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DEMAND IN INDONESIAN DOMESTIC AIR TRAVEL MARKET AFTER DEREGULATION

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Abstract: This research is exploring the change of domestic air travel market demand in Indonesia prior and post deregulation. Changes on policies in Indonesian aviation were contributed to the present day market. This historical overview will examine the 'oligopoly policy' with only five airlines and the deregulation process that began in 1999. The research then analyses the demand for domestic air travel. Exponential Moving Average Growth were using to analysing data to forecasting the number of passenger from year 2007 to 2015 in yearly basis. Demand is then analysed on three separate airline routes in Indonesia they are Jakarta-Medan, Jakarta-Surabaya, and Jakarta-Pontianak.
Keywords: Demand, Domestic Air Travel, Deregulation, Passeneger, Indonesia.

Introduction

Deregulation in Indonesia start when governments remove restrictions on airlines business Indonesia to encourage the efficient, competitive and consumer oriented marketplace in Indonesian airline industry (Williams, 1993). Secretary General of the Ministry of Communications Anwar Suprijadi said the decision to deregulate was taken in a bid to promote fair competition in domestic airline services, ("Govt insists on licensing more airlines," 1999). And resulting numbers of new Indonesian airlines emerged predominantly mostly in the cut-fare sector including Lion Air; Indonesia's Air Asia, former Adam Air, former Batavia Air and Sriwijaya Air, radically changing the nature of the airline business in Indonesia with present of low cost carrier.

This research is to identifying the change of demand in Indonesian domestic travel market prior and post deregulation. To develop this finding researcher set limitation to focus on three main routes as samples. The route examined is Jakarta-Surabaya, Jakarta-Medan and Jakarta - Pontianak. The route was chosen based on our judgement that Surabaya and Medan were representing high dense city population while Pontianak was representing medium city dense population.

Method

Researcher used quantitative and qualitative techniques approach. Quantitative data was analyzed through Time series by Exponential Moving Average Growth to analyzing data to forecasting the number of passenger in the future year from year 2007 up to 2015 in yearly basis.

The Time Series models by Exponential Moving Average were adopted from (Doganis, 2002). The analyses presented were using the historical data of previous year from year 1995 to year 2006 to find the number of passenger till year 2015. The formulation of analyzing this data shown as follow:

$$\text{2015 Traffic} = 34{,}016.0 \times (0.148)^{15} = 114{,}757.9 \text{ passenger}$$

Discussion

This section presents the time series estimates with exponential Moving average growth and it will diagnostic the air travel market in Indonesia for the future years up to year 2015. This section is divided into four sub-sections. Each sub-section considers the results for each route. For Jakarta – Medan Demand Estimates, researcher identified that number of passengers from 1995 to 1996 was steadily growth and number of passenger on Jakarta – Medan route increase to 530.197 passengers but due to crises in 1997 and getting worsen in 1998 number of passengers on Jakarta – Medan routes slum to 228.665 passengers continue slumming to 197.975 passenger in 1999 as shown at table 1.

Table 1.

YEARS	***ROUTES***	
	Jakarta – Medan (CGK-MES)	**Medan – Jakarta (MES-CGK)**
1995	416.731	444.673
1996	530.197	458.989
1997	456.071	441.009
1998	228.665	255.237
1999	197.976	224.253
2000	253.704	270.562
2001	1.304.998	352.297
2002	228.665	566.600
2003	520.726	832.295

Table 1, cont.

2004	988.401	1.108.647
2005	1.074.894	1.203.985
2006	1.133.721	1.316.951

Source: ("Penumpang Pesawat Udara," 2005)

Table 2.

Years	CGK-MES Passengers (000)	Annual Percentage Change (%)	Three year moving average passenger (000)	Annual Change (%)
1995	416.7			
1996	530.2	27.2	467.7	
1997	456.1	-14.0	405.0	-13.4
1998	228.7	-49.9	294.2	-27.3
1999	198.0	-13.4	226.8	-22.9
2000	253.7	28.1	258.9	14.2
2001	325.0	28.1	367.4	41.9
2002	523.4	61.1	527.8	43.7
2003	734.9	40.4	748.9	41.9
2004	988.4	34.5	932.7	24.5
2005	1074.9	8.8	1065.7	14.3
2006	1133.7	5.5		

The growth of passenger for Jakarta – Medan and Medan Jakarta was growth tremendously after the deregulation. Number of passenger's increase and government set this as fat route. Many airlines operator interested to operate on this route and government was set no restriction for all airlines operator to serve this route or just to increase frequency. Impact on government decision has made the flight frequencies of Jakarta – Medan and Medan – Jakarta this condition also brought the positive growth number of passenger as shows in table 1.

Based on researcher calculation shown on table 2 exponential moving average growth calculation for Jakarta – Medan Route and table 4 exponential moving average growth calculation for Medan - Jakarta Route shown the numbers of forecasting passengers from Jakarta to Medan and Medan to Jakarta will keep growing. Through this model researcher found that the grow rate for Jakarta – Medan route in the future is 13% and Medan

– Jakarta is 14.6%. This rate used to finding the number of passenger in future year from year 2007 to year 2015 for both direction routes.

Table 3 exponential moving average growth result for Jakarta – Medan routes from 2007 to 2015 show number passenger forecasted for Jakarta – Medan route for year 2008 will be 1.537.700 passengers and it will keep growing up to year 2015 with about 3.617.500 passengers, while on table 5 exponential moving average growth result for Medan - Jakarta routes from 2007 to 2015 the passengers on Medan – Jakarta route will higher than Jakarta – Medan or about 1.820.900 passengers in 2008 and will grow to 4.727.000 passengers in 2015 it still higher than Jakarta – Medan routes.

Table 3.

Years	CGK-MES Passengers (000)
2007	1360.8
2008	1537.7
2009	1737.6
2010	1963.4
2011	2218.7
2012	2507.1
2013	2833.0
2014	3201.3
2015	3617.5

There are possibilities passengers are using other mode of transportation such bus, ship or using private car. Transportation substitution will not significantly change the number of passenger on this route as due to large population in Indonesia and the economic grow.

Intention to made Medan as an International hub to compete with Singapore, Kuala Lumpur and Bangkok might potentially increase number of passenger to Medan. In year 2006 flight frequencies on flight Jakarta – Medan is 37 flights a day and serves with only single runway. This problem might be solving if the new airport open by end of year 2009 with bigger capacity and maximum landing weight and may accept A380.

Table 4.

Years	MES-CGK Passengers (000)	Annual Percentage Change (%)	Three year moving average passenger (000)	Annual Change (%)
1995	444.7			
1996	458.9	3.2	448.2	
1997	441.0	-3.9	385.0	-14.1
1998	255.2	-42.1	306.8	-20.3
1999	224.3	-12.1	250.0	-18.5
2000	270.6	20.7	282.4	12.9
2001	352.3	30.2	396.5	40.4
2002	566.6	60.8	583.7	47.2
2003	832.3	46.9	835.8	43.2
2004	1108.6	33.2	1048.3	25.4
2005	1204.0	8.6	1209.9	15.4
2006	1317.0	9.4		

For Jakarta-Surabaya Demand Estimates, Surabaya is the second largest city in Indonesia after Jakarta. Surabaya is the popular destination among the Jakarta's people the flight frequency for Jakarta – Surabaya and Surabaya – Jakarta is 234 flights per week in 2001 and become 399 flights per week in 2007 or equal with 57 flight per day and put Jakarta – Surabaya route as the most popular city by serving the most frequent flight between two cites and followed by Jakarta - Medan route 39 flights a day.

Even though number of passenger for Jakarta- Surabaya or Surabaya – Jakarta is very fluctuate and it will be difficult to predict the future demand. On table 6 Jakarta – Surabaya vice versa Traffic from 1995 – 2006 the number of passenger in year 2002 is higher than in year 2003 while the flight frequency between Jakarta and Surabaya in year 2003 was higher with 357 flights a week compare with year 2002 with only 226 flights per week. Surprisingly in 2005 numbers of passenger increasing drastically compare from previous year with 203% growth or about 1.588.416 passengers for Jakarta Surabaya route and 70% for Surabaya – Jakarta route with 1.203.985 passengers.

Table 5.

YEARS	*ROUTES*	
	Jakarta – Surabaya (CGK-SUB)	**Surabaya – Jakarta (SUB-CGK)**
1995	753.426	789.256
1996	779.011	820.896
1997	764.848	804.809
1998	379.061	400.358
1999	315.787	386.507
2000	450.184	507.762
2001	537.959	576.766
2002	823.511	566.600
2003	520.726	475.763
2004	523.796	707.967
2005	1.588.416	1.203.985
2006	1.569.966	1.683.118

Source: ("Penumpang Pesawat Udara," 2005)

Surabaya airport have good infrastructure with new terminal with bigger capacity and bigger apron to accommodate large number of aircraft serving Surabaya. On table 7 exponential moving average growth calculation for Jakarta - Surabaya Route and table 8 exponential moving average growth result for Jakarta - Surabaya route from 2007 to 2015 researcher calculate the number of passenger with growth rate 8.3% for Jakarta – Surabaya route and 7% for Surabaya – Jakarta route.

The result of the forecasting for both directions are shows on table 8 exponential moving average growth result for Jakarta - Surabaya route from 2007 to 2015 and table 9 exponential moving average growth result for Surabaya - Jakarta route from 2007 to 2015. The Jakarta Surabaya route will reach number 2.724.400 passengers in 2015 whiles the Surabaya – Jakarta will reach 2.438.900 passengers as shown on table 10 or lower than Jakarta – Surabaya.

Table 6.

Years	**CGK-SUB Passengers (000)**	**Annual Percentage Change (%)**	**Three year moving average passenger (000)**	**Annual Change (%)**
1995	753.4			
1996	779.0	3.4	765.8	
1997	764.8	-1.8	641.0	-16.3
1998	379.1	-50.4	486.6	-24.1
1999	315.8	-16.7	381.7	-21.6

Table 6, cont.

2000	450.2	42.6	434.6	13.9
2001	538.0	19.5	603.9	38.9
2002	823.5	53.1	627.4	3.9
2003	520.7	-36.8	622.7	-0.8
2004	523.8	0.6	877.6	40.9
2005	1588.4	203.3	1227.4	39.9
2006	1570.0	-1.2		

Table 7.

Years	CGK-SUB Passengers (000)
2007	1439.6
2008	1559.1
2009	1688.5
2010	1828.6
2011	1980.4
2012	2144.8
2013	2322.8
2014	2515.6
2015	2724.4

The lower percentage growth for Surabaya compares than Jakarta – Medan might cause Surabaya located on the same island with Jakarta were passengers have options to choose other mode of transportation as substitutes to travelling to Surabaya. Flight frequencies between Surabaya and Jakarta and Surabaya to Jakarta will keep increasing with lower than 10% growth.

Table 8.

Years	SUB-CGK Passengers (000)	Annual Percentage Change (%)	Three year moving average passenger (000)	Annual Change (%)
1995	789.3			
1996	820.9	4.0	805.0	
1997	804.8	-2.0	675.3	-16.1
1998	400.4	-50.3	530.6	-21.4
1999	386.5	-3.5	431.5	-18.7
2000	507.8	31.4	490.3	13.6

Table 8, cont.

2001	576.8	13.6	550.4	12.2
2002	566.6	-1.8	539.7	-1.9
2003	475.8	-16.0	583.4	8.1
2004	708.0	48.8	795.9	36.4
2005	1204.0	70.1	1198.4	50.6
2006	1683.1	39.8		

Table 9.

Years	SUB-CGK Passengers (000)
2007	1372.0
2008	1468.0
2009	1570.8
2010	1680.8
2011	1798.4
2012	1924.3
2013	2059.0
2014	2203.1
2015	2438.9

For Jakarta – Pontianak demand estimates, Pontianak is one of growth city in Kalimantan or Borneo Island beside Balikpapan. Many of Pontianak's migrate to Jakarta to doing business mostly the Pontianak's Chinese followed with the Malay and Dayaks. Many seasonal events in Pontianak attract the passenger to travel to Pontianak to celebrate many Chinese festivals within a year.

Table 10.

YEARS	*ROUTES*	
	Jakarta – Pontianak (CGK-PNK)	**Pontianak – Jakarta (PNK-CGK)**
1995	191.404	188.172
1996	210.495	190.503
1997	156.308	149.161
1998	162.209	153.970
1999	119.041	128.352
2000	158.434	161.807
2001	221.047	226.274
2002	239.859	247.720
2003	320.326	337.584
2004	402.277	424.430
2005	399.543	431.641
2006	424.747	463.114

Source: ("Penumpang Pesawat Udara," 2005)

The number of passenger as show on table 11 Jakarta – Pontianak vice versa traffic from 1995 – 2006 for Jakarta – Pontianak and Pontianak – Jakarta is not fluctuated drastically the annual change for both direction routes is lower than 40%. Number of passenger keep growing event though in some years there relatively small decreasing in number of passengers.

Table 11.

Years	CGK-PNK Passengers (000)	Annual Percentage Change (%)	Three year moving average passenger (000)	Annual Change (%)
1995	191.4			
1996	210.5	10.0	186.1	
1997	156.3	-25.8	176.4	-5.2
1998	162.2	3.8	145.9	-17.3
1999	119.0	-26.6	146.6	0.5
2000	158.4	33.1	166.2	13.4
2001	221.0	39.5	206.4	24.2
2002	239.9	8.5	260.4	26.1
2003	320.3	33.5	320.8	23.2
2004	402.3	25.6	374.0	16.6
2005	399.5	-0.7	408.9	9.3
2006	424.7	6.3		

Government also attempted the transmigration program to live and settle in West Kalimantan or beyond Pontianak increasing number of population in this region. Most of the people who transmigrate are from West Java and from Central Java this trend will strengthen the growth of passenger between Jakarta and Pontianak with movement of people between these two cities.

Table 12.

Years	CGK-PNK Passengers (000)
2007	495.6
2008	545.7
2009	600.8
2010	661.5
2011	728.3

Table 12, cont.

2012	801.8
2013	882.8
2014	972.0

Table 13.

Years	PNK-CGK Passengers (000)	Annual Percentage Change (%)	Three year moving average passenger (000)	Annual Change (%)
1995	188.2			
1996	190.5	1.2	175.9	
1997	149.2	-21.7	164.5	-6.5
1998	154.0	3.2	143.8	-12.6
1999	128.4	-16.6	148.0	2.9
2000	161.8	26.1	172.1	16.3
2001	226.3	39.8	211.9	23.1
2002	247.7	9.5	270.5	27.6
2003	337.6	36.3	336.6	24.4
2004	424.4	25.7	397.9	18.2
2005	431.6	1.7	439.7	10.5
2006	463.1	7.3		

Based on the calculation on table 12 exponential moving average growth calculation for Jakarta – Pontianak route and table 14 the number of growth passenger for Jakarta – Pontianak is 10.1% while the Pontianak – Jakarta growth passenger is 11.6%. Number of passengers for Jakarta – Pontianak will be reach level 1 million passengers in 2015 as shown at table 13 and Pontianak – Jakarta reach level 1 million passengers in 2013 as shown table 15. Passengers travelling between Jakarta and Pontianak only have one transportation substitution by sea with offer lower price compare travelling by air.

Table 14.

Years	PNK-CGK Passengers (000)
2007	547.7
2008	611.2
2009	682.1

Table 14, cont.

2010	761.2
2011	849.5
2012	948.1
2013	1057.1
2014	1180.8
2015	1307.4

For Indonesia air travel market estimates, we discuss the whole Indonesian domestic travel market. Based on research calculation as show on table 16 the number of passenger in Indonesian domestic travel market is increase tremendously compare prior of deregulation, the same table describe the annual change growth percentage increase mostly between year 2002 to year 2003 reach 56%.

Indonesia travel market is quite immune from any turbulence that hit the international market such as Bali bomb the first and second, SARS and the increasing of oil price. Between that periods Indonesian domestic travel market keep showing fantastic grow till now.

Based on this research the number of passenger in Indonesia will keep going show it fantastic number of growing as show on table 17 the number of passenger will reach level 114.757.900 passenger in 2015 with growth 14.8% based on calculation on table 16.

Table 15.

Years	INDONESIA Passengers (000)	Annual Percentage Change (%)	Three year moving average passenger (000)	Annual Change (%)
1996	13,493.8			
1997	12,813.5	-5.0	11,297.7	
1998	7,585.9	-40.8	8,921.6	-21.0
1999	6,365.5	-16.1	7,191.3	-19.4
2000	7,622.6	19.7	7,718.7	7.3
2001	9,168.1	20.3	9,707.9	25.8
2002	12,333.0	34.5	13,560.8	39.7
2003	19,181.3	55.5	18,426.1	35.9
2004	23,764.0	23.9	23,919.6	29.8
2005	28,813.5	21.2	28,864.5	20.7
2006	34,016.0	18.1		

Table 16.

Years	INDONESIA Passengers (000)
2007	38,040.6
2008	43,670.6
2009	50,133.9
2010	57,553.7
2011	66,071.6
2012	75,850.2
2013	87,076.1
2014	99,963.3
2015	114,757.9

Based on this research Indonesian domestic travel market industry will keep growing in the future years. The growth numbers of passengers will supported by the new aviation infrastructures which are ready to use. This new infrastructure enables airlines to increase their flight frequencies where many airports had bigger capacity for serve passenger and their aircraft.

Conclusion

This research has evaluated the impact of deregulation in Indonesia domestic air travel market. results of time series model of exponential moving average growth for Jakarta – Medan vice versa, Jakarta – Surabaya vice versa, Jakarta – Pontianak vice versa and Indonesian domestic travel market in general showing growth and prove that deregulation was boosting number of passenger in Indonesian domestic air travel market from 6.3 million passengers in 1999 to 34 million passenger in 2007 and will reach 114 million passengers in 2015.

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