Assets	100.00%	5.0%	128%	119%	124%	117%	100%
Liabilities (THB Millions)	CMS	CAGR	2018	2017	2016	2015	2014
Accounts Payable	3.43%	4.8%	126%	125%	124%	97%	100%
Accrued Expenses	0.67%						
Current Port. of LT Debt/Capital Leases	1.17%	-8.3%	65%	49%	42%	45%	100%
Other Current Liabilities, Total	8.11%	5.1%	128%	130%	121%	112%	100%
Customer Advances	4.08%	3.3%	118%	122%	110%	108%	100%
Income Taxes Payable	0.02%	-25.6%	23%	375%	72%	54%	100%
Other Payables	1.21%	0.0%	100%	93%	79%	83%	100%
Other Current Liabilities	2.79%	12.4%	179%	164%	183%	145%	100%
Total Current Liabilities	13.44%	4.4%	124%	123%	109%	97%	100%
Total Long Term Debt	27.12%	6.5%	137%	130%	122%	113%	100%
Total Debt	28.35%	5.6%	131%	124%	116%	107%	100%
Deferred Income Tax	8.59%	7.5%	144%	123%	143%	136%	100%
Minority Interest	0.11%	-11.4%	54%	59%	62%	113%	100%
Other Liabilities, Total	1.26%	14.3%	195%	161%	153%	123%	100%
Total Liabilities	50.52%	6.1%	135%	127%	122%	112%	100%
Shareholders Equity (THB Millions)							
Common Stock, Total	3.38%	0.0%	100%	100%	100%	100%	100%
Additional Paid-In Capital	15.01%	0.0%	100%	100%	100%	100%	100%
Retained Earnings (Accumulated Deficit)	0.05%	-161.9%	-9%	-123%	-183%	-119%	100%
Treasury Stock - Common	-0.59%						
Unrealized Gain (Loss)	0.00%	-100.0%	0%	116%	139%	134%	100%
Other Equity, Total	31.62%	-363.3%	-12661%	136%	136%	100%	100%
Total Equity	49.48%	3.9%	121%	112%	126%	122%	100%
Total Liabilities & Shareholders' Equity	100.00%	5.0%	128%	119%	124%	117%	100%

Source: Thomson Reuters Eikon

5.2 Financial Ratios

5.3.1 Profitability

In term of profitability, one of the most popular way to assess it is to use DuPont Analysis. Bangkok Airways' ROA, see figure 5.1, was 3.55 % and 4.16 % in 2015 and 2016, respectively. Unfortunately, it has suddenly dropped to only 0.06% and 0.46% in 2017 and 2018, respectively. By decomposing the ROA, following the DuPont Analysis, we can see that the profit margin is the main reason that the ROA has dropped dramatically. The profit margin was at 8.11% and 9.88% in 2015 and 2016 then it has dropped to 0.13% and 1.10% in 2017 and 2018. The total asset turnover (TATO) was quite stable over the past five years. Despite the small number of TATO, less than one, it is quite common in airline industry that require high investment in fixed assets to operates..

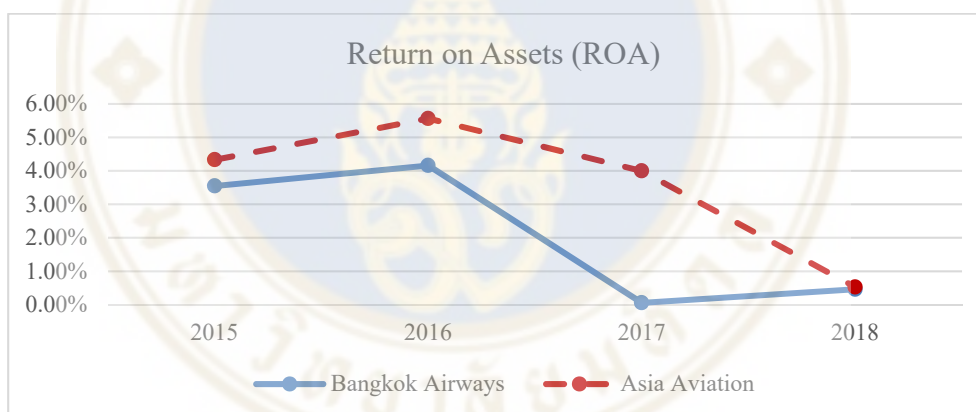


Figure 5.1 Return on Assets (ROA) Comparison

By comparing with its competitor, Asia Aviation, the ROA was in the similar range as Bangkok Airways in 2015 and 2016, but in 2017, while the ROA of Bangkok Airways has dropped to 0.06%, Asia Aviation can maintain its ROA at 4.00%. By 2018, Asia Aviation's ROA was 0.53%. The reason that ROA has dropped was also the decrease in profit margin, from 7.51% in 2015, 9.40% in 2016, 6.63% in 2017 and down to only 0.84%. The total assets turnover was in quite stable and also a bit higher than Bangkok Airways, it reflects the better assets utilization of the company.

The decreasing in ROA of both companies negatively affected their ROE. Bangkok Airways' ROE has been decreasing from 6.39% in 2015, 5.62% in 2016, 2.62% in 2017 and 0.84% in 2018, see figure 5.2. Apart from ROA, the capital leverage structure and earnings leverage of Bangkok Airways was pretty stable over the past 5 years. Similarly, Asia Aviation was in the same situation. The ROE has dropped from 3.95% in 2015, 6.37% in 2016, 4.86% in 2017 and down to only 0.23% in 2018.

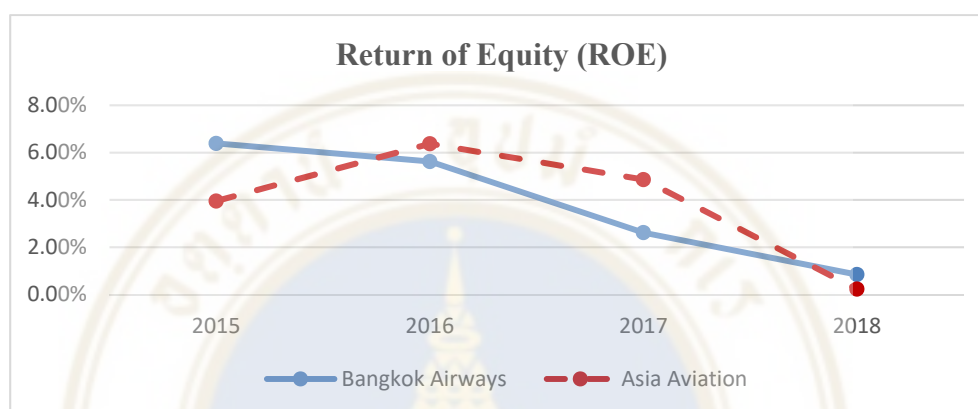


Figure 5.2 Return of Equity (ROE) Comparison

5.2.2 Risks

For the risks, in 2018 Bangkok Airways' current ratio was 1.37 and quick ratio was 1.12, see figure 5.3, while Asia Aviation's current ratio was 0.58 and quick ratio was 0.50, see figure 5.3. In term of liquidity, Bangkok Airways appears to be less risky than Asia Aviation.

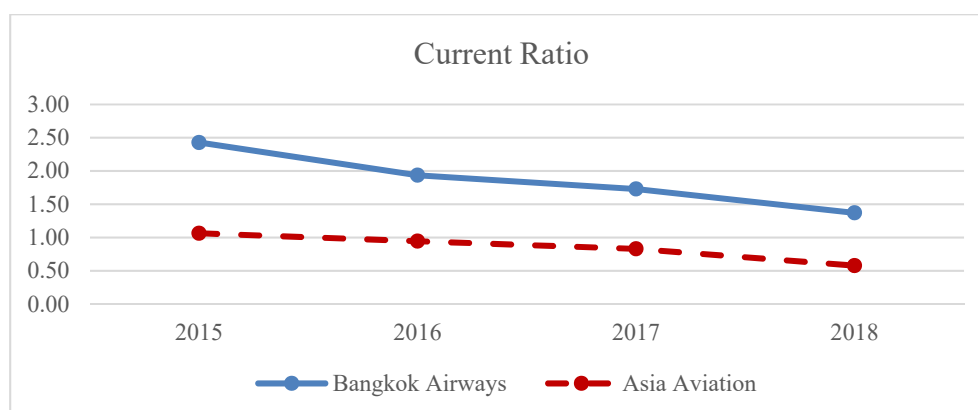


Figure 5.3 Current Ratio Comparison

For the solvency risks, Debt-to-equity ratio of Asia Aviation was 1.02 which was about two times higher than Bangkok Airways, 0.57, see figure 5.4. This shows that Asia Aviation has been using higher leverage. It also seems like Bangkok Airways is less risky by looking at the capital structure.

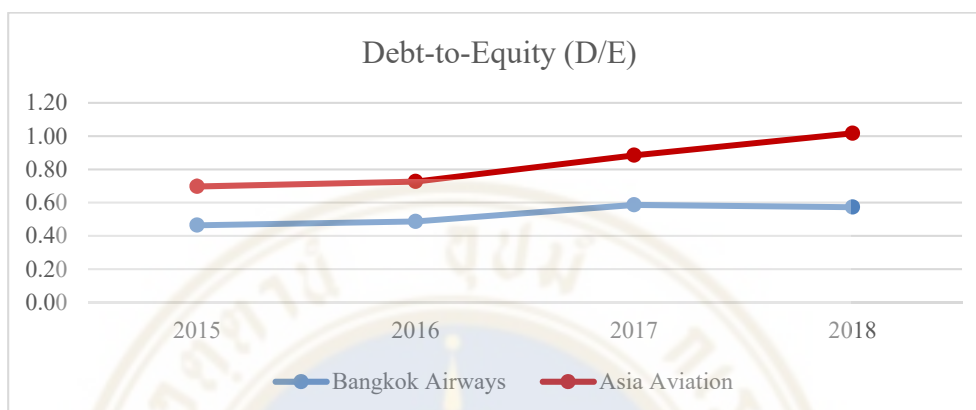


Figure 5.4 Debt-to-Equity (D/E) Comparison

However, the ability to pay its financial obligation of both companies have been decreasing. The interest coverage ratio (ICR) of Bangkok Airways used to be around 2.3 in 2015 to only 1.19 in 2018, see figure 5.5. However, Asia Aviation used to be better than Bangkok Airways, in 2015, ICR was around 5.61, but in 2018, ICR dropped to only 0.89 which means that the operating income cannot cover the existing finance costs.

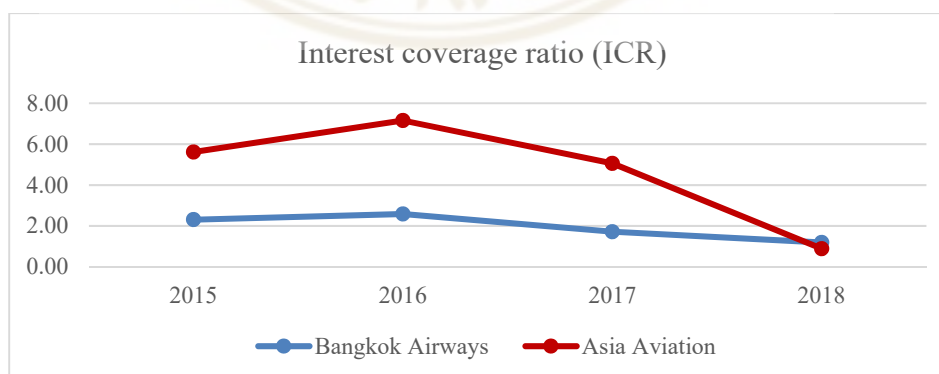


Figure 5.5 Interest coverage ratio (ICR) Comparison

5.2.3 Valuation and Investors' Confidence

In 2018, Bangkok Airways price per share went down to 11.6 which was only a half from its price in 2015. The most obvious reason is the significant drop in EPS, Bangkok Airways' EPS has dropped from 0.86 baht per share in 2017 to only 0.12 baht per share in 2018, see figure 5.6.

Comparably, Asia Aviation's EPS has hugely dropped from 3.05 baht per share in 2017 to only 0.14 baht per share in 2018. The difference is that Asia Aviation's share price also went down but not as severe as Bangkok Airways'. Asia Aviation's share price has dropped to 4.2 baht per share in 2018 from 6.15 baht per share in 2017.

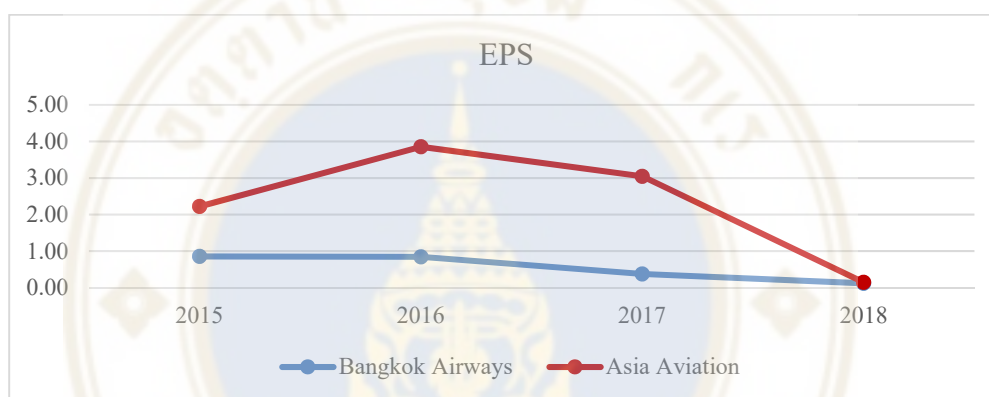


Figure 5.6 Earning Per Share (EPS) Comparison

Price to earnings ratio of Bangkok Airways was relatively high when comparing to Price to earnings ratio of Asia Aviation. Overall, the performance, profitability and leverage ratio of both companies were very poor in 2018 compared to the earlier years, see figure 5.7. So, by looking at only the price to earnings ratio, the market price of Bangkok Airways is considered very expensive compared to price of Asia Aviation. In spite of the decreased share price, investors may be more confidence in Bangkok Airways than Asia Aviation.

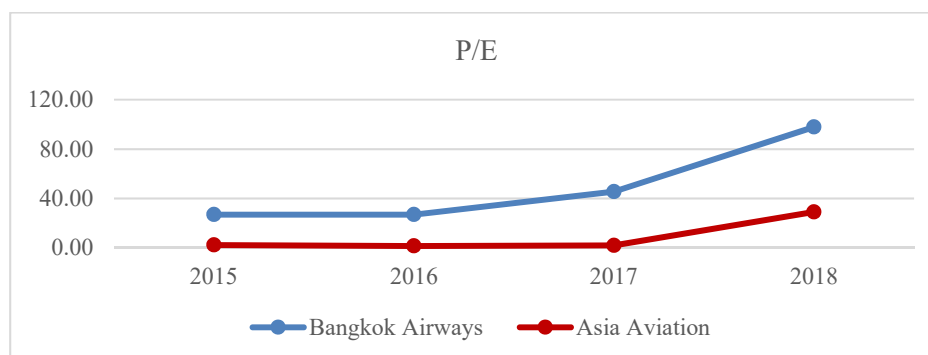


Figure 5.7 Price-Earnings Ratio (P/E) Comparison

		2018	2017	2016	2015
Financial Ratio: Bangkok Airways					
Dupont Analysis	Profitability				
	Return of Equity (ROE)	0.84%	2.62%	5.62%	6.39%
	Return on Assets (ROA)	0.46%	0.06%	4.16%	3.55%
	Earning Leverage (EL)	0.90	23.45	0.72	0.96
	Capital Structure Leverage (CSL)	2.03	1.96	1.87	1.88
	Return on Assets (ROA)	0.46%	0.06%	4.16%	3.55%
	Profit Margin (PM)	1.10%	0.13%	9.88%	8.11%
	Total Asset Turnover (TATO)	0.42	0.42	0.42	0.44
	Accounts Receivable Turnover (ARTO)	14.10	13.05	12.95	13.01
	Inventorty Turnover (ITO)	43.76	52.10	56.54	63.07
Accounts Payable Turnover (APTO)	10.56	10.55	10.26	10.99	
Fix Asset Turnover (FATO)	1.68	1.83	2.21	2.79	
Liuidity Risk					
Current Ratio	1.37	1.73	1.94	2.43	
Quick Ratio	1.12	1.43	1.72	2.31	
Receivables Collection Period (RCP)	25.88	27.96	28.18	28.05	
Inventory Collection Period (ICP)	8.34	7.01	6.46	5.79	
Payables Deferral Period (PDP)	34.57	34.58	35.56	33.21	
Cash Conversion Cycle (CCC)	-0.35	0.39	-0.93	0.63	
Solvency Risk					
Debt-to-Equity (DE)	0.57	0.59	0.49	0.46	
Dept-to-Total Assets (DTA)	0.28	0.29	0.26	0.25	
Interest coverage ratio (ICR)	1.19	1.72	2.58	2.31	
Sensitivity Ratio					
Degree of Operating Leverage (DOL)	805.63	-101.47	4.43	7.57	
Degree of Financial Leverage (DFL)	1.03	-0.03	0.92	0.91	
Degree of Total Leverage (DTL)	832.08	3.45	4.06	6.86	
Valuation Ratio					
Price	11.6	17.1	22.7	23.1	
EPS	0.12	0.38	0.84	0.86	
P/E	97.83	45.57	26.96	26.99	
P/BV	0.79	1.27	1.49	1.57	

Figure 5.8 Bangkok Airways' Financial Ratio Analysis

Financial Ratio: Asia Aviation					
	2018	2017	2016	2015	
Profitability					
Dupont Analysis	Return of Equity (ROE)	0.23%	4.86%	6.37%	3.95%
	Return on Assets (ROA)	0.53%	4.00%	5.57%	4.33%
	Earning Leverage (EL)	0.21	0.62	0.61	0.49
	Capital Structure Leverage (CSL)	2.03	1.96	1.87	1.88
	Return on Assets (ROA)	0.53%	4.00%	5.57%	4.33%
	Profit Margin (PM)	0.84%	6.63%	9.40%	7.51%
	Total Asset Turnover (TATO)	0.62	0.60	0.59	0.58
Accounts Receivable Turnover (ARTO)	28.13	27.15	32.14	38.05	
Inventory Turnover (ITO)	216.17	232.43	251.77	265.08	
Accounts Payable Turnover (APTO)	154.83	77.65	64.76	99.07	
Fix Asset Turnover (FATO)	1.51	1.57	1.68	1.72	
Liquidity Risk					
Current Ratio	0.58	0.83	0.94	1.06	
Quick Ratio	0.50	0.75	0.86	0.96	
Receivables Collection Period (RCP)	12.98	13.44	11.36	9.59	
Inventory Collection Period (ICP)	1.69	1.57	1.45	1.38	
Payables Deferral Period (PDP)	2.36	4.70	5.64	3.68	
Cash Conversion Cycle (CCC)	12.31	10.31	7.17	7.29	
Solvency Risk					
Debt-to-Equity (DE)	1.02	0.88	0.73	0.70	
Debt-to-Total Assets (DTA)	0.34	0.31	0.27	0.27	
Interest coverage ratio (ICR)	0.89	5.06	7.16	5.61	
Sensitivity Ratio					
Degree of Operating Leverage (DOL)	-10.70	-1.95	3.81	20.22	
Degree of Financial Leverage (DFL)	0.45	0.90	0.86	0.81	
Degree of Total Leverage (DTL)	-4.86	-1.75	3.29	16.32	
Valuation Ratio					
Price	4.2	6.15	6.05	5.25	
EPS	0.14	3.05	3.85	2.22	
P/E	29.10	2.02	1.57	2.36	
P/BV	0.10	0.14	0.14	0.13	

Figure 5.9 Asia Aviation's Financial Ratio Analysis

CHAPTER VI

NEWS, EVENTS AND PRESS RELEASE

In this section will discuss about news, events and press releases that happened during 2019 which are relevant to the valuation of Bangkok Airways.

6.1 TAT Keen for More Regional, Indian Visitors

This news talked about the campaign “Fly Me to Thailand” which is the collaboration between The Tourism Authority of Thailand and Bangkok Airways. The campaign aims to attract more tourists from the so-called CLMV countries; Cambodia, Laos, Myanmar and Vietnam, by offering 800 baht voucher for shopping at department stores and discounts at more than 63 hotels, restaurants, entertainment venues and spa lounges to visitors from those nations flying with Bangkok Airways in a group of three or more anytime this year. The campaign is expected to generate 25,000 more tourists from these countries and generating approximately 924 million baht in revenue (The Nation Thailand, 2019).

6.2 Loss-Ridden Bangkok Airways Tightens Purse Strings

Bangkok Airways has posted loss of 190 million baht for the first six months of 2019. Mr. Puttipong Prasarttong-Osoth, the president of the company, still believes that the demand from the tourists in CLMV countries is still strong. He mentioned that the deducing in revenue is the result of the shifting in consumer preferences. The forward booking has dropped 4% for the second half of the year. The airlines plan to launch a few marketing campaigns to attract more customers and gain more revenue. He also mentioned the plan the expand the fleet, as well as replacing some of the old aircrafts but there is no confirmation, or any decision has been made yet. Apart from

the airlines business, the company plans to open new Aviation Training Centre in Sukhothai in early 2020 as well (Bangkok Post Public Company Limited, 2019a).

6.3 Thai Airlines' Losses Widen on Weak Tourism, Strong Baht

Not only Bangkok Airways but most of Thai airlines have reported losses in the second quarter, due to a decline in Chinese tourists and an appreciation of Thai Baht. And the government's decision to waive visa fees until October could attract more visitors during the low season. (Thomson Reuters, 2019).

6.4 Direct Flight to Bangkok From Pune Airport on The Cards

The Airports Authority of India (AAI) revealed that Bangkok Airways are keen to open new routes from Bangkok to Pune, Jaipur, Port Blair, Bhubaneswar, Kolkata and Guwahati (Times of India, 2019)

6.5 Two New Ventures for Bangkok Air Catering (BAC)

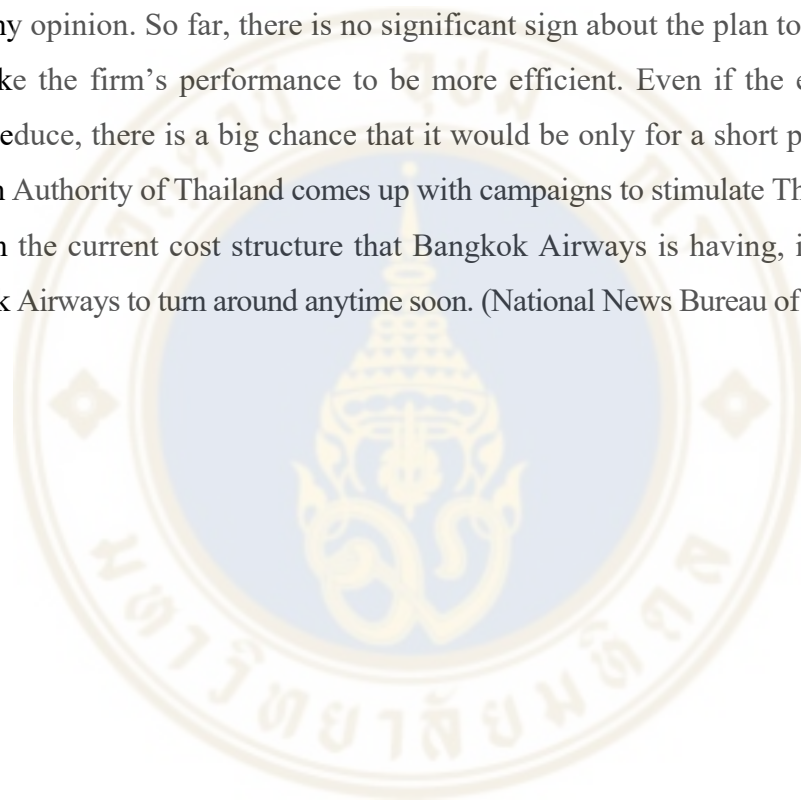
BAC, one of Bangkok Airways' subsidiaries, announces its two new ventures, including the first-ever professional airline catering unit at Chiang Mai International Airport, and the in-flight service provider at Don Mueang Airport. (Bangkok Post Public Company Limited, 2019b).

6.6 Excise Department Eyes Jet Fuel Tax Discount to Help Domestic Airlines

After the 3rd quarterly reports have been published. Many Thai airlines have reported losses. Representatives from each airline have arranged meetings with Excise Department, asking for the reducing in excise tax for jet fuel. The Excise Department is actually considering it and willing to discuss further to find solutions that can help domestic airlines, but as of now, there is no solid solution or any promise yet. Excise

Department states that if they are going to reduce the excise tax on jet fuel, airlines must offer something in return. For example, Excise Department ordered airlines to come up with some plans that if the excise tax of jet fuel is reduced, how would it enhance tourism. According to Mr. Patchara Anuatasilpa, The Excise Department's Director General, the current jet fuel tax is not higher than taxes on other petroleum products. If there is any reduction in jet fuel excise tax, it is very likely to be only for a short-term. (National News Bureau of Thailand., 2019).

To summarise, Bangkok Airways has many plans to generate more revenue, but in my opinion. So far, there is no significant sign about the plan to reduce the costs and make the firm's performance to be more efficient. Even if the excise tax on jet fuel is reduce, there is a big chance that it would be only for a short period. Although, Tourism Authority of Thailand comes up with campaigns to stimulate Thailand's tourism, but with the current cost structure that Bangkok Airways is having, it might not help Bangkok Airways to turn around anytime soon. (National News Bureau of Thailand., 2019).



CHAPTER VII

DISCOUNTED CASHFLOW VALUATION

The aim of this section is to find the target share price of Bangkok Airways. The general idea of doing Discounted Cashflow Valuation is to discount the expected cashflow with the appropriate discount rate. In this paper, we will be finding the value of the firm by discounting the Free Cash Flow to The Firm (FCFF) with Weighted Average Cost of Capital (WACC) to get the value of operating assets. After that we will add the value of Non-Operating Assets to get the total value of the firm. Lastly, we will deduct the debts and other obligations to get the value of equity and finishing it up by divide the total value of equity with number of share outstanding to get the target share price of Bangkok Airways.

We will begin with the Weighted Average Cost of Capital (WACC) and later on we will do the free cashflow projections. Please notice that, we have tries so many method and assumptions, but we will focus on the methods and assumptions that we will be using in the final model only. The rest of it will be in the Appendix.

7.1 Discount Rate

The discount rate that will be used in this valuation is the weighted average cost of capital (WACC). It will be used to discount the cashflow that the company can generate in the future. The assumptions about the WACC should be in line with purpose of usage, in other words, make it forward looking. To get the WACC, we will need 3 components which are cost of debt, cost of equity and the weight or the proportion between debt and equity.

7.1.1 Cost of Debt

There are several methods to get find the cost of debt of a company. We will use the cost of debt under the assumption that it will be the cost of borrowing, if the company want to borrow today. The most popular one and also match the purpose of this paper will be the Credit Spread Method which will be the only method that is shown in this section. The other methods will be put in the appendix.

Usually, using Credit Spread Method to find cost of debt is relatively easy. We can just use the credit spread according to the credit rating of the company plus the risk-free rate. However, in this case, Bangkok Airways has never issued any bond nor has been rated by credit rating agency before, so we will be using the implied credit rating provided by Thomson Reuter Eikon instead. The implied credit rating that Thomson Reuter gives to Bangkok Airways is BB+ which is considered Non-Investment Grade. Usually, the credit spread is provided in ThaiBMA's website but the credit spreads available on the website are only from BBB to AAA. Fortunately, a company called Major Development PCL (MJD) has just issued a new 3 years bond in late November 2019. The company has the same rating which is BB+ and the coupon rate is 6.8% per annum. With this information we can manage to find the credit spread of a BB+ company and finally get the cost of debt that we can apply with Bangkok Airways.

Table 7.1 Credit Spread from Other Companies

Credit Spread From Other Company			
		BB+	
TTM	Risk Free	Credit Spread	Cost of Debt
3 Years	1.36%	5.44%	6.80%
10 Years	1.71%	5.44%	7.14%

Table 7.1 shows the cost of debt of Major Development PCL which is 6.80% and the current return of 3 years government bond is 1.36%. Now, we can deduct the return of 3 years government bond to get the credit spread of 5.44% for the company with BB+ rating.

Though out this paper, we will be using the return of the current 10 years government bond as a proxy of risk-free rate which is 1.71%, as of 15th November

2019. So, if we add the credit spread up with risk-free rate, we will get the cost of debt which is 7.14%. This is the pre-tax cost of debt that we will be using to construct the WACC of Bangkok Airways.

7.1.2 Cost of Equity

There are two popular methods to find the cost of equity which are the Capital Assets Pricing Model (CAPM) or using the implied cost of equity from constant growth model. In this section will show only the CAPM model that is used in this valuation. The other models with different assumption and the dividend discount model can be found in the appendix.

There are three components that we need in CAPM which are risk-free rate, beta and equity market risk premium. The risk-free rate which we have already used when finding the cost of debt; 1.71%. Beta is the measurement of relative risk of investing in a stock over the market. The equity market risk premium is the premium to compensate for extra risks of investing in equity market over the risk-free assets.

Beta is the measurement of relative risks which can be derived from running a regression model. The dependent variable would be the return of the stock and the independent would be the return of the equity market. Running the regression of the monthly total return of Bangkok Airways stock against the monthly total return of Stock Exchange of Thailand Index (S.E.T. Index) from November 2014 to October 2019, we find that the Beta of Bangkok Airways is 0.829 (see table 7.2). It can be interpreted that if the return of SET increase by 1, the return of Bangkok Airways would increase by 0.829 or vice versa. Then we can take a look at the P-Value of the X variable, which is 0.001, meaning that the beta coefficient is significant. But the R square is relatively low, 0.183, meaning that this model can describe only 18.3% of the movement of Bangkok Airways' share price.

Intuitively, a company would have higher beta when in more competitive market and using higher leverage. In this case, the beta of Bangkok Airways is unexpectedly low. Many investors should agree that investing in Bangkok Airways is riskier than investing in SET. Therefore, the beta that we should use in the CAPM model should be higher than 1, so it can properly reflect the riskiness of the investment.

Table 7.2 Regression of BA's Return Against SET's Return

BA (Y), SET (X) SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.428							
R Square	0.183							
Adjusted R Square	0.169							
Standard Error	0.059							
Observations	59							
ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	0.044	0.044	12.756	0.001			
Residual	57	0.197	0.003					
Total	58	0.242						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.015	0.008	-1.916	0.060	-0.030	0.001	-0.030	0.001
X Variable 1	0.829	0.232	3.572	0.001	0.364	1.294	0.364	1.294

The alternative way is that we could do is to use the beta from of the competitors. In this case, we will use the beta of Asia Aviation PCL (AAV) (Thai Air Asia) and Nok Air PCL (NOK) instead. After running regressions, the beta of AAV is 1.058 (table 7.3) and beta of NOK is 1.370 (table 7.4).

Table 7.3 Regression of AAV's Return Against SET's Return

AAV (Y), SET (X) SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.474							
R Square	0.225							
Adjusted R Square	0.214							
Standard Error	0.068							
Observations	75							
ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	0.097	0.097	21.191	0.000			
Residual	73	0.333	0.005					
Total	74	0.430						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.008	0.008	-1.016	0.313	-0.024	0.008	-0.024	0.008
X Variable 1	1.058	0.230	4.603	0.00002	0.600	1.516	0.600	1.516

Table 7.4 Regression of NOK's Return Against SET's Return

NOK (Y), SET (X) SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.475							
R Square	0.225							
Adjusted R Square	0.215							
Standard Error	0.087							
Observations	75							
ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	0.162	0.162	21.212	0.000			
Residual	73	0.558	0.008					
Total	74	0.720						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.023	0.010	-2.255	0.027	-0.043	-0.003	-0.043	-0.003
X Variable 1	1.370	0.297	4.606	0.00002	0.777	1.963	0.777	1.963

We can use Hamada's Equation to find unlevered beta; the beta if the company does not have debt, of both companies. The equation assumes that the firm with higher leverage, should have higher beta. So, the unlevered beta equation is trying to isolate the financial effects of the leverage from the levered beta; the beta that is derived from the regression.

$$\text{Beta}_{\text{Unlevered}} = \frac{\text{Beta}_{\text{Levered}}}{\left[1 + (1 - T) \times \left(\frac{D}{E}\right)\right]}$$

AAV's unlevered beta is 0.660 and NOK's unlevered beta is 1.062. To normalize, find the average of unlevered beta of the two companies. Thus, the unlevered beta of an airline company is 0.861 (see table 7.5).

Then the levered beta of Bangkok Airways can derive by using Hamada's Equation again to incorporate the leverage that the company uses.

$$\text{Beta}_{\text{levered}} = \text{Beta}_{\text{Levered}} \left[1 + (1 - T) \times \left(\frac{D}{E}\right)\right]$$

The result of bottom up beta is more reasonable to use in the calculation of WACC that will be used for valuation of Bangkok Airways. It can better reflect the risks of investing in Bangkok Airways since the company is in the relatively intense competitive

market and also using leverage. Therefore, the beta should be higher than 1 and the bottom up beta is 1.687 (see table 7.5).

Table 7.5 Levered Beta of Bangkok Airways

Beta			
Unlevered Beta			
	AAV	NOK	Average
Beta	1.058	1.370	
Tax Rate	20%	20%	
D/E Ratio	0.755	0.363	
Unlevered Beta	0.660	1.062	0.861
Levered Beta			
Unlevered Beta			0.861
Tax Rate			20%
Bangkok Airways' D/E Ratio			1.20
Levered Beta (Bangkok Airways)			1.687

The last component of CAPM model is equity market risk premium. There are a few methods to find the equity market risk premium. The most popular one is just using the average historical return of the market deduct the risk-free rate. The alternative way is called “Implied Equity Risk Premium”. In this section will shows the return from both methods.

For the historical method is quite straight forward. We can use the change in SET TRI as a proxy of the return of the equity market as a whole, minus the risk-free rate of the same period, so we can get the equity market risk premium. 10 years average equity market risk premium was 9.47%, and 5 years average equity market risk premium was only 2.67%.

The implied equity risk premium is slightly more complex, as is uses the dividend of the whole market as a proxy of the return of stock market. Then, forecast the growth of the dividend for the next 5 years and also find the terminal value. The key is to find the discount rate that can discount all the future cashflow to the current price index of SET.

$$\text{Price Index}_{\text{Current}} = \frac{D_1}{(1+r)} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3} + \frac{D_4}{(1+r)^4} + \frac{D_5 + \left[\frac{D_6}{(r-g)} \right]}{(1+r)^5}$$

Table 7.6 Implied Equity Risk Premium

Implied Equity Risk Premium						
As of	Nov-19					
Year	0	1	2	3	4	5
SET Price Index	1,602.23					
Dividend Yield	3.11%					
Dividend	49.83	52.01	54.29	56.66	59.14	61.73
Growth Rate (SET 5 Years Average Return)		4.38%	4.38%	4.38%	4.38%	4.38%
Terminal Value						1,758.06
Terminal Growth	1.71% (Use Riskfree Rate as a Proxy)					
Total Cashflow		52.01	54.29	56.66	59.14	1,819.80
Discounted Cashflow		49.40	48.98	48.56	48.15	1,407.14
Sum of Present Value	1,602.23					
Implied Market Return	5.28%					
Implied Equity Risk Premium	3.57%					

Table 7.6 shows the calculation of implied equity risk premium as of 15th November 2019, SET Index is 1,602.23. The dividend yield is 3.11% (The Stock Exchange of Thailand, n.d.) or around 49.83 baht; derived by multiplying the dividend yield and the price index. In this model, the underlying assumptions are that the amount of dividend is expected to grow at 4.38% which based on the 5 years average return of SET. The reason that 5 years average is used here is that it would reflect the current situation of Thai stock market better than 10 years average. As the economy is in downturn, investors may argue that using 10 years average would be too good to be true; too high, for this period. Finding the implied equity risk premium is finding the discount rate that can discount all the forecasted cashflow from SET index back to the current price. The easiest way is to use the function Solver in Microsoft Excel to calculate it. In the end, the implied equity risk premium is 3.57%.

Table 7.7 Equity Market Risk Premium Comparison

Equity Market Risk Premium		
Option	Title	ERP
1	Implied Equity Risk Premium	3.57%
2	Average 10 Yrs. Hist Risk Premium	9.74%
3	Average 5 Yrs. Hist Risk Premium	2.67%
2	Average 10 Yrs. Hist Risk Premium	9.74%

Table 7.7 shows the comparison between 3 different assumptions about the equity market risk premium. To be conservative, I have decided to use the average 10 years historical return of SET as a proxy of equity market risk premium. Since, this equity risk premium will be used in finding the cost of equity which is the rate that investors would require to compensate for excess risks over investing in risk-free asset, the implied equity risk premium and the 5 years average historical risk premium, 3.57% and 2.67% respectively, are relatively low. By using low equity risk premium implies that investors want just a little higher compensation for bearing higher risks of investing in stock market, but the implied equity risk premium and 5 years average historical risk premium might be suitable to use for some short-term investments. So, 10 years average historical risk premium; 9.74%, which looks more reasonable for investors as they have to bear higher risks be investing in the stock market, especially in the economic is not in the very best situation.

Finally, the components needed in finding the cost of equity are ready. To recap, the risk-free rate is the current yield on 10 years government bond. The beta is the bottom up beta that we have derived from Bangkok Airways' competitors. The equity market risk premium is average 10 years historical return of SET minus the risk-free rate. In result, Bangkok Airways' cost of equity is 18.1% (see table 7.8).

Table 7.8 Cost of Equity: Capital Asset Pricing Model (CAPM)

CAPM		
	As of	Nov-19
RF	Current	1.71%
Beta	Bottom up Beta of Competitors (AAV,NOK)	1.687
ERP	Average 10 Yrs. Hist Risk Premium	9.74%
CAPM		18.1%

7.1.3 Weighted Average Cost of Capital

Next will be the construction of the weighted average cost of capital (WACC). In order to do so, we also need to know that proportion between debts and equity. The weight that is used in this valuation, is based the latest financial statement available which is 3rd quarter of 2019 financial statement. Book value of debt is assumed that it can reflect the market value of debt. The value of equity that is used in this paper will be the market value which derived from the current share price; 7.1 baht per share at 15th November 2019, multiply be the number of share outstanding; 2,100 million shares. After the calculation, the capital structure is 54.54% debt and 45.46% equity (tale 7.9). This is the same Debt to Equity ratio that is used to find to levered beta as well.

Table 7.9 Proportion of Debts and Equity

Weight		
Book Value of Debt + Market Value of Equity		
	As of	15/11/19
Debt Value	17,888	million THB
Equity Value	14,910	million THB
Share Price	7.1	Baht
Share OutStanding	2,100	Million Shares
Total Value	32,798	million THB
WD	54.54%	
WE	45.46%	

Table 7.10 Bangkok Airways' Weighted Average Cost of Capital

Weighted Average Cost of Capital (WACC)	
As of	15/11/19
Pre-Tax Cost of Debt	7.14%
Tax Rate	20%
After Tax Cost of Debt	5.72%
Cost of Equity	18.13%
Weight	
Weight of Debt	54.54%
Weight of Equity	45.46%
WACC	11.36%

Table 7.10 shows the construction of Bangkok Airways' WACC. Because Bangkok Airways is subject to corporate tax, in turn get the tax benefit from using debts. The cost of debt that we have derived from the sum of risk-free rate and the credit spread is deducted the by the corporate tax; 20%. The after-tax cost of debt is 5.72%. The cost of equity is 18.13%. So, Bangkok Airways' weighted average cost of capital is 11.36%. This WACC will be used as a base discount rate in the valuation.

7.2 Pro Forma Financial Statement and Discounted Cashflow Valuation

There will be two assumptions presented in this paper. The base case will represent the current situation of the firm and will be forecasted based on the current information that can be gathered publicly. The other assumption will assume that the firm will be able to improve its efficiency and reflected in the reduction of costs. Further details will be discussed later on.

Both assumptions will begin with the most current financial statement which is trailing 12 months financial statement (table 7.11) is best to reflect to current situation of the company. As we can see that, by the third quarter of 2019, Bangkok Airways has made net loss of 546 million baht. The total revenue was 24,228 million baht but the operating expense was 25,013 million baht which is higher than the total revenue already. Although, the company has received some interest income, dividend income

and also sold some of its investments, the Earning Before Taxes (EBT) or the Net Income Before Taxes is still negative. The negative EBT came from the operating loss and also the finance cost.

Table 7.11 Bangkok Airways' Trailing 12 Months Income Statement

Income Statement	
	Sep-19
	Trailing 12 Months
THB Million	
Passenger	19,190
Passenger service Charge	550
Freight	204
Sales and service income	4,284
Total Revenue	24,228
	-
Reversal of accrued concession fee	(140)
Other Operating Income/Expense	(5)
Other income	(1,932)
Cost of Sales and Services	22,823
Selling Expenses	2,029
Administrative Expenses	2,236
Other expenses	2
Total Operating Expense	25,013
	-
Interest income	101
Finance cost	(1,796)
Loss on exchange rate	(43)
Gain on exchange rate	79
Dividend income	577
Gain on sales of investments	385
ShareOfProfit fr. Investment inAssociat.	828
Net Income Before Taxes	(654)
Provision for Income Taxes	(119)
Net Income After Taxes	(535)
Non-controlling Interest of subsidiary	(12)
Net Income Before Extra. Items	(546)
	-
Net Income	(546)

Source: Thomson Reuters Eikon

7.2.1 Base Case

This cashflow projection will begin with the filtering out some of the extra items in the trailing 12 months' income statement such as gain from sales of investment and etc. We will include only items that are recurring. The assumptions that have been used in this scenario are as following,

- Sales: Bangkok Airways' passenger revenue came from two segments; scheduled and charter flights, and the its historical growth rate in sales of each segment were higher than the forecasted growth rate in sales of airlines industry (Euromonitor, 2019). The scheduled flight and charter flight have been growing at 2.42% and 92.16% CAGR, respectively while the airlines industry has been forecasted to grow at a slower rate. In this scenario (figure 7.12 and 7.13), the growth rate of sales of each segment are assumed to be slower and will be at the same rate as the industry by the end of year 5 (figure 7.14). For Passenger Service Charges, Freight and Sales and Service Income from its subsidiaries will be growing according to its trend and CAGR.

Table 7.12 Bangkok Airways Sales Break Down (Historical)

Revenue			2018	2017	2016	2015	2014
	CMS	CAGR					
Passenger Revenue	80.5%	2.96%	20,259	20,249	20,431	19,104	17,513
Schedule Flights	78.3%	2.42%	19,709	19,757	20,237	19,087	17,492
Charter Flight	2.2%	92.16%	550	492	194	17	21
Passenger service Charge	2.4%	3.48%	598	593	564	535	504
Freight	0.9%	-8.24%	216	242	282	326	332
Sales and service income	16.2%	8.75%	4,082	3,848	3,415	3,148	2,684
Total Revenue	100.0%	3.64%	25,156	24,932	24,692	23,113	21,033

Source: Bangkok Airways 2015-2018 Annual Reports

Table 7.13 Airlines Forecast Growth Rate of Sales

Airlines: Sales Value Forecasted 2019-2024						
	2019 E	2020 E	2021 E	2022 E	2023 E	2024 E
Charter	6.77%	6.10%	5.49%	4.94%	4.44%	4.00%
Low Cost Carriers	10.10%	9.90%	9.70%	9.51%	9.32%	9.13%
Scheduled Airlines	1.47%	1.44%	1.41%	1.38%	1.36%	1.33%
Airlines	3.45%	3.48%	3.50%	3.53%	3.56%	3.59%

Source: Euromonitor

Table 7.14 Bangkok Airways' Adjusted Growth Rate of Sales

Bangkok Airways' Adjusted Growth Rate of Sales					
	1	2	3	4	5
Adjusted Growth Rate of Scheduled Flight	2.20%	1.98%	1.76%	1.55%	1.33%
Adjusted Growth Rate of Charter Flight	74.53%	56.90%	39.26%	21.63%	4.00%

- **Cost of Revenue:** The majority part from cost of revenue is contributed from Fuel, Aircraft Maintenance, Personnel, Cost of Passenger services and Aircraft Rental. These items will be projected as an average percentage of their related revenue which is the sum of Passenger, Passenger Service Charge and Freight Revenue from 2014-2018. For the other cost of revenue that came from its subsidiaries will be projected as an average percentage of Sales and Service Income from subsidiaries.

- **Selling, General, Administrative Expenses and Other Expenses:** Increasing by following the its own CAGR.

- **Other Operating Income:** Increasing as a percentage of sales.

- **Interest Income:** Average percentage of the sum of Cash, Cash Equivalent and Short-Term Investment.

- **Dividend Income:** Average percentage of Long-Term Investment (Available-For-Sales Securities).

- **Gain and Loss on Exchange Rate:** Assumed to be zero.

- **Interest Expenses:** Cost of Debt times total debt.

- **Tax:** Thailand Statutory Tax Rate is 20%

- **Minority Interest:** The average percentage of Net Income

- **Dividend Payout:** If the firm can generate net profit, the firm will pay cash dividend to its shareholders. The amount would be the average percentage of Net Income after deducting minority interest. The data that has been used to find the average payout ratio were 2015-2017. In 2018, Bangkok Airways have paid out cash dividend a lot more than it has earned. In my opinion, by removing the data from 2018, the dividend payout ratio looks more sustainable. The rest of net income will be put in Retain Earnings.

- **Cash and Cash Equivalent:** Increase as an average percentage of sales.

- **Account Receivable:** Using Day Sales Outstanding (DSO) or Receivable Conversion Period (RCP)

- Inventory: Using Inventory Conversion Period (ICP)
- Plant, Property, and Equipment: The company does not disclose any information about the investment plan yet. In this case, the PP&E will be projected by following its own CAGR. The rationale is that the firm has been in the mature state for several years and there were always some investments in PP&E to keep the firm operate functionally. So, it is safe to assume that they will continue to reinvest and CAGR is the best proxy that we have here.
 - Depreciation and Amortization: Since the company does not report the gross PP&E, in this case, we use the average percentage of net PP&E.
 - Marketable Securities and Available-For-Sales Securities: Assumed that the firm will not invest more in these assets.
 - Account Payable: Using Payable Deferral Period (PDP)
 - Accruals and Advance from Customer: Average percentage of sales
 - Funding: Assumed that the firm will not issue any new shares. All of fund needed will be funded by retain earnings and debts. If the firm is continuously making losses and having deficit retain earnings, the firm will also issue new debts to fund its operation. The proportion between short-term and long-term debts will be the average percentage of the total debts.

Table 7.15 Pro Forma Income Statement: Base Case

INCOME STATEMENT	Trailing 12 Months		Method	Assumption	Pro Forma								
	Sep-19				1	2	3	4	5				
THB Million													
Passenger	19,190				19,579	20,098	20,659	21,090	21,188				
Scheduled*	18,669		Adjusted		18,670	18,671	18,672	18,673	18,674				
Charter**	521		Adjusted		910	1,427	1,987	2,417	2,514				
Passenger service Charge	550		CAGR	3%	569	589	610	631	653				
Freight	204		CAGR	(8%)	188	172	158	145	133				
Sales and Service Income (Subsidiaries)	4,284		CAGR	9%	4,659	5,066	5,509	5,991	6,515				
Total Revenue	24,228				24,995	25,925	26,936	27,857	28,489				
Cost of Sales and Services (COGS)	22,823			86.26%	21,562	22,520	23,561	24,561	25,376				
Fuel*	5,042		Average % of Revenue**	22%	4,407	4,520	4,643	4,738	4,761				
Aircraft Repair and Maintenance*	3,613		Average % of Revenue**	14%	2,769	2,840	2,917	2,977	2,991				
Personnel Expenses*	3,519		Average % of Revenue**	15%	2,979	3,056	3,139	3,203	3,219				
Cost of Passenger Services*	3,219		Average % of Revenue**	15%	3,098	3,177	3,264	3,331	3,347				
Aircraft Rental*	1,597		Average % of Revenue**	9%	1,775	1,821	1,870	1,908	1,918				
Other Cost of Revenue (Subsidiaries)*	5,832		Average % of Revenue***	140%	6,535	7,107	7,728	8,404	9,139				
Selling General and Administration Expt	4,265		CAGR	6%	4,538	4,828	5,137	5,465	5,814				
Other Expense	2		CAGR	15%	3	3	4	4	5				
Total Operating Expense	27,090				26,102	27,351	28,701	30,031	31,195				
Other Operating Income	1,932		% of Sales	5%	1,247	1,294	1,344	1,390	1,421				
Interest Income	101		Average % of Cash and ST Investr	1.55%	95	97	100	102	103				
Dividend Income	577		Average % of LT Investment	1.35%	405	405	405	405	405				
Loss on exchange rate	(43)												
Gain on exchange rate	79												
Earning Before Interest and Tax (EBIT)	(215)				640	371	84	(276)	(776)				
Interest Expense	(1,796)		Rd * Total Debt	7.1%	(1,385)	(1,698)	(2,097)	(2,598)	(3,225)				
Earning Before Tax (EBT)	(2,011)				(744)	(1,327)	(2,013)	(2,874)	(4,002)				
Tax	(119)			20%	-	-	-	-	-				
Net Income After Tax	(2,130)				(744)	(1,327)	(2,013)	(2,874)	(4,002)				
Minority Interest	(12)		Average % of NI	(6%)	41	74	112	160	222				
Net Income	(2,142)				(703)	(1,254)	(1,901)	(2,714)	(3,779)				
Dividend Payout	(165)		Average % of NI (15-17)	59%	-	-	-	-	-				
Retain Earnings	(1,977)				(703)	(1,254)	(1,901)	(2,714)	(3,779)				

Table 7.16 Pro Forma Balance Sheet: Base Case

BALANCE SHEET	Trailing 12 Months Sep-19	Method	Assumption	Pro Forma				
				1	2	3	4	5
THB Million								
Assets								
Cash and Cash Equivalence	5,362	Average % Sales	15%	3,710	3,849	3,999	4,135	4,229
Marketable Securities	2,440	No Change		2,440	2,440	2,440	2,440	2,440
Accounts Receivable	1,342	Average RCP	27.5	1,884	1,954	2,031	2,100	2,148
Inventories	493	Average ICP	6.9	407	426	445	464	480
Other Current Assets	1,121	No Change		1,121	1,121	1,121	1,121	1,121
Total Current Assets	10,758			9,564	9,790	10,036	10,261	10,418
Plant, Property, and Equipment (PPE) (n	15,690	CAGR	17%	18,381	21,533	25,226	29,552	34,620
Available For Sales Securities	29,972	No Change		29,972	29,972	29,972	29,972	29,972
Other Non-Current Assets	4,508	No Change		4,508	4,508	4,508	4,508	4,508
Total Non-Current Assets	50,171			52,861	56,014	59,706	64,032	69,100
Total Assets	60,929			62,425	65,803	69,742	74,293	79,518
Liabilities								
Accounts Payable	1,924	Average PDP	34.5	2,029	2,129	2,228	2,322	2,399
Accruals	367	Average % Sales	2%	454	471	490	506	518
Advance From Customer	2,153	Average % Sales	10%	2,524	2,618	2,720	2,813	2,877
Notes Payable	45			49	61	75	93	116
Other Current Liabilities	2,522	No Change		2,522	2,522	2,522	2,522	2,522
Total Current Liabilities	7,010			7,578	7,801	8,034	8,257	8,431
Long-Term Debt	17,843			19,519	24,011	29,748	36,982	46,085
Other Non-Current Liabilities	6,236	No Change		6,236	6,236	6,236	6,236	6,236
Total Non-Current Liabilities	24,079			25,755	30,247	35,983	43,218	52,320
Total Liabilities	31,089			33,333	38,048	44,017	51,474	60,752
Shareholders' Equity								
Common Stock	2,100	No Change		2,100	2,100	2,100	2,100	2,100
Additional Paid-In Capital	9,319	No Change		9,319	9,319	9,319	9,319	9,319
Retained Earnings (Accumulated Deficit	(476)			(1,223)	(2,560)	(4,591)	(7,497)	(11,550)
Treasury Stock - Common	(492)			(492)	(492)	(492)	(492)	(492)
Other Equity	19,324	No Change		19,324	19,324	19,324	19,324	19,324
Non-Controlling Interest	63	No Change		63	63	63	63	63
Total Equity	29,839			29,092	27,756	25,725	22,819	18,766
Total Liabilities and Equity	60,929			62,425	65,803	69,742	74,293	79,518
Status	Balanced			Balanced	Balanced	Balanced	Balanced	Balanced

From figure 7.5, the total revenue will be increasing for over the next five years and will be approximately 28,400 million baht. The Passenger Revenue will be growing with the adjusted growth rate and reach 21,188 million baht in the next five years. The revenue from freight service will be slowing decreasing overtime as the trend of its own has shown. The reason might be the intensive competition and there are many new substitutions in the market.

The operating expenses will grow a bit faster and actually higher than total revenue already. But, in the first 3 years, the interest and dividend income can help offsetting it. In result, the Earnings Before Interest and Taxes (EBIT) will still be positive for the next 3 years, but unfortunately, by the end of year 4, the firm will start to make operating losses, resulting in negative EBIT. Anyway, after paying interest expenses and taxes, the firm will end up with net loss since year 1.

Table 7.17 Discounted Cashflow Valuation: Base Case

Time	1	2	3	4	5
NOPAT	512	297	67	(221)	(621)
Depreciation	1,613	1,889	2,213	2,593	3,037
Capital Expenditure	(2,691)	(3,152)	(3,693)	(4,326)	(5,068)
NCA	2,292	2,380	2,476	2,564	2,627
NCL	5,007	5,218	5,437	5,641	5,793
NOWC	(2,715)	(2,838)	(2,961)	(3,077)	(3,166)
Change in NOWC	106	123	123	116	89
Free Cash Flow to the Firm	(459)	(843)	(1,289)	(1,838)	(2,563)
WACC	11.36%				
Terminal Growth	1.71%				
Terminal Value	(26,997)				
Total Cashflow	(459)	(843)	(1,289)	(1,838)	(29,559)
Discounted Cashflow	(413)	(680)	(934)	(1,195)	(17,260)
Value of Operating Assets	(20,481)				
ADD: Cash & ST Investment	7,802				
ADD: Non-Operating Assets	29,972				
LESS: Non-Controlling Interest	(63)				
Total Value of The Firm	17,293				
LESS: Value of Debt	(17,888)				
LESS: Preferred Shares					
Total Value of Equity	(595)				
Number of Share	2,100				
Value of Equity Per Share	(0.28)				

Figure 7.17 shows the discounted cashflow valuation on the base case. The very first line is the Net Operating Profit/Loss After Tax (NOPAT). After that, add back the depreciation which is an average percentage of net PP&E. Then, deduct the capital

expenditure which is the incremental amount of the PP&E. Next, deduct the change in Net Working Capital (NOWC) to get the Free Cash Flow to the Firm (FCFF). The terminal value is derived from the perpetual growth model which the terminal growth, in this case, is the risk-free rate as the risk-free rate can be used as a proxy of the GDP growth rate.

We can see that in this assumption, the FCFF will be negative since year 1. With this Assumption, the terminal value of firm will also be negative. So, no matter what would the WACC or the terminal growth are, the discounted cashflow will always be negative which means that the Value of Operating Assets will be negative.

Anyway, Bangkok Airways has approximately 7,802 million baht of cash and short-term investment. Furthermore, there is a very big amount of Available-For-Sales Securities which the majority part of it is the shares in BDMS and SPF, 29,972 million baht. Deducting the Non-Controlling Interest of 63 million baht. The total intrinsic value of the firm is 17,293 million baht. To get the value of equity, we need to deduct the amount of debt, 17,888 million baht. Unfortunately, the total value of equity would be less than zero, approximately -595 million baht.

Lastly, we divide the total value of equity with the number of shares outstanding; 2,100 million shares, we will get the intrinsic value of equity which is equal to -0.28 baht per share, but the share price could never be lower than zero. Hence, the current target share price of Bangkok Airways is 0.

It is a common practice to issue a target price for the next year. Usually, it can be done by the following,

$$P_1 = P_0 \times (1 + \text{Cost of Equity}) + \text{Dividend}_1$$

The assumption is that the price of the next year should be equal to the price this year would increase at the same rate as the cost of equity which is the require rate of return that investors would want plus the upcoming dividend. In order for the price to increase as the investors required, the firm must be able to operates and be profitable as the investors have expected. In contrary, the value price of Bangkok Airways does not come from its operation but comes from the book value of its long-term investment in BDMS and SPF. However, if do the calculation following the formula that is mentioned

above. Unfortunately, under this circumstance, the target price for next year should also be negative, -0.26 baht per share. See, figure 7.18.

Table 7.18 Calculation of Target Price for Next Year

Target Price Next Year	
Target Price Today	(0.28)
Cost of Equity	18.13%
Latest Dividend (Baht)	0.078
ROE	0.81%
Dividend Payout Ratio	86.75%
Retention Ratio	13.25%
Dividend Growth	0.11%
Expected Dividend Next Year	0.079
Target Price Next Year	(0.26)

Figure 7.18 shows the calculation of Bangkok Airways' target price for the next year by following the formula that is mentioned earlier. The target price for today is -0.26, according to the assumption in the base case. The cost of equity is 18.13%, the latest dividend paid is 0.078 baht per share, per year. The expected dividend for the next year is 0.079 baht per share, calculated by the following formula,

$$\text{Dividend}_{t+1} = \text{Dividend}_{t0} \times (1 + \text{Dividend Growth Rate})$$

$$\text{Dividend Growth Rate} = \text{ROE} \times (1 - \text{Payout Ratio})$$

According to this calculation, the target price for next year would be -0.26. Please be reminded that this price is derived under the assumption that the company will be able to deliver the performance and profitability as the investors expected only. As of now, the company has been making loss and there is no official announcement about any plan to make a significant change or to turn the company back to be the profitable company. The value of its share actually comes from the book value of its investment in BDMS and SPF.

However, it is very unlikely that the management will let the company runs like this and keep making losses forever. If the management team can come up with some strategies to improve the efficiency and resulting in reduction of costs, the intrinsic value of the company would be higher. We can run a sensitivity analysis on the cost saving ability; the ability to reduce the cost of sales and services by a particular percent each year, to see what the new target share price of the company would be, see figure 7.19.

Table 7.19 Sensitivity Analysis with varied Cost Saving Ability

Sensitivity Analysis on Cost Saving		
Cost Saving	Target Price This Year	Target Price Next Year
0%	0.00	0.00
2%	1.54	1.89
4%	3.36	4.04
6%	5.18	6.19
8%	7.00	8.35
10%	8.82	10.50
12%	10.64	12.65
14%	12.46	14.80
16%	14.28	16.95
18%	16.10	19.10
20%	17.92	21.25

From figure 7.19, we can see that if the firm can successfully reduce the cost of sales and services by only 2%, the value of the equity per share could raise up to 1.54 baht per share. The higher ability to reduce the cost, the higher intrinsic value of equity per share would be.

Table 7.21 Sensitivity with Changes in Fuel Expense

Sensitivity Analysis on Cost Reduction		
Change in Fuel Expense	Target Price This Year	Target Price Next Year
0%	0.00	0.00
-2%	1.32	1.64
-4%	2.93	3.54
-6%	4.54	5.44
-8%	6.14	7.34
-10%	7.75	9.24
-12%	9.36	11.13
-14%	10.97	13.03
-16%	12.57	14.93
-18%	14.18	16.83
-20%	15.79	18.73

Figure 7.21 shows the sensitivity analysis on the current target share price with the changes in fuel expense. Intuitively, if the fuel expense decreases, the current target share price would be higher. For example, if the fuel expense is lowered by 20%, the current target share price could be as high as 15.79 baht per share.

Unfortunately, there is no solid evidence about the cost saving program or strategy that the company would implement. The fuel price is also expected to be increasing over the future which makes the probability the Bangkok Airways' fuel expense will be decreased is very unlikely. Thus, to be conservative, based on the all evidences that we have gathered, the target share price of Bangkok Airways is zero baht, the company has no value in this assumption.

7.3 Conclusion

In the past couple of years, Bangkok Airways' performance was not as good as it used to be. The net income has been decreasing over the years and recently, in September 2019, Bangkok Airways has reported net losses. If the company cannot improve its efficiency and find a way to reduce the cost, the value of its operating assets will be negative, -20,481 million baht. Besides, the company has a relatively large amount of long-term investments which are the shares in Samui Property Fund (SPF) and Bangkok Dusit Medical Service (BDMS). These non-operating assets help raise the value of the

firm upto 17,293 million baht. Unfortunately, after deducting the value of debt, the value of equity is -595 million baht or -0.28 baht per share. Since, the share price cannot be lower than zero, the target share price of Bangkok Airways is 0 baht per share.

Under the assumption that Bangkok Airways will never recover from making the operating loss, I would recommend Hold or Sell. Depends on investors' preferences, if investors believe that the company will successfully turn around, investors might consider holding the share until further information is available. On the contrary, for investors who are no longer believing that the company can turn around and be would like to make a decision based on the available information, the investors should consider selling the share.



CHAPTER VIII

INVESTMENT RISKS AND DOWNSIDE POSSIBILITIES

1. The intrinsic value may or may not equal the market price

The target price in this paper is based on the many assumptions that may or may not be true. Moreover, the methods used in this paper are based on traditional finance that assume that investors have adequate knowledge in finances. The assumption is that the market price will may or may not be correct at this moment, but in long-term, the market price should be equal to the intrinsic value. While, in reality, many investors do not know anything about finances. Even educated investors might act irrationally, due to psychological and expectation.

2. The assumptions in this paper are based on public information only

There may be some private information that the company does not disclose to the public, at the time of the valuation.

3. The company may use different capital structure

In this paper, we assume that the company will not issue any new share. All the operations will be funded with debt. If the firm changes the capital structure, there is a high chance that the WACC will change. If the firm issues new share, the EPS will be diluted and share price might change dramatically.

4. The company has high exposure from exchange rate risk

In this valuation, the gain and loss on exchange rate are assumed to be zero. Apart from the gain and loss on the exchange rate, if Thai Baht appreciates, tourism will be impacted negatively and that will also affect the performance of Bangkok Airways as well.

REFERENCES

- Bangkok Airways. (2018a). *Company History*. Retrieved from https://ba.listedcompany.com/company_history.html.
- Bangkok Airways. (2018b). *Bangkok Airways' Annual Report 2018*.
- Bangkok Post Public Company Limited. (2019a). *Loss-ridden Bangkok Airways tightens purse strings*. Retrieved from <https://www.bangkokpost.com/business/1738055/loss-ridden-bangkok-airways-tightens-purse-strings>.
- Bangkok Post Public Company Limited. (2019b). *Two New Ventures for Bangkok Air Catering (BAC)*. Retrieved from <https://www.bangkokpost.com/thailand/pr/1714076/two-new-ventures-for-bangkok-air-catering-bac->.
- Bank of Thailand. (2019). *Nominal Effective Exchange Rate (NEER) and Real Effective Exchange Rate (REER)*. Retrieved October 24, 2019, from https://www.bot.or.th/App/BTWS_STAT/statistics/BOTWEBSTAT.aspx?reportID=407&language=eng.
- CEIC Data. (2019a). *Thailand Real GDP Growth [1994 - 2019] [Data & Charts] (2019, June 1)*. Retrieved from <https://www.ceicdata.com/en/indicator/thailand/real-gdp-growth>.
- CEIC Data. (2019b). *Thailand Forecast: Real GDP Growth [1980 - 2019] [Data & Charts] (1970, January 1)*. Retrieved from <https://www.ceicdata.com/en/indicator/thailand/forecast-real-gdp-growth>.
- CEIC Data. (2019c). *United States Real GDP Growth [1948 - 2019] [Data & Charts] (2019, September 1)*. Retrieved from <https://www.ceicdata.com/en/indicator/united-states/real-gdp-growth>.
- CEIC Data. (2019d). *United States Forecast: Real GDP Growth [1980 - 2019] [Data & Charts] (1970, January 1)*. Retrieved from <https://www.ceicdata.com/en/indicator/united-states/forecast-real-gdp-growth>.

- CEIC Data. (2019e). *China Real GDP Growth [1992 - 2019] [Data & Charts] (2019, September 1)*. Retrieved from <https://www.ceicdata.com/en/indicator/china/real-gdp-growth>.
- CEIC Data. (2019f). *China Forecast: Real GDP Growth [1980 - 2019] [Data & Charts] (1970, January 1)*. Retrieved from <https://www.ceicdata.com/en/indicator/china/forecast-real-gdp-growth>.
- Damodaran, A. (n.d.). *Ratings, Interest Coverage Ratios and Default Spread*. Retrieved November 15, 2019, from http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ratings.htm.
- Economic Intelligence Center Siam Commercial Bank. (2019). *Thailand's economy grew at 2.3%YOY in 2019Q2, lowest in 19Q*. Retrieved from <https://www.thailand-business-news.com/economics/75643-thailands-economy-grew-at-2-3yoy-in-2019q2-lowest-in-19q.html>.
- Euromonitor. (2019). *Airlines in Thailand 2019*. Retrieved from <http://www.portal.euromonitor.com/portal/analysis/tab>.
- Gurufocus. (2019). *Thomson Reuters Enterprise Value Calculation 2019*. Retrieved from <https://www.gurufocus.com/term/ev/TRI/Enterprise-Value/Thomson-Reuters>.
- IMF. (2019). *The World Economy: Synchronized Slowdown, Precarious Outlook*. Retrieved from <https://blogs.imf.org/2019/10/15/the-world-economy-synchronized-slowdown-precarious-outlook/>.
- IndexMundi. (n.d.). *Crude Oil (petroleum) Monthly Price - US Dollars per Barrel*. Retrieved October 24, 2019, from <https://www.indexmundi.com/commodities/?commodity=crude-oil&months=240>.
- National News Bureau of Thailand. (2019). *Excise Department eyes jet fuel tax discount to help domestic airlines*. Retrieved from <https://thainews.prd.go.th/en/news/detail/TCATG191121152615102>.
- Phatra Asset Management Company Limited. (2019). *Major Unitholders of Samui Property Fund*. Retrieved from http://en.samuiairportpropertyfund.com/major_unitholders.html.

- Settrade. (n.d.). *Bangkok Airways*. Retrieved November 15, 2019, from https://www.settrade.com/AnalystConsensus/C04_10_stock_saa_p1.jsp?txtSymbol=BA&ssoPageId=11&selectPage=10.
- Thailand Business News. (2019). *Thailand's economy grew at 2.3%YOY in 2019Q2, lowest in 19Q*. Retrieved from <https://www.thailand-business-news.com/economics/75643-thailands-economy-grew-at-2-3yoy-in-2019q2-lowest-in-19q.html>.
- The Nation Thailand. (2019). *TAT keen for more regional, Indian visitors*. Retrieved from <https://www.nationthailand.com/travel/30376988>.
- The Stock Exchange of Thailand. (n.d.). *Market Statistic*. Retrieved from https://www.set.or.th/en/market/market_statistics.html.
- Thomson Reuters Eikon. (n.d.). *Bangkok Airways' Standardized Consolidated Financial Statement 2018*.
- Thomson Reuters. (2019). *Thai airlines' losses widen on weak tourism, strong baht*. Retrieved from <https://www.reuters.com/article/us-thailand-airlines/thai-airlines-losses-widen-on-weak-tourism-strong-baht-idUSKCN1V4193>.
- Times of India. (2019). *Direct flight to Bangkok from Pune airport on the cards: Pune News - Times of India*. Retrieved from <https://timesofindia.indiatimes.com/city/pune/direct-flight-to-bangkok-on-the-cards-at-pune-airport/articleshow/71249925.cms>.
- U.S. Energy Information Administration. (2019). *Annual Energy Outlook 2019*. Retrieved October 24, 2019, from <https://www.eia.gov/outlooks/aeo/pdf/aeo2019.pdf>
- Yahoo Finance. (n.d.). *Bangkok Airways Public Company Limited (BA.BK.)*. Retrieved November 15, 2019, from <https://finance.yahoo.com/quote/BA.BK?p=BA.BK>.



Appendix A: Alternative Risk-Free Rate

In this valuation, the yield of the current ten years government's bond has been used as a proxy of the risk-free rate. However, there are some alternatives that also can be used as the risk-free rate.

Risk-Free Rate			
Yield of 10 Years Thai Government's Bond			
Option	Title	As of	Nov-19 RF Rate
1	Current (15th November)		1.71%
2	Average 5 Years Historical Return Jan 2014 - Oct 2019		2.48%
3	Average 10 Years Historical Return Jan 2008 - Oct 2019		3.09%
1	Current		1.71%

Figure A1 Alternative Risk-Free Rate

Source: Thomson Reuter Eikon

The yield of ten years government's bond is one of the most popular proxy of the risk-free rate. Some textbooks suggest that the most suitable one should be the yield of thirty years government's bond. Still, many investors do not agree with that, the argument is that the thirty years government's bond has lower liquidity than ten years governments bond. So, holding thirty years government's bond has some liquidity risk which would not be as good as ten years government's bond, if it will be used as the proxy of risk-free rate.

Figure A1 shows 3 different variations of the risk-free rate which all derived from the yield of ten years government's bond. The first one is the current yield of ten years government bond; 1.71%, which is used in the valuation. The second one is the 5 years average yield of ten years government's bond from January of 2014 to October 2019 which is 2.48%. The third one is the 10 years average yield of ten years government's bond from January of 2008 to October 2019 which is 3.09 %. The most obvious one is

that the risk-free rate has become lower within the past ten year, on average. Since the risk-free will be used in the valuation, the underlying assumption is that it should be the rate that the company or investors could get if the company of investors will invest today. Hence, the 10 years average yield of ten years government's bond might look more conservative, but it is impossible to invest in any risk-free asset that would give that high return. So, the current yield of ten years government bond is the most suitable proxy of the risk-free rate to be used in the valuation.



Appendix B: Alternative Cost of Debt

Apart from using the risk-free rate plus the credit spread that we have used in the valuation. The cost of debt can be derived by some other methods such as find the average yield of its own bonds which is impossible to do because the company has never issued any bond before. Another alternative is to use the actual interest rate that the firm has been paying.

Table B1 Weighted Average of Actual Interest Rate

Weighted Average of Actual Interest Rate			
	Amount (MB)	Interest rate	Weighted Interest Rate
Long Term Loan	1,969	3.70%	0.43%
Liabilities Arising From Finance Lease of Aircrafts	3,483	4.57%	0.95%
Finance Lease Liabilities	51	4.00%	0.01%
Long-Term Lease Liabilities From Related Party	11,331	12.64%	8.51%
Total Long Term Debt	16,834		9.90%

Source: Bangkok Airways' 2018 Annual Report

Table B1 shows list of Bangkok Airways' long-term debt along with the amount of debt and the interest rate. To find the cost of debt, we can find the weighted average interest rate of every long-term debt. In result, the cost of debt from this method is 9.90%. The downside of this method is that this is the historical rate and the company might not be able to raise the fund today and get the same rate.

Another alternative way to find the cost of debt is to use the data provided in Damodaran's website (see figure B1). According to the rating that we retrieved from Thomson Reuter Eikon, the implied credit rating of Bangkok Airways is BB+, the credit spread should be 3.00%. However, the rates in Damodaran's chart is based on emerging markets in general, not specifically for Thailand. The charts also based on the so-called "Synthetic Rating" which based from using the Interest Coverage Ratio (ICR) and Bangkok Airways' interest coverage ratio would be negative, according the trailing 12 months' income statement, means that the credit spread of Bangkok Airways would be as high

as 19.38% which is extremely high and also not really realistic. Hence, it should not be used in the valuation.

In conclusion, none of these methods mentioned in this section is suitable for using in the valuation of Bangkok Airways.

For all emerging market firms and developed market firms with market cap < \$5 billion			
If interest coverage ratio is			
greater than	≤ to	Rating is	Spread is
-100000	0.499999	D2/D	19.38%
0.5	0.799999	C2/C	14.54%
0.8	1.249999	Ca2/CC	11.08%
1.25	1.499999	Caa/CCC	9.00%
1.5	1.999999	B3/B-	6.60%
2	2.499999	B2/B	5.40%
2.5	2.999999	B1/B+	4.50%
3	3.499999	Ba2/BB	3.60%
3.5	3.999999	Ba1/BB+	3.00%
4	4.499999	Baa2/BBB	2.00%
4.5	5.999999	A3/A-	1.56%
6	7.499999	A2/A	1.38%
7.5	9.499999	A1/A+	1.25%
9.5	12.499999	Aa2/AA	1.00%
12.5	100000	Aaa/AAA	0.75%

Figure B1 Damodaran's Synthetic Credit Rate and Credit Spread Chart

Source: Damodaran, A. (n.d.)

Appendix C: Alternative Beta

We have discussed about the Beta in the cost of equity section and we decided to use the bottom-up beta that we derived from 2 of Bangkok Airways' competitors which are Thai Airways and Asia Aviation (Thai Air Asia). However, some analysts would argue that using only two peer companies cannot perfectly capture the risks of the airline industry and also Bangkok Airways has been operating in an airline business and also airport business. Therefore, the bottom-up beta should be done by finding the unlevered beta of the airline business and also the unlevered beta of an airport business. Then, apply to Bangkok Airways by using the EV/Sales of each business and multiply it with the sales of each of Bangkok Airways' businesses. By doing this, the unlevered beta will capture the proportion of each business.

Table C1 Unlevered Beta of Airlines Business

Beta: Airline Companies							
Unlevered Beta							
	THAI AIRWAYS	ANA HOLDINGS	CATHAY PACIFIC	AIR CHINA	HAINAN AIRLINES	VIRGIN	QANTAS AIR
Beta	1.574	0.479	0.912	1.387	1.182	0.698	0.654
EV/Sales	0.817	0.905	0.922	1.508	1.914	0.455	0.617
Tax Rate	0.200	0.309	0.165	0.250	0.250	0.300	0.300
D/E Ratio	7.441	0.717	1.156	1.028	2.345	2.353	1.522
Unlevered Beta	0.226	0.320	0.464	0.783	0.428	0.264	0.317
	SINGAPORE			JETBLUE	UNITED		
	REGIONAL	AIRLINE	ALASKA AIR	DELTA AIR	AIRWAYS	AIRLINES	SKYWEST
Beta	0.342	0.662	0.762	1.048	0.972	0.906	1.260
EV/Sales	0.447	0.922	1.012	0.942	0.744	0.808	1.476
Tax Rate	0.300	0.170	0.210	0.210	0.210	0.210	0.210
D/E Ratio	0.039	0.501	0.561	0.714	0.362	1.474	1.609
Unlevered Beta	0.333	0.468	0.528	0.670	0.756	0.418	0.555
Average Unlevered Beta	0.466		Average EV/Sales			0.963	

Table C2 Unlevered Beta of Airport Related Business

Beta: Airport Companies							
Unlevered Beta							
	AIRPORTS OF THAILAND	JAPAN AIRPORT TERM	AGP	JALUX	BEJ.CAPI.A RPT.	WEIHAI GUANGTAI ARPT.	SHENZHEN AIRPORT
Beta	1.126	0.895	0.366	0.538	1.006	1.101	0.820
EV/Sales	14.557	1.996	0.524	0.213	3.036	2.000	3.817
Tax Rate	0.200	0.309	0.309	0.309	0.165	0.250	0.250
D/E Ratio	0.125	0.501	0.061	0.487	0.210	0.322	0.020
Unlevered Beta	1.024	0.665	0.351	0.403	0.857	0.887	0.808
	SHANGHAI INTL.ARPT.	SYDNEY AIRPORT					
Beta	0.657	0.638					
EV/Sales	9.603	15.678					
Tax Rate	0.250	0.300					
D/E Ratio	0.112	7.896					
Unlevered Beta	0.606	0.098					
Average Unlevered Beta		0.633		Average EV/Sales		5.714	

Table C3 Unlevered Beta of Bangkok Airways

Unlevered Beta: Bangkok Airways							
Business	Sample size	Unlevered Beta of Business	Revenue (mil Bath)	EV/Sale	Value of Business	Proportion of Value	
Airlines	14	0.466	21,073	0.963	20,304	46.5%	
Airport Operators & Services	9	0.633	4,082	5.714	23,324	53.5%	
Bangkok Airways' Unlevered Beta		0.556	25,155		43,628	100.0%	

Table C4 Levered Beta of Bangkok Airways

Levered Beta	
Unlevered Beta	0.556
Tax Rate	20%
Bangkok Airways' D/E Ratio	1.20
Levered Beta (Bangkok Airways)	1.089

Table C1 shows the unlevered beta of selected airlines companies, based on the type of services and the size of the company, by using the Hamada's Equation (see cost of equity section). The average unlevered beta from selected companies in airlines business is 0.466 and the average EV/Sales is 0.963.

Table C2 shows the unlevered beta of a selected airport companies. The average unlevered beta is 0.633 and the average EV/Sales is 5.714.

Table C3 shows the calculation of Bangkok Airways' unlevered beta. Please note that, the revenue from airlines business and airport business in this calculation is not the exact numbers because the company does not officially disclose this information. According to this calculation, the unlevered beta of Bangkok Airways would be only 0.556 and the levered beta would be only 1.089. There are many issues with this calculation. Firstly, most of the peer airline companies are not in the same geographic location. Therefore, the consumers' behaviour and preference can be a lot different. For example, in the United State of America, regional airlines have been the main mode of transportation for a very long time while in Thailand, majority of the population cannot afford to fly. So, the perception toward the risks in airline business from two different countries can be differed significantly. Secondly, the size of peer airport companies is a lot bigger than the size of Bangkok Airways' airport business and most of them have far greater number of location than Bangkok Airways' which has only 3 locations which 2 of them are not the major destinations of Thais or tourists. The risks of Bangkok Airways' airport business can be much higher than the peer companies. Moreover, the EV/Sales of the average airline business is relatively high, so when we apply the EV/Sales with Bangkok Airways to find the proportion of each business, the proportion cannot correctly reflect the risks of Bangkok Airways' operations. In conclusion, this model should not be used in the valuation.

Selected Peer Airline Companies' Background

- THAI.BK

Thai Airways International Pcl

“Thai Airways International Public Company Limited is a Thailand-based company engaged in the operations of airline business and business units related to air transportation. The Company operates three business segments: air transport business,

which covers the transport of passengers, cargoes, and mail on scheduled flights, as well as chartered flights to domestic and international destinations; business units segment including cargo terminal handling services, ground customer services, ground equipment services and catering services, and other activities segment, which consists of technical department providing aircraft maintenance services, dispatch services, duty free sales on board and Thai shop-souvenir sales. Its subsidiaries include Thai-Amadeus Southeast Asia Company Limited and Thai Smile Airways Company Limited.”

- 9202.T

Ana Holdings Inc

“ANA HOLDINGS INC. is a Japan-based holding company principally engaged in the aviation business. The Company operates in four segments. The Aviation segment conducts regular and irregular air transportation of passengers and cargo domestic and international flights. The Aviation Related segment provides services associated with air transport, such as airport handling and maintenance. The Travel segment plans and sells package travel products, focusing on travel products development and sales. The Trading Companies segment conducts import and export of aviation-related materials and mail order sales.”²⁷

- 0293.HK

Cathay Pacific Airways Ltd

“Cathay Pacific Airways Limited is a Hong Kong-based investment holding company principally engaged in airline and related businesses. The Company operates its businesses through two segments. The Airline segment is engaged in passenger transport and cargo transport. The Non-airline segment is engaged in the provision of catering, ground handling and aircraft ramp handling services, as well as cargo terminals operation. The Company operates its businesses in countries mainly in Asia, Europe and North America.” (Thomson Reuters Eikon, n.d.)

- 601111.SS

Air China Ltd

“Air China Limited is a China-based company principally engaged in the provision of air passenger transportation, freight transportation, postal transportation and maintenance services in Mainland China, Hong Kong, Macau and foreign regions. The Company is also engaged in domestic and international business aviation businesses,

plane business, aircraft maintenance, airlines business agents, ground and air express services related to main businesses, duty free on boards, retail business on boards and aviation accident insurance sales agent business.” (Thomson Reuters Eikon, n.d.)

- 600221.SS

Hainan Airlines Holding Co., Ltd

“Hainan Airlines Holding Co., Ltd. is a China-based airline company. The Company mainly provides passenger air transportation service, freight air transportation service and charter flight service. The Company is also engaged in the production of in-flight supplies, aviation equipment, aeronautical ground equipment and spare parts. The Company conducts its businesses within domestic market and to overseas markets.” (Thomson Reuters Eikon, n.d.)

- VAH.AX

Virgin Australia Holdings Ltd

“Virgin Australia Holdings Limited is engaged in the operation of a domestic and international airline business, and the operation of a frequent flyer program. The Company's segments include Virgin Australia Domestic, which includes operations using the fleet of Boeing B737 aircraft, Airbus A320 and A330 aircraft, and Fokker F50 and F100 aircraft, and comprises Australian domestic flying, including regional network and cargo operations; Virgin Australia International, which includes operations using a mix of Airbus A330, Boeing B777 and B737 aircraft, and comprises Trans-Pacific, Abu Dhabi, Trans-Tasman, Pacific Island and South East Asia flying, including international cargo operations; Velocity, which includes operations of its loyalty program, and Tigerair Australia, which includes operations using a narrow body fleet of Airbus A320 and Boeing B737 aircraft, and comprises Australian domestic flying targeting the budget leisure market and international flying to Denpasar.” (Thomson Reuters Eikon, n.d.)

- QAN.AX

Qantas Airways Ltd

“Qantas Airways Limited is an Australia-based company, which operates domestic and international airline. The Company is engaged in the operation of international and domestic air transportation services, the provision of freight services and the operation of a frequent flyer loyalty program. Its segments include Qantas Domestic, Qantas International, Jetstar Group, Qantas Freight, Qantas Loyalty and Corporate. The Qantas

Domestic, Qantas International and Jetstar Group segments include passenger flying businesses. The Qantas Freight segment is engaged in the air cargo and express freight business. The Qantas Loyalty segment is engaged in the customer loyalty recognition programs. Its main business is the transportation of customers using two airline brands, which include Qantas and Jetstar. It also operates subsidiary businesses, including other airlines and businesses in specialist markets, such as Q Catering. Its airline brands operate regional, domestic and international services.” (Thomson Reuters Eikon, n.d.)

- REX.AX

Regional Express Holdings Ltd

“Regional Express Holdings Limited (Rex) is engaged in the provision of air services for the transportation of passengers and freight. The Company's segments include Regular public transport and Charter. Its products and services include Amend Bookings, Redeem Reward Flights, Web Check-in, Print Invoices, Safe Hand Baggage, Rextra Legroom, Rex Business Flyer, Rex Lounge, Rex Collection, Rex Partners, Travel Insurance, Queensland Freight, Local Fare Scheme and Snowy Mountain Shuttle. Its regular public transport (RPT) network services approximately 60 airports throughout South Australia, Victoria, Tasmania, New South Wales, Queensland and Western Australia. It operates a fleet of over 50 Saab 340 aircraft on approximately 1,500 weekly flights to over 60 destinations throughout all states in Australia. Its subsidiaries include Regional Express Pty Limited, Rex Freight & Charter Pty Limited, Rex Investment Holdings Pty limited, Air Link Pty Limited and Pel-Air Aviation Pty Limited.” (Thomson Reuters Eikon, n.d.)

- SIAL.SI

Singapore Airlines Ltd

“Singapore Airlines Limited is engaged in passenger and cargo air transportation, engineering services, training of pilots, air charters and tour wholesaling and related activities. The Company's segments include airline operations, engineering services, cargo operations and Others. The airline operations segment provides passenger air transportation. The engineering services segment is in the business of providing airframe maintenance and overhaul services, line maintenance, technical ground handling services and fleet management. The engineering services segment also manufactures aircraft cabin equipment, refurbishes aircraft galleys; provides technical and non-technical

handling services, and repairs and overhauls hydro-mechanical aircraft equipment. The cargo operations segment is involved in air cargo transportation and related activities. The Others segment includes other services provided by the Company, such as the training of pilots, air charters and tour wholesaling.” (Thomson Reuters Eikon, n.d.)

- ALK.N

Alaska Air Group Inc

“Alaska Air Group, Inc. is the holding company of Alaska Airlines (Alaska), Virgin America Inc., Horizon Air (Horizon) and other business units. The Company operates through three segments: Mainline, Regional and Horizon. Its Mainline segment includes Alaska's and Virgin America's scheduled air transportation for passengers and cargo throughout the United States, and in parts of Canada, Mexico, Costa Rica and Cuba. Its Regional segment includes Horizon's and other third-party carriers' scheduled air transportation for passengers across a shorter distance network within the United States under capacity purchased arrangements (CPAs). Its Horizon segment includes the capacity sold to Alaska under CPA. Alaska and Virgin America operate fleets of narrowbody passenger jets. As of December 31, 2016, it maintained two frequent flyer plans: the Alaska Airlines Mileage Plan and the Virgin America Elevate.” (Thomson Reuters Eikon, n.d.)

- DAL.N

Delta Air Lines Inc

“Delta Air Lines, Inc. provides scheduled air transportation for passengers and cargo throughout the United States and across the world. The Company's segments include Airline and Refinery. The Company's route network is centered around a system of hub, international gateway and airports that the Company operates in Amsterdam, Atlanta, Boston, Detroit, London-Heathrow, Los Angeles, Minneapolis-St. Paul, New York-LaGuardia, New York- John F Kennedy International Airport, Paris-Charles de Gaulle, Salt Lake City, Seattle and Tokyo-Narita. Each of these operations includes flights that gather and distribute traffic from markets in the geographic region surrounding the hub or gateway to domestic and international cities and to other hubs or gateways. The Company's route network includes its international joint ventures, its alliances with other foreign airlines, its membership in SkyTeam and agreements with multiple domestic regional carriers that operate as Delta Connection.” (Thomson Reuters Eikon, n.d.)

- JBLU.OQ

Jetblue Airways Corp

“JetBlue Airways Corporation is a passenger carrier company. The Company provides air transportation services across the United States, the Caribbean and Latin America. Its segments include Domestic, and Caribbean & Latin America. It operates various kinds of aircrafts, including Airbus A321, Airbus A320 and Embraer E190. It also provides premium transcontinental product called Mint. As of December 31, 2016, Mint included 16 fully lie-flat seats, four of which were in suites with a privacy door. The Company also provides Fly-Fi in-flight Internet service across its Airbus fleet. It provides its customers a choice to purchase tickets from three branded fares, which include Blue, Blue Plus and Blue Flex. Each of these fares include different offerings, such as free checked bags, reduced change fees and additional TrueBlue points. As of December 31, 2016, its Airbus A321 aircraft in a single cabin layout had 200 seats and those with Mint premium service had a seating capacity of 159 seats.” (Thomson Reuters Eikon, n.d.)

- UAL.OQ

United Airlines Holdings Inc

“United Airlines Holdings Inc., formerly United Continental Holdings, Inc., is a holding company and its principal, wholly owned subsidiary is United Airlines, Inc. (United). The Company transports people and cargo throughout North America and to destinations in Asia, Europe, the Middle East and Latin America. Through United and its regional carriers, it operates across five continents, with hubs at Newark Liberty International Airport (Newark), Chicago O'Hare International Airport (Chicago O'Hare), Denver International Airport (Denver), George Bush Intercontinental Airport (Houston Bush), Los Angeles International Airport (LAX), A.B. Won Pat International Airport (Guam), San Francisco International Airport (SFO) and Washington Dulles International Airport (Washington Dulles). It has contractual relationships with various regional carriers to provide regional aircraft service branded as United Express.” (Thomson Reuters Eikon, n.d.)

- SKYW.OQ

Skywest Inc

“SkyWest, Inc., through its subsidiaries, SkyWest Airlines, Inc. (SkyWest Airlines) and ExpressJet Airlines, Inc. (ExpressJet), operates regional airline operations in the United States. The Company's segments include SkyWest Airlines, ExpressJet and SkyWest Leasing. The SkyWest Airlines segment provides regional jet service to airports primarily located in the Midwestern and Western United States, as well as Mexico and Canada. The ExpressJet segment provides regional jet service to airports primarily located in the Eastern and Midwestern United States, as well as Mexico, Canada and the Caribbean. The SkyWest Leasing segment includes its E175 aircraft ownership business. As of December 31, 2016, the Company offered scheduled passenger service with approximately 3,160 daily departures to destinations in the United States, Canada, Mexico and the Caribbean. The Company's flights are operated as Delta Connection, United Express, American Eagle or Alaska Airlines.” (Thomson Reuters Eikon, n.d.)

Selected Peer Airport Companies' Background

- AOT.BK

Airports of Thailand Pcl

“Airports of Thailand Public Company Limited is a Thailand-based company engaged in airport business and other services related to airport operation. The Company operates two principal business segments, which are airport business and hotel business. The Company develops and manages Suvarnabhumi, Don Mueang, Chiang Mai, Hat Yai, Phuket and Mae Fah Luang Chiang Rai airports. The Company's operations involve both aeronautical and non-aeronautical activities. The aeronautical activities are associated with air-traffic movements, such as landing, parking, passenger services and aircraft services. The non-aeronautical activities include office and state property rents, services and concession. The Company is also involved in the development and operations of hotels near Suvarnabhumi and Don Mueang airports. The Company's subsidiary includes Suvarnabhumi Airport Hotel Company Limited.” (Thomson Reuters Eikon, n.d.)

- 9706.T

Japan Airport Terminal Co Ltd

“Japan Airport Terminal Co., Ltd. is a Japan-based company principally involved in the management and operation of Haneda airport terminal building, as well as the distribution of merchandise and catering businesses. The Company operates in three business segments. The Facility Management and Operation segment manages and operates facilities within the Haneda airport terminal building. It mainly leases facilities to airline companies. The Merchandise Sale segment is primarily engaged in the sale of commercial products to air travelers in Haneda Airport, Narita Airport, Kansai International Airport, as well as the wholesale of commercial products to airport terminal companies. The Catering segment specializes in the provision of food and beverage products to passengers of Haneda Airport and Narita International Airport, as well as the manufacture and sale of in-flight food and frozen food.” (Thomson Reuters Eikon, n.d.)

- 9377.T

Agp Corp

“AGP Corporation is in the provision of power including electricity, air conditioner to the aircraft, as well as maintenance of special airport related facilities. The Company operates through three segment business. The Power Supply segment is in the provision of electricity, air conditioner and compressed air to the aircraft. The Maintenance segment is engaged in maintenance and management of special airport related facilities, buildings and utilities. The Associated segment is engaged in manufacturing and sales of food cart, operation and management of checked baggage inspection device, production and sales of low potassium vegetable, provision of support services for business jet, as well as sales of ground support equipment (GSE).” (Thomson Reuters Eikon, n.d.)

- 2729.T

Jalux Inc

“JALUX Inc. is a trading company. The Aviation-related segment involves in the sale of airplanes, airlines cabin products, machinery and materials and others, as well as the export of aircraft parts. The Media and Life Services segment involves in production and publishing of advertising, damage and life insurance business, financial planning, development, leasing and management of real estate, among others. The

Retail segment involves in in-flight sales, mail-order business, sale of miscellaneous goods, and operates airport shops and duty-free shops. The Food and Beverage segment involves in planning and sale of agricultural and marine products, processing food, in-flight meals and wines, as well as production of foodstuff. As of March 31, 2015, the Company had 53 subsidiaries and six associated companies.” (Thomson Reuters Eikon, n.d.)

- 0694.HK

Beijing Capital International Airport Co Ltd

“Beijing Capital International Airport Company Limited is a Hong Kong-based investment holding company principally engaged in airport and related businesses. The Company is mainly engaged in the operation and management of Beijing Capital Airport and the provision of related services in China. Its aeronautical businesses include the provision of aircraft landings and take-offs and passenger service facilities, ground support services and fire-fighting services for domestic and foreign air transportation enterprises. Its non-aeronautical businesses include the provision of ground handling agency services, the provision of in-flight catering services, the operation of duty free and other retail shops in the terminals, the operation of restaurants in the terminals and the leasing of advertizing spaces inside and outside the terminals, among others.” (Thomson Reuters Eikon, n.d.)

- 002111.SZ

Weihai Guangtai Airport Equipment Co Ltd

“Weihai Guangtai Airport Equipment Co., Ltd is a China-based company, principally engaged in the research and development, manufacture and distribution of airport ground equipment. The company produces ground equipment, fire vehicles and equipment, fire alarm equipment, military equipment, specialty vehicles and unmanned aircrafts. Its products include pallet loaders, tow tractors, alternating current (AC) power buses, jet start units, refuellers, aircraft deicers, handicapped vehicles, baggage conveyor belts, passenger boarding stairs, potable water service vehicles, lavatory service vehicles and catering trucks, among others. The Company's products are primarily applied in airports, airline companies, military facilities and export trading, among others.” (Thomson Reuters Eikon, n.d.)

- 000089.SZ

Shenzhen Airport Co Ltd

“Shenzhen Airport Co.,Ltd. is a China-based company principally engaged in the operation and management of Shenzhen Bao'an International Airport. The Company is mainly engaged in aviation business and non-aviation extending business. Aviation business provides airline companies, passengers and cargos with aviation ground security and aviation ground agency services. Non-aviation extending business includes aviation logistics services and aviation value-added services. The Company is also involved in the provision of aviation advertisement services. The Company mainly operates its business in Shenzhen, China.” (Thomson Reuters Eikon, n.d.)

- 600009.SS

Shanghai International Airport Co Ltd

“Shanghai International Airport Co., Ltd. is a China-based company primarily engaged in the provision of airport services and the operation and management of airports. The Company's main activities consist of the provision of ground handling services to domestic and foreign airlines and passengers, which includes management and leasing of aviation operation space, commercial space and offices inside the airports, as well as domestic trading; other airport related services, which includes advertising business, freight forwarding, customs agent, agent inspection, long distance bus terminal, parking management and expanded services; and the integrated development of other investment projects. The Company operates Pudong International Airport in Shanghai, China.” (Thomson Reuters Eikon, n.d.)

- SATS.SI

Sats Ltd

“SATS Ltd. is an investment holding company, which is engaged in providing food solutions and gateway services. The Company's other activities include rental of premises and provision of management services to related companies. The Company's operating segments include Food Solutions, Gateway Services and Corporate. The Food Solutions segment provides inflight and institutional catering, food processing, distribution services and airline laundry services. The Gateway Services segment provides both airport and cruise terminal services. The airport terminal services include airfreight handling services, passenger services, aviation security services, baggage handling services

and apron services to the Company's airline customers. On the provision of cruise terminal services, the Gateway Services segment manages and operates the Singapore International Cruise Terminal at Marina South. The Corporate segment is engaged in the provision of rental of premises and other services.” (Thomson Reuters Eikon, n.d.)



Appendix D: Implied Cost of Equity from Constant Growth Model

Implied cost of equity from constant growth mode is another alternative to find cost of equity. The formula of this method is derived from the Dividend Discount Model (DDM) that is used to price a stock,

$$\text{Stock Price}_{xd} = \frac{\text{Dividend}_{t+1}}{\text{Cost of Equity} - \text{Constant Growth Rate}}$$

If we already have the stock price, the dividend and the constant growth, we can solve for the cost of equity as the following,

$$\text{Cost of Equity} = \frac{\text{Dividend}_{t+1}}{\text{Stock Price}_{xd}} + \text{Constant Growth Rate}$$

Please note that Stock Price_{xd} in the formula represent the stock price with the label XD which means the buyer will not receive this upcoming dividend.

The issue with this model is that this model should apply with a company in a mature stage or in very stable situation. The dividend payout must be stable, as well as the growth rate of the dividend. The growth rate of dividend in this calculation is derived from the following formula,

$$\text{Constant Growth Rate} = \text{ROE} \times (1 - \text{Payout Ratio})$$

However, Bangkok Airways' current situation is not very stable, the company has been making loss. Although, the company has been paying dividend even when it was making loss, but the amount of dividend has been decreasing over the past couple of periods.

Table D1 Implied Cost of Equity from Constant Growth Model

Implied Cost of Equity from Constant Growth Model 1	
Latest: Nov 2019	
ROE	0.81%
Dividend Payout Ratio	0.87
Growth	0.11%
Dividend (Baht Per Share)	0.078
Current Stock Price	7.1
Cost of Equity	1.21%

Table D1 shows the calculation of the implied cost of equity from constant growth model by using the latest information available, as of November 2019. The return of equity (ROE) was only 0.81% and the dividend payout was 0.87 which is very high and resulting in a relatively low growth rate; 0.11%. The latest dividend that the company paid to its investors was only 0.078 baht per share and the current stock price is 7.1 baht. By solving the equation, the cost of equity from the implied cost of equity from constant growth model is only 1.21% which should not be used in the valuation because this cost of equity is even lower than the risk-free rate, 1.71%. It is impossible that any investors would willing to invest in Bangkok Airways and expected the return only 1.21% per annum. So, this model should not be used in the valuation.

Appendix E: Alternative Pro Forma Income Statement

One of a very common ways to make a pro forma income statement is using the trend of each items or using the compound annual growth rate (CAGR). Figure 10.9 shows the pro forma income statement using CAGR. There are many issues with this assumption. First of all, the CAGR of the Charter Flight revenue has been growing at 92% per year which is much higher than the growth rate of the industry. At the end of 5th year, Bangkok Airways' revenue from its charter flight would be as high as the total revenue from charter flights of the whole industry. Secondly, the fuel expense has been decreasing at -1.06% CAGR. By using this rate is simply meaning that the cost of fuel will keep reducing which is conflict with the forecast from U.S. Energy Information Administration (see the macroeconomic section). So, this model should not be used in the valuation.

Table E1 Pro Forma Income Statement, Based on CAGR

	Trailing 12 Months		Method	Assumption	Pro Forma				
	Sep-19				1	2	3	4	5
THB Million									
Passenger	19,190				20,121	21,506	23,752	27,644	34,689
Scheduled*	18,669	*	CAGR	2.4%	19,120	19,581	20,054	20,539	21,035
Charter*	521	*	CAGR	92%	1,001	1,924	3,698	7,106	13,654
Passenger service Charge	550		CAGR	3.48%	569	589	610	631	653
Freight	204		CAGR	-8.24%	188	172	158	145	133
Sales and service income	4,284		CAGR	8.75%	4,659	5,066	5,509	5,991	6,515
Total Revenue	24,228				25,537	27,333	30,029	34,412	41,990
Cost of Sales and Services	22,823				24,121	25,553	27,131	28,870	30,787
Fuel*	5,042	*	CAGR	-1.06%	4,988	4,935	4,883	4,831	4,780
Aircraft Repair and Maintenance*	3,613	*	CAGR	12.36%	4,059	4,561	5,125	5,758	6,470
Personnel Expenses*	3,519	*	CAGR	9.33%	3,848	4,207	4,599	5,028	5,497
Cost of Passenger Services*	3,219	*	CAGR	3.84%	3,343	3,471	3,605	3,743	3,887
Aircraft Rental*	1,597	*	CAGR	-2.28%	1,561	1,525	1,490	1,456	1,423
Other Cost of Revenue*	5,832	*	CAGR	8.40%	6,322	6,853	7,429	8,053	8,730
Selling General and Administration Expenses	4,265		CAGR	6%	4,538	4,828	5,137	5,465	5,814
Other Operating Income/Expense	5		CAGR	15%	5	6	7	8	9
Total Operating Expense	27,092				28,664	30,387	32,275	34,344	36,611
Loss on exchange rate	(43)								
Gain on exchange rate	79								
Earning Before Interest and Tax (EBIT)	(2,864)				(3,128)	(3,054)	(2,246)	68	5,379
Tax				20%	-	-	-	(14)	(1,076)
NOPAT					(3,128)	(3,054)	(2,246)	54	4,304