

Global Aviation Monitor (GAM)

Analysis and Short Term
Outlook of Global, European
and German Air Transport

December 2016



Main Results of Global Air Transport Supply Analysis and Outlook

Background:

- Covers about 3,500 airports worldwide
- Covers about 850 airlines worldwide
- Air transport supply of 2016: More than 35 M flights (non-stop) worldwide, new record value
- Busiest month 2016: August with 3.2 M flights; 2016
- Air traffic increases slowly since April 2013
- Forecasting methodology: Time series analysis
- The mean absolute forecast error over a twelve month period typically lies in a range of between 0.5 and 1.5 percentage points for a forecast horizon of 1, 2 & 3 months.

Analysis: January 2016 – December 2016

Global

- December 2016: 2.9 M flights supplied (+4.6%)
- About 5% growth per year before financial crisis 2008/2009, then a rapid decline of more than 9% between February 2008 and February 2009, followed by a rather slow recovery until 2011 (7.2% increase between February 2009 and February 2011). Since 2011, the number of flights grows only very slowly; stagnation between September 2012 and March 2013, small growth rates since April 2013; growth rates of around 3% since March 2015, 3.0% - 5.3% between December 2015 and December 2016
- Airports: Heterogeneous development of no. of flights offered; strong growth e.g. at Los Angeles, Guangzhou, Shanghai, Jakarta, Mexico and Dehli (5% and more)
- Airlines: Heterogeneous development of no. of flights offered; strong growth e.g. of Ryanair, easyjet and IndiGo; some airlines with decrease, e.g. Gol and Turkish Airlines

World Regions, Europe

- Overall small increase since April 2013; in Europe, small traffic increase since July 2013; in Asia continued growth; strong growth in Middle East; small growth in North America
- Airports: Heterogeneous developments of no. of flights offered; strong increase e.g. at Munich, Barcelona, Moscow Sheremetyevo, Stockholm and Dusseldorf however decline at some airports, e.g. Moscow Domodedovo, Istanbul and Frankfurt
- Airlines: Heterogeneous developments of flights, some airlines, e.g. Ryanair with strong growth, some growth in the low cost segment, e.g. Wizz, flybe, Ryanair and easyjet; new: Eurowings (former Lufthansa and germanwings flights in Germany and Europe are now operated by Eurowings except at Frankfurt and Munich; long-haul low cost flights from Cologne), some airlines, e.g. Turkish Airlines with decrease

Germany

- Airports: Some bigger airports, e.g. Munich, Dusseldorf and some small airports e.g. Karlsruhe with traffic growth; strong growth at Berlin Schoenefeld because of strong growth of Ryanair; some German airports with downward trend, e.g. Hahn and Niederrhein
- Airlines: Heterogeneous developments of number of flights offered; strong growth of e.g. Ryanair and Wizz Air; some airlines, e.g. Condor and SAS with decreasing traffic

Outlook: January 2017 – March 2017

Global

- For the next few months, a traffic growth of 4-6% is expected

World Regions, Europe

- For the next few months, a traffic growth of 4-6% is expected

Germany

- For the next few months, a traffic growth of 2-5% is expected

Rank	Airport	12/2016	Growth rate
1	Atlanta Hartsfield-Jackson Intl	35.116	-1,2
2	Chicago O'Hare International	33.771	-1,7
3	Los Angeles International	27.469	7,9
4	Dallas/Fort Worth Intl	26.216	-5,8
5	Beijing Capital	25.722	2,0
6	Denver Intl	22.851	3,3
7	Charlotte	21.246	-0,0
8	Shanghai Pudong International	20.287	5,5
9	Jakarta Soekarno-Hatta	20.115	9,0
10	Tokyo Haneda	19.337	0,0
11	Guangzhou	18.917	11,9
12	Houston George Bush Intercontinental	18.730	-6,3
13	London Heathrow	18.661	0,3
14	Mexico City Juarez International	18.091	5,9
15	New York J F Kennedy International	17.984	-0,9
16	Amsterdam	17.973	5,7
17	Dubai	17.583	3,7
18	Istanbul Ataturk	17.559	-6,4
19	Paris Charles de Gaulle	17.527	0,2
20	San Francisco International	17.333	4,2
21	Toronto Lester B Pearson Intl	17.261	3,2
22	Hong Kong International	17.224	1,2
23	Delhi	17.140	16,6
24	Newark Liberty International	16.968	4,1
25	Frankfurt International	16.432	-0,3

Tab. 1: Number of monthly Take-offs at the biggest Airports in the World

Rank	Airport	12/2016	Growth rate
1	Frankfurt International	16.432	-0,3
2	Munich International	14.165	9,0
3	Dusseldorf International	7.534	10,6
4	Berlin Tegel	6.908	2,3
5	Hamburg	5.440	9,9
6	Berlin Schoenefeld	3.491	20,3
7	Stuttgart	3.308	-1,8
8	Cologne/Bonn K.A.	3.216	3,0
9	Hanover	1.651	2,0
10	Nuremberg	1.411	13,6
11	Bremen	801	-5,8
12	Dresden	746	3,9
13	Leipzig/Halle	693	3,4
14	Frankfurt Hahn	541	-10,3
15	Dortmund	489	0,8
16	Munster	278	-1,8
17	Karlsruhe/Baden Baden	275	16,5
18	Dusseldorf Niederrhein	275	-8,6
19	Memmingen	269	52,0
20	Friedrichshafen	224	53,4
21	Saarbrücken Ensheim	210	7,7
22	Paderborn	151	18,0
23	Westerland	84	127,0
24	Mannheim	79	-6,0
25	Rostock-Laage	72	53,2

Tab. 3: Number of monthly Take-offs at the biggest Airports in Germany

Rank	Airport	12/2016	Growth rate
1	London Heathrow	18.661	0,3
2	Amsterdam	17.973	5,7
3	Istanbul Ataturk	17.559	-6,4
4	Paris Charles de Gaulle	17.527	0,2
5	Frankfurt International	16.432	-0,3
6	Madrid Barajas	14.551	3,1
7	Munich International	14.165	9,0
8	Moscow Sheremetyevo International	11.048	8,6
9	Rome Fiumicino	10.948	-3,9
10	London Gatwick	10.184	8,0
11	Barcelona	10.124	5,1
12	Zurich	9.156	4,7
13	Copenhagen	9.103	0,0
14	Paris Orly	9.012	-0,7
15	Istanbul Sabiha Gokcen	8.508	0,4
16	Stockholm Arlanda	8.488	11,3
17	Vienna	8.327	2,4
18	Oslo	8.301	3,5
19	Brussels	7.818	1,2
20	Moscow Domodedovo	7.715	-6,2
21	Dusseldorf International	7.534	10,6
22	Dublin	7.466	5,2
23	Lisbon	7.075	12,5
24	Berlin Tegel	6.908	2,3
25	Manchester International	6.840	17,1

Tab. 2: Number of monthly Take-offs on the biggest Airports in Europe

Source: OAG 2015/16, DLR 2015/16

Rank	Airline	12/2016	Growth rate
1	American Airlines	188.107	-2,8
2	Delta Air Lines	151.282	0,5
3	United Airlines	135.652	-1,7
4	Southwest Airlines	113.502	3,6
5	China Southern Airlines	60.815	9,6
6	China Eastern Airlines	56.347	1,4
7	Ryanair	50.956	16,8
8	Air Canada	46.338	0,0
9	Air China	38.261	2,6
10	easyJet	37.630	10,5
11	Lufthansa German Airlines	37.008	-0,3
12	Turkish Airlines	36.297	-6,3
13	All Nippon Airways	32.064	-0,7
14	JetBlue Airways Corporation	29.933	4,8
15	Alaska Airlines	29.791	1,1
16	British Airways	27.636	-0,8
17	IndiGo Air	27.091	34,1
18	Air France	26.925	-2,9
19	Aeroflot Russian Airlines	25.136	8,9
20	Japan Airlines International	24.214	5,9
21	Qantas Airways	22.818	-2,1
22	AVIANCA	22.783	0,6
23	Azul	22.469	-7,1
24	Gol Transportes Aereos	22.466	-19,5
25	SAS Scandinavian Airlines	22.010	3,9

Tab. 4: Number of monthly Take-offs by the biggest Airlines in the World

Rank	Airline	12/2016	Growth rate
1	Lufthansa German Airlines	22.697	0,8
2	Air Berlin	8.513	5,3
3	germanwings	5.358	-9,5
4	Ryanair	3.568	30,2
5	Eurowings	2.348	17,3
6	easyJet	2.240	10,0
7	British Airways	1.339	14,1
8	KLM-Royal Dutch Airlines	1.175	0,1
9	Austrian Airlines AG	1.111	44,1
10	Swiss	1.099	13,7
11	Turkish Airlines	1.042	-21,7
12	Air France	1.039	-2,5
13	Condor Flugdienst	881	-2,1
14	SAS Scandinavian Airlines	828	-3,3
15	Aeroflot Russian Airlines	775	7,3
16	Wizz Air	722	23,0
17	Flybe	594	47,8
18	Germania	570	12,4
19	SunExpress	521	22,0
20	British Midland Regional	511	72,6
21	TUIfly	511	-10,4
22	Iberia	387	4,9
23	LOT - Polish Airlines	377	70,6
24	Air Dolomiti	365	7,0
25	Alitalia	358	-12,9

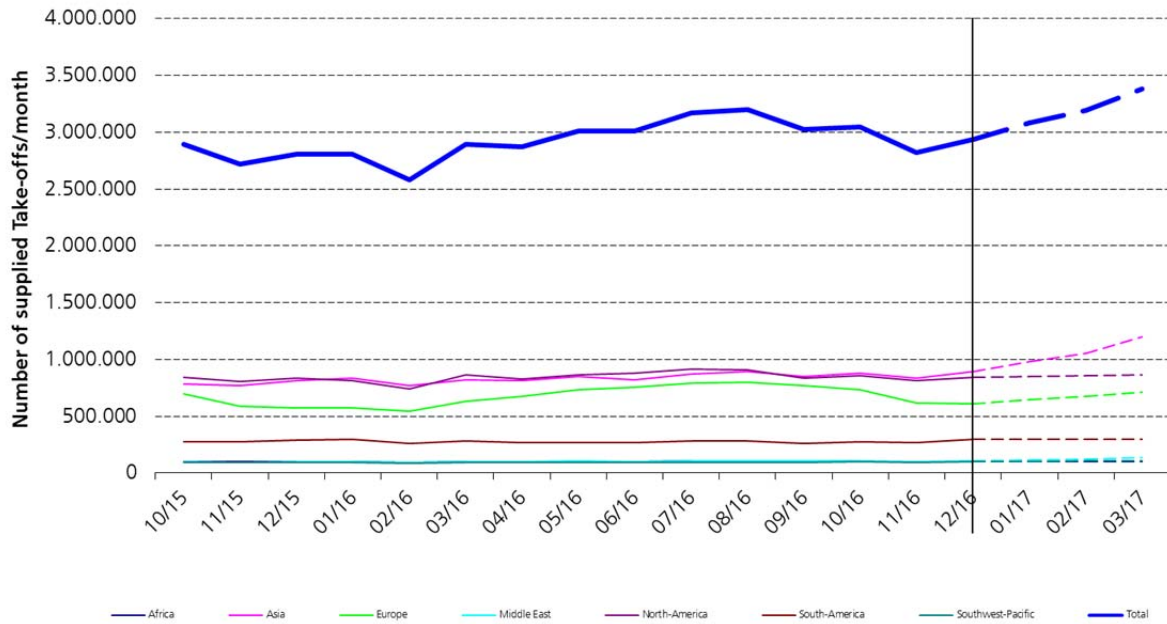
Tab. 6: Number of monthly Take-offs by the biggest Airlines in Germany from German airports

Rank	Airline	12/2016	Growth rate
1	Ryanair	50.250	17,0
2	easyJet	37.207	11,2
3	Lufthansa German Airlines	33.878	-0,1
4	Turkish Airlines	31.314	-7,1
5	Air France	23.505	-3,1
6	British Airways	22.536	-0,9
7	SAS Scandinavian Airlines	21.644	3,7
8	Aeroflot Russian Airlines	21.162	8,5
9	KLM-Royal Dutch Airlines	16.371	5,1
10	Flybe	15.710	15,8
11	Iberia	14.353	0,6
12	Alitalia	14.339	-4,5
13	Air Berlin	12.790	8,1
14	Pegasus Airlines	12.193	2,4
15	Wizz Air	11.331	15,2
16	Vueling Airlines	10.625	-2,3
17	Swiss	10.616	-1,1
18	Wideroe's Flyveselskap	9.964	-6,0
19	Norwegian Air Shuttle	8.761	2,1
20	Austrian Airlines AG	8.669	8,3
21	TAP Air Portugal	8.627	4,6
22	Finnair	8.309	1,6
23	germanwings	7.761	-6,4
24	LOT - Polish Airlines	7.381	46,2
25	Aer Lingus	6.909	-2,3

Tab. 5: Number of monthly Take-offs by the biggest Airlines in Europe from European airports

Source: OAG 2015/16, DLR 2015/16

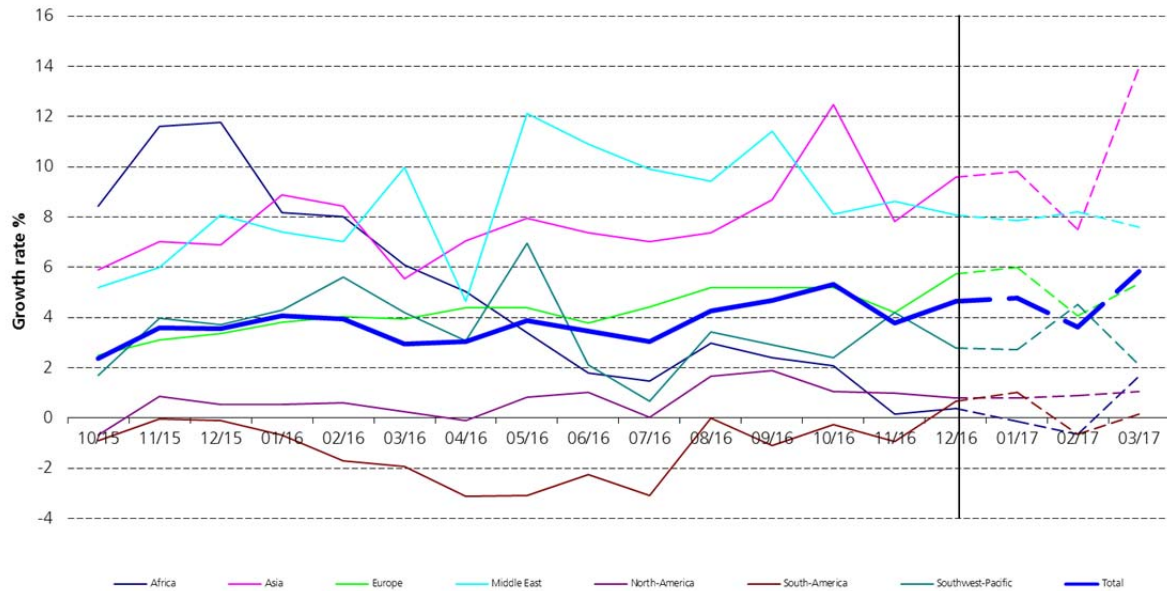
Development of the Global Air Transport Supply



Source: OAG 2015/2016, DLR 2015/2016

Fig. 1: Development of the Global Air Transport Supply

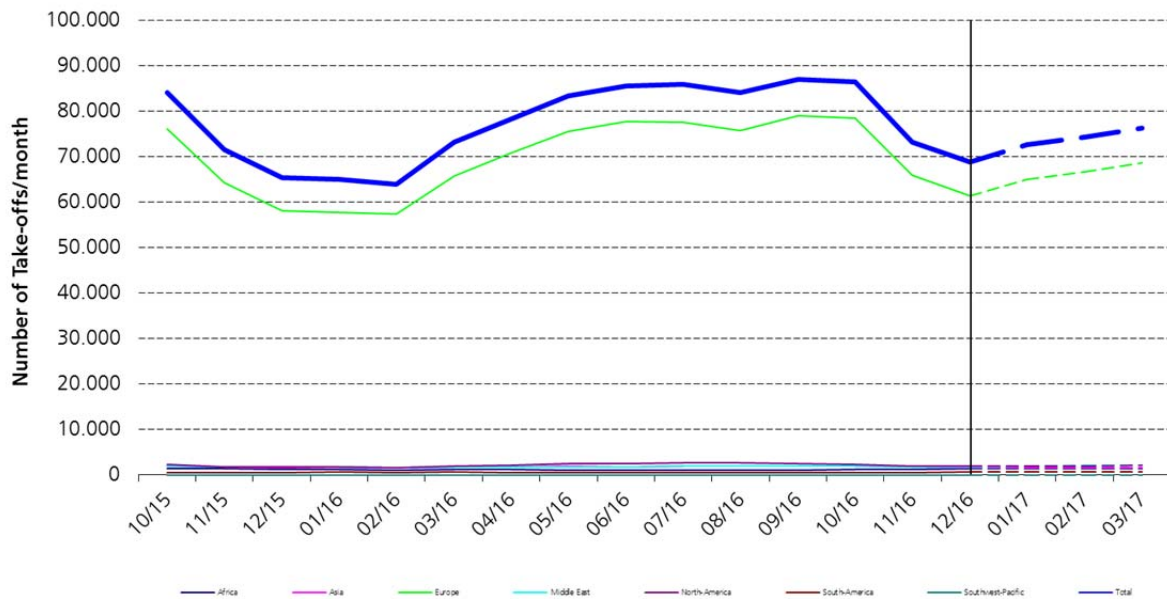
Changes in the Global Air Transport Supply



Source: OAG 2015/2016, DLR 2015/2016

Fig. 2: Changes in the Global Air Transport Supply

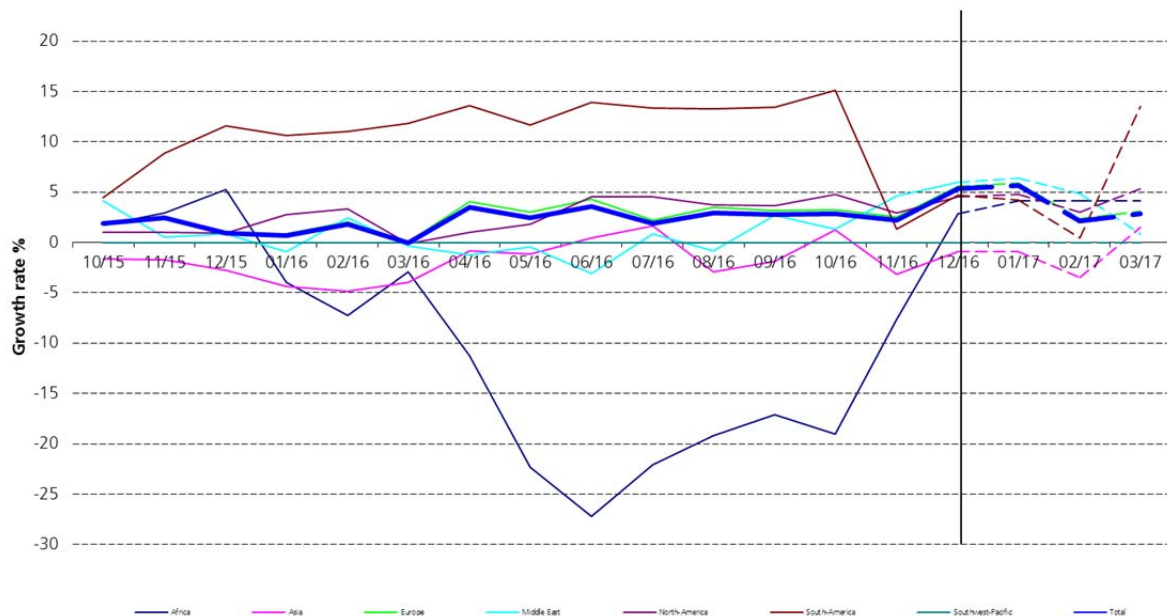
Development of the German Air Transport Supply



Source: OAG 2015/2016, DLR 2015/2016

Fig. 3: Development of the German Air Transport Supply

Changes in the German Air Transport Supply



Source: OAG 2015/2016, DLR 2015/2016

Fig. 4: Changes in the German Air Transport Supply

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