

Global Aviation Monitor (GAM)

Analysis of Global, European
and German Air Transport

September 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 2015: More than 34 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: October 2015 – September 2016

Global

- September 2016: 3.0 M flights supplied (+4.7%)
- 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, of around 3.0% - 4.7% between November 2015 and September 2016
- Airports: Heterogeneous development of no. of flights offered; strong growth e.g. at Los Angeles, Denver, Amsterdam, Guangzhou, San Francisco and Munich (5% and more)
- Airlines: Heterogeneous development of no. of flights offered; strong growth e.g. of Ryanair, and IndiGo; American Airlines merger with US Airways

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 Palma de Mallorca, Amsterdam, Athens, Manchester and Dublin however decline at some airports, e.g. Moscow Domodedovo and Frankfurt
- Airlines: Heterogeneous developments of flights, some airlines, e.g. Ryanair Airlines 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. Aeroflot and Air France with decrease

Germany

- Airports: Some bigger airports, e.g. Cologne and some small airports e.g. Erfurt, with traffic growth; strong growth at Berlin Schoenefeld because of strong growth of Ryanair; some German airports with downward trend, e.g. Hahn and Friedrichshafen
- Airlines: Heterogeneous developments of number of flights offered; strong growth of e.g. Ryanair and Transavia; some airlines, e.g. Condor and SAS with decreasing traffic

Outlook: October 2016 – December 2016

Global

- For the next few months, a traffic growth of 3-5% is expected

World Regions, Europe

- For the next few months, a traffic growth of 4-5% is expected

Germany

- For the next few months, a traffic growth of 2-3% is expected

Rank	Airport	09/2016	Growth rate
1	Chicago O'Hare International	35.815	-0,6
2	Atlanta Hartsfield-Jackson Intl	35.501	0,8
3	Los Angeles International	26.068	5,3
4	Dallas/Fort Worth Intl	25.957	-3,0
5	Beijing Capital	25.192	4,4
6	Denver Intl	23.060	8,7
7	Amsterdam	20.690	5,5
8	Frankfurt International	20.416	-1,6
9	London Heathrow	20.319	0,0
10	Charlotte	20.140	-0,3
11	Istanbul Ataturk	19.934	0,4
12	Paris Charles de Gaulle	19.772	1,1
13	Shanghai Pudong International	19.673	-0,4
14	Tokyo Haneda	18.271	2,3
15	Toronto Lester B Pearson Intl	18.189	4,1
16	Guangzhou	17.928	6,8
17	New York J F Kennedy International	17.849	1,3
18	San Francisco International	17.720	7,6
19	Houston George Bush Intercontinental	17.299	-6,1
20	Jakarta Soekarno-Hatta	17.217	-1,3
21	Munich International	17.216	5,7
22	Dubai	16.857	2,9
23	Seattle/Tacoma International	16.592	4,3
24	Mexico City Juarez International	16.508	4,9
25	Hong Kong International	16.481	2,5

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

Rank	Airport	09/2016	Growth rate
1	Frankfurt International	20.416	-1,6
2	Munich International	17.216	5,7
3	Dusseldorf International	9.772	4,8
4	Berlin Tegel	8.131	0,5
5	Hamburg	6.477	1,0
6	Stuttgart	4.834	1,7
7	Cologne/Bonn K.A.	4.427	3,7
8	Berlin Schoenefeld	3.712	46,7
9	Hanover	2.421	2,2
10	Nuremberg	1.832	4,0
11	Bremen	1.177	-1,5
12	Leipzig/Halle	983	-1,0
13	Dresden	914	2,2
14	Frankfurt Hahn	754	-9,8
15	Dortmund	608	-1,1
16	Dusseldorf Niederrhein	589	0,2
17	Karlsruhe/Baden Baden	507	7,0
18	Munster	490	0,0
19	Memmingen	317	-15,2
20	Saarbrücken Ensheim	315	-5,7
21	Paderborn	271	-16,4
22	Friedrichshafen	242	-41,7
23	Westerland	171	-10,0
24	Erfurt	102	43,7
25	Mannheim	92	15,0

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

Rank	Airport	09/2016	Growth rate
1	Amsterdam	20.690	5,5
2	Frankfurt International	20.416	-1,6
3	London Heathrow	20.319	0,0
4	Istanbul Ataturk	19.934	0,4
5	Paris Charles de Gaulle	19.772	1,1
6	Munich International	17.216	5,7
7	Madrid Barajas	15.936	3,0
8	Rome Fiumicino	14.354	-2,0
9	Barcelona	13.974	6,5
10	London Gatwick	13.154	5,3
11	Copenhagen	11.413	4,6
12	Moscow Sheremetyevo International	11.145	1,5
13	Paris Orly	10.719	1,3
14	Zurich	10.672	2,7
15	Oslo	10.387	0,8
16	Palma Mallorca	10.332	12,4
17	Vienna	10.281	0,8
18	Stockholm Arlanda	9.970	3,0
19	Moscow Domodedovo	9.848	-2,6
20	Dusseldorf International	9.772	4,8
21	Istanbul Sabiha Gokcen	9.680	1,6
22	Brussels	9.514	-1,0
23	Dublin	9.034	9,3
24	Manchester International	8.751	11,6
25	Athens Intl Eleftherios Venizelos	8.163	12,8

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

Source: OAG 2015/16, DLR 2015/16

Rank	Airline	09/2016	Growth rate
1	American Airlines	183.369	81,0
2	Delta Air Lines	154.360	3,5
3	United Airlines	136.267	0,3
4	Southwest Airlines	105.733	3,9
5	Ryanair	60.060	12,2
6	China Southern Airlines	59.386	-3,1
7	China Eastern Airlines	56.655	4,1
8	Air Canada	49.238	0,1
9	easyJet	46.185	7,1
10	Lufthansa German Airlines	45.091	-2,4
11	Turkish Airlines	42.641	1,3
12	Air China	38.086	3,8
13	British Airways	32.516	2,7
14	All Nippon Airways	30.489	0,9
15	Air France	29.177	-5,2
16	Alaska Airlines	28.607	1,1
17	SAS Scandinavian Airlines	28.232	0,3
18	JetBlue Airways Corporation	26.694	6,5
19	Aeroflot Russian Airlines	25.709	-0,5
20	IndiGo Air	24.550	27,2
21	Qantas Airways	23.402	1,3
22	Japan Airlines International	22.793	2,5
23	AVIANCA	21.864	0,1
24	KLM-Royal Dutch Airlines	20.781	3,6
25	Azul	20.712	-10,9

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

Rank	Airline	09/2016	Growth rate
1	Lufthansa German Airlines	27.526	-1,5
2	Air Berlin	11.900	2,2
3	germanwings	6.873	-29,4
4	Ryanair	4.083	36,9
5	Eurowings	3.074	---
6	easyJet	2.378	2,3
7	Condor Flugdienst	1.792	-8,6
8	Turkish Airlines	1.592	2,8
9	TUIfly	1.556	3,6
10	British Airways	1.466	5,5
11	KLM-Royal Dutch Airlines	1.360	-3,7
12	Austrian Airlines AG	1.289	41,8
13	Air France	1.256	-0,6
14	SunExpress	1.181	7,4
15	Swiss	1.177	13,8
16	SAS Scandinavian Airlines	1.136	-9,9
17	Germania	994	0,6
18	Wizz Air	746	16,7
19	Aeroflot Russian Airlines	699	-1,0
20	British Midland Regional	620	57,4
21	Flybe	576	56,9
22	Air Dolomiti	573	11,7
23	Transavia.com	490	1784,6
24	SunExpress Deutschland	472	-21,1
25	Vueling Airlines	455	-14,5

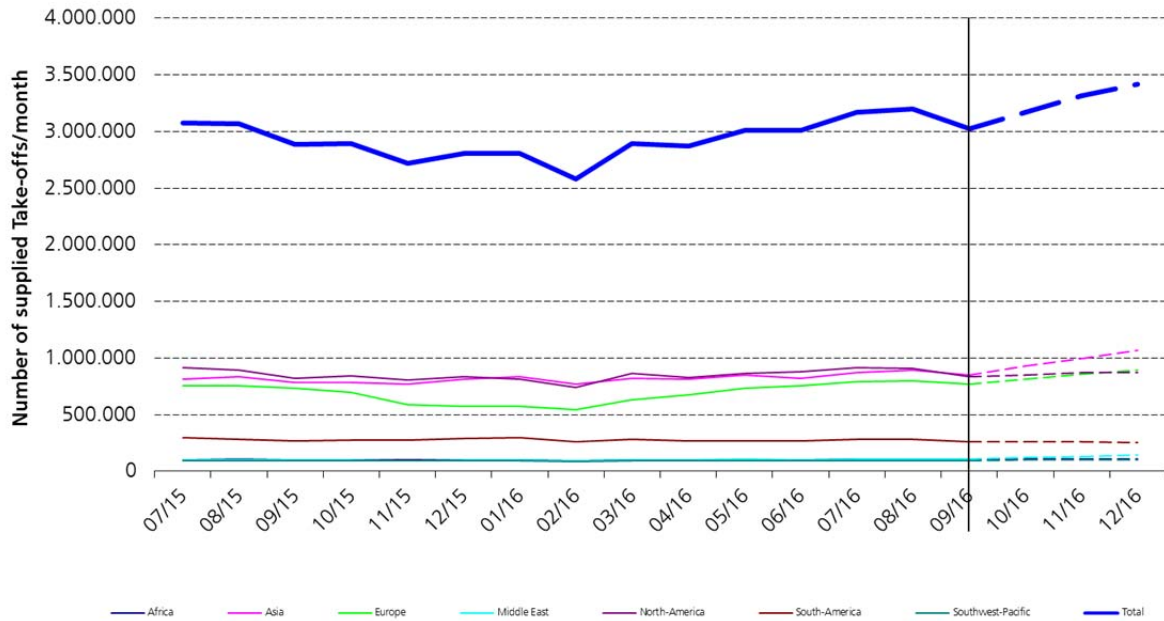
Tab. 6: Number of monthly Take-offs by the biggest Airlines in Germany from German airports

Rank	Airline	09/2016	Growth rate
1	Ryanair	59.391	12,4
2	easyJet	45.803	7,7
3	Lufthansa German Airlines	41.285	-2,1
4	Turkish Airlines	37.150	-0,2
5	SAS Scandinavian Airlines	27.826	0,1
6	British Airways	27.133	2,8
7	Air France	25.754	-5,6
8	Aeroflot Russian Airlines	21.592	-1,7
9	Vueling Airlines	18.876	6,4
10	Air Berlin	18.742	0,7
11	KLM-Royal Dutch Airlines	18.699	3,6
12	Flybe	17.589	14,0
13	Alitalia	17.399	-2,8
14	Iberia	16.810	4,2
15	Pegasus Airlines	13.541	5,6
16	Wizz Air	12.752	16,0
17	Swiss	12.026	1,0
18	Norwegian Air Shuttle	11.931	-24,7
19	Austrian Airlines AG	10.887	5,2
20	Wideroe's Flyveselskap	10.800	-6,9
21	germanwings	10.780	-30,0
22	Finnair	9.463	-2,1
23	TAP Air Portugal	9.231	0,3
24	Aer Lingus	9.128	6,8
25	HOP!	7.548	4,6

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

Source: OAG 2015/16, DLR 2015/16

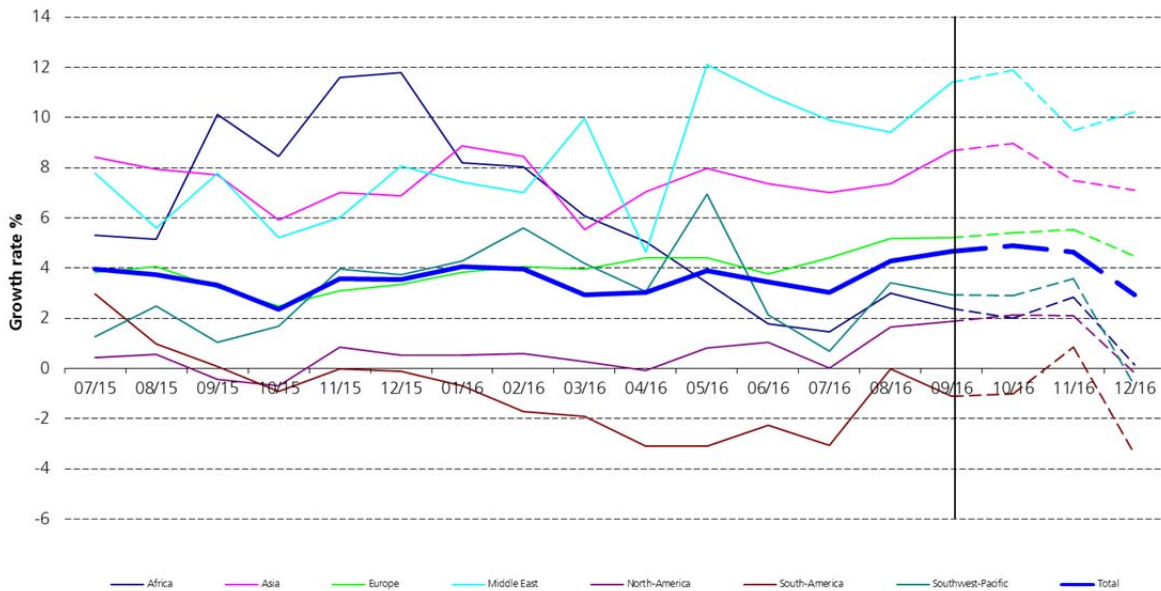
Development of the Global Air Transport Supply



Source: OAG 2015/2016, DLR 2015/2016

Fig. 1: Development of the Global Air Transport Supply

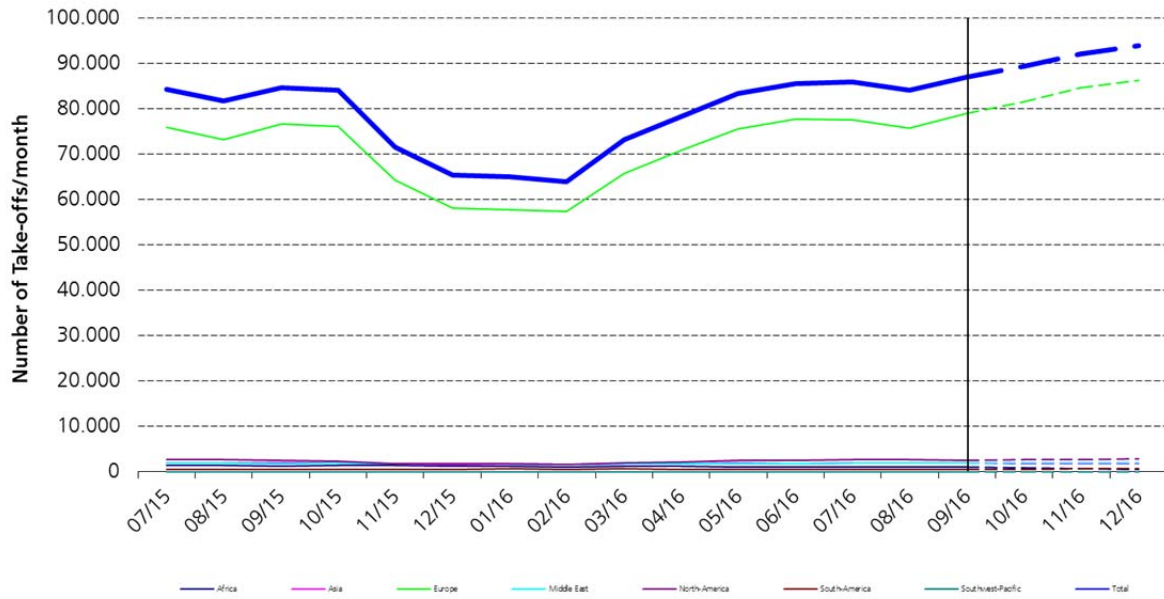
Changes in the Global Air Transport Supply



Source: OAG 2015/2016, DLR 2015/2016

Fig. 2: Changes in the Global Air Transport Supply

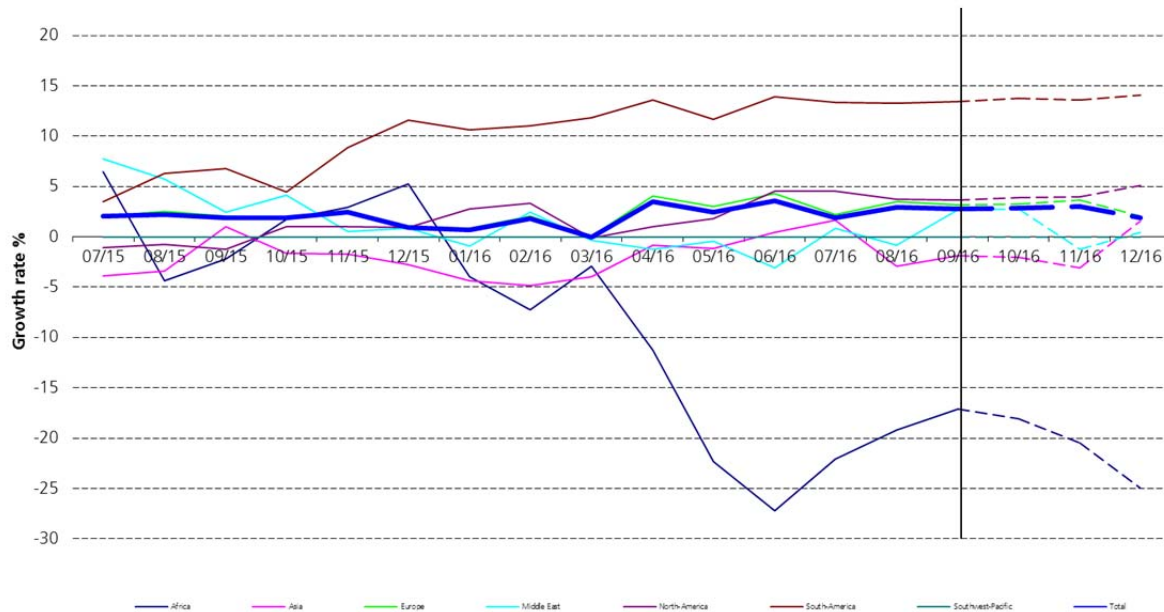
Development of the German Air Transport Supply



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

Authors:

Dr. Peter Berster
DLR
Flughafenwesen und Luftverkehr
D-51147 Köln
E-Mail: peter.berster@dlr.de

Dr. Marc Gelhausen
DLR
Flughafenwesen und Luftverkehr
D-51147 Köln
E-Mail: marc.gelhausen@dlr.de

Holger Pabst
DLR
Flughafenwesen und Luftverkehr
D-51147 Köln
E-Mail: holger.pabst@dlr.de

Dieter Wilken
DLR
Flughafenwesen und Luftverkehr
D-51147 Köln
E-Mail: dieter.wilken@dlr.de