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Chaikal Nuryakin  
Regi Kusumaatmadja  
Natanael Waraney Gerald Massie  
Alvin Ulido Lumbaraja  
Sean Hambali  
Devina Anindita

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Setting : Rini Budiastuti

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Institute for Economic and Social Research  
Faculty of Economics and Business  
Universitas Indonesia (LPEM-FEB UI)

Salemba Raya 4, Salemba UI Campus Jakarta, Indonesia 10430  
Phone : +62-21-3143177  
Fax : +62-21-31934310  
Email : [lpem@lpem-feui.org](mailto:lpem@lpem-feui.org)  
Web : [www.lpem.org](http://www.lpem.org)

# The Sky in Blues: On the Recent Development of Indonesian Airlines Industry

Chaikal Nuryakin<sup>1,\*</sup>, Regi Kusumaatmadja<sup>1</sup>, Natanael Waraney Gerald Massie<sup>1</sup>, Alvin Ulido Lumbanraja<sup>1</sup>, Sean Hambali<sup>1</sup>, & Devina Anindita<sup>1</sup>

## Abstract

As the ASEAN put forward aviation industry liberalization measures in 2010, the Indonesian aviation industry has been moving towards the other side of spectrum of late. Two market ventures driving the change was in late 2018, where one of the leading airlines group, Garuda Group, through Citilink agreed to form cooperation with Sriwijaya Air. Second, January 2019 further marked the period in which Lion Air started charging 'baggage fees' and Garuda Indonesia stopped offering sub class ticket. Amid the presence of such changes in the industry, this study aims to discuss the current state, challenges, and potential of the Indonesian aviation market; comprehensively discuss the economic implications of such state of the industry; as well as how the government may act to help address the possible market failures. The study utilizes multiple data sources, i.e., data from CAPA, INFARE, as well as official governmental transportation database. We first describe the potential of airlines industry in Indonesia. We identify the periodical breaks in the industry's growth; that is, during which periods significant changes are happening. What follows is a complete breakdown of the market concentration and landscape. We proceed to show the impacts of the generalized price hike. Our findings suggest that loss of passengers is immense. Further, we find an intriguingly similar capacity drop in the period following the Citilink – Sriwijaya deal conducted by virtually all the members of Garuda Group and Lion Air Group – all against the year-on-year trend. We specifically decompose the changes that follow the late 2018 trend. Further implications are discussed. We conclude the study with relevant policy recommendations.

**JEL Classification:** L93; L98; D43

## Keywords

airlines industry — imperfect competition — Indonesia — liberalization — consumer welfare

<sup>1</sup> *Institute for Economic and Social Research, Faculty of Economics and Business, Universitas Indonesia (LPEM FEB UI)*

\***Corresponding author:** Jl. Salemba Raya No. 4, Jakarta, 10430, Indonesia. Email: chaikal.nuryakin@ui.ac.id.

## 1. Introduction

How does the Indonesian aviation industry fare in terms of efficiency and competition? In this paper, we aim to explore such issue. For a period of time, this issue had received widespread attention, particularly amid the intensive news coverage surrounding recent baggage fees' hike of the largest domestic airline groups (Garuda and Lion groups) in January 2019 and subsequently, the removal of one minor airline player – that is, AirAsia's tickets from several prominent online travel agent platforms. However, despite the importance of such issues, to date we find that little to no empirical study has been done on competition within Indonesia's aviation industry, much less the aforementioned price hike phenomenon.

Such lack of study thereof is troubling, particularly if one considers the growing relevance of aviation transportation within Indonesia's context as an archipelagic state. We document that Indonesia's aviation market is a potential one, as reflected by the booming passengers' growth rate – particularly in the 2005–2012 period. Since then, however, growth has been relatively modest. We argue that this is not indicative of an exhausted market; rather, it reflects the potential of uncaptured segment. As people's income increase and flying become more bearable, arguably the number of passengers will also grow commensurately.

However, recent development in domestic aviation land-

scape has posed a significant barrier in realizing the industry's potentials. In January 2019, LCCs of the largest domestic airline groups – Garuda and Lion groups – ceased to implement free baggage facilities, which contributed to upward movement in ticket prices. We further document the immensely negative impact of such phenomenon on domestic airline industry in terms of passenger loss. The passenger drop also poses negative externalities to other sectors as well, particularly tourism sector – one of the government's most prioritized sectors.

Furthermore, in this paper, we also argue that such phenomenon is indicative of deeper issues within the industry. The first and most important issue that will be explored in this paper are issues related to competition within the industry. After operational agreement between Citilink–Sriwijaya was implemented in late 2018, the current landscape of domestic airline industry is a near-duopoly one in which Lion and Garuda virtually control 96% of all market shares in the industry. We argue that such lack of competition incentivizes incumbent players to engage in a rather coordinated price harmonization policy, as strongly indicated by our data. In addition, in this paper we will also delve into greater details about current players' state of efficiency – in terms of cost structures – by scrutinizing the financial reports of these airlines.

The figures for passenger losses presented in this paper should provide policy-makers with enough information on

the severity of the issue, and the need to implement quick reforms on the industry. Specifically, we argue that liberalization policies are indeed crucial for Indonesia's current aviation industry. However, not all liberalization policies are politically feasible – and as such, we propose several policy alternative forms of liberalization that are aimed at bringing efficiency and competition within the aviation industry.

The rest of the paper is organized as follows. The next section will specifically provide a brief historical account on the Indonesian aviation market while also discussing relevant extant literature, particularly focusing on liberalization and competition within aviation industry. The third section will explore the methodology employed in this study. In the fourth section, we will present our findings on the current state of competition within aviation industry, and its relevance in understanding the recent phenomenon of fare hikes between the largest players within the industry. We will also discuss in greater details about such phenomenon's immensely adverse impact on national aviation industry. The fifth section concludes.

## 2. Literature Review

### 2.1 Developments in the Indonesian Aviation Market

To date, there have been limited works of literature specifically discussing the development of Indonesian aviation market. As such, this section will attempt to synthesize relevant extant literature and provide a brief account of the market's history. Arguably, one of the earliest monumental events in the history of Indonesian aviation industry is KLM's first intercontinental flight from Amsterdam to Batavia in 1924, which was then operated by a Fokker F-VII. Its first regular service between the two connecting cities was further established in September 1930. However, ensuing political stabilities within Indonesia, which were epitomized by Japanese invasion of the region and the following Indonesian battle of independence – ultimately ending in the nationalization of KLM (Casius & Postma, 1986). The nationalization process resulted in the inception of Garuda Airlines, which became Indonesia's prominent flag carrier. As the industry grows, new players start to emerge within the industry, which major examples include the government owned Merpati Nusantara Airlines (in 1962); Mandala Airlines (in 1969) and Bouraq (in 1970).

Indonesia's first legal references for the aviation industry was implemented on the 1958 Aviation Act (Saraswati & Hanaoka, 2013) – which provides legal standing and framework for airlines operations within the industry. Until late 1990s, Indonesia's aviation industry saw a heavy state control on the industry<sup>1</sup>. This was made apparent in the 1992 Aviation Act, in which its Article 31 stipulated that the government directly oversees the use of facilities and services at airports – which further provides the basis of powers needed to regulate prices (Anas & Findlay, 2017). This was further compounded by the enactment of the Min-

ister of Transport's (hereafter named as MoT) Decree No. 25/1997, which delegated the rights to set the (floor) prices of scheduled flights to the airline association, Indonesian National Air Carrier Association (INACA).

Following the Asian Financial Crisis that hit the Indonesian economy during 1998, Indonesia was pressured by the IMF to implement several major reform packages within many sectors of its economy, including the aviation sector. Such reform is manifested in the implementation of 1999 Antitrust Act, which grants the competition committee (KPPU) the monitoring authority to ensure that efficiency and competition within the industry are achieved and maintained. Indeed, one of KPPU's first major act of reform was to pressure the MoT to revoke its previous decree which grants INACA the power to fix ticket prices. As a result, provisions on floor prices were abolished – leaving ceiling prices alone to be regulated. Another major milestone for the deregulation process was the implementation of Decree No. 11/2001 by the MoT, which further allowed private airlines to attain the license to operate by operating only two aircraft, compared to its former requirement of five aircrafts. The enactment of such regulation propelled the abrupt growth of players within the industry; the number of airline players amounted to 27 players in 2004, as compared to only 7 in 2000. These new players arguably undermined the market shares of the once-dominant incumbent players, that is, Garuda Indonesia and Merpati Airlines.

However, the rapid growth was rather short-lived. In the following years, several consolidations took place within the industry, and many infant players were driven out of the industry, an example of which include Adam, Celebes, Batavia, and Indonesian Airlines. In addition, the aforementioned rapid growth in the industry was not followed by commensurate intensive monitoring by the MoT, particularly on the safety aspects. As a result, several safety-related problems occurred, culminating in the Adam Air accident which occurred in early 2007. This prompted the Indonesian government to impose stricter rules on aircrafts requirement that were needed to establish airlines operation, which was indeed formulated on the 2009 Aviation Act. The 2009 Aviation Act, arguably, marked the end of the deregulation era in Indonesia's aviation industry.

We argue that the current stance maintained by the Indonesian government on the 2009 Aviation Act is arguably hawkish and rather promotes protectionism to 'safeguard' national interests, as it is often cited. The former is made apparent by the enactment of strict aircraft requirements than ever before – 10 minimum aircraft, in which a minimum amount of 5 aircrafts has to be owned by the airlines (instead of being leased). This creates a huge entry barrier for new entrants, while its effectiveness in maintaining safety aspects of airline operations remains questionable. The latter protectionist stance is reflected by provisions on investment in the airline industry – specifically, the enactment of single majority provisions. The implementation of such regulation was due to concerns that foreign interests might dominate domestic business landscape. Undoubtedly, such provisions provide impediments for domestic airlines in their attempt to acquire broader capital base – further creating barriers for Indonesian aviation industry to fully realize its huge potential.

<sup>1</sup>The main policy stance during this era was arguably a protectionist one. For example, although private airlines were allowed to operate within the industry, the Ministerial Decree SK 13/6/1971 assigned the state-owned Garuda International Airways to control the trunk routes (Abeyratne, 2014).

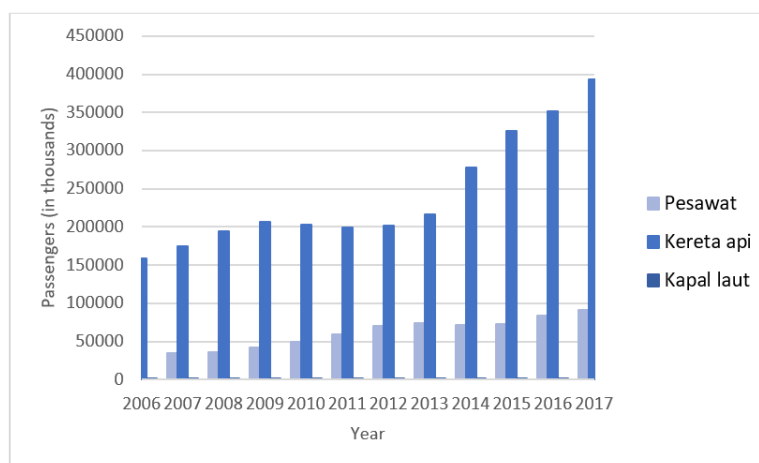


Figure 2.1. Number of Airplanes, Train, and Ships Passengers in Indonesia (2006-2017)

Source: Indonesia CBS

Indonesia's potentials can be seen in its steadily increasing passenger circulation, as made apparent in Figure 1.1. However, when compared to the other modes of transport, one difference stands out. The usage of the train as the domestic transport option has consistently been dominating the usage of flights as the preferred transportation mode. The figure above also depicts the comparisons of mode usage between flights, train, and ships in Indonesia between 2006 and 2017. Referring to the above graph, we may notice that the gap between train and flights usage has consistently been stark between the years. Every year, the number of train passengers are about 4 to 5 times the passengers of airlines for domestic use. While the difference is inevitably attributed to the price differences, one may also argue that such stark difference also shows the significant potential of the uncaptured market for the aviation industry. If the industry, for instance, aims to take mere tens of per cent of such a market, the value of such a market would still be immense. As such, the role of the Low-Cost Carriers (LCC) in Indonesian domestic transportation would be more pivotal than ever.

On the other hand, the aviation market has seen a steady year-on-year growth rate of around 15 to 20 per cent between 2005 and 2012, according to the data gathered from CAPA. However, the growth has since been modest, hovering around 0 to 10 per cent during the years after (except for the year 2016). Such a significant decrease in the expansion of the market may raise several questions, specifically on why the stagnation occurred. As one might argue, the former growth rate may depict the actual potential of the aviation market expansion every year. The latter, however, is the empirical growth rate potentially hindered by idiosyncratic shocks. One of the contributors to such stagnation might have arguably been the increased ceiling price regulation during the time, although further thorough inquiry on the matter is needed. Nevertheless, the growth trend also poses serious market potential for the aviation market industry.

Even as Indonesia dominates the total passenger number in Southeast Asia, the number of passengers on per-capita basis still trails other ASEAN countries. Figure 1.3. shows the ratio of flight passengers divided by the population of the respective ASEAN countries, along with the regional figure. Roughly put, the figures denote the 'airlines passenger per

capita', representing a rough estimation of the number of times a citizen a country uses airlines as her transportation mode per year. Indonesia had seen its number grow from 0.17 in 2007 to 0.42 in 2017. That translates to the fact that, in 2007, almost 1 out of 5 citizens in Indonesia used air transport, and the ratio was almost 1 in every 2.5 citizens in 2017. While the growth has been noticeable, it still trails Malaysia's, Singapore's, and even the regional figures. Singapore boasts the region-high figure of 6.71, meaning that every 1 Singaporean flew roughly 6 to 7 times in 2017.

The above elaboration has highlighted developments in the domestic aviation market. It has also mentioned the immense and untapped potentials of the market, while also putting emphasis on the need to formulate policies that are in accordance with the goal of realizing such potentials. We note that notable, if not major, changes are needed in incentivizing Indonesian society to use more of the airline's service. In that regard, this study aims to specifically address the afflictions endured by the industry while expanding in Indonesia. Problems such as regulatory rigidities and capital constraints are among those aimed to be further discussed in the upcoming sections. Relevant policy recommendations are also to be further discussed.

## 2.2 Extant Literature on Liberalization

There exists a vast amount of literature shedding light on the aviation industry, particularly with respect to liberalization and its impact on competition within the industry. Mainstream literatures suggest that liberalizing the aviation industry increases the number of competitors, both foreign and domestic alike, and subsequently, lower fares and increase the number of passengers being served. Squalli (2013), for example, studies liberalization within the United Arab Emirates region and empirically finds that increased openness is associated with higher enplanement – number of passengers being served – and lower fares. In contrast, the study also finds that code-sharing agreements lead to higher enplanement and higher fares, suggesting potential collusive behaviour. Therefore, he argues that further liberalizing passenger airline markets within the region would result in increased expenditure on air travel and lower production costs. Another study by Fu et al. (2010) also suggests that liberalization has led to substantial economic and traf-

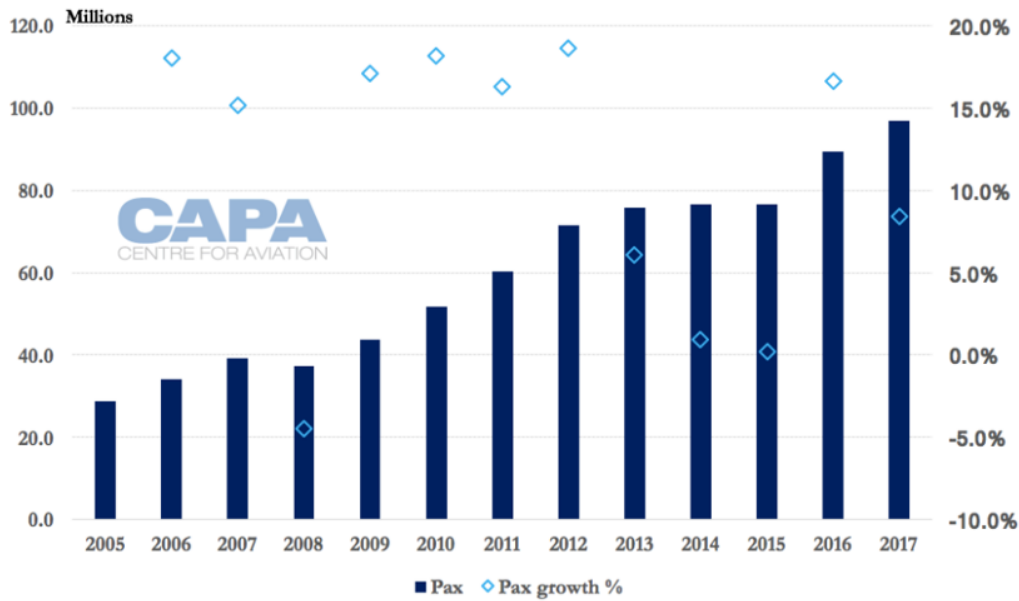


Figure 2.2. Indonesia Annual Scheduled Domestic Passenger Traffic and Y-o-Y Growth  
Source: CAPA

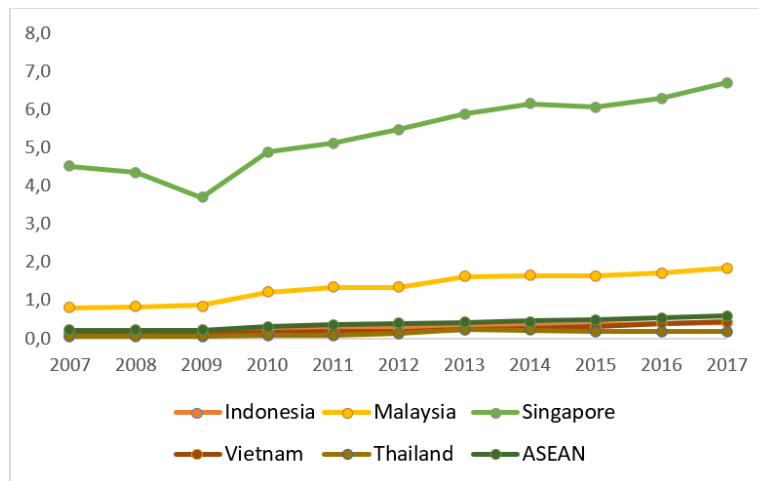


Figure 2.3. ASEAN Countries Airlines Passenger per Capita Ratio  
Source: CBS; World Bank

fic growth, which results from increased competition and efficiency gains.

More specifically, the developments of LCCs have been epitomized as one of the direct results of such liberalization, while also often cited as harbingers of efficiency within the industry. Vlaar et al. (2005) argue that these LCCs brought disruption to the 1970s airlines industry through its new and revolutionary business model, in which it creates an entirely new combination of aircraft types, deploys hub-and-spoke airport networks, and curbing the excessive amount of personnel. In line with Vlaar et al.’s work, Pels (2008) argues that the LCCs compete intensely with the FSCs, particularly on the short-haul routes.

In addition, positive impacts on the economy are also channeled through increased connectivity between regions. For example, Campante & Yanagizawa-Drott (2017) studies the impact of improving air connectivity across countries. The empirical results suggest that improving an airport’s position in the network of air links exert positive effect on local economic activity through increased business links –

further demonstrating that movement of people often precipitates movement of capital. This should be the empirical basis on the deeper pursuit of multilateral open-sky policies, such as the ASEAN Single Aviation Market (ASAM).

Extant literature also suggest that liberalization and a new entry is often costly for incumbent players. Berry (1992) develops a theoretical entry model, in which their simulation results suggest that profitability of airline players tend to decline fairly rapidly with the number of entering firms. A study on other industry – the mutual fund markets – by Feng et al. (2017) also finds that incumbent players have a poor performance when facing fierce competition from new entrants, as the competition exerts negative impact on the stock-picking ability of the fund managers.

Faced with such extensive capital and sunk costs while at the same time threatened with profitability decline as new players enter the market, incumbent players have adopted strategies to deter such entries of new players. A famous empirical study by Goolsbee and Syverson (2008) investigates such behaviour. Their results indicate that incumbents

cut their fares significantly on routes facing entry threats by new entrants – confirming the results of previous study on incumbents' behaviour changes after such entry occurs (Whinston & Collins, 1992).

Our work contributes to the extant literature by investigating issues of liberalization and competition within Indonesia, a country which has rarely been studied by previous literatures. Perhaps our work relates more to Goolsbee and Syverson (2008) and Whinston and Collins (1992) in that it delves deeper into the actions of major incumbent airlines – Garuda groups and Lion groups – in their endeavour to ensure their sustainability while also maintaining their market share. This paper exploits the operational agreement between the subsidiaries of the two major groups in late 2018, and specifically, in the coming sections we will describe the adverse impacts that are arguably attributable to the implementation of such operational agreements.

### 3. Methodology

#### 3.1 Hypothesis

The recent operational agreement (Kerja Sama Operasi/KSO) between Citilink and Sriwijaya Group at the end of 2018 effectively consolidated Indonesia's commercial passenger's market into effective near duopoly. While the operational agreement did not necessarily transform Sriwijaya Group into subsidiary of Garuda Indonesia Group, the operational agreement and the placement of President Director of Garuda Indonesia as Sriwijaya's President Commissioner/Chairman of the Board allows Garuda group, through its low-cost subsidiary Citilink, to structure the schedule and routing decision of Sriwijaya and NAM Air to the benefit of Garuda Indonesia. Both Lion and Garuda airline groups, therefore, have all types of airlines in their holding, both from regional carriers to full-service carriers. We highlighted the current grouping of the two major airline groups, Lion and Garuda, in Figure 3.1.

Although in theory duopoly condition does not necessarily have to impair competition in the market, the risk of anti-competitive behaviours under duopoly regime is significantly higher than under previous regime. Total passenger carried by Lion Group is 50.74% of total passengers transported by scheduled air services, while combined figure for Garuda Indonesia Group and Sriwijaya Group amounted to 45.7% of total domestic passengers in 2018. The two airline groups thus captured more than 96% of total scheduled passenger air services market. With Lion Group and Garuda Indonesia Group dominating scheduled passenger air services market, the probability of either airline monopolizing certain routes and/or artificially constraining seat inventory would inevitably increase. This condition where both airlines gain considerable market power and sway in domestic routes is exacerbated by the high barrier to entry into Indonesia's scheduled passenger air service market and the high regulatory and compliance-related costs, which only serve to deter competition in the market that already lack one.

The risks associated with weak competitors and concentration of market power is highlighted in the total flight frequency for domestic routes. Following the crash of JT610

on 29th October 2018, demand for Lion Air drop (shifting the demand curve to the lower left), with no change in price, the quantity demanded drop from 8,6 million passengers in October to 7,8 million in November. Meanwhile, the crash of JT610 seemingly impacted Garuda Indonesia Group, since they also own the same airplane (Boeing 737 Max 8) that crashed. There could be also that Garuda Airlines has been taken a preventive action in using the Boeing 737 Max 8 their own. This explains the marginal drop of Garuda's flight frequency although Garuda Group received spillover effect from the drop of Lion Group's passengers (see Table 1).

Even with the coming peak season in December, Lion Group seems to have not gained much traction to improve. We can see in Figure 4.16 that the increase number of passengers in December is far below the long-term trend of passenger in December. It seems that with the stronger Garuda Group (through Citilink) and Sriwijaya Group with the KSO, the crashed has pushed Lion Air to "coordinate" rather than to compete with the newly established Garuda-Sriwijaya Group. In what will be explained shortly, the harmonized ticket price policy (and sales of only one class structure) and/or charging baggage fee in January by the two major Groups plus Sriwijaya had huge impact on the domestic airline market.

To sum up, our conjecture about what happened to the ticket price in recent months are as following:

1. Prior to JT610 crash, the market equilibrium was around point A, with demand at low season and seat inventory at a normal level;
2. The crash of Lion Air temporarily reduced market demand for air travel, causing demand to shift downward to DC. As a result, airlines, particularly Lion Air, responded by reducing supply to S', thus bringing equilibrium price and quantity to point B;
3. The increase in demand for air transport around Christmas and New Year shifted the demand for air transport upward to DH, bringing equilibrium price and quantity to point C.

While demand usually shifted downward again following the end of Christmas and New Year peak season to DL, the artificially high price in January (keeping the peak season price in the low season) has reduced quantity demanded (movement along DL) from 8.6 million passenger in October to 6.7 million in November or has driven out more than 1.8 million passengers from the domestic market.

#### 3.2 Data

We utilize several datasets in this report; our primary dependent variable is the amount of seat served by each airline for several routes every month from the beginning of 2014 to the fourth month of 2019. This data is obtained from the Directorate-General of Aviation, Ministry of Transportation. We use both domestic and international routes for Indonesia. We decided to leave cargo-type airlines and also operators who use propellers in our data. The data includes information about all reported domestic and international routes, for instance; the origin-and-destination, the available seats, the number of passengers, the freight which the airline carries (in kilograms), the aircraft hours, the distance (in kilometres), and the type of aircraft an airline operator used (for



Figure 3.1. Airlines in Two Major Airline Groups in Indonesian Airlines Industry After Citilink-Sriwijaya’s Operational Agreement (KSO)

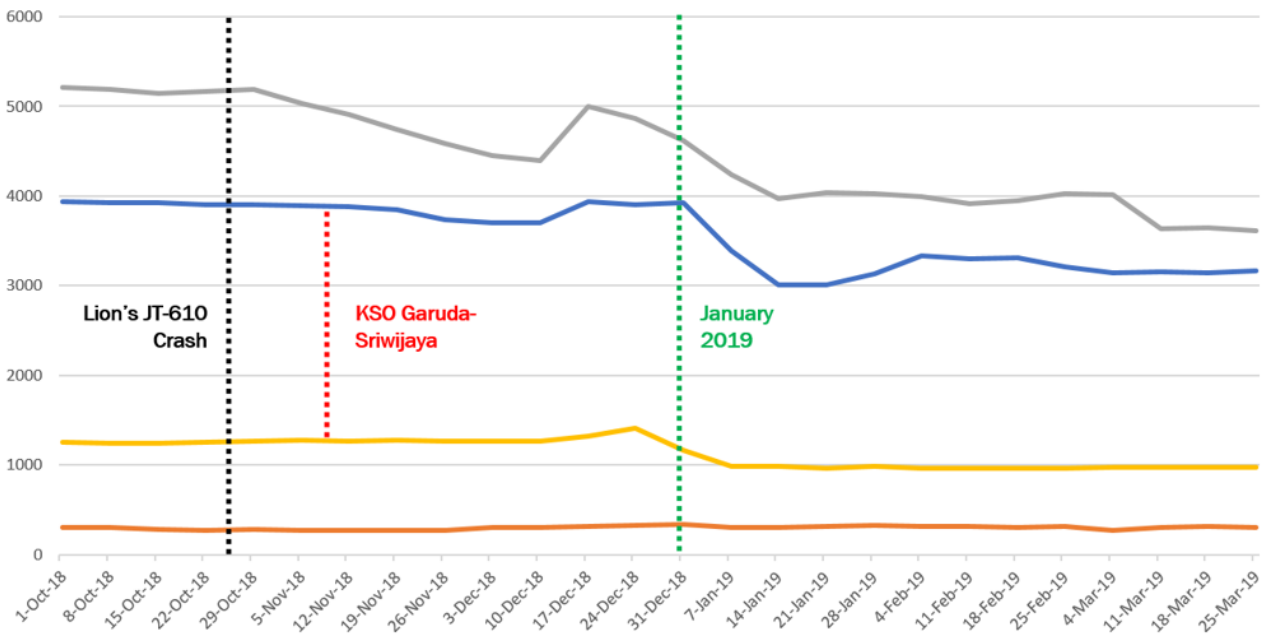


Figure 3.2. Flight Frequency of Domestic Airlines Group, Indonesia  
Source: CAPA

instance; B737 and A330) for each route for each airline in each month. Using this dataset, we can construct one of our dependent variables, “LoadFactor”, where we define the “LoadFactor” as the proportion of the number of passengers to the available seats served by an airline for a route in one period. As for international routes, we only use origins (destinations) to (coming from) several ASEAN cities. Our decision is influenced by the fact that there is an open-sky policy ratified by the ASEAN members state and the Presidential Regulations No. 12/2016.

We also utilize several control variables such as the price of the airlines’ fuel, the floor and ceiling prices (In Bahasa: *Tarif Atas Bawah* and *Tarif Batas Atas*) set by the Ministry of Transportation. We only extract the floor and ceiling prices for jet-type of aircraft. In the regulations, there is information regarding the minimum and the maximum prices each operator can charge to their respective customers for each domestic route. As for the international routes, to the best of our knowledge, the Ministry of Transportation has not introduced any regulations. In our current version of the report, we use the index of airlines’ fuel data because we are not able to access the data for the time being. We plan to use the airlines’ fuel data from Pertamina Aviation,

which the nature of the data is that the price is set for each month and different between airports, to improve our understanding about the influence of this particular variable in our research.

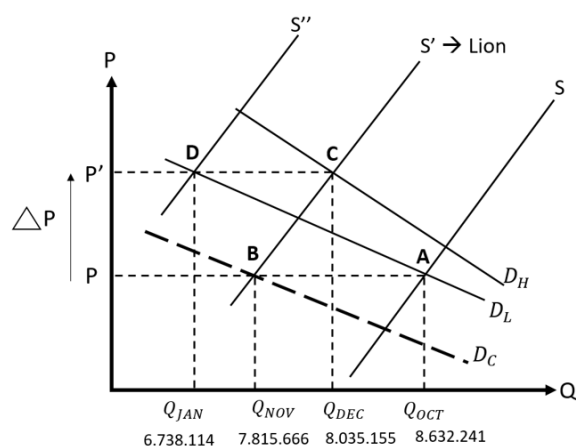
We then merge the information obtained from the Directorate-General of Aviation, the airlines’ fuel index, the floor, and ceiling prices data into an unbalanced panel data. It is important to remark that the floor and ceiling prices data from the Ministerial Decrees are not monthly nor monthly data.

## 4. Analysis

### 4.1 Descriptive Statistics

In this sub-section, we present our descriptive statistics in this research report. We are interested in observing the existence of descriptive patterns that can serve as prima facie explanations to the available seats (Capacity), the number of passengers (“PassengersNumber”), and the load factor (“LoadFactor”). We provide two types of graphs for each airline in every domestic route possible documented by the Directorate-General of Aviation, Ministry of Transportation; the first-type graph depicts information about our dependent variables and the fuel price, while the second-type





**Figure 3.3. Illustration of the Recent Case**  
Source: DGCA

graph shows our variables of interests and the USD-IDR exchange rates. We use four airlines group; (1). Garuda Indonesia Group (Garuda Indonesia and Citilink), (2). Indonesia AirAsia Group (Indonesia AirAsia and Indonesia AirAsia X), (3). Lion Air Group (Lion Air and Batik Air), and (4). Sriwijaya Air Group (Sriwijaya Air and Nam Air).

In the following descriptive statistics, one similar notion could be noted. The graphs provided show that generally, external factors (e.g., avtur prices and/or exchange rate) do not correspond to the high prices experienced by the consumers. Instead, during the drop of avtur prices in late 2018-early 2019, there were notable capacity drops across airlines groups. The reasoning of such occurrence would still require clarifications; however, the widely spread rationale has so far been counterintuitive.

#### 4.1.1 Available Seats (Capacity)

The available seats are the number of seats served by an airline for each route in a given time. This variable represents the supply-side of the airline industry.

#### 4.1.2 Number of Passengers

The number of passengers represents how many passengers use the service from airlines' operator. This variable represents the demand-side of the airline industry.

#### 4.1.3 Load Factor

We construct load factor as a fraction of the number of passengers and the available seats served by an airline.

### 4.2 Impact of Increased Ticket Prices

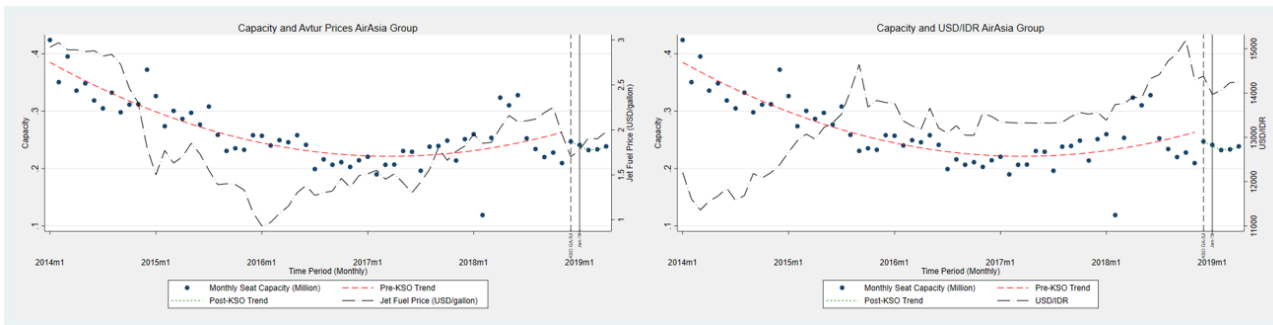
The impacts of reduced competition towards the national aviation industry should not be underestimated. Table 1 and 2 provide figures on the loss of consumers, as reflected by several indicators, that might potentially be attributed to the widely cited increase in both ticket and baggage fees. Specifically, Table 1 indicates monthly development (from September 2018 to January 2019) of variables including passenger numbers, flight frequencies, and load factors of Indonesian airline groups. It is important to note that along this time frame, the aforementioned major events took place: firstly, Lion's JT610 airplane crash on 29th October 2018. Second, the operational partnership agreement between two domestic airline players, Citilink and Sriwijaya, on 9th November 2018. Third, late January 2019 saw

Citilink, Lion Air, and Wing's Air abolition of free baggage facilities. Also, airlines affiliated with Garuda and Lion groups had not dropped their high-season ticket prices, even after such peak-season had ended.

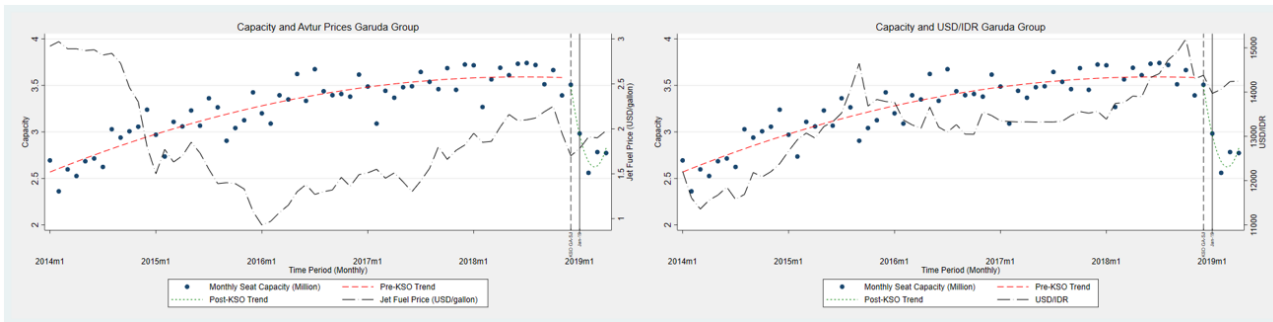
Based on Table 1, one can conclude that the number of passengers dropped abruptly in January 2019. From October 2018 to January 2019, the number of traveling passengers saw a large nationwide decrease of more than 1.8 million passengers. The number of passengers saw its first drop (of 800,000 passengers) in November 2018, whereby such decrease might arguably be caused by widespread public fear of air travel attributable to the JT610's crash on late October. Afterwards, the numbers returned to normal as the holiday season approached, increasing the number of air travelers back to 8 million. However, from that figure, the number dropped by 1.3 million in January 2019. Such abrupt decrease coincided with the aforementioned rise in ticket prices and baggage fares of several airlines in Indonesia.

Additionally, from December 2018 to January 2019, there is a significant drop in the number of passengers. Furthermore, Airlines affiliated with Garuda group, Lion group, Sriwijaya group, and that which are not affiliated with any major groups saw a huge drop in load factor, indicating sluggish demand for these airlines. It is interesting to note further that AirAsia is the only airline which experienced an increase in load factor, suggesting a switching demand to AirAsia.

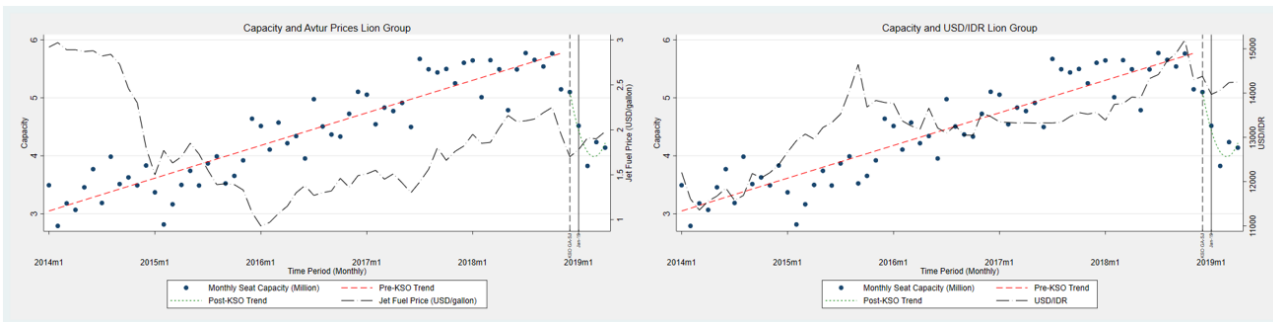
To control for any seasonal factors that might confluence the pattern of such variables, we also make a quarterly year-on-year comparison on several indicators, which include passenger numbers and flight frequencies. Such comparison is shown in Table 2. The conclusion that might be derived from the below data also validates the conjectures that are derived from Table 1. Overall, within the same quarter from 2018 to 2019, the civil aviation sector saw a huge drop in its nationwide passengers by nearly 5.5 million passengers (equivalent to 5.4% of total passengers in 2018). One can infer that in 2019, Lion, Garuda, Sriwijaya groups saw a huge drop in the number of their passengers, as compared to the same quarter in the preceding year. Such a phenomenon is a clear reversal of a positive trend that had been going on from 2015 to 2018. The exact opposite is true of the Air



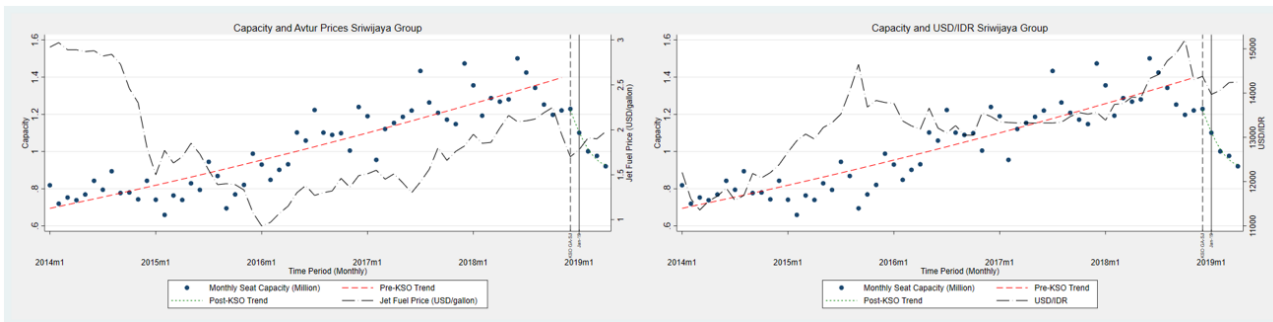
**Figure 4.1. Capacity and Avtur Prices / USDIDR Comparison, Airasia Group**  
Source: Directorate General of Aviation



**Figure 4.2. Capacity and Avtur Prices / USDIDR Comparison, Garuda Group**  
Source: Directorate General of Aviation



**Figure 4.3. Capacity and Avtur Prices / USDIDR Comparison, Lion Group**  
Source: Directorate General of Aviation



**Figure 4.4. Capacity and Avtur Prices / USDIDR Comparison, Sriwijaya Group**  
Source: Directorate General of Aviation

Asia group, which clearly saw an increase in its passenger numbers, after years of a declining trend. With regards to the supply side, another conclusion that can be derived is that the three major airline groups also decreased their flight frequencies. Again, such a decrease is a clear reversal of a positive trend that had been going on from the preceding years. Meanwhile, Air Asia and other minor airline groups did not cut back on their supply – they even increased their

flight frequencies, a break-off from declining trend inherited from the preceding years. Such a phenomenon is the exact opposite of those experienced by the other three major airline groups.

We argue that the decrease in passenger numbers is directly attributable to the relatively high-ticket prices (i.e., peak-season prices charged at low-season) and the abolition of free baggage facilities implemented by several major air-

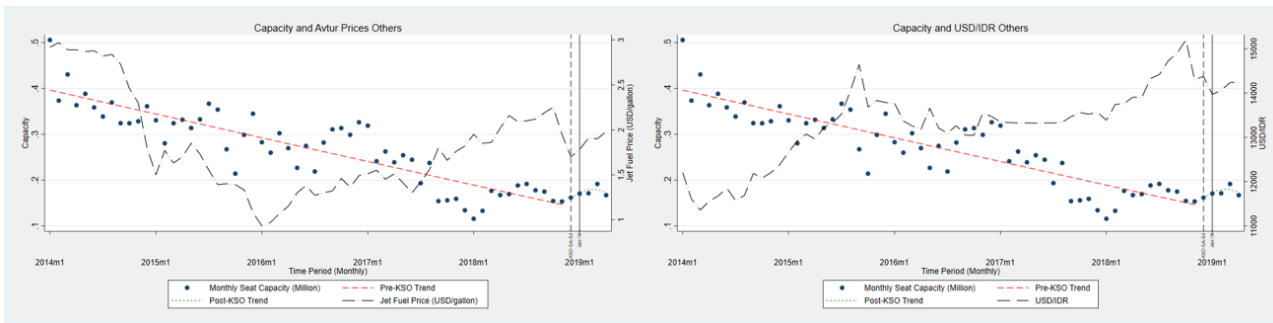


Figure 4.5. Capacity and Avtur Prices / USDIDR Comparison, Others

Source: Directorate General of Aviation

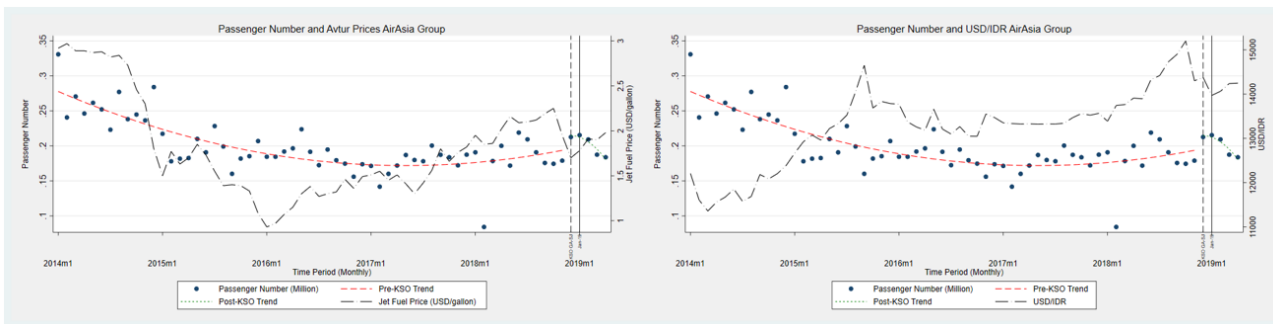


Figure 4.6. Passenger and Avtur Prices / USDIDR Comparison, Airasia Group

Source: Directorate General of Aviation

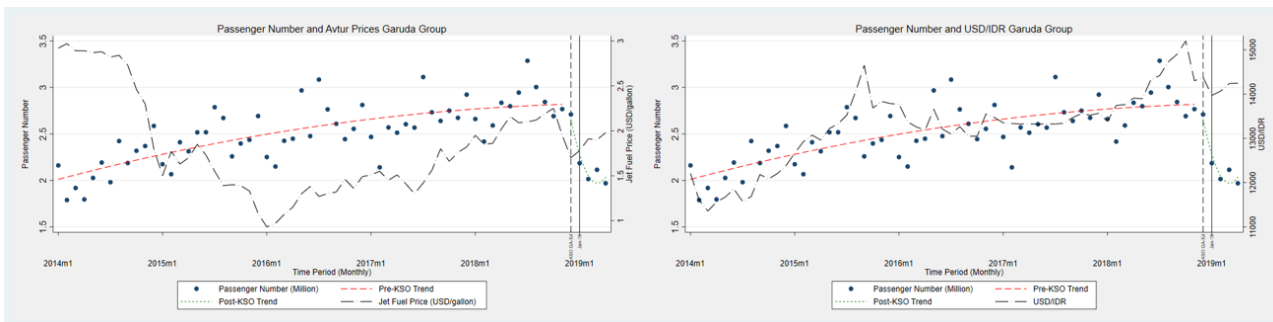


Figure 4.7. Passenger and Avtur Prices / USDIDR Comparison, Garuda Group

Source: Directorate General of Aviation

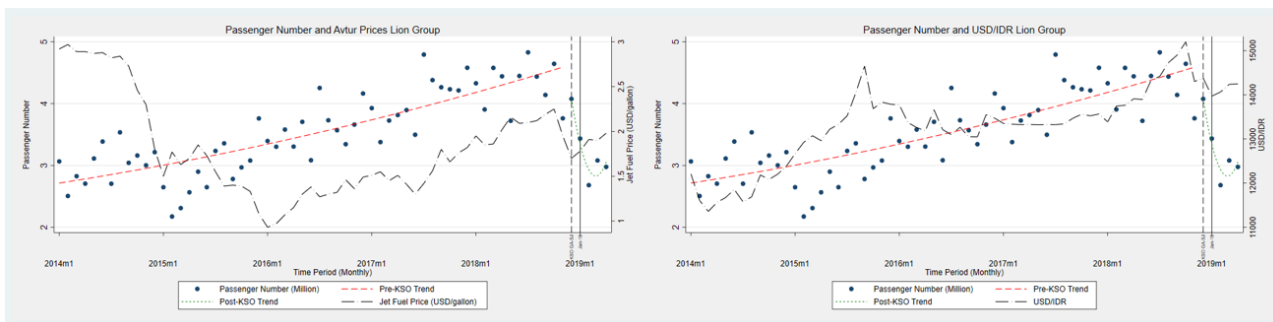
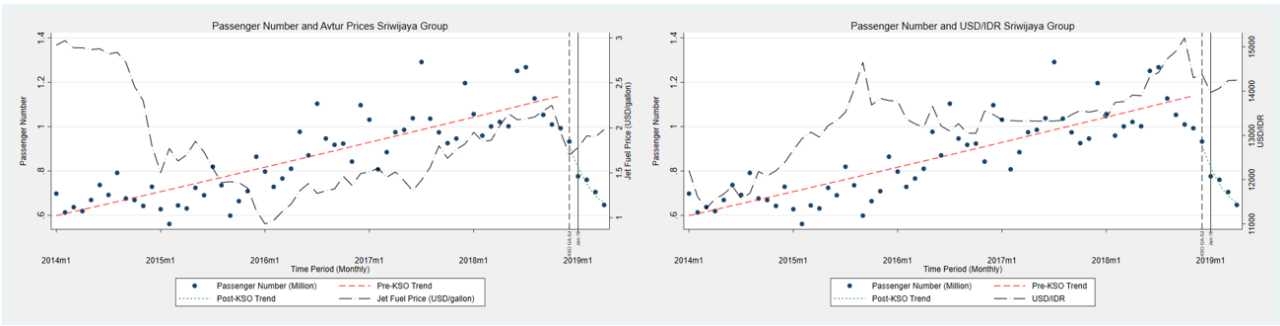


Figure 4.8. Passenger and Avtur Prices / USDIDR Comparison, Lion Group

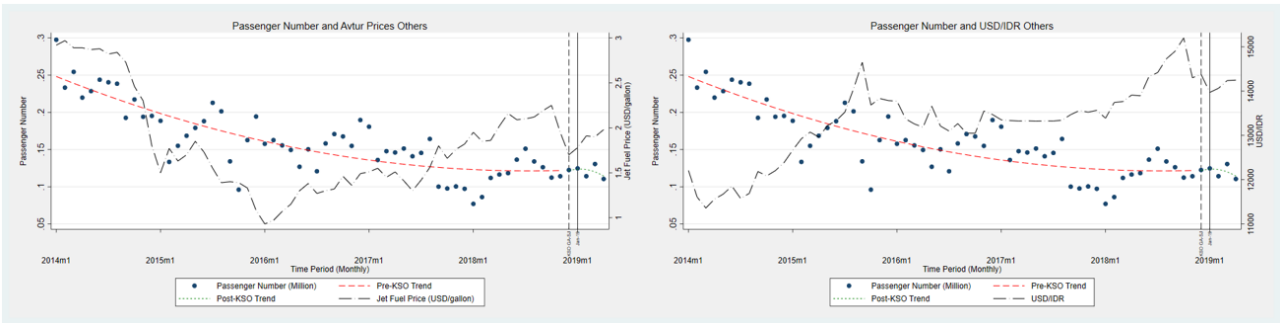
Source: Directorate General of Aviation

line groups, particularly by Garuda group and Lion group. Such conjecture is further validated by the fact that Air Asia did not experience the same decrease in passenger numbers. This might be due to cheaper ticket prices offered by the airline, and at the same time, not abolishing the free baggage facilities that have been provided previously. Additionally, due to the operating agreement between Sriwijaya and Garuda groups, there appeared to be an act of consolida-

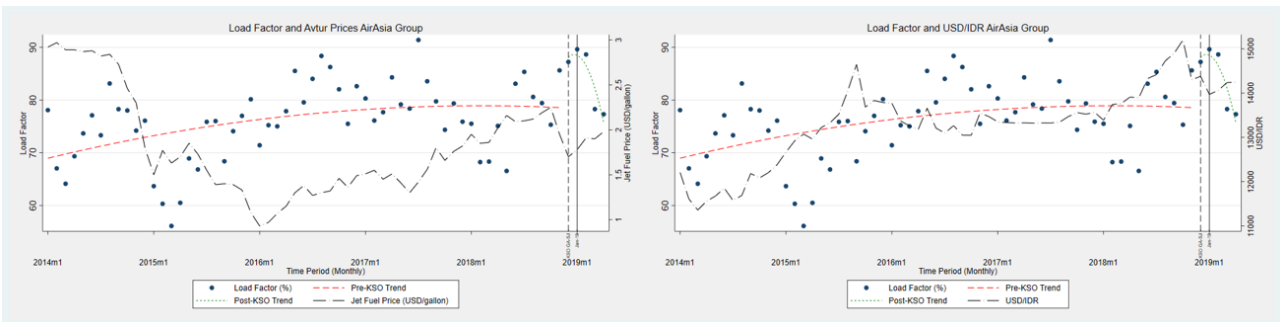
tion between these two airline groups, in which the former is bound to implement policies on sales, and commission (among other things) that are adopted by the latter. The act of harmonized policy in price and sales structure has resulted in a decrease in quantity demanded in the low season. This is reflected in Table 2 above, which depicts the decrease in flight frequencies of Garuda and Sriwijaya airline groups. In such condition, decrease in flight frequencies is



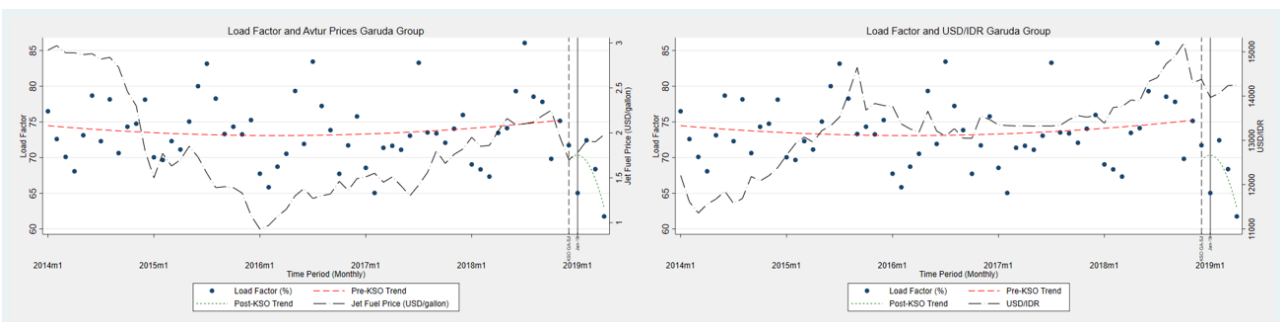
**Figure 4.9. Passenger and Avtur Prices / USDIDR Comparison, Sriwijaya Group**  
Source: Directorate General of Aviation



**Figure 4.10. Passenger and Avtur Prices / USDIDR Comparison, Others**  
Source: Directorate General of Aviation



**Figure 4.11. Load Factor and Avtur Prices / USDIDR Comparison, AirAsia Group**  
Source: Directorate General of Aviation

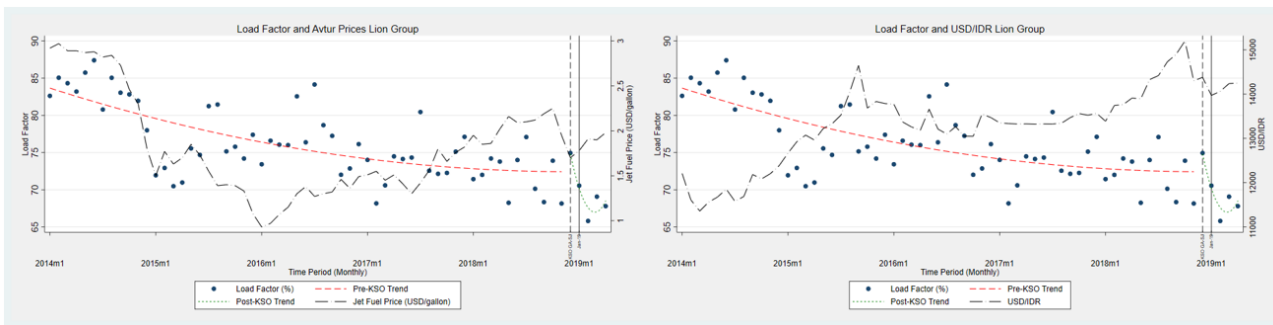


**Figure 4.12. Load Factor and Avtur Prices / USDIDR Comparison, Garuda Group**  
Source: Directorate General of Aviation

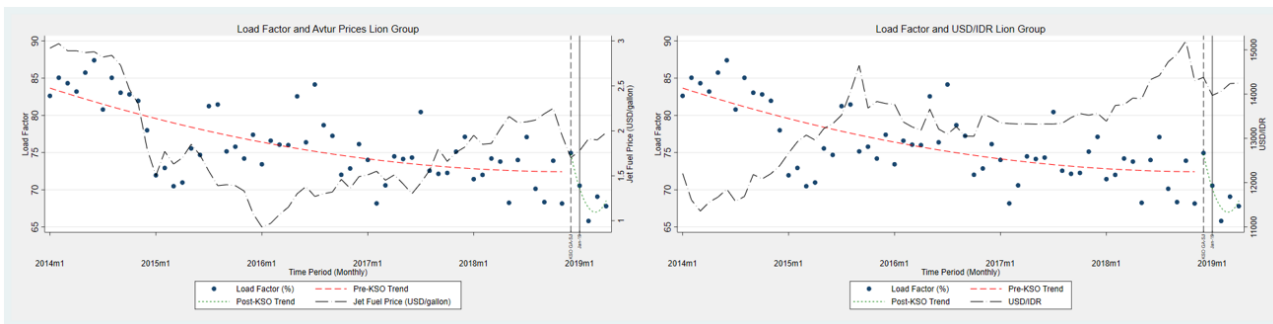
a rational action to take in order to maintain load factor.

Another important observation to be made is that the drop in the number of passengers is so massive, that even in reducing flight frequencies still lead to higher load factors. Figure 4.16 provides support for this conjecture. From the graph, one can conclude that there is a massive and abrupt drop in total passenger number nationally in January 2019 – right after the signing of the operational agreement between

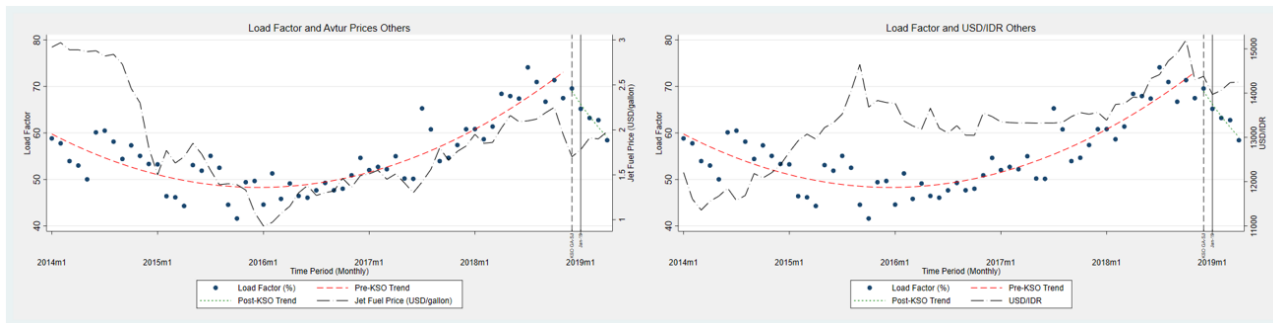
Citilink and Sriwijaya airline groups took place. Additionally, we also calculate the loss of potential passengers in Q1 2019, which is estimated as a deviation from the pre-KSO projected long-term trend – further shown by the navy dash-dot line in Figure 4.16. The KSO cut-off took place in November 2018, and arguably, as December is considered as a peak season, these airlines waited until January to implement the abolition of free-baggage facilities. As a result,



**Figure 4.13. Load Factor and Avtur Prices / USDIDR Comparison, Lion Group**  
Source: Directorate General of Aviation



**Figure 4.14. Load Factor and Avtur Prices / USDIDR Comparison, Sriwijaya Group**  
Source: Directorate General of Aviation



**Figure 4.15. Load Factor and Avtur Prices / USDIDR Comparison, Others**  
Source: Directorate General of Aviation

our estimates show that the loss of potential passenger in Q1 2019, as compared to its long-term trend, reaches a stark amount of nearly 8 million passengers (shown by Table 4.3). Such figures should provide enough evidence of the negative impact of competition on passengers.

Further, we investigate whether: (i) domestic routes, in general, are priced considerably higher in relative airlines-profit-to-price ratio compared to the international routes, and (ii) differences exist between comparable routes (domestic and international). Our results are shown in Table 4 and 5.

Meanwhile, calculations on the comparable routes are as follow (Table 6 and 7).

The results are rather striking. We find that in general, domestic routes enjoy higher profit-to-price ratio compared to the international route. Further, between arguably comparable flights such as Jakarta-Bali and Jakarta-Singapore, a considerable 14.4 per cent percentage points difference is noted. A similar finding is noted between Surabaya-Penang and Surabaya-Medan flights, with a 2.9 percentage points difference being notable. The results indicate potentially

higher market power for domestic routes, compared to the international routes, in the Indonesian context.

A similar context is seen on the price variation comparisons.

Meanwhile, calculations on the comparable routes are as follow (Table 10 and 11).

The results are also indicating highly concentrated market power. We find that in general, domestic routes have strikingly low variation compared to the international route. The variation of international flights is roughly four times the domestic flights. The results suggest that variation in domestic markets is considerably low, and while the inference that there exist ‘price coordination’ is bold, further investigation is surely needed following the above findings.

### 4.3 Competition and Efficiency Issues

The above-mentioned findings suggest that there are prima facie evidence for a significant reduction in competition within the commercial aviation industry due to market consolidation. While this is still a strong claim, the rather striking introduction of baggage fees following decrease in total

**Table 1. Cross-groups Comparisons on Several Indicators, Sep '18 – Jan '19**

	PASSENGER NUMBERS				
	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19
AirAsia	175,738	174,510	178,999	212,728	215,437
Lion Group	4,140,675	4,644,242	3,762,075	4,076,752	3,435,359
Garuda Group	2,844,142	2,691,291	2,767,306	2,710,092	2,186,089
Sriwijaya Group	1,053,396	1,009,846	993,127	933,045	776,455
Others	126,281	112,352	114,159	122,518	124,774
<b>Total</b>	<b>8,340,232</b>	<b>8,632,241</b>	<b>7,815,666</b>	<b>8,055,135</b>	<b>6,738,114</b>
	FLIGHT FREQUENCY				
	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19
Air Asia	1220	1266	1164	1373	1340
Lion Group	36050	37364	33428	33238	29110
Garuda Group	23107	23983	22447	22947	19025
Sriwijaya Group	8452	8163	8312	8239	7403
Others	2492	2394	2401	2451	2585
<b>Total</b>	<b>71,321</b>	<b>73,170</b>	<b>67,752</b>	<b>68,248</b>	<b>59,463</b>
	LOAD FACTOR				
	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19
Air Asia	79.43%	75.32%	85.63%	87.24%	89.64%
Lion Group	68.35%	73.90%	68.16%	74.94%	70.56%
Garuda Group	77.82%	69.82%	75.15%	71.73%	65.04%
Sriwijaya Group	81.41%	80.85%	78.36%	72.77%	67.49%
Others	66.72%	71.36%	67.49%	69.57%	65.19%
<b>Average</b>	<b>78%</b>	<b>78%</b>	<b>77%</b>	<b>79%</b>	<b>75%</b>

Source: Directorate General of Aviation

**Table 2. Cross-group Quarterly Comparisons on Several Indicators, 2014–2019**

	Passenger					
	2014Q1	2015Q1	2016Q1	2017Q1	2018Q1	2019Q1
AirAsia	842,327	577,119	561,095	473,394	453,623	612,227
Lion Group	8,398,167	7,131,408	10,279,709	11,031,798	12,813,576	9,197,570
Garuda Group	5,870,147	6,653,049	6,828,154	7,179,133	7,669,734	6,316,747
Sriwijaya Group	1,949,441	1,834,004	2,292,771	2,724,408	3,017,817	2,242,546
Others	785,276	477,111	475,945	464,588	275,027	369,568
<b>Total</b>	<b>17,845,358</b>	<b>16,672,691</b>	<b>20,473,674</b>	<b>21,873,321</b>	<b>24,229,777</b>	<b>18,738,658</b>
	Flight Frequency					
	2014Q1	2015Q1	2016Q1	2017Q1	2018Q1	2019Q1
Air Asia	6,500	5,004	4,134	3,372	3,474	3,927
Lion Group	54,915	55,723	79,380	89,520	105,044	83,528
Garuda Group	49,284	56,732	62,412	65,513	69,429	52,525
Sriwijaya Group	16,111	15,825	18,450	21,486	25,808	20,613
Others	20,075	13,980	13,369	10,835	5,995	8,112
<b>Total</b>	<b>146,885</b>	<b>147,264</b>	<b>177,745</b>	<b>190,726</b>	<b>209,750</b>	<b>168,705</b>

Source: Directorate General of Aviation

**Table 3. Estimated Passenger Loss in Q1-2019**

Month	Potential Passenger Numbers*	Actual Passenger Number	Passenger Loss
Jan-19	8.854.488	6.738.114	2.116.374
Feb-19	8.905.088	5.781.341	3.123.747
Mar-19	8.955.688	6.219.203	2.736.486
<b>Total</b>	<b>26.715.264</b>	<b>18.738.658</b>	<b>7.976.606</b>

Source: Directorate General of Aviation

Note: \*Based on the linear trend estimation model

capacity period between the affiliated airlines was present.

To further strengthen our argument for competition-related conjecture, we provide the Herfindahl-Hirschman Index (HHI), which provides estimates on how each market are concentrated among its players. As data on all market players are available, the HHI index is preferred over the CR-4 index (which focuses on the concentration level among its four largest players) due to the more complete panorama

of the industry that it provides (Naldi & Flamini, 2014). Furthermore, we define the markets in terms of a direct route between two cities, while the market shares of each player are defined in terms of the numbers of passengers being serviced along individual route<sup>2</sup>.

<sup>2</sup>Ideally, definition of each market should be extended to include that of non-direct routes. This is particularly true amid recent cases in which travelers prefer flying to a destination through non-direct flights due to

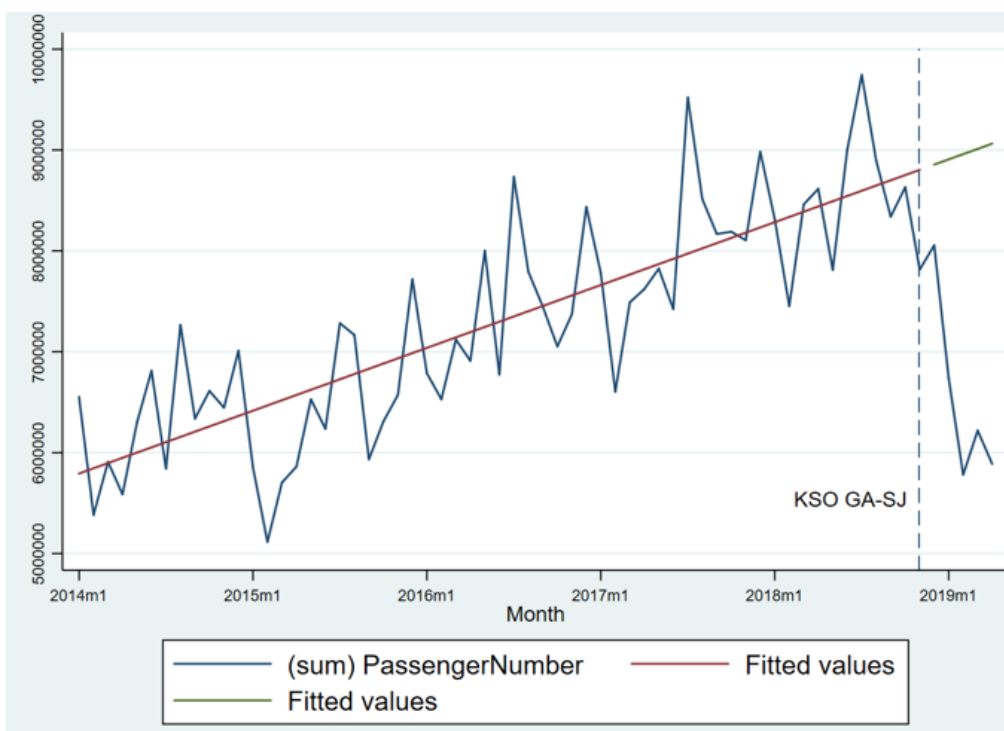


Figure 4.16. Projected and Actual National Passenger Number, 2014–2019

Source: Directorate General of Aviation

Table 4. Domestic routes profit-to-price ratio (in per cent), April–July 2019

Price category	0 to 10 days	11 to 20 days	21 to 30 days	> 31 days	All
Bandung – Denpasar	85.1	85.1	85	84.9	84.9
Bandung – Medan	86.8	86.8	86.8	86.6	86.7
Jakarta – Denpasar	84.8	84.5	84.4	84.2	84.2
Jakarta – Jogjakarta	82.9	82.7	82.7	82.7	82.7
Jakarta – Medan	86.2	86	86	86.1	86.1
Jakarta – Surabaya	83.4	83.1	83.3	83.5	83.4
Jakarta – Makassar	87	86.7	86.7	86.7	86.7
Denpasar – Bandung	84.9	85	85	84.8	84.9
Denpasar – Bali	84.8	84.5	84.4	84.2	84.2
Jogjakarta – Jakarta	83.1	82.7	82.8	82.7	82.7
Jogjakarta – Medan	87.2	87.2	87.3	87.7	87.5
Medan – Bandung	86.7	86.8	86.8	86.6	86.7
Medan – Jakarta	86.1	86	85.9	86.1	86.1
Medan – Jogjakarta	87.2	87.2	87.3	87.7	87.5
Medan – Surabaya	87.7	87.5	87.3	87.2	87.4
Surabaya – Medan	87.7	87.5	87.3	87.2	87.4
Makassar – Jakarta	87	86.7	86.7	86.7	86.7
Average	85.8	85.6	85.6	85.6	85.6

Source: Infare

Figure 4.16 and 4.17 pose evidence that merit concerns regarding competition in the aviation industry, in which the former provides concentration levels on (selected) trunk routes while the latter explains its minor counterparts. A general overarching result that can be inferred from both figures is that we observe the prevalence of highly concentrated markets in both the selected trunk and minor routes, indicating signs of unhealthy competition. The difference between both categories of routes is that the trunk routes experienced a rapid rise in concentration level after the operational agreement between Citilink-Sriwijaya airline groups was made, whereby the relatively-minor routes did not.

cheaper prices being offered. In doing so, a more detailed data on the number of passengers travelling to a city through indirect routes is further needed. Unfortunately, to date, such data has not yet been available to us.

The minimum HHI level observed on the selected trunk routes is 0.28 (the CGK-JOG route in January 2018), which, according to the U.S Department of Justice standard, meets the criteria of being categorized as a highly concentrated market. Furthermore, a striking observation in Figure 4.17 can be made in that almost all of these trunk routes experienced a dramatic upward trend in their HHI levels in December 2018. The increase in HHI levels is particularly noteworthy if one considers the equally dramatic decrease of total passenger numbers for the same routes and period, as demonstrated by Figure 4.19 (plotted on the left axis). Furthermore, the above-mentioned increase in HHI levels can be strongly attributed to the occurrence of operational agreement (KSO) between Citilink and Sriwijaya in late November 2018, effectively consolidating operations be-

**Table 5. International routes profit-to-price ratio (in percent), April–July 2019**

Price category	0 to 10 days	11 to 20 days	21 to 30 days	> 31 days	All
BKKCGK	78.6	75.5	75.2	73.1	74.8
CANDPS	88.9	87.4	86	84.9	86.1
CGKBKK	78.6	75.5	75.2	73.1	74.8
CGKDMK	81.2	76.4	75.5	75.2	76.5
CGKKUL	84.1	81.7	81.4	80.5	81.5
CGKSIN	75.4	70.3	70.6	69	70.6
DMKCGK	81.1	76.4	75.5	75.2	76.5
DPSCAN	88.8	87.3	85.9	84.8	86.1
KULCGK	84.1	81.7	81.4	80.7	81.6
PENSUB	90.4	86.1	84.5	81.8	84.5
SINCGK	75.3	70.3	70.6	69	70.6
SINSUB	82.9	79.6	78.8	76.4	78.4
SUBPEN	90.4	86.1	84.5	81.8	84.5
SUBSIN	83.6	79.5	78.7	76.3	78.4
Average	83.1	79.6	78.8	77.3	78.9

Source: Infare

**Table 6. Comparable routes profit-to-price ratio comparisons (in per cent), April–July 2019 (1)**

Price category	0 to 10 days	11 to 20 days	21 to 30 days	> 31 days	All
CGKDPS	84.8	84.5	84.4	84.2	84.2
CGKSIN	75.4	70.3	70.6	69	70.6

Source: Infare

**Table 7. Comparable routes profit-to-price ratio comparisons (in per cent), April–July 2019 (2)**

Price category	0 to 10 days	11 to 20 days	21 to 30 days	> 31 days	All
SUBPEN	90.4	86.1	84.5	81.8	84.5
SUBKNO	87.7	87.5	87.3	87.2	87.4

Source: Infare

**Table 8. Domestic routes price coefficient of variation, April–July 2019**

Price category	0 to 10 days	11 to 20 days	21 to 30 days	> 31 days	All
BDODPS	46%	32%	28%	24%	27%
BDOKNO	11%	10%	11%	13%	12%
CGKDPS	41%	29%	27%	22%	25%
CGKJOG	47%	32%	27%	20%	25%
CGKKNO	30%	18%	14%	11%	18%
CGKSUB	32%	23%	19%	17%	22%
CGKUPG	9%	7%	7%	3%	5%
DPSBDO	45%	32%	28%	24%	27%
DPSCGK	41%	29%	27%	22%	25%
JOGCGK	47%	32%	27%	20%	25%
JOGKNO	14%	16%	16%	7%	13%
KNOBDO	11%	10%	11%	13%	12%
KNOCGK	30%	18%	14%	11%	18%
KNOJOG	14%	16%	16%	7%	13%
KNOSUB	26%	15%	13%	12%	16%
SUBKNO	26%	15%	13%	12%	16%
UPGCGK	9%	7%	7%	3%	5%
Average	28%	20%	18%	14%	18%

Source: Infare

tween the two airlines under the former group.

Markets of the relatively minor routes are, rather unsurprisingly, more concentrated due to fewer airline players involved in such markets. The minimum HHI level on the selected minor routes is higher than their major counterparts, which is 0.40 in the BDO-DPS route. On some routes (such as SUB-KNO route in Figure 4.18), the HHI might even reach a maximum level of 1, indicating total monopoly of that route. Indeed, data from Directorate General of Aviation also shows that in April 2019, 55% of all domestic routes in Indonesia has an HHI level of 1. However, despite having higher HHI levels, the dramatic rise in HHI levels

as demonstrated in Figure 4.16 is not clearly articulated in the minor routes. Figure 4.18 demonstrates a rather stable trend of HHI levels across several minor routes, with the exception of CGK-DJJ route. Even after the operational agreement, the HHI levels show little or no breakout from their long-term trends.

Figure 4.19 clearly demonstrates the decrease in the number of passengers (plotted in the right axis) on selected minor routes. Such phenomenon combined with the absence of any HHI level changes in Figure 4.18 implies that each airline groups' number of passengers fall roughly by the same magnitude (in terms of percentage) with the decrease



**Table 9. International routes price coefficient of variation, April–July 2019**

Price category	0 to 10 days	11 to 20 days	21 to 30 days	> 31 days	All
BKKCGK	25%	24%	22%	16%	24%
CANDPS	26%	24%	24%	24%	27%
CGKBKK	25%	24%	22%	16%	24%
CGKDMK	28%	30%	35%	29%	32%
CGKKUL	59%	63%	63%	60%	62%
CGKSIN	84%	90%	90%	93%	90%
DMKCGK	28%	31%	35%	29%	32%
DPSCAN	26%	24%	24%	24%	27%
KULCGK	59%	63%	63%	60%	62%
PENSUB	25%	31%	30%	32%	41%
SINCGK	84%	90%	90%	93%	90%
SINSUB	58%	61%	61%	61%	62%
SUBPEN	25%	31%	30%	32%	41%
SUBSIN	57%	61%	61%	61%	62%
Average	43%	46%	47%	45%	45%

Source: Infare

**Table 10. Comparable routes price coefficient of variation, April–July 2019 (1)**

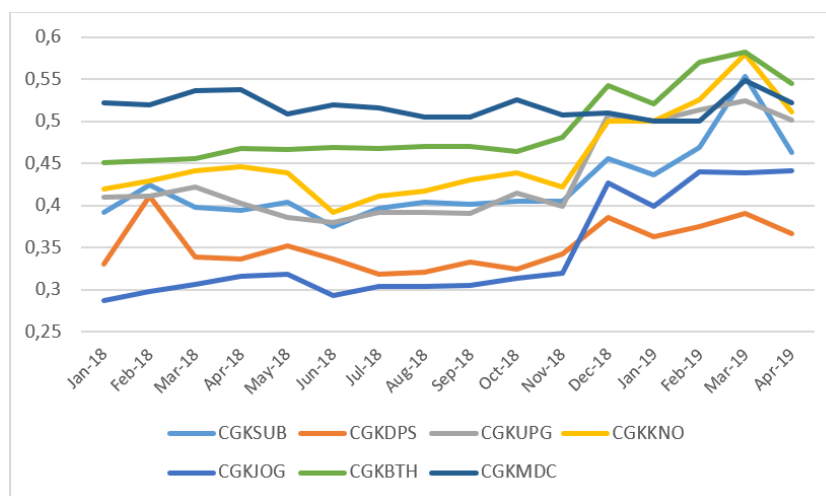
Price category	0 to 10 days	11 to 20 days	21 to 30 days	> 31 days	All
CGKDPS	41%	29%	27%	22%	30%
CGKSIN	84%	90%	90%	93%	89%

Source: Infare

**Table 11. Comparable routes price coefficient of variation, April–July 2019 (2)**

Price category	0 to 10 days	11 to 20 days	21 to 30 days	> 31 days	All
SUBPEN	25%	31%	30%	32%	30%
SUBKNO	26%	15%	13%	12%	16%

Source: Infare



**Figure 4.17. HHI in Selected Trunk Routes, 2018–2019**

Source: Directorate General of Aviation

in total passengers flying on these routes. The stagnant trend can also be further explained by the lack of combined presence of Garuda and Sriwijaya airline groups in each of these minor routes.

However, one may also see that competition may not be the only concern in the market. Another aspect, sometimes intertwined with the competition, in this case, would be the efficiency issues. While the rationales for the less-than competitive regulatory measures undertaken in the industry are touted to be for competition and/or consumer protection issues (which, in any case would have virtually little case), one must also consider the efficiency issues within the industry that may precede and, even worse, be caused by the

uncompetitive regulation and market concentration alike.

The efficiency of the cost structures in the Indonesian airlines is one of the understated issues, if not unconsidered. Serving as proxy for (in)efficiency, high inefficiency is rather noted. The vast amount of capital needed in the industry is juxtaposed with the arguably unbalanced cost structures the companies are facing. For instance, the proportion of fuel costs and maintenance costs in the companies is not necessarily healthy. Costs of aircraft leasing are considerably high, while the distribution of aircraft between affiliated airlines could still also be improved. For instance, smaller aircrafts such as ATR and/or Bombardier should be better managed and utilized by low-cost airlines. In Garuda

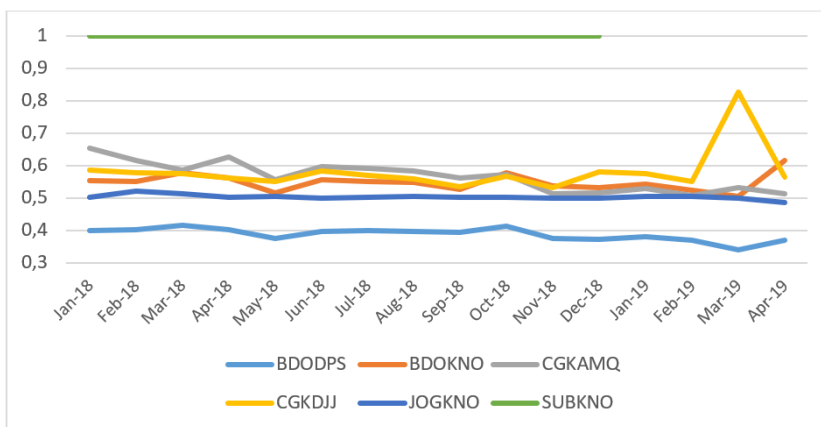


Figure 4.18. HHI in Minor Routes, 2018–2019  
Source: Directorate General of Aviation

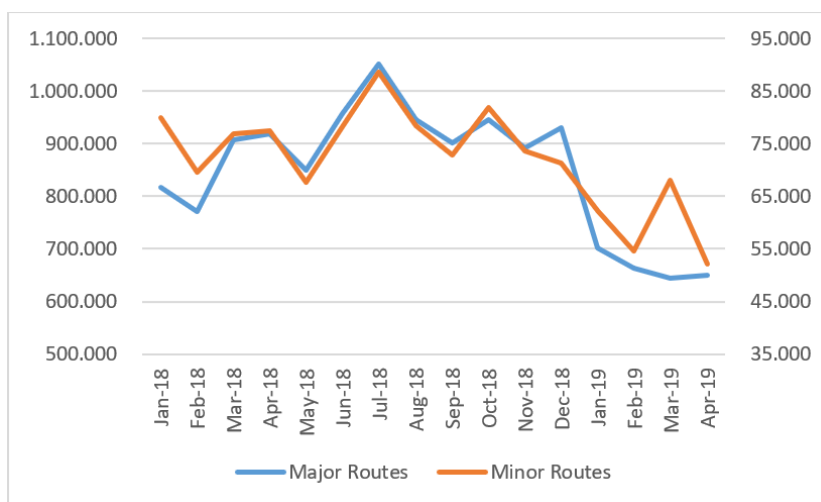


Figure 4.19. Number of Passengers in Selected Major and Minor Routes, 2018–2019  
Source: Directorate General of Aviation

Group, however, the opposite persists.

Even between the international counterparts, leasing and fuel costs are noted to be among the more prominent for the airlines. For the Indonesian companies, i.e., Indonesia AirAsia and Garuda Indonesia Group, fuel cost accounted for more than 20 per cent of annual operating cost structure. Indonesia AirAsia has been noticeably successful in increasing efficiency in fuel cost; however, while Garuda Group has kept staff cost relatively low. Aircraft lease costs persist at around 20 to 25 per cent level for the Indonesian airlines.

Indonesian airlines are also suffering from unusually high flight operation cost structure. ICAO reported that in 2001, flight operation cost account for 28 per cent and around 50 per cent in 2017. However, Garuda Indonesia, for instance, is operating with around 58 to 60 per cent of flight operation cost. The efficiency in this part of operation might be improved, granting future benefits for the airlines and industry as a whole. Further, simple glance on the operating cost over revenue comparison (row 6, Table 4.2) shows that Indonesian airlines with available data possess arguably higher ratio compared to their foreign counterparts.

One of the more important points to note, however, is that when one analyses the cost structure, one of the Indonesian government rationales for enacting the floor price

policy become rather questionable. That is, such floor price policy was enacted due to concerns that Indonesian airlines might ‘sacrifice’ security-related costs for a lower price. Intriguingly, the costs for maintenance, for instance, remain considerably high for Indonesian airlines across the periods, compared to their international counterparts.

As Clemons et al. (1996) suggest, several issues precede the downfall of dominant firms – even the presence of heavy regulation causing lack of competition. Dominant firms possessing considerable market power due to regulation may suffer to entrants and/or smaller firms due to simplistic historical pricing mistake – leading the companies into what is called a ‘death spiral’. The firms would require heavier sets of regulation to support due to such mistakes, which would further present more threat to the firms. The problem in the Indonesian case is that major players are still losing despite the concentrated market power.

The debate revolves around whether competition or efficiency issue is the main driver for the uncompetitive regulatory landscape of the airline industry in the country. While definite answers that also acknowledge the possibility for both simultaneously being the drivers need further investigation, what we know for now would be that either one is the answer, the airline companies are losing. Prices are being harmonized; however, the market has not been as inelastic

as it was perhaps hoped. Load factors experienced notable drop in 2019, with little signs of improving.

## 5. Conclusion and Recommendation

### 5.1 Conclusion

The preceding sections have outlined various issues in Indonesia's commercial aviation industry from various point-of-views, from describing the untapped potentials of the Indonesian aviation market to describing recent developments in the domestic market landscape. We conclude our study with the following findings:

#### 1. High Barrier to Entry Remains in the Industry

We have argued that, despite the enormous potentials in the current landscape of the industry, there remains a high barrier to entry for new entrants. Such is demonstrated by the enactment of provisions on the fleet requirement. Our analysis has also shown that Indonesia has the most restrictive fleet requirement as compared to other countries, especially Southeast Asian countries. The Indonesian Aviation Act (UU No. 1 Tahun 2009) subjected airlines operating scheduled flights to possess minimum amount of 10 aircraft, in which at least five aircrafts are to be possessed while the other five aircrafts can be leased. Such specifications on the number of owned/leased aircrafts are either absent or smaller (in amount) on other countries. Due to the expensive costs of purchasing aircrafts, this provision engenders the adverse outcome of impeding entry for new entrants, further undermining competition in the industry.

#### 2. One of the Most Restrictive for Foreign Ownership

We have also shown that, as compared to other countries, Indonesia has a more relatively restrictive foreign ownership control. Indonesia implements restrictive measures on all four dimensions included in our analysis – namely, provisions on substantial ownership, effective control, single domestic majority and citizenship on Board of Directors. Notably, Indonesia is the only country to enact provisions on a single domestic majority requirement, which further impede access to foreign capital investment. These barriers accompanied by domestic capital constraint might potentially hinder existing players and new entrants in acquiring the much-needed capital base, further impeding competition in the industry.

#### 3. Weak Commitment to ASEAN Open Sky

Due to the relatively large population and the vast amount of airspace it possesses, Indonesia has a strong tendency to be reluctant in opening its market to foreign competitors, even to the Southeast Asian ones. While access to the capital city, Jakarta, has been opened to foreign airlines through the implementation of the 2009 MAAS framework, access to secondary cities has been fairly limited. Such protectionism stance is made apparent in Indonesian government's choice to open up only the selected few secondary points for the open-sky policy: Surabaya, Medan, Makassar and Bali. The rationale behind undertaking such measures might potentially be to maintain the status quo of domestic airlines which thrive upon carrying passengers from the capital city to secondary cities.

#### 4. Cost and Policy Inefficiency

In the previous section, we have also explained the inefficiencies of both cost structures of domestic airlines and the governing floor-price policy. With regards to the former, our analysis shows that fuel and leasing costs of domestic airlines are higher in proportion (to total cost) as compared to their foreign counterparts. Moreover, Indonesian airlines have also been shown to suffer from unusually high flight operation cost structure, when compared to the international average.

We also question the efficiency of the floor-price policy, particularly its role in maintaining the security-related aspects of airlines operations. The financial statement data on Indonesian airlines indicate that the costs for maintenance remain considerably high across the periods, shedding doubt on the efficacy of floor-price policy as its primary concern was to mitigate the risks that domestic airlines might 'sacrifice' security-related costs for a lower price.

#### 5. Near Duopoly and Harmonized Price Structure

We also have established the case for a suspected-unfair practice in this industry using supply-side data. We have shown that the decrease in total available seats and ASKs after the operational agreement between Sriwijaya and Citilink (which took place on late November 2018) are so significant and are not explained by seasonal factors or other structural problems. This operational agreement thus reinforces the notion of the near-duopoly status of commercial aviation market, that is, only two players (Garuda Indonesia Group and Lion Air Group) are controlling virtually all market shares in the industry.

Additionally, such agreement also expedites a harmonization of policies in price and sales structure between the two largest players in the industry, keeping the price artificially high during the low season in January 2019. Such a move is made clear by the introduction of baggage fees by these airline players at the beginning of 2019, further validating the above-mentioned conjecture of near-duopoly status in the industry.

#### 6. The Impact

The above-mentioned artificially high price resulted in vast domestic passenger loss. Our analysis shows that from October 2018 to January 2019, the number of passengers travelling by air saw a large nationwide drop of more than 1.8 million passengers. Additionally, when compared to its long-term trend, the industry experienced a loss of nearly 8 million potential domestic passengers during the first quarter of 2019. Such a huge decrease in potential passengers will engender counter-productive impact for the tourism sector, one of the sectors whose development is prioritized by the government. In turn, tax revenues that might be potentially generated from the sector will also be lost.

Our recommendations are primarily aimed at bringing more competition into the domestic commercial aviation market through further liberalization of the industry, which helps to increase consumer welfare. We structure our recommendations in largely two parts, where the first recommendation focuses on improving the efficiency of the aviation industry by revisiting provisions on floor price (TBB). Meanwhile, the second part aims to further enhance competition within the industry through the following avenues:

Table 12. Cost Structure of Select Airlines

Cost Comparisons	Low-cost Carrier						Full service							
	Indonesia AirAsia			Ryan Air			Garuda Indonesia Group			Singapore Airlines		Emirates		
	2014	2015	2016	2016	2017	2018	2016	2017	2018	2017	2018	2016	2017	2018
Fuel cost	54%	43%	38%	41%	37%	35%	24%	28%	30%	28%	28%	25%	28%	32%
Staff cost	12%	15%	21%	11%	12%	13%	8%	7%	6%	15%	16%	16%	15%	13%
Maintenance	12%	16%	19%	3%	3%	3%	10%	10%	12%	7%	7%	3%	3%	3%
Aircraft lease	20%	24%	19%	2%	2%	1%	26%	26%	23%	6%	5%	13%	13%	13%
Others	2%	2%	3%	43%	46%	48%	32%	30%	29%	44%	44%	43%	41%	39%
Operating cost/ revenue (BOPO)	111%	118%	108%	78%	77%	76%	98%	102%	105%	96%	94%	99%	97%	99%

Source: CAPA

Table 13. Net Profit (Loss) of Indonesian Airlines, 2013–2018

	Net Profit (Loss) in IDR			
	Garuda Indonesia	Indonesia AirAsia	Citilink	Sriwijaya Air
2013	112,003,800,000.00	(373,910,000,000)	(485,000,000,000)	-
2014	(3,689,112,790,000.00)	(856,330,000,000)	(148,900,000,000)	-
2015	779,741,610,000.00	(2,204,829,603,990)	35,620,000,000	-
2016	93,648,580,000.00	(21,027,099,106)	(97,450,000,000)	-
2017	(2,891,459,051.49)	(512,961,280,383)	(721,815,718,157)	-
2018	72,623,849.49	(907,024,833,708)	-	(1,200,000,000,000)

Source: Financial statements, compiled by the authors

by relaxing entry barriers in the industry, pursuing deeper commitments on open-sky regulations, and lastly, by also relaxing restrictions on foreign capital ownership.

## 5.2 Recommendations for Improving Industry-Level Efficiency

### 5.2.1 Improving Intra-Airline Efficiency

Companies are urged to start from within. As previously noted, the efficiency level of the airlines in Indonesia have room for improvements. For instance, the considerably high level of Garuda's flight operating costs might indicate the possible inefficiency within the intra-airline level. Meanwhile, one of the country's low-cost carriers (LCC) with publicly available financial statements, Indonesia AirAsia, has been showing considerably high staff costs that need further justification. Without scrutinizing the actual practice of the airlines due to the limited availability of mere financial statements, we strongly urge companies to start trimming inefficient cost structures.

Among the more pressing matter in this context would be improving the efficiency of the rather fixed cost structures. Aircraft fuel remains among the highest of the proportions within the cost structures, while aircraft leasing is also posing considerable costs for Indonesian airlines. As the two cost components are among the most crucial for airlines operation, not only the airlines are mandated with the task for making cost more efficient, but also the government.

We recommend that the government attempt to address the issue on high fuel costs, especially in the more remote regions, while also starting to provide better financing options for the airlines in order to access aircraft leasing. Without such support from the government, the above-mentioned, crucial cost components of the airlines will remain considerably high, thus hindering the ventures towards better intra-airline efficiency.

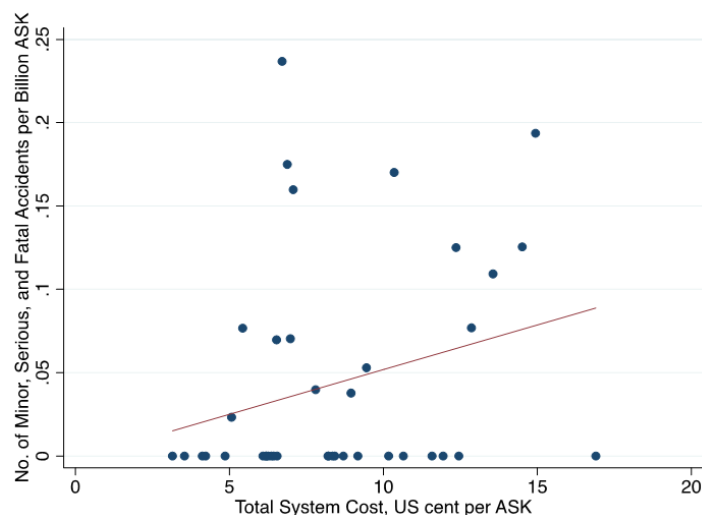
### 5.2.2 Revisiting Provisions on Floor Price

To further improve the efficiency of the industry, we encourage the government to repeal provisions on floor prices

(TBB). The government should run policies which encourage every player in the industry to innovate to achieve maximum cost-efficiency to improve consumers' welfare, particularly for price-sensitive segment. While we recognize that the floor price is implemented in the name of consumers' protection, particularly from (1) predatory pricing and (2) excessive cost-cutting that can jeopardize operational safety, we argue that floor price as a policy does not accomplish either goal, and that government can pursue other alternatives, more effective policy measures to protect consumers.

If low costs are actually associated with airlines cutting corners on cost centres that are essential to operational safety, we should expect statistically significant, negative relationship between costs and accidents. We plot the number of minor, serious, and fatal accidents for the period of 2008-2018 and the latest available cost per available seat kilometre (which serves as the proxy for airlines' cost structures) for 40 global airlines with available CASK data. With various mix of low-cost and full-service carriers, we see that there seems to be no correlation between airlines' cost structure and total accidents suffered by airlines. Without having to run a proper statistical regression, this pattern in itself has cast doubt on the strong assumption on relationship between cost and safety that was used by Ministry of Transport as rationale for setting floor price.

Indeed, some of the largest international low-cost carriers, such as WestJet, EasyJet, JetBlue, Ryanair, and Frontier, have recorded no fatal accidents in their entire history, thus further negating the premise of safety as a function of airlines' cost structure. Rather than cutting corners on safety, these airlines decided to cut costs per ticket by other methods, such as fitting more passengers into the plane using slimline seats or adopting more sophisticated overbooking process. On the contrary, without proper audit process by relevant regulatory bodies, airlines with questionable safety record would not be necessarily incentivized to invest additional ticket revenues from floor price regulation into higher safety-complying standards. Therefore, strong and effective



**Figure 5.1. Number of Passengers in Selected Major and Minor Routes, 2018–2019**

Source: Bloomberg (Costs), ICAO (Accidents)

regulatory enforcement with respect to airlines safety, such as safety audit process, maybe far more effective in ensuring safety rather than using costs as signal for safety.

We are also well aware of economic risks that might be incurred from abolishing such provisions, namely, the predatory pricing practice. Rather than introducing a policy that directly distorts the markets, one suggestion to safeguard the market against the predatory competition is by fully supporting the implementation of Article 20 of Law 5/1999 (UU No. 5 Tahun 1999) by the Indonesian Competition Authority (KPPU). Such measures will help remove distortions in the domestic aviation industry while also ensuring that healthy competition in the industry is maintained. Alternatively, the government can foster healthy competition by using 'producer surplus management' as practised by Thailand. The Thailand government enact a proportional number of permitted airlines servicing different demands of route. Routes with high demand are more open to competition, while routes with little demand are heavily protected to only a few players. This practice allows the producer surplus to be kept high in the low demand routes, giving benefits to the competition, hence better innovation. Ultimately, any change to aviation industry policy should be implemented with consumers' welfare as its key objectives; distortion that harms the interest of flying public should be addressed through competition-friendly policies.

### 5.3 Recommendations for Improving Competition within the Industry

#### 5.3.1 Reducing Minimum Fleet Requirements

Other policy measures that we recommend is reducing the minimum amount of fleets that a company needs to own before starting their business. This current regulation acts as a strict barrier for newcomers. Specifically, we encourage the government to make changes in Article 118 of Law No. 1/2009 (UU No. 1 Tahun 2009). In the current setting, to start up a new company, they need to have a minimum of 10 fleets where five of them should be owned, and the other five can be leased. We, therefore, suggest that the government reduce the number of minimum fleets to two. The rationale behind this suggestion is that such newcomers can start

serving one route at one time back-to-back, say from Jakarta - Cengkareng (CGK) to Surabaya (SUB). Another fleet will serve as a reserve to the one they are currently using. By reducing the minimum number of fleets, the government would also induce more competition in the industry; that is, making consumers better off by providing them with more choices. We also urge the government to lift an additional requirement to wholly own the said fleets, which in current policy regimes, the company should own a minimum five of them. The two articles mentioned above curtains the newcomers with higher operating and fixed costs. Thus, making them less likely to enter the industry in the first place because of the burden of the enormous costs they will face when they enter the industry.

We acknowledge the rationale behind enacting such provisions on minimum fleet requirements is well-intended. The government aims to uphold the credibility and safety standards of airlines operating domestic routes. Thus, less credible airlines –those without sufficient capital needed to ensure the safety standards– will be ruled out in the first place. However, aside from the potential adverse impacts it brings to the degree of competition in the industry, such provisions might actually create a backlash against safety. Because of the strict regulation on minimum fleet requirements, current and/or prospective players now have the incentives to purchase low-cost, ageing aircraft which might not meet the minimum safety standards. If fleet-specific policies are designed with operational safety as its key policy objective, it makes much more sense for government to set maximum age or setting higher standard on airworthiness of the aircraft that are planned to be used by the new entrant rather than setting ownership-based policies.

#### 5.3.2 Pursuing Deeper Commitments on Open-Sky Policies

To further reap the benefits of a liberalized aviation market, we further recommend the Indonesian government to play an active role in pursuing deeper commitments on open sky policies, notably through the currently existing framework of ASEAN Single Aviation Market (hereafter called ASEAN-SAM). An optimum level of benefit can be achieved by opening up Indonesia's secondary cities

to foreign airlines within the context of fifth freedom, or alternatively, by allowing foreign airlines to service domestic routes. Such a move will invite direct competition to domestic markets, thus forcing currently suspected inefficient players to innovate its business operations in order to compete with these newcomers. Consumers will have broader range of options, and hence, their welfare would be increased. Conversely, domestic airline players will also have the opportunity to gain access to foreign customer base. Therefore, we argue that deepening commitments on the ASEAN-SAM framework will engender mutual benefits for countries being involved.

However, such a move might be considered as a violation of cabotage rights, which provide countries with sovereignty over and within its national borders. Moreover, those who oppose liberalization often cite security risk that might arise due to the increased flow of people, which is an inevitable result of increasing traffic flows between countries. Through new routes being opened, for example, there may be increased chance of people espousing adverse motives to perform acts of terrorism on a state. Additionally, such availability of new routes augments the role of air navigation services in managing air traffic. However, there remains a potential threat that cyber-terrorists may disrupt these services through attacks on electronic systems of companies that design and develop both hardware and software used at airports and air traffic control systems. Such attack may pose a grave danger to the safety of air travels, while at the same time having larger scope of impact, as more states are being involved due to development of new routes.

The above-mentioned security risks can be mitigated through greater coordination between individual sovereign states and international police organization, such as the Interpol, to monitor the movements of certain people designated as terrorism suspects. A far more challenging task is to motivate each country involved in the ASEAN-SAM framework to further commit themselves to achieving deeper levels of the agreement. We acknowledge that chances of removing restrictions on cabotage rights are slim, both nationally and regionally. Nationally, there are political barriers in implementing such measures, as incumbents' players will be forced to adjust and innovate their business models in order to compete with newcomers. However, as with any other multilateral agreement, the barriers at the regional level will also need to be addressed. As ASEAN-SAM involves further cooperation of all ASEAN countries, optimal benefits will not be attained unless the involved parties are willing to extend their perspectives beyond individual sovereign borders. However, to date, with Philippines excluding Manila and Laos excluding two of its large cities – Luang Prabang and Vientiane – from the agreement, the commitment of these countries remain questionable.

### 5.3.3 Relaxing Barriers for Foreign Ownership

As globalisation brings with it an ever-growing need for the broader capital base in the airline industry, it is imperative that the Indonesian government relax restrictions on capital acquisition, of which one avenue is to allow foreign entities to become a majority shareholder of companies in the industry. In the current policy regimes, a foreign entity cannot become a majority shareholder due to the constraints put in

both Law No. 1/2019 (UU No. 1 Tahun 2019) and Presidential Regulation No. 44/2016. We argue that by alleviating these regulations would be the quickest and cheapest (in terms of monetary costs) way to attract more competition into the industry. With more firms entering the commercial aviation industry, Indonesian flying public will have more choices of airlines to fly with. More competition would also mean shift of market power to consumers, in the sense that more options will allow consumers to choose airlines that provide cheaper airfare options and/or better services, thus making consumers less dependent to any particular airlines.

On the other hand, there are several potential risks that may arise from the relaxation of the foreign ownership limit. Some of often-cited concerns from opponent of liberalization are that foreign involvement in the domestic business landscape, including the aviation industry, will compromise national interests and sovereignty. This concern about national interest and sovereignty prompted restriction for foreign carriers to obtain cabotage rights (rights for foreign carriers to serve domestic routes) and, to some extent, limitation of foreign ownership in domestic carriers. As mentioned in the previous section, in many, if not most countries, there is a limit of 49% total capital that can be owned by foreign investors. Another effort to limit foreign interests includes mandating the total number of board members that are of foreign nationalities. In the United States, for example, the Department of Transport (hereafter called DoT) limits the proportion of foreign board members to two-third of its total board members. In Indonesia, however, we know of no such rule governing the number of foreign nationals sitting in the board members. Indeed, these risks are often cited by the opponents of liberalization, of which Indonesian policies stance are notoriously well-known for (Patunru & Rahardja, 2015).

Therefore, while relaxing the foreign ownership limit represents vast opportunities for the domestic aviation industry, any move toward liberalization should also be safeguarded by rules that address and mitigate risks concerning foreign investment should be addressed and mitigated. In doing so, we also recommend that the government limits the number of board members of foreign nationalities, as commonly practised in countries such as US and Thailand. Specifically, we propose that the minimum of two-thirds of the management team, the board of directors, and the commissioners of the company should also possess Indonesian citizenship. Furthermore, the local authorities should consider carefully examining the implications of any supermajority voting mechanism available in an airline's operating procedures, as it potentially requires the voting of foreign board members to be in favor of any corporate decisions being discussed.

Realizing that there may be political hurdles in passing legislation that opens an industry to foreign players despite the clear evidence of net benefit to consumers from most liberalization efforts, we also propose another, more politically feasible alternative of liberalization effort. The Indonesian government could, for instance, revisit Article 108 of Law No. 1/2019 (UU No.1 Tahun 2019) with regards to the single majority. In the current regulatory framework, a person (or a company) who holds Indonesian citizenship must possess the single majority of the company. This arti-

cle presents additional hurdle for capital-raising effort in an industry capital requirement is already high, to begin with. Not many Indonesian citizens or Indonesian-based and -owned companies can afford the required capitals to start an airline. By eliminating single-ownership requirement, the government can reduce the barriers for newcomers to enter the industry by allowing each local partner to put less money while ensuring that the said company is still majority-owned by Indonesian citizens and entities. However, this relaxation would have to be compensated by imposing the same regulations stipulating that the management team, board of directors, and the commissioners of the company are Indonesian majority. The enactment of these measures could help ensure that the national interests are well-served despite the company's largest shareholder being foreign.

#### 5.4 Recommendations for Future Studies

One particular limitation of this study is the unavailability of data on ticket fares. As such, this study has been unable to layout any strict definition of welfare losses, which has been stipulated as one of the study's objectives. The reason is that price data is of crucial importance in making any quantifications of welfare losses. One may also note that so far, the authors have only been able to establish indications – not robust statistical evidence - of harmonized price structures, if any, due to the operational agreement (KSO) made between Garuda (through Citilink) and Sriwijaya airline groups.

Future studies can, therefore, include price data as one variable of interest. Particularly, one can further exploit the abrupt timing of such operational agreement on ticket prices by using regression discontinuity methods. The availability of such analysis can help contribute to more rigorous and evidence-based discourses on Indonesian aviation industry, and further inform policy-makers or other related stakeholders of the huge costs borne by inefficiency in the industry. Other recommendations for future research might also include measurement of the macroeconomic impact derived from the occurrences of such high ticket fares. Such macroeconomic impacts might include analysis on tourism and logistic sector, further extending to the national output. A deeper take on the aviation industry might also include the cargo flights industry – which has not been included in the current study.

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Jl. Salemba Raya No. 4, Jakarta 10430

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