

A dynamic competitive assessment of the recent Lufthansa mergers

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Trend: bankruptcy wave and mergers to avoid insolvency...

Impression: partnership with LH gives the possibility to survive;
the stronger the partnership, the more possibilities: mergers

But: what if LH becomes too strong and abuses market power?
(Harvard's concentration doctrine)

European Commission (EC) allows mergers only if they do not harm consumers = do not increase prices. Therefore, the EC imposed undertakings, so-called remedies.

Research question: did the remedies work?

Which remedies?



Nr.	Remedy Table		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
	frequency freeze (ff)	price freeze (pf)	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W
1	ZRH-FRA	ff at 11			pf	pf	5	5	5	5	5	5										
2	ZRH-MUC	ff at 10			pf	pf	5	5	5	5	5	5										
3	ZRH-DUS				pf	pf	4	4	4	4	4	4										
4	ZRH-HAM				pf	pf	4	4	4	4	4	4										
5	ZRH-VIE				pf	pf	4	4	4	4	4	4										
6	ZRH-TXL				pf	pf	3	3	3	3	3	3										
7	ZRH-CPH				pf	pf	3	3	3	3	3	3										
8	ZRH-HAJ				pf	pf	2	2	2	2	2	2										
9	ZRH-ARN	pr			pf	pf	2	2	2	2	2	2										
10	ZRH-WAW	pr			pf	pf	2	2	2	2	2	2										
11	ZRH-OTP				pf	pf	1	1	1	1	1	1										
12	VIE-CGN	ff at 3			pf	pf	3	3	3	3	3	3	3	3								
13	VIE-STR	ff at 5			pf	pf	2	2	2	2	2	2	2	3	3							
14	STR-DRS	ff at 5			pf	pf	2	2	2	2	2	2										
15	BRU-MUC												3	3	3	3						
16	BRU-HAM												3	3								
17	BRU-FRA												2	2	2	2	2	2	2	2		
18	BRU-ZRH												2	2	2	2						
19	VIE-FRA												5	5	5	5	5	5	5	5		
20	VIE-BRU												4	4								
21	VIE-MUC												4	4								

Source: own figure, based on EC decisions



Hypotheses, questions and answers

Hypothesis	By meaning	Evidence if	Results in groups			
			1	2	3	4
1) The success of the EC slot remedies is questionable	Slot remedies does not work	a) LH's market share remains high	Yes			
		b) No sufficient entries				
2) The fear of the EC to abuse market power is feasible	Strategic or predatory behavior to frighten competitors	c) LH's equipment capacity grows until the rival left the route	Yes			
		d) Price war	No	Yes	Partly	
	Concentration and price positively correlated: less competition results in higher prices	e) Average yield on regulated relevant routes is higher than on non-regulated routes	Yes			
		f) LH's price grows with increasing market share	Yes	Partly	-	

Groupings of the relevant markets



	1) LH monopoly	2) Germanwings dominance	3) LCC competition	4) Flag cooperation	5) No regulation
2005	ZRH-FRA, ZRH-MUC	VIE-STR, VIE-CGN, STR-DRS	ZRH-DUS, ZRH-HAM, ZRH-VIE, ZRH-TXL, ZRH-HAJ (AB)	ZRH-CPH, ZRH-ARN, ZRH-WAW, ZRH-OTP	
2009	BRU-MUC, BRU-FRA, BRU-ZRH, BRU-HAM, VIE-BRU	VIE-STR, VIE-CGN	VIE-FRA, VIE-MUC (NIKI)	-	36 routes

Data: time series panel data: monthly; concerning 21 plus 36 city pairs investigated by the EC

Methodology: descriptive route analysis with Excel

Schedule Data (all relevant routes 2002 January – 2014 June)

- | |
|--|
| a. Origin and Destination |
| b. Operating and Marketing Airline |
| c. Fleet, Equipment Capacity; and Total Capacity per month |
| d. Load Factor |
| e. Departure and Arriving Time; Flight Duration |
| f. Starting and discontinued Date; Days of operation during the week |
| g. Distance (km) |
| h. Departure count (frequency per month) |
| i. Year and month |
| j. Segment Passengers |
| a. Yield-US-Cents/Mile |
| b. OD Revenue In USD |
| c. Segment Revenue In USD |
| d. OD Average Fare In USD |
| e. Segment Average Fare In USD |
| f. Cabin class (only hub-to-hub connections, 3 years data) |
| g. Segment split (only hub-to-hub connections, 3 years data) |

Hyp 1: Did the slot remedies work? Evidence: A) and B)



Within the remedy periods:

- A) LHG's average market share increased from 69.9% up to 76.1%
- B) 15.3 daily slot remedies were used instead of 350
 - 3 new short entries (AB)
 - 2 capacity expansions (AB)
 - 2 airline exits

The slot remedies did not work.

	Relevant route	Slot remedy	Entry/Expansion / Exit	LHG's market share (%)		M Sh.
G1	ZRH-FRA 2004-2008	5*6	AB 3.07*1	99.8	99.9	↗
	ZRH-MUC 2004-2008	5*6	-	99.9	99.2	↘
	BRU-MUC 2008-2010	3*4	-	99.1	99.6	↗
	BRU-HAM 2008-2010	3*2	-	97.9	99.4	↗
	BRU-FRA 2008-2010	2*8	-	98.6	100	↗
	BRU-ZRH 2008-2010	2*4	-	89.4	97	↗
	VIE-BRU 2008-2010	4*2	NE -0.7	68.3	97.7	↗
G2	VIE-CGN 2004-2010	3*8	X3 0.53*1, AB 1.7*1	82	75.9	↘
	VIE-STR 2004-2010	2*6 + 3*2	AB 1*3	75.5	96.9	↗
	STR-DRS 2004-2008	2*6	-	99.7	100	↗
G3	ZRH-DUS 2004-2008	4*6	-	54.4	51.9	↘
	ZRH-HAM 2004-2008	4*6	AB 0.8*5	45	43.6	↘
	ZRH-VIE 2004-2008	4*6	(HG)	30	56	↗
	ZRH-TXL 2004-2008	3*6	AB 0.5*6	36.6	45	↗
	ZRH-HAJ 2004-2008	2*6	-	77	59	↘
	VIE-FRA 2008-2012	5*8	JP -2.3	57	72.4	↗
	VIE-MUC 2008-2010	4*2	-	57	62.1	↗
G4	ZRH-CPH 2004-2008	3*6	-	29.3	47.2	↗
	ZRH-ARN 2004-2008	2*6	-	45.5	54.2	↗
	ZRH-WAW 2004-2008	2*6	-	43.2	62.6	↗
	ZRH-OTP 2004-2008	1*6	-	81.7	79	↘
Av		16.7	0.59	69.9	76.1	↗
All		350	15.3			

Hyp 2: If remedies are not successful, is there a fear of abusing market power?

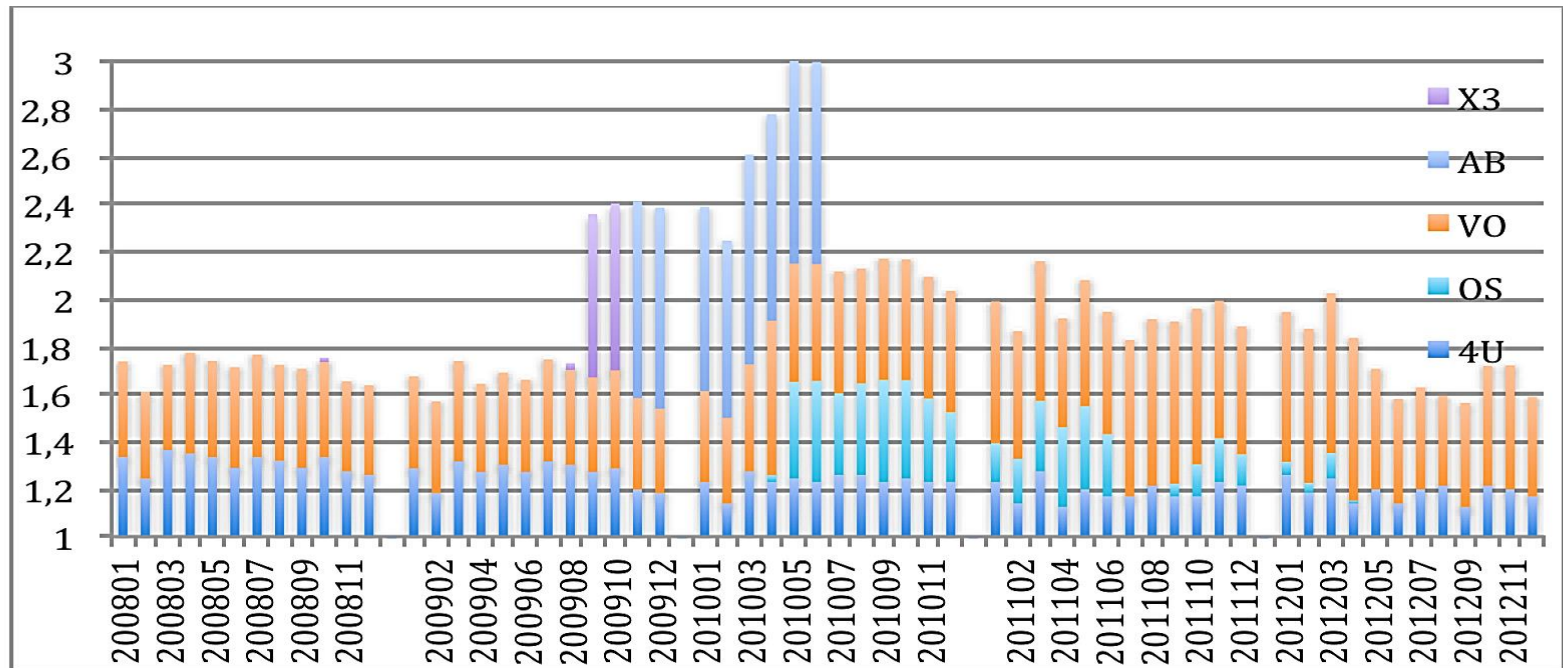


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Strategic or predatory behaviour to frighten competitors?

C) LHG's capacity increases until rival left the route

VIE-CGN: Post-merger seat capacity development (in 10,000)



- 1) when **OS entered** in May 2010, the load factor of both 4U and VO stood at an all-time low (63 and 53 %);
- 2) also **OS undercut the AB average fares**

Strategic or predatory behaviour to frighten competitors?



D) Healthy competition or price war?

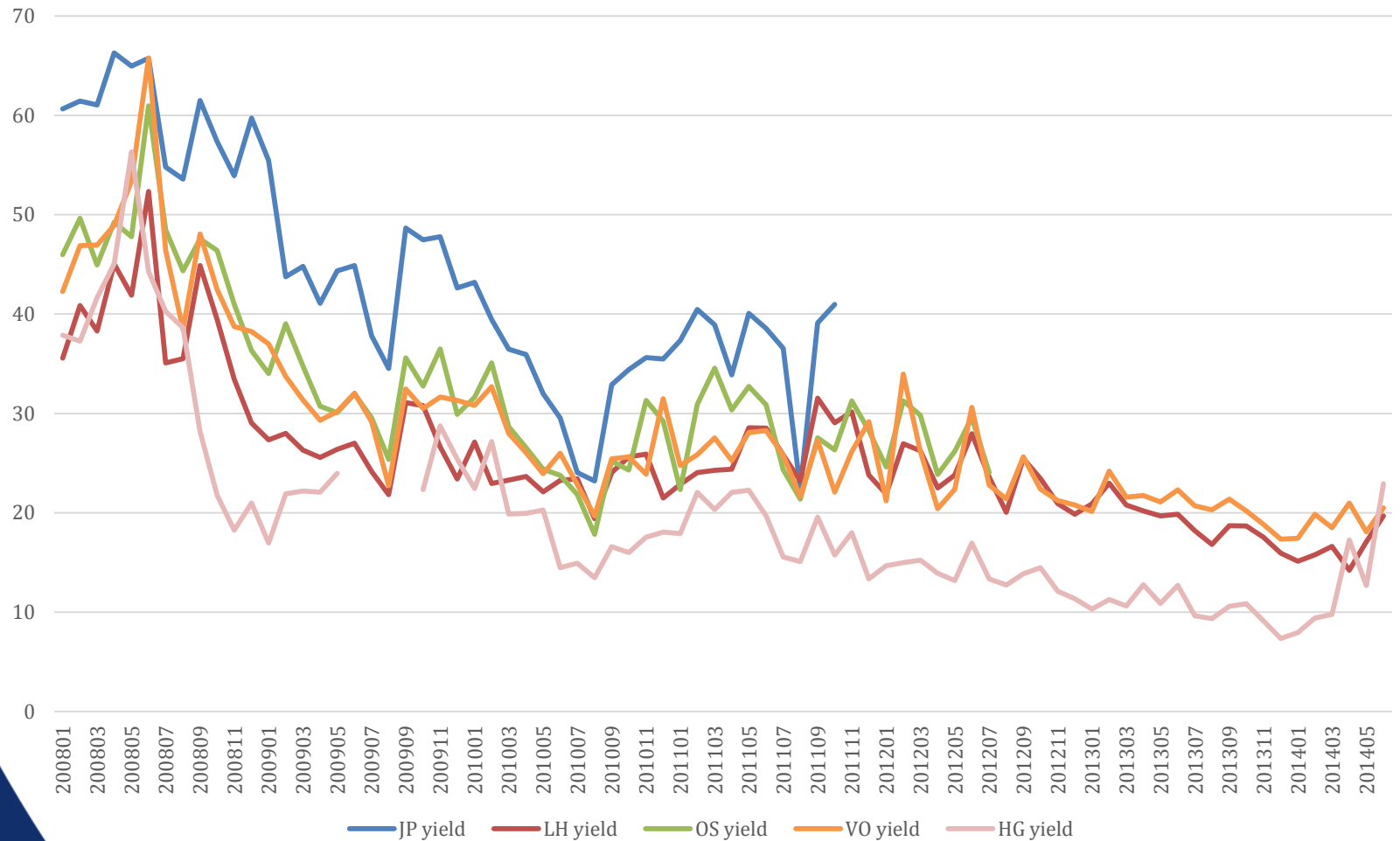
Route	AB's market share (%)	AB's sum seat capacity	AB's average segment fare in %, during its whole operation, compared to					LH Group's average fare in %, compared to during competition, after AB left the route				
			LH	LX	CL	4U	VO	LH	LX	CL	4U	VO
ZRH-FRA	4	23.571	-3	-27	-	-	-	26	19	-	-	-
VIE-CGN	26	66.492	-	-	-	-51	-31	-	-	-	-53	14
VIE-STR	23	79.302	-	-	-56	-10	-52	-	-	19	10	-2
ZRH-HAM	34.2	1.18 m	-27	-19	-	-	-	15	32	-	-	-
ZRH-TXL	46	2.52 m	-23	-21	-40	-	-	No exit				
ZRH-HAJ	39	665.838	-40	-22	-	-	-	-	21	-	-	-
average			-23	-22	-48	-31	-42	21	24	19	-22	6

Disappearing flag carriers: because of the price war?



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Yields per mile on VIE-FRA (in USD cents)

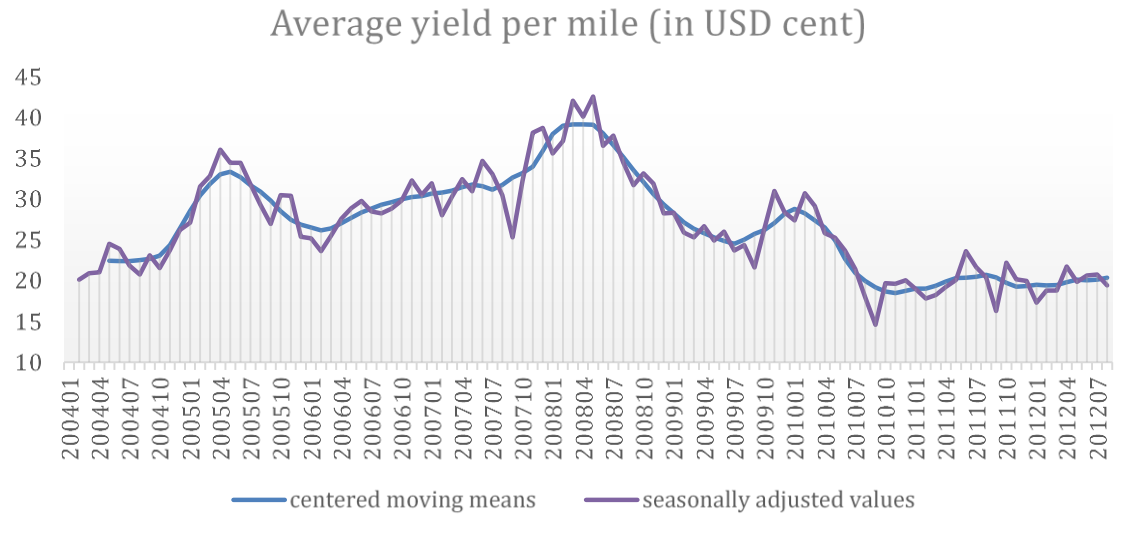


Comparing general performances

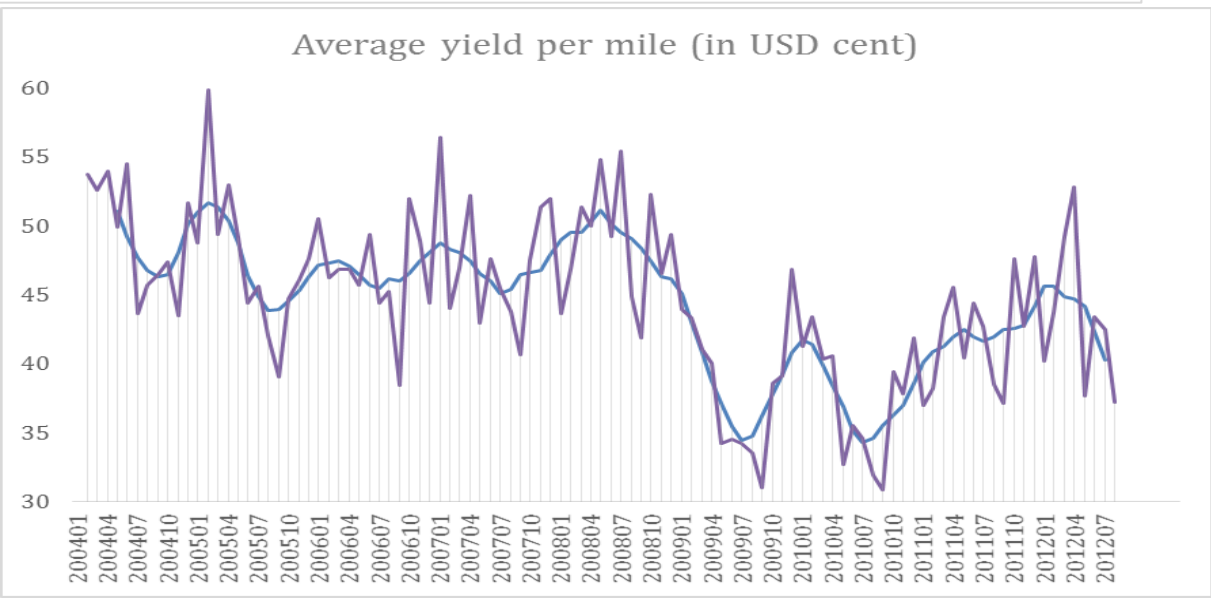


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Air Berlin's average yield per mile from 2004 to 2012



Lufthansa's average yield per mile from 2004 to 2014



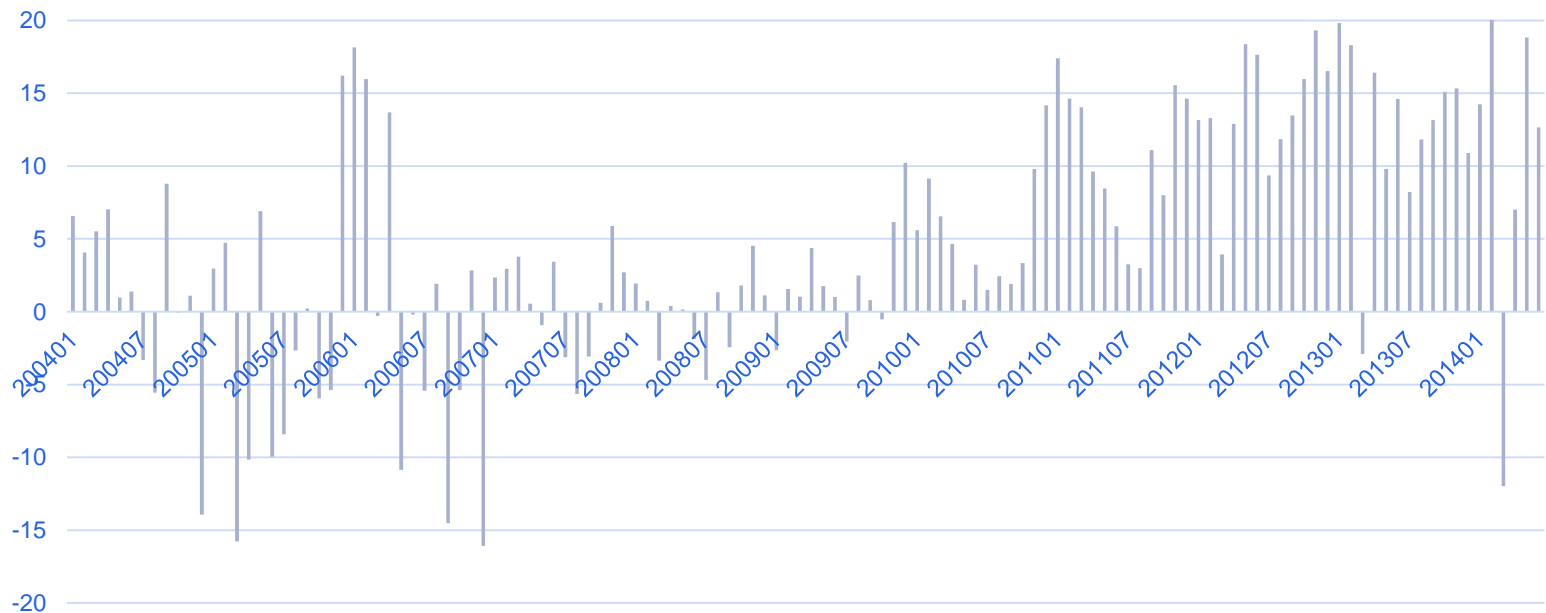
Concentration and price: is there a positive correlation?



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E) Higher net ticket prices on relevant routes

LH's difference in average yield per mile (in USD cent)

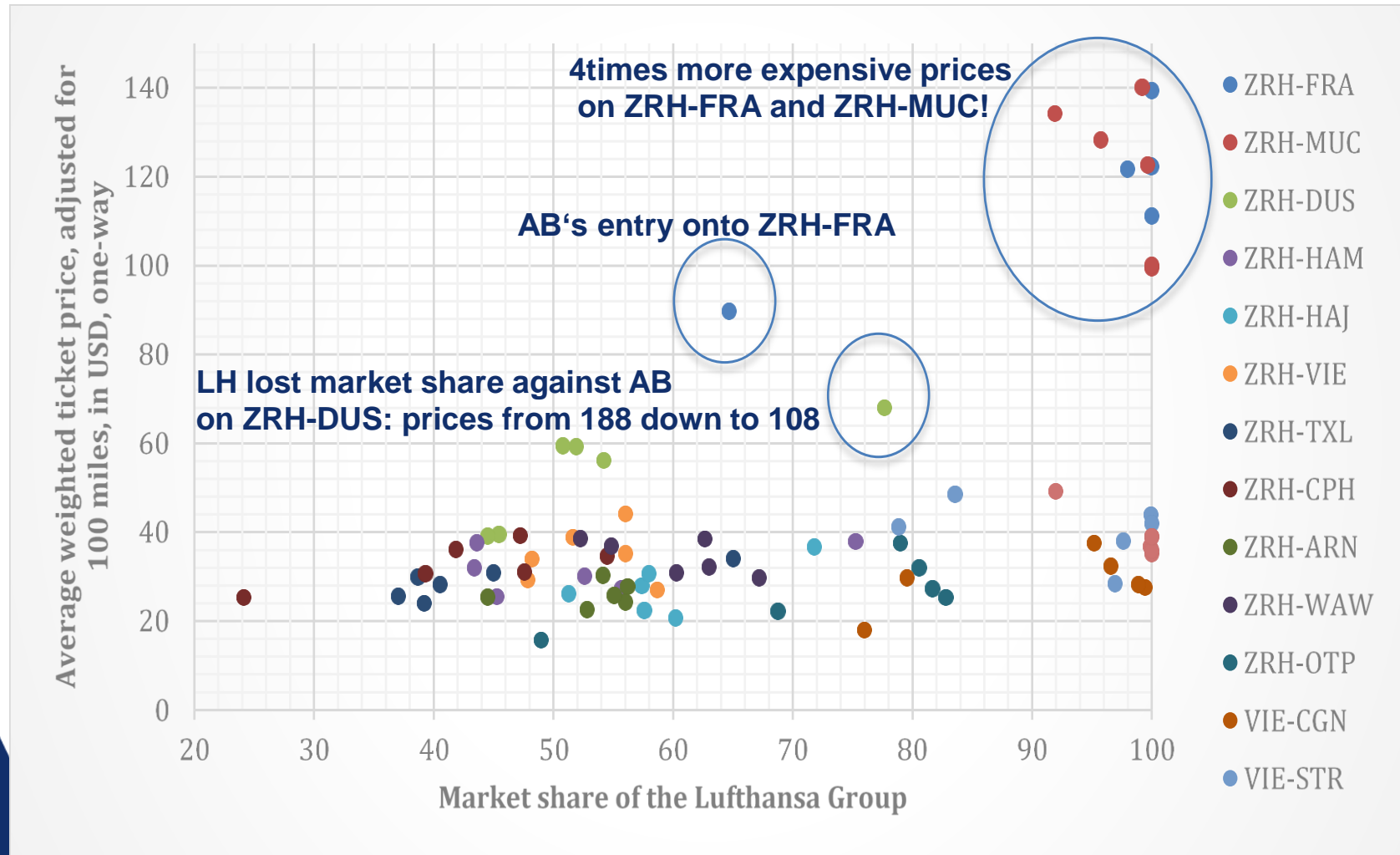


- **LH's average yield per mile: 40 USD cent**
 - **12 relevant** (dominant) and **19 non-relevant** routes in the sample
 - Since Nov. 2009 (after SN and OS takeovers): **24 percent higher net ticket prices** on relevant routes!

Concentration and price: is there a positive correlation?



F) LH's price grows with increasing market share



There is no general rule, must be analyzed case-by-case



Hyp 1: The efficiency of the EC slot remedies in order to promote competition (and avoid price increases) is questionable

- **Market structure more concentrated:**
 - Slot remedy used: 15.3 out of 350
 - LHG's market share increases 69.9 % to 76.1 %

Hyp 2: The fear of abusing market power is feasible

- **Strategic capacity improvement** to frighten Air berlin
- AB's reaction: **fierce price competition (price war?)**



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Thank you!

Questions? Remarks? Interest in joint research? Job offers?

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