Eurofound

Effects of restructuring at regional level and approaches to dealing with the consequences

Airbus, Germany

Contents

Abstract

In the first decade of the 21st century, Hamburg and the Hamburg Metropolitan Region in northern Germany has become the third biggest site for civil aviation in the world. Hamburg has traditionally been a place for aircraft production, but this dynamic development has been driven by the decision to concentrate parts of the Airbus 380 programme at the major production site in Hamburg Finkenwerder. This decision and the direct job creation at Airbus, plus much more in hundreds of regional SMEs in the aviation sector, has been accompanied by a number of regional multistakeholder measures. These measures have targeted, for example, infrastructure development, industrial policy and labour market policy as well as collective bargaining and social dialogue at regional level from the late 1990s.

In addition to describing the regional approaches, this case study discusses the regional effects of this restructuring case, which have both qualitative as well as quantitative effects on the regional economy, labour market and social structures.

Furthermore, this case study highlights examples of good practice and tries to find underlying conditions, driving factors and other framework conditions of success for the regional restructuring.

This case study is based on two main sources of information. Firstly, desk research was carried out, involving an analysis of regional statistical data, research reports and further documents on the aviation sector and labour market developments in Hamburg, plus literature and documents from key actors in the aviation cluster. Secondly, roughly a dozen interviews with key actors were conducted, amongst them representatives of the government of Hamburg, employer organisations in the aviation sector and trade union representatives as well as management and employee representatives from single companies in the aviation sector. Both the desk research and the fieldwork were carried out between August 2013 and January 2014.

Regional and company-specific context

Main characteristics of the region

With about 1.8 million inhabitants in 2013, the Free and Hanseatic City of Hamburg (Freie und Hansestadt Hamburg) is the second largest city in Germany after Berlin (which has 3.5 million inhabitants). Hamburg is both a municipality and a city-state of the Federal Republic of Germany. Located in northern Germany alongside the Elbe River, and close to both the Northern Sea and the Baltic Sea, the city covers a total area of 775km².

With a GDP per capita of €53,090 in 2012 (compared to a national average of €32,280), Hamburg is the richest region in Germany by far in terms of GDP per capita. According to Eurostat figures, in 2010 Hamburg was also the third richest region (after Luxembourg and Brussels) in the EU27, with a regional GDP (in purchasing parity) of more than 200% of the EU average.

As a city-state, Hamburg is the centre of a metropolitan region that is characterised by economic, social and labour market integration with neighbouring districts in the surrounding federal states of Schleswig-Holstein in the north and Lower Saxony in the south, as well as with Mecklenburg-West Pomerania in the east. This metropolitan area has a total population of around 5.1 million inhabitants and a working population of 2.5 million (HWWI/PWC, 2012).

In 2012, around 152,300 people from Schleswig-Holstein, 90,500 people from Lower Saxony and 14,400 people from Mecklenburg-West Pomerania commuted to work in Hamburg, while only 48,600, 14,900 and 1,400 Hamburgers respectively commuted to work to the three neighbouring federal states (Statistikamt Nord, 2013).

Table 1 illustrates the dynamism of the city of Hamburg in terms of population growth (in contrast to a decline in Germany as a whole) as well as regarding the number of employed people. With a view on key economic indicators such as GDP growth and productivity, however, the growth during 2000 and 2012 was below the national average.

Table 1: Key economic indicators

	Population 2012 (thousands)	Population growth 2000–2012	GDP per capita 2012, in euros	GDP growth 2000–2012	GDP per capita growth 2000–2012	Employed people 2000–2012
Hamburg	1,734	1.1%	53,091	25.4%	18.8%	11.5%
Germany	80,524	-2.1%	32,281	29.1%	29.6%	3.5%

Source: Federal Statistical Office

Port, logistics and the maritime economy, including shipbuilding, are traditionally among the strongest economic sectors in Hamburg. The city is home to Germany's largest seaport, covering about a tenth of the area of Hamburg. The port of Hamburg is the second largest port in Europe in terms of container handling and it ranks third after Rotterdam and Antwerp in terms of sea cargo handling. According to the Hamburg Port Authority, 156,000 jobs in the metropolitan region were directly and indirectly dependent on the port's operations – this equals around 6% of all employed people in the metropolitan area.[1]

Closely linked to the port and to its geographical location is Hamburg's historical role as a central hub for trade. The city has a centuries-old tradition of import, export and overseas trade. Nowadays, it plays an important role for trade within the Baltic Sea region, for example, and for trade with East Asia. Several thousand trading companies, wholesalers and retailers are therefore based in Hamburg. The same applies to logistics companies. In order to efficiently distribute goods, Hamburg has 'the world's most advanced container terminal' and a well-developed logistical infrastructure in terms of road and rail networks as well as air transportation facilities. According to the Hamburg Business Development Corporation (HWF, 2010), there were around 395,000 jobs in the logistics sector in the metropolitan region in 2010 (nearly 16% of all employed people in the metropolitan area).

[1] Hamburg Port Authority (2013), 'Facts and figures'.

Other key sectors of Hamburg's economy are the media and IT industry, with 110,000 employees in the metropolitan area working in publishing, advertising, design, film production or software development. Finance and insurance companies also provide industry-related services to the large trade sector. There are around 25,000 jobs in the banking sector and 24,000 jobs in the insurance industry.[2]

Finally, the aviation industry, which according to the main cluster organisation in 2013 provided employment for more than 40,000 people, is another key sector in Hamburg with a long tradition (see 'The aviation industry in Hamburg' box below).

Overall, despite the diverse and broadly based economic structure described above, as in other urban agglomerations, the services sector clearly dominates Hamburg's economic structure. Around 80% of the employed people living in Hamburg are working in services and more than 80% of the gross value added is generated in the services sector. Hamburg's manufacturing industry evidently has a lower share both in added value as well as in employment compared to the national average and its share is declining.

Between 2000 and 2012, the total labour force in Hamburg increased significantly, from around 880,000 to more than 960,000, and the number of people employed increased by more than 100,000. However, against the strong growth in the total labour force, the employment rate (of those aged 15 to 64) only increased slightly, from 59.5% to 61%.

Table 2: Key employment indicators, Hamburg

	2000	2005	2010	2012
Total labour force (aged 15 to 64)	879,000	895,000	952,000	964,000
Employed people (residential concept)	800,000	802,000	884,000	913,000
Employment rate (of population aged 15 to 64) (%)	59.5	59	61.1	61.0
Share of manufacturing in total employment (%)	12.0	10.8	9.7	9.4
Share of construction in total employment (%)	5.0	3.9	3.3	3.4
Share of retail, transport, hotels and restaurants, information and communication in total employment (%)	33.8	33.5	32.9	33.3
Share of business services in total employment (%)	22.1	23.9	25.2	25.2
Share of public and other services, education and health (%)	26.9	27.6	28.5	28.3
Unemployment rate (%)	8.3	11.3	8.2	7.5

Source: Statistikamt Nord, Statistisches Jahrbuch Hamburg 2013/2014.

Regarding the share of main economic sectors in total employment, Hamburg reflects both general structural changes, such as the dwindling of manufacturing employment, which in 2012 accounted for only 9.4% in total employment, and the increasing shares of services. Regarding the latter, however, the share of retail, transport, hotels and restaurants as well as information and communication was quite stable between 2000 and 2012 and even decreased slightly (since 2010), while both business services as well as public services, education and health reported a continuous increase.

With an unemployment rate of 7.5% in 2012, Hamburg ranked above the German average of 6.8%. However, compared to the other federal city-states, Bremen (11.2%) and Berlin (12.3%), Hamburg performed significantly better. In October 2013, the unemployment rate in Hamburg stood at 7.4%, which was the lowest rate since 1993.

Regarding structural changes of employment relationships, Hamburg also reflects the main trends within the German labour market, in particular the rise in part-time employment and marginal employment ('*geringfügige Beschäftigung*', or 'mini jobs').

[2] See HWF (2010), 'Hamburg as a business location'. All the figures presented here are for the Hamburg metropolitan area.

Reflecting the national average increase, the share of part-time employment in Hamburg increased by more than 70% between 2004 and 2013, and in June 2013 one out of four employees subject to social insurance in Hamburg worked on a part-time basis (which is also the same as the national average).

In June 2013, around 170,000 people worked in Hamburg on the basis of marginal part-time contracts, earning a maximum of €450 per month. This is more than 18% of the total number of employed people. While the increase of marginal part-time work between 2004 and 2013 was quite similar to the increase in the number of employees that where subject to social insurance contributions (18.1% compared to 17.7%), the number of those who carried out marginal part-time work as a second job (either in addition to an existing 'mini job' or in addition to a permanent part-time or even full-time job) has increased by more than 55% since 2004.

Table 3: Employment subject to social insurance and marginal part-time work

	Hamburg June 2013	Change 2004–2013	Germany June 2013	Change 2004–2013
Employees subject to social insurance	870,336	17.7%	29,268,918	10.3%
Thereof part-time	217,926	73.9%	7,496,087	73.9%
Marginal employees ('mini jobbers')	170,995	18.1%	7,446,850	15.2%
Employees having a marginal job as a secondary job	67,683	55.3%	4,818,510	189.8%

Source: Federal Labour Agency, Employment Statistics database as of January 2014

Regarding educational attainment and qualification levels, Hamburg has quite a polarised structure. For example, while the share of Hamburg's population with a third-level education was 32%, thereby exceeding significantly the German average of 27%, the share of the population with a low qualification level up to upper secondary education (ISCED 3C short) was also higher than the German average (Statistische Ämter des Bundes und der Länder, 2013).

The number of students at Hamburg's universities increased from 64,000 in 2000/2001 to 70,000 in 2005/2006 and up to 80,000 in 2010/2011 (Statistikamt Nord, 2013).

The data on educational attainment reflect a structural pattern of the social situation in Hamburg. According to a recent report on poverty in Germany (Deutscher Paritätischer Wohlfahrtsverband, 2013), nearly 15% of people living in Hamburg in 2011 faced relative poverty according to the EU SILC definition (that is, an income of less than 60% of the median income level). While the share of people living in poverty in Hamburg is around 0.5 percentage points below the German average, the share has increased since 2006 and thus illustrates a trend of growing inequality and social polarisation, as in the same period the GDP of the city increased significantly.

Hamburg's executive and key political actor is the Senat, headed by the First Mayor, who is the head of government, which is currently controlled by the Social Democratic Party. There are 10 ministries or authorities (*Behörde*). Economic and industrial policy, labour market policy and education and training are covered by three ministries: the Ministry of Economy, Transport and Innovation (Behörde für Wirtschaft, Verkehr und Innovation), the Ministry of Employment, Social Affairs, Family and Integration (Behörde für Arbeit, Soziales, Familie und Integration) and the Ministry of Schools and Vocational Training (Behörde für Schule und Berufsbildung). The Ministry of Science and Research (Behörde für Wissenschaft und Forschung) as well as the Ministry of Urban Development and the Environment (Behörde für Stadtentwicklung und Umwelt) are also relevant actors on structural development policy in Hamburg.

When it comes to Hamburg's economic policy and a major turnaround in this field, people often refer to the First Mayor Klaus von Dohnanyi, who in a famous speech in 1983 coined the term '*Unternehmen Hamburg*' ('Enterprise Hamburg') and argued for a 'turning away' from focusing only on the port and maritime economy towards new markets, including job creation in new, promising industries.[3] As a direct consequence of this, the Economic Promotion Agency (Hamburgische

[3] Dohnanyi, K., 'Vortrag vor dem Übersee Club, Unternehmen Hamburg', 29 November 1983.

Gesellschaft für Wirtschaftsförderung, HWF) was founded in 1985 as the key public institution for the promotion of investment and structural change in Hamburg.

Economic promotion policy and industrial policy in Hamburg are carried out by many public and private actors as well as through public–private partnerships (PPP). In addition, the role of the city of Hamburg as the direct or indirect owner or shareholder of public and private enterprises is important in this context (Freie und Hansestadt Hamburg, 2013a). Apart from public and private enterprises providing services of general interest (for example, in the field of water and waste, public facilities, police, local transport, housing, welfare, education and science, culture or waste removal), Hamburg also holds shares in private enterprises that have a strategic role for the regional economic structure and employment. Through the holding company HGV (Hamburger Gesellschaft für Vermögens- und Beteiligungsmanagement), the city of Hamburg holds equities in the port and aerospace industry.

Furthermore, there are a number of regional financial institutions that provide financial support, guarantees and loans for private businesses in Hamburg, in particular the main regional financial institution, the HSH Nordbank, which is owned jointly by the state governments of Hamburg and Schleswig-Holstein (85.4%). Further shareholders are the Savings Banks Association of Schleswig-Holstein and nine trusts.

Since the 1990s, Hamburg's economic and industrial policy has been based on the concept of cluster development, focusing on areas and sectors that have important growth potential and where Hamburg and the metropolitan region have gained specific strengths and opportunities. As of 2014, there are eight economic clusters that are supported by various measures of public–private partnerships, such as networking, financial support programmes for innovation, skills development, research or business creation, and infrastructure developments (Freie und Hansestadt Hamburg, 2011):

- media, IT, telecommunication (1997);
- aviation (2001);
- life science (2004, in cooperation with the federal state of Schleswig-Holstein);
- logistics (2006);
- health economy (2009, PPP with the chamber of commerce);
- creative economy (2010, PPP in cooperation with research institutions and private companies);
- renewables (2011, PPP in cooperation with research institutions and private business);
- maritime economy (2011, in cooperation with the federal states of Lower Saxony and Schleswig-Holstein).

In addition, Hamburg has also developed a number of support initiatives and programmes in strategic fields such as port and transport infrastructure development (including the airport), innovation and research.

The cluster initiatives as well as further industrial policy projects are integrated in key policy orientations, in particular the 'Master Plan Industry' that was agreed between the government of Hamburg, the chamber of commerce and the association of industrial employers in 2007. The master plan was updated and revised in 2014 (Freie und Hansestadt Hamburg, 2007; Freie und Hansestadt Hamburg, 2014).

Key social partner organisations in the field of employers' business organisations are the Hamburg Chamber of Commerce (Handelskammer Hamburg, HK) and the Hamburg Industry Association (Industrieverband Hamburg, IVH), which is also a member of the German Industrial Employers organisation (Bundesverband der Deutschen Industrie, BDI), which is the main political interest representation body of industrial employers in Germany.

The metalworkers union, IG Metall, is the main employee organisation in the manufacturing sector, including the aviation industry. IG Metall's regional administration is the IG Metall Küste, which covers not only Hamburg, but also the federal states of Bremen, Schleswig-Holstein, Mecklenburg-West Pomerania and the north-western part of Lower Saxony. The IG Metall regional section negotiates collective agreements for single subsectors, such as shipyards, automotive, aviation, steel, electronics and medical devices, at regional level with the main employer organisation, Nordmetall.

The relationship between the two social partners in Hamburg reflects the overall culture of social dialogue at sector level in Germany, which can best be characterised as 'boxing and dancing'. Although collective bargaining processes and the main collective bargaining rounds between trade unions and employers in the manufacturing sector are normally accompanied by mass campaigns, picketing and industrial action, and even though regional restructuring processes at company level have often resulted in trade union solidarity campaigns and other activities, social dialogue in the industry sector is characterised by joint interests and concerns. In particular, issues such as improving vocational education and training, developing solutions to demographic change, equal opportunities, health and safety at work or activities to improve the image of manufacturing in Hamburg and northern Germany have often been addressed by joint campaigns, initiatives and projects.

Main features of the company and the cluster

Airbus is a European aircraft manufacturer with production sites in France, Germany, the UK and Spain. Airbus is a global producer with fully owned subsidiaries and production facilities in China, the US, Japan and the Middle East, aided by spare parts centres and field service offices around the world with a global workforce of almost 60,000 people.

Hamburg hosts the main German production site and is the headquarters of Airbus-Germany. At the major production site in the district of Hamburg-Finkenwerder, Airbus even has its own runway. Other German sites are located in Stade and Buxtehude in Lower Saxony (but part of the metropolitan area of Hamburg) and in Bremen. In 2013, Airbus in Hamburg was the city's largest employer with a total workforce of nearly 15,000, which is almost 40% of the total employment in the aviation industry. Apart from the other large industrial player, Lufthansa Technik, which concentrates on repair, overhaul and interior design, there are also more than 300 SMEs in the aviation sector that are either direct suppliers to the large companies or indirect suppliers for products and services such as surface and material treatment, measurement and control technics, engineering, IT, software integration and others. It should be noted here (described in more detail below) that the SME suppliers of the aviation industry have established their own employer organisation and network (Hanse-Aerospace), which is the largest network of its kind in Germany.

Hamburg has a long aviation tradition that dates back more than 100 years (see the box below), and since the 1960s it has been closely linked to Airbus. The Deutsche Airbus GmbH consisted of several companies that later merged to become Messerschmitt-Blohm-Bölkow (MBB), Dornier and Fokker-VFW. In 1970, the consortium Airbus Industrie was set up by joining the French Aérospatiale and the German Deutsche Airbus. Spanish Construcciones Aeronauticas SA (CASA) joined the consortium in 1971 and British Aerospace joined too in 1979.

The aviation industry in Hamburg

In 1909, Hamburg's first aircrafts were constructed in the Centrale für Aviatic, later Hansa-Flugzeugwerke. In 1911, Hamburg Airport was built. Today, it is the oldest airport in Germany still operating at its original location. In 1933, the Hamburger Flugzeugbau GmbH (HFB) was founded as a subsidiary of the shipbuilding company Blohm&Voss. In the following years, it basically served military purposes. At the end of the war, the company was dissembled by the British. Aircraft manufacturing started again in the mid-1950s, when the Hamburger Flugzeugbau GmbH had around 300 employees. Therefore, when the Deutsche Airbus GmbH was founded in 1969, it could use the existing experiences and know-how in aircraft manufacturing in Hamburg.

The aerospace and aviation sector has been a growing industry throughout the last decades, globally as well as in Hamburg. At the end of the 20th century, around 25,000 people were employed in the aerospace industry in or around Hamburg. In 2013, more than 40,000 people were employed in the region's aviation sector (industry plus aviation-related services) according to the cluster organisation Hamburg Aviation, making Hamburg the second most important region for civil aviation in Europe behind Toulouse and the third largest location behind Seattle (Boeing) and Toulouse worldwide.

The biggest employers in Hamburg's aerospace sector are Airbus in the field of aircraft construction, with about 15,000 employees, and Lufthansa Technik in the field of maintenance, repair and overhaul (MRO), with about 7,500 employees in 2010. Another core actor in the field of aviation is the Hamburg Airport, which together with local suppliers employed around 6,000 people in 2010. Finally, the aviation industry and related business services in the Hamburg metropolitan area consist of around 300 SMEs, which in 2010 were reported to have a workforce of around 8,800 employees (Bräuniger et al, 2010). Their business activities range from basic materials, surface protection, equipment and model construction, measuring and control technology to fitting out cabin interiors and systems. In addition, there are services to the sector in engineering, consultancy, documentation and design.

It was a political decision to launch the Airbus project in order to build a European competitor to Boeing, the US aircraft manufacturer, which had a monopoly in the 1970s and 1980s. Due to its strategic importance but also due to the specific competitive conditions, the aerospace industry is traditionally characterised by strong government support, both in terms of direct financial participation by the governments of Germany, France and Spain as well as by providing framework conditions such as the provision of infrastructure, research and innovation programmes and guarantees.

Throughout the 1970s and 1980s, Airbus launched several aircraft programmes. It started with the A300 and the A310, followed by the Long Range programmes A330 and A340 and the 'success model' A320.

From the beginning, the production and development of all Airbus aircraft programmes were based on a production network involving an international division of labour between manufacturing sites. In the first 20 years, final assembly of all aircraft programmes took place in Toulouse, while Hamburg was mainly responsible for the cabin installation and fuselage. To this day, cabin and fuselage are core competences of the aerospace industry in Hamburg.

The restructuring event

This case study focuses on the dynamic growth of the aviation industry in the Hamburg metropolitan region since the end of the 1990s. Thus, it mainly focuses on restructuring in terms of business expansion and job creation.

However, restructuring is a permanent feature of the aviation industry and various forms of restructuring, such as the internal reorganisation of functions at national as well as European and global level, outsourcing and changes in the value chain, are taking place continuously. At Airbus in Hamburg, different forms of restructuring during the last decades have resulted in job losses but also direct as well as indirect job creation. For example, in 1995 a large internal restructuring programme was implemented at Airbus globally in response to pressures caused by the low dollar value on costs and prices of the European production sites that resulted in the reduction of 8,000 jobs in total, of which 1,900 were located in Hamburg. However, most of these jobs were not lost entirely but were outsourced and moved to supplier companies or were relocated to new suppliers within as well as outside the region that were established at that time. This is another feature of restructuring at regional level: while employment in a certain company may be reduced, the overall employment in the sector is stable or even grows due to employment creation at suppliers and new establishments as a direct result of restructuring.

Background and drivers

Although the focus of this study is the business and employment expansion at Airbus in Hamburg and it covers the aviation industry in the region as a whole, the decision to build parts of the world's largest commercial aircraft, the A380 (previously known as A3XX), at the production site in Germany and to expand the industrial site of Airbus Hamburg-Finkenwerder was the most important single trigger of the restructuring event. This covered a period from 1997 and even earlier, when Hamburg applied to the global headquarters to host major parts of the production of the new aircraft, up to the industrial launch of the A380 in December 2000.

The background and main driver has been the global growth and the growth potential of the aviation sector. For Airbus, this reflected their corporate strategy to significantly increase their market share in global aircraft production.[4] Apart from the expansion of existing Airbus models, this included the decision to design and produce a larger, wide-body aircraft serving long-distance routes. Through this, the A380 should compete with Boeing's 747 jumbo jet.

The restructuring process

Main actors, their interests and motivation

Though the decision to locate significant parts of the planning, design and production as well as the delivery of the A380 in Hamburg was made by the Airbus management, a significant number of actors were involved in making this decision happen. In fact, the expansion of the Hamburg-Finkenwerder site and the development of necessary supplier and service resources in the whole region were based on a broad coalition of regional actors, such as the government of the city of Hamburg, the neighbouring regions and federal states as well as social partners' organisations and business interests and professional organisations. The only relevant regional groups that were *against* the expansion were environmental groups and local citizens (in particular farmers) that were concerned about building a new runway in a local natural protection area and a traditional horticultural region.[5]

[4] In 2012, the share of Airbus in global civilian aircraft orders was around 50%, slightly more than that of Boeing. See 'Airbus baut erstes Werk in Boeing-Land'.

[5] The Airbus production site in Finkenwerder is located in a traditional horticultural area of fruit production (in particular apples, but also cherries and other fruits). With around 10,000 hectares, it is the largest fruit production area in northern Europe.

For the city of Hamburg, the participation in the A380 programme was a major step to sharpen the aviation profile of the city, but it was also the most important industrial prestige project of the decade and thus was supported by a massive financial investment of around €1 billion as well as unprecedented political and societal engagement.

The business and production expansion would not have been possible without the strong support from the German federal government, since the decision also included federal legislative decisions (for example, regarding road and transport infrastructure and air traffic[6]) as well as financial support and direct involvement, for example through the federal Aviation Research Programme (Luftfahrtforschungsprogramm, LuFo) or guarantees and favourable loans provided by the Federal Bank for Reconstruction (Kreditanstalt für Wiederaufbau, KfW).

The Airbus expansion also received strong and unanimous support from all the industrial employer organisations as well as aircraft and other business interest organisations (for example, the Chamber of Industry and Commerce and cluster initiatives in the sector) as well as the regional trade union organisations (both the metalworkers' union, IG Metall, as well as the DGB as the umbrella organisation). Given the comparatively high organisation rate of Airbus employees (around 40%), IG Metall was a particularly strong supporter of the expansion of the production in Hamburg. Because of its sheer size, Airbus is a key industrial company for the trade unions and thus the Airbus works councils that exist at national as well as local level have a strong influence on the politics of the trade union organisation in northern Germany as well as in Hamburg. In this context, the Airbus European Works Council (which until the 2014 changes was integrated in the European works council of the Airbus mother group, EADS, as an autonomous section/subcommittee) is an influential actor.[7]

As mentioned above, the only significant group of actors that opposed the business expansion of the production and hangar in Hamburg-Finkenwerder consisted of a rainbow coalition of environmentalist groups, local citizens and small parties and groups on the left political spectrum. These organisations joined forces and at the end of the 1990s established the alliance Schutzbündnis für Hamburgs Elbregion (Alliance for the Protection of Hamburg's Elbe Region) that campaigned in particular against the extension of the runway and the filling up of a lake/branch of the river Elbe. However, in November 1999 the government of Hamburg decided to lift environmental protection laws on the site and it also received the approval of the EU Commission for this controversial decision (with reference to the 'overarching public interest') in May 2000.

Further information on the actors involved and their activities are presented in Chapter 4.

Anticipation, planning and preparation measures

In June 1997, the city of Hamburg applied to the global headquarters to become one of the major production sites of the A380 aircraft. Initially Hamburg not only competed with Toulouse and St Nazaire in France and Puerto Real/Cadiz in Spain, but also with Rostock, another German city, before the German federal government strongly supported Hamburg at a later stage. One of the factors that contributed to the German government's decision in favour of Hamburg was the local availability of qualified employees as well as local manufacturing and service providers, research institutions and further actors that were organised under the umbrella of a cluster organisation.

Between the formal application of Hamburg and the positive decision of EADS at the beginning of 2000, the planning and preparation of the expansion was adjusted and concretised by the EADS headquarters, the Airbus central management as well as national and regional governments. In the end, the decision was also made possible by a political compromise between the four national governments.

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6 The so-called Lex Airbus (Gesetz zum Erhalt und zur Entwicklung des Luftfahrtstandortes Hamburg) was quite prominent, which was passed by the Parliament of Hamburg in 2004 and was only made possible on the basis of an amendment to the federal air traffic law (Luftverkehrsgesetz) in 2002. According to the amendment, private business airports were declared as being in the general public interest (Bethge, 2012).

7 Traditionally, the presidency of the Airbus EWC is shared by German and French trade unionists. As of 2014, the Germans are in the chairing position and the French are the deputy chairman. Thus, the EWC support for the decision on the location of the A380 production was based on a joint decision within the EWC.

In June 2000, Airbus officially decided on the implementation of the production and the division of labour between different sites. While the final assembly line was going to be in Toulouse, Hamburg was chosen as the site to build the fuselage, the cabin interior and for painting of the ircraft. The final inspection and delivery to customers in Europe and the Middle East should also happen in Hamburg.[8]

An interesting aspect in this context is the issue of the anticipation of the positive effects of the Airbus extension on the regional economy and labour market in Hamburg, as this was quite a controversial debate in the media.

Even though it was based on a strong joint interest of all the key political and economic actors in Hamburg, the anticipated costs for the Hamburg public budget (and thus the taxpayers) were tremendous. Nevertheless, the government of Hamburg committed itself to pay for all of the costs to develope the production site, including the infrastructure development. Though no exact official figures are available, it is said that in total, these investments added up to more than €1 billion.

While the government was convinced that these costs would easily be paid off in terms of employment effects, tax revenues and rents paid by Airbus, these assumptions were based on quite a small amount of forecasted evaluations and anticipatory research. Only two studies were commissioned by the government of Hamburg, in 1998 and in 2000. Both studies were carried out by the same private consultancy and both were criticised (*Der Spiegel*, 2001; *Der Spiegel*, 2002).

The first study concluded that the effects of the expansion on the economy of Hamburg would be very positive and would result in the creation of 2,000 direct jobs at the Airbus site and 2,700 indirect new jobs at suppliers in the region. The study was criticised (*Der Spiegel*, 2001) for several methodical and analytical reasons (for example, the anticipation of the number of aircraft produced per year) and in particular for the fact that the expected direct job effects were based only on information that was provided by the Airbus/EADS management itself. Therefore, in 2000 the same consultancy carried out a further study that should have been based on much better quantitative data and information. However, the results of the study were very similar and were as positive as those of the first study, partly because the consultants lowered the expectations on the indirect job effects from 2,700 to only 2,000 (while the forecast for direct jobs created was the same).

It also became obvious that it was extremely difficult to calculate the fiscal effects of the Airbus extension beforehand. While the first study calculated an amount of €2–6 million per year from income tax of the additional employees at Airbus, the second study was less optimistic and only calculated €1.6 million. It should be mentioned here that Hamburg receives no revenues from corporate tax from Airbus, as EADS is registered in the Netherlands.

Implementation and management of the restructuring process

The A380 project was officially launched in December 2000 and the Airbus sites in Hamburg and other parts of the metropolitan region became part of the largest-ever project in the modern aircraft industry in Europe. Regarding core competences, the Hamburg branch of Airbus had sole responsibility for the development and production of the A380 cabin. In this context, the production site in Finkenwerder was not the only one that profited from the A380 project. The Airbus site in Stade near Hamburg became a centre of excellence for carbon-fibre reinforced polymer technology, and the site in Buxtehude took over the responsibility for in-flight entertainment systems for the A380.

The operational implementation of the restructuring, that is, the extension of the production in Hamburg, was a multifaceted process that included infrastructure development and significant building works at the site in Finkenwerder, the extension of traffic infrastructures/roads and the building of new production and service facilities at the Finkenwerder site as well as the recruitment and training of employees, internal work organisation and processes, networking with local suppliers and so on. The actors involved included not only company-level actors (both in Hamburg and the Toulouse headquarters), but also the government of Hamburg, employer organisations and public employment services as well as supplier companies and different networks. A more detailed

[8] Apart from Hamburg and Toulouse, Spanish Puerto Real in the region of Cadiz and Broughton in northern Wales are also involved in parts of the production. See 'Production' on the Airbus website.

description and analysis of measures of managing and implementing the restructuring process as well as the interests and motivations of major actors involved are presented in Chapter 4.

The launch of the A380 was accompanied by a major internal restructuring of the Airbus holding in general. In June 2000, the German DASA, the French Aérospatiale-Matra and the Spanish CASA merged to form EADS, the European Aeronautic Defence and Space Company. Eighty per cent of Airbus was integrated with EADS, while 20% of the company remained with the British BAE Systems. Major EADS shareholders included the private companies Daimler AG (Germany), the Lagardère group (France) and the SEPI group (Spain) as well as the French state, the German federal government and some German federal states. In July 2000, the new integrated company, Airbus S.A.S. (Societé par Actions Simplifieé), headquartered in Toulouse, began operating with a shareholders' board of seven members – five from EADS and two from BAE Systems – that would decide on new programmes and investments. It would also appoint members of the Airbus executive committee, who would be based in Toulouse and who would be responsible for all core functions and strategy.

Major milestones of the A380 production at a glance were:

- industrial launch in December 2000;
- completion of the first A380 in 2004 (after a lot of technical problems and delays as well as a lack of orders due to the September 2001 terrorist attacks);
- landing of the first A380 in Hamburg in 2005;
- handing over the extended runway at the Airbus site in Hamburg-Finkenwerder in 2007;
- inauguration of the Airbus Delivery Centre in 2008 and delivery of the first A380;
- start of the production of the A380 Cargo (delivery will not start before 2015).

This overview shows that it took at least 10 years from the time actors in Hamburg and at national level decided to suggest the site in Hamburg-Finkenwerder for taking over parts of the production and assembly of the A380 until the first aircraft was delivered in 2008. To make this happen, the main actors involved in Hamburg at Airbus as well as beyond the company faced challenges and problems directly related to the extension of capacities. Furthermore, there were a number of expected as well as unexpected developments and events that resulted in needs for adjustment, response and restructuring at company level as well as within the region.

The delivery of the first A380 aircraft was a very 'difficult birth' that was not only due to technical problems and the dramatic events of September 2001, but also due to difficulties on the cost side resulting from the weakness of the dollar, which caused significant financial losses and constraints. In addition, not only was the realisation of the A380 project a financial and technical challenge for Airbus, but at the beginning of the century the development and design of the A350 – the major competition project to the Boeing Dreamliner – also faced difficulties.[9]

Thus, the launch of the A380 production was a double challenge for Airbus. On the one hand, the necessary capacities had to be provided, including hiring thousands of employees (mainly in engineering and white-collar jobs). On the other hand, the company faced financial constraints and the challenge of reorganising production processes and value chain processes on a global scale.[10]

Both challenges had significant effects on the company itself and the development of employment in quantitative as well as qualitative terms at the Airbus sites in Hamburg as well as on suppliers and service providers.

In response to the financial problems and challenges, between 2003 and 2006 Airbus implemented a global comprehensive cost reduction programme (targeting a cost reduction of €1.5 billion per year)

[9] While development delays were officially announced in 2006, it took seven more years before the first A350 was finally delivered in 2013.

[10] The A380 was the first global programme for Airbus, involving some 1,000 companies worldwide (800 of them in the US, Russia and Asia). A major step in Airbus's internationalisation was the development of its initial final assembly line outside of Europe, which is located in Tianjin, China, and produces A320 Family aircraft, the first of which made its initial flight in May 2009.

called Route 06 that also included internal reorganisation processes such as setting up a series of centres of excellence based around its manufacturing sites and the major components of its aircraft. The programme also included outsourcing functions and services such as logistics and streamlining processes in cooperation with suppliers, quality control and purchasing.

In 2006, Airbus announced the restructuring and cost reduction programme called Power 08. This was also a reaction to the significant delays in the delivery of the first A380 to the customer and the massive financial losses caused by this as well as to technical problems in the production and assembly process, which resulted from difficulties in the supply chain. The cost reduction included the massive reduction of temporary agency workers at the Airbus sites (in Hamburg, 1,000 of the then 4,000 agency workers were dismissed) as well as a concentration and significant reorganisation of the supplier network. The overall number of first-tier suppliers was reduced massively and the principle of risk-sharing was introduced. Furthermore, the former Airbus production sites in Varel and Nordenham (Lower Saxony) were transformed into a new company (Premium Aerotec) that was then controlled by the parent company, EADS. Other sites were sold to main supplier companies, such as the Diehl Group.

Effects of restructuring

Effects for the company and its workforce

After the formal decision to concentrate certain functions of the A380 development, production and assembly in Hamburg-Finkenwerder, there was a need for additional personnel, in particular in the production/assembly as well as in engineering functions. Functions such as procurement and controlling also required additional personnel. Due to the financial difficulties and the uncertainties on the stability of employment, this employment creation only partly took place directly at the Airbus site, where most of the new jobs created were white-collar jobs. The extension of production and assembly capacities took place by hiring temporary agency workers and hiring via private employment agencies.

As a result, the structure of the Airbus workforce has changed significantly during the last decade. Due to the increase in temporary agency work in manufacturing functions and the outsourcing of work that is not regarded as a ‘core competence’ (for example, logistics), a strong trend towards service occupations took place. Meanwhile, two-thirds of the direct jobs at Airbus in Hamburg are white-collar jobs and only one-third are blue-collar.

These internal company developments (including growing insecurities, for example due to the management crisis and change within EADS in 2008) as well as increased external pressure have contributed to a worsening of working conditions and an atmosphere of general insecurity amongst manual as well as knowledge workers at Airbus.

The number of agency workers at Airbus in Hamburg-Finkenwerder increased rapidly after the start of the A380 programme and also as a result of the Route 06 restructuring plan, reaching peak levels of 5,000 to 6,000 agency workers in 2005/2006, with around one-third of the workforce in Hamburg-Finkenwerder being agency workers. Temporary agency workers were employed mainly in production, painting, coating and assembly functions, but also in administrative white-collar jobs.

The massively increased demand for several thousand engineers (until the delivery of the first A380 in 2008, a lot of engineering and production had to be carried out in parallel) was mainly met by procurement/service contracts with specialised external engineering companies. Though Airbus had already worked with external engineering providers in the aviation industry, the extension of engineering contracts has been an unprecedented challenge.

Handling and coping with the effects of the extension of the work at Airbus in Hamburg-Finkenwerder and the implementation of the global cost saving programmes Route 06 and later Power 08 was a huge challenge not only for the local management (which also faced internal competition such as benchmarking, in particular with the Airbus site in Toulouse), but also for the employee interest representation at local, national and European level.

The works councils at the major site in Hamburg-Finkenwerder as well as at the Airbus locations in Buxtehude and Stade not only had to cope with the rapidly increasing number of flexible workers, but

the years between 2003 and 2007/2008 were also characterised by an increase in overtime work, the intensification of work processes and a general increase in work strain that also resulted from the cost reduction programmes.[11] These challenges and the action taken by works councils and trade unions are described in depth in Chapter 4.

Effects on the region

Measuring the regional effects of business expansion in the aviation industry

It is difficult to measure the regional effects of restructuring (in terms of this case study, business expansion), particularly when trying to quantify certain effects on the regional economic and social fabric. While it is possible to quantify a number of direct as well as indirect effects, in particular in terms of employment, it is much more difficult or even impossible to deduce, for example, quantifiable effects on the regional GDP, gross value added or public income and expenditure, as these are triggered by many factors, large-scale restructuring being just one of them, which cannot be singled out for a sound assessment of restructuring effects. This is also true for dimensions such as demographic development, living standards and social quality, working and living conditions, education and research infrastructures and so on.

In the following and on the basis of available statistical sources and research findings, the following aspects will be analysed with for quantitative as well as qualitative effects:

- employment and labour market developments;
- regional wealth and income;
- restructuring and structural change at supplier companies, in particular SMEs;
- demographic effects and effects on living conditions.

Effects on employment and labour market developments

During the last decade, the aviation industry has played a major role in the positive employment development in Hamburg and it has played an outstanding role in mitigating the job losses in manufacturing employment.

A recent study (Görlinger et al, 2013) that compared the structural change in major German metropolitan regions illustrates that in comparison to other urban conglomerates such as Munich and Frankfurt, the loss of industry jobs in metropolitan Hamburg was lower. Between 2000 and 2012, the share of manufacturing employment decreased by 10 and 11 percentage points in Munich and Frankfurt, while in Hamburg the loss was only 7 percentage points.

This comparatively better performance of the industry in the Hamburg region mainly results from the dynamic employment development in the aviation industry. As Table 4 shows, manufacturing in Hamburg in total lost more than 14,000 jobs between 2000 and 2013. Within the same period, the aviation industry reported an employment growth of 9,500 jobs.

Against the background of the long-term decreasing share of industry employment in overall employment (in 2013 the share was only 9.6%, compared to 12.9% in 2000), it is also quite remarkable that nearly one out of 10 in all net jobs gains in Hamburg during the last decade was created in the aviation industry. Also, between 2000 and 2013, nearly one out of two jobs that were created in the German aviation industry (22,700) was created in Hamburg. While on average the industry grew by 35.9% at national level, the growth rate in Hamburg was more than 67%.[12]

These shifts within manufacturing have also resulted in a significant increase in the share of the aviation industry in total manufacturing employment in Hamburg, from around 14% in 2000 to more than 28% in 2013.

[11] Furthermore, the production rate of aircrafts of the successful A320 family (single aisle) increased massively over the past decade.

[12] According to data from the Federal Labour Office, from 23,738 in 2000 to 25,214 in 2013.

Table 4: Employment development in Hamburg

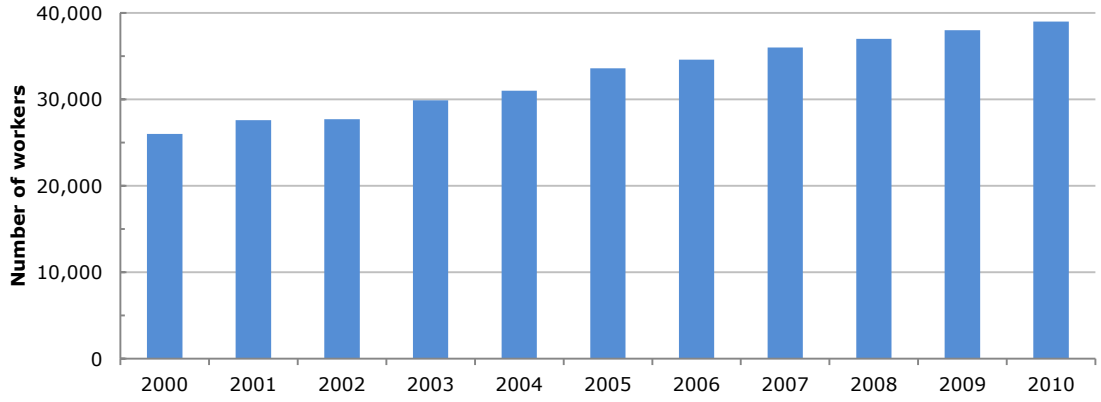
	2000	2009	2011	2013	Job gains/ losses	Change 2000–2009	Change 2000–2013
Total employment	762,471	809,315	835,148	870,336	107,865	6.1%	14.1%
Total manufacturing employment (NACE 10-33)	98,000	82,700	83,000	83,700	–14,300	–15.6%	–14.6%
Employment in the aviation industry (NACE 30.30)	14,131	20,781	23,680	23,622	9,491	47.1%	67.2%
Manufacturing employment without aviation industry	83,869	61,919	59,320	60,078	–23,791	–26.2%	–28.4%

Source: Bundesgentur für Arbeit, own calculations. Employment figures as of June each year.

The employment effects on the regional labour market are even stronger than the rather narrow statistical figures according to NACE suggest, as restructuring is also increasingly resulting in employment shifts across different statistical sector classifications. In the case of restructuring in the aviation industry, for example, thousands of jobs in fields such as engineering, logistics or design have been outsourced and are statistically 'lost', but in fact have moved to the service sector. Furthermore, the strong trend within the industry of job creation and hiring no longer being done directly but via temporary work agencies also statistically results in employment growth not in the aviation industry itself, but in the service sector.[13] These trends are illustrated not only by the whole aviation sector but also by employment figures at Airbus in Hamburg, which increased by around 15% (2,000 additional direct jobs created; in 2013, Airbus in Hamburg had around 15,000 employees).

Against these considerations, sector organisations as well as the Hamburg government, on the basis of surveys and research studies, estimate the actual number of jobs in the aviation sector to be much higher, at around 40,000.[14] However, while the growth in terms of absolute figures (13,000) is also higher, the growth rate between 2000 and 2010 of 50% matches the one based on the official labour market statistics.

Figure 1: Aerospace employment in the Hamburg metropolitan region



Source: Authors' own figures based on employment data from Freie und Hansestadt Hamburg (2011), p. 11.

A recent study has tried to estimate the indirect job effects of employment in the aviation industry (according to the narrower statistical classification) on up- and downstream employment (via purchasing and orders) in the metropolitan region of Hamburg (HWWI, 2012). According to another

[13] This is illustrated, for example, by a significant reduction of employment in the aviation industry in 2007 by around 2,500 jobs that resulted entirely from changes in the statistical method of counting. Since 2007, temporary agency workers are no longer counted at the hiring companies, but at the temporary agencies and thus are classified as service sector employees (Bräuninger et al, 2010).

[14] The figures of the Hamburg government are based on employment figures as reported by member companies of the aviation industry cluster and, for example, also include temporary agency workers, engineering service companies and so on.

study, each aviation industry job induces around 0.6 further jobs in the region and 1.1 further jobs in the whole of Germany (HWWI, 2012).

The jobs created in the aviation industry are usually more high skilled than on average in employment. According to 2013 data from the regional labour office, 56% of the employees in the aviation industry had a vocational degree and 31% had an academic degree, while on average the shares were 50% and only 17% respectively. The comparatively high qualification standards in the industry certainly have a number of positive effects on the region, for example purchasing power, because wages are also high, because of the region's attractiveness for young talents from other regions and so on, but these are difficult to quantify. Regarding job transitions between other industrial sectors and the aviation industry and transitions from unemployment, however, the high and often specialised qualification profiles may be a barrier. In this context it should also be stressed that the larger companies in the sector not only recruit their personnel on the regional labour market, but nationally and internationally too.

A further aspect relates to recruitment and the shortage of skilled workers. The aviation industry in general and well-known companies such as Airbus or Lufthansa Technik in particular are very attractive employers and thus are in a much better position in the competition between companies for young talents not only with academic degrees, but also for skilled workers and technicians. During the period of rapid employment expansion in the aviation sector between 2003 and 2006 and against the background of a general skills shortages of engineers and skilled workers, this certainly constrains recruitment in other, less attractive industries and companies, for example smaller suppliers.

In order to continuously adjust to technological progress and innovations, the supply of further training and qualification courses has also been extended. According to a report on the German aviation sector, Hamburg is the leading centre of initial as well as further training of aviation-specific occupations in Germany.[15] vocational education and training (VET) schools, universities and technical colleges have established new aviation-specific courses and new aviation-related occupational profiles have been developed. One indicator of this is the massive increase in the number of engineering students at universities and technical colleges in the metropolitan area of Hamburg. The HWWI (2012) study has highlighted that between 2000 and 2011, the number of employed aviation mechanics and engineers grew strongly by more than 50% and 16% respectively.

Effects on regional wealth and income

As already indicated in Table 1, the regional economy of Hamburg during the last decade has been remarkably stable and characterised by steady growth. Though the GDP growth was below the national average, the growth rate was above the rate of employment growth and Hamburg is the leading German region not only in GDP per head, but also in terms of productivity increase.

Since 2000, the aviation industry in Hamburg has contributed a growing share to the GDP and to the added value of the regional economy. Between 2000 and 2009 the turnover of the industry has more than doubled and the share of the aviation industry in the total manufacturing turnover increased from 6% to 13%. While the turnover of manufacturing due to the crisis slumped by 30% in the region, the aviation industry reported an increase of around 20% in 2009.

The growing contribution of the aviation sector to the region's wealth and income is also illustrated quite strikingly by added value data. In 2010, the added value of all sectors in Hamburg was €82.5 billion. Since 2000, the added value has increased by €6.1 billion, or 8%. Based on an estimated added value of €2.2 billion that was generated by the aviation industry in 2010 (Bräuninger et al, 2010), the share of aviation in total added value would have been 2.6%. Against the doubling of the aviation industry's turnover during that decade, one could also conclude that also the added value has increased much faster than in the total economy of Hamburg.

The strong effects of the aviation industry on income and wealth are also due to the fact that jobs in the aviation industry are on average highly skilled and thus better paid than most other industry jobs and in many service sectors.

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[15] Bundesministerium für Wirtschaft und Technologie (2010), 'Luftfahrtstandort Hamburg: das Kompetenznetz im Norden', http://www.innovations-report.com/html/profiles/profile-1315.html.

Thus, the aviation sector's growth has not only contributed significantly to the economic dynamism of the economy of Hamburg as a whole, but has also added to the advantages of the region in comparison to other German regions, for example high productivity and productivity growth.

Although the manufacturing sector's share in overall employment is declining, the added value still increased during the last decade by more than 11%. Furthermore, it has to be stressed that the frontiers between industry and service jobs and wealth creation are blurring. Examples here are the engineering service sector, which has grown quickly during the last decade, and private employment agencies, which have played an important role in the aviation industry not only in terms of screening and recruitment, but also in further training and providing the necessary qualifications.

Effects on suppliers and service providers

As shown above, the two leading companies, Airbus and Lufthansa Technik, have driven the dynamic development of the aviation industry in Hamburg during the last decade. Though both companies account for most of the manufacturing employment in the sector, a significant share of the workforce of the aviation industry and cluster is also employed in more than 300 SMEs in the region that function as manufacturing suppliers as well as service providers, in particular in the field of engineering, software, IT or documentation.

The expansion of the production at Airbus in connection with the high degree of outsourcing of components, parts and engineering, design and development services as well as in the field of HR (recruitment, temporary agency workers and contract workers) also resulted in a dynamic employment growth at the supplier companies in the region.

While overall the development has been positive, there have been a number of trends regarding business structures and employment in the aviation industry that should be briefly highlighted here.

In the context of recent restructuring programmes such as Power 08, Airbus has drastically reorganised and streamlined its supply chain and as such has reduced the number of system providers (first- and second-tier suppliers). This has resulted in massive change within the supply chain – a small number of suppliers are acting at an increasingly global level and many smaller providers no longer work directly for Airbus, but rather for first- or second-tier suppliers. Furthermore, new selection criteria, larger work packages, pre-financing needs and the increasing use of risk-sharing clauses in contracts with system suppliers are putting a lot of strain on suppliers, which SMEs often cannot handle.

Given that French suppliers on average are much larger than German suppliers (including those in northern Germany and in the Hamburg area), it is not surprising that French companies found it easier to cope with new requirements than their German counterparts. According to representatives of Airbus supplier companies in Hamburg, many of the mostly small and medium-sized companies are not able to meet the stricter criteria and thus they often move down the supplier chain or have to look for alternative markets outside the aviation industry.

From the point of view of sector representatives, these trends and developments have already resulted in a loss of independence and self-control of aviation suppliers in northern Germany and Hamburg. In addition, key competences were transferred to larger companies outside the region. This is illustrated by the takeover of two companies in Hamburg that are know-how providers in the field of cabin interior systems (Dasell Cabin Interiors GmbH and Mühlenberg Interiors GmbH) by the Diehl-Group in Nuremberg in 2010 and 2011. Diehl is currently one of the few German first-tier suppliers of Airbus and the only serious competitor to the French Zodiac company that dominates the Airbus supply chain in this and further areas.

The globalisation of aircraft production and assembly is a further challenge for SMEs in the aviation industry. This results in the need for supplier companies to internationalise, which is often not possible for smaller local companies.[16]

[16] In a recent study on the internationalisation and competitiveness of aerospace suppliers, German SMEs fared relatively badly, in particular when compared to large French suppliers. Many of these SMEs offer specialised niche products. Still, their international growth is limited by difficulties in supply chain management, risk management or financing (h&z, 2012).

These changes and challenges affect manufacturing suppliers as well as engineering service providers in Hamburg, as these also tend to be smaller than their counterparts at other aviation locations in the world. Currently, there are only two German engineering providers (one located in Hamburg) that are listed at Airbus as first-tier suppliers.

Furthermore, engineering providers already face the challenge of having to develop alternative markets because the large engineering programmes for the A380 are completed, and according to Airbus a new aircraft programme will not be launched before 2025. This means that engineering providers have to adjust their business models.

Further regional economic and social effects

It is not possible to quantify the specific contribution of the expansion of the aviation sector, but it is clear that it has contributed significantly to the positive development of employment and wealth in Hamburg as the second largest German and sixth largest European city as well as its metropolitan area of around 5 million inhabitants.

This positive development is also illustrated by demographic change and the continuous increase in the number of inhabitants. While the population in Germany between 2000 and 2012 declined by 2.1%, it increased in the city of Hamburg by 1.1% and in the wider metropolitan area by 2.1% and more than 100,000 people. Against the declining birth rate, population growth resulted from migration from other German regions as well as from foreigners (economic migration). As recent research has shown (HWWI, 2012), Hamburg gained in particular from the immigration of highly qualified employees – between 2000 and 2010, the share of employees with a university or technical college degree increased by more than 30%.

As shown above, a large share of the highly qualified employees who migrated to Hamburg, as well as the growing number of students who left the universities, colleges and VET schools in Hamburg with technical degrees, found jobs in the aviation industry, either in one of the two leading companies or at one of the supplier companies or the booming business services that serve the aviation industry. While these are characterised by above-average wage levels, working conditions are demanding, for example due to project-related deadlines, high pressure on efficiency and competition within and between teams.

Though the fiscal effects of this development are not possible to quantify, it is obvious that the city of Hamburg and (perhaps even more) the surrounding districts have benefited in terms of rising income due to wage and business taxes and the individual spending of good earners.

A further effect of Hamburg being a 'Growing City' (this slogan was created in 2002 as the *Leitbild* of urban development) has been the improvement and growth of public transport, large inner-city development projects, the mega urban redevelopment project of the 'Harbour City' in the old dockland area (which is comparable to the London Docklands both in terms of size and the amount of investment) and a number of large mass-cultural investments (such as the building of a new opera house, which should become the new landmark of the city) that serve the growing number of wealthy 'knowledge-workers' and their demands. These infrastructure projects have had positive effects on sectors such as construction, tourism and retail.

The aviation industry has undoubtedly contributed to this. However, the developments are also related to social problems and challenges in Hamburg. Hamburg is not only the richest German city in terms of average income per inhabitant, but it is also one of the urban areas where income and social inequalities are the largest and have increased during the last decade.

As already shown, unemployment and the share of long-term unemployment are above the national average[17] and are also higher in comparison with other metropolitan areas. Furthermore, the share of those living on social benefits and the number of inhabitants facing poverty is higher than on average in Germany, particularly in western Germany. When studying the development of these social indicators during the last decade, there is no sign that the positive economic development has also

[17] For example in June 2013, the overall share of unemployment was 7.3% and share of long-term unemployment was 2.2% while in Western Germany on average the share of unemployment was 5.8% and the share of long-term unemployment was 1.9%.

resulted in a reduction of existing inequalities, labour market segmentation (in marginal, often part-time, insecure and low-paid jobs on the one hand and full-time and high-paid jobs on the other) and social deprivation resulting from long-term unemployment and living on social benefits. While the number of people living in Hamburg who were in need of social benefits decreased slightly (from 14% to 13.2% of the total population) between 2007 and 2010, the figure is still higher than in Germany as a whole (10.7% in 2007 and 10% in 2010), particularly in western Germany (8.8% in 2007 and 8% in 2010; see Freie und Hansestadt Hamburg, 2013b).

Unfortunately, there are no studies on labour market transitions at regional level. However, we know that the average income of inhabitants who are classified as 'income rich' (with an income of more than 200% of the median income) has increased significantly during the last decade, while similar positive developments of the lower income groups are not reported; thus, income gaps are rising.

Approaches to dealing with the regional consequences

Overview and broad concepts

Given that the extension of the Airbus production in Hamburg is the largest and most significant single industrial investment and development project in the last decades, many company-level, public and public–private initiatives (see Table 5) have been developed to prepare and manage the restructuring/business expansion and the effects and consequences for the regional economy and the labour market.

It is not possible to clearly separate the various initiatives for different stages of action (anticipation, preparatory, implementation). It is also rather arbitrary to identify any certain dates of the restructuring 'event', as this was a sequence of events, as mentioned above, which sometimes meant that plans needed to be adjusted to react flexibly and on short notice to external and internal company developments.

Finally, there were time lags in public responses but also in the context of activities and approaches by social partners. The various initiatives carried out by the Hamburg government in the field of qualification, training and research are particularly telling; some of them came into practice only recently, such as the opening of the Hamburg Centre of Aviation Training (HCAT) or the important future collective agreement (*Zukunftstarifvertrag*) between Airbus and the metalworkers' union in 2012. It is difficult to determine whether these latter measures as well as some other more recent ones try to manage the effects of past restructuring or whether they are measures that anticipate and prepare for future restructuring. Thus, this differentiation is also somewhat arbitrary.

Table 5: Main initiatives for anticipating and managing restructuring at Airbus and within the aviation sector in Hamburg

	Public initiatives and public–private partnerships	Initiatives at company level, including Airbus works council and the IG Metall trade union
Anticipation and preparation	- Two studies on the anticipation of regional economic effects of the extension of the Airbus production based in Hamburg-Finkenwerder (1998, 2000) - Various regional and national legal, parliamentary and political activities and infrastructure development works in the context of the extension of the production site (1998–2004)	- Discussions with Boeing to develop a joint programme for a large aircraft failed; Airbus decided on the new aircraft project (1995–1996) - Discussions within EWC and local employee representations about possible locations for assembling the new aircraft - Agreement within the EWC and between French and German trade union organisations
Management and implementation	- Start of the Qualification Initiative for the aviation industry (*Qualifizierungsoffensive Luftfahrt*) (2000) - Founding of Initiative Luftfahrtstandort Hamburg, the aviation cluster initiative (2001) - The government of Hamburg launched the first Aviation Research Programme (LuFo) in Hamburg (2001–2006) - Based on a strong public–private coalition, in 2002 Hamburg hosted the world's largest annual exhibition of aircraft interior design and cabin systems, the Aircraft Interiors Expo (2002) - Hamburg University of Applied Studies (HAW Hamburg) started academic courses on cabins and cabin systems in the context of aircraft engineering (2005) - The Centre for Aviation Research was established at the University of Technology Hamburg-Harburg (2005) - Technical university at CFK Valley Stade started the first academic study course (2006)	- Hanse-Aerospace, the association of aviation suppliers, was established (2000) - Negotiations with EWC and local works councils and trade unions, collective agreement (Siduflex) between Airbus Germany and IG Metall on security and flexibility (2003) - Airbus local production sites were sold to suppliers (2008), negotiations with local works councils and trade unions

	- Launch of the second Aviation Research Programme (LuFo) for Hamburg (2006–2010) - Free and Hanseatic City of Hamburg donated the first international award for excellence in aircraft interiors, the Crystal Cabin Award (2007)	
Anticipation of and preparation for future change	- Aviation Cluster of the Metropolitan Region of Hamburg won the Leading-Edge Cluster Competition of the Federal Ministry of Education and Research (total budget of €200 million for four cluster initiatives) (2008) - The Hamburg Senate decided to invest €10 million to establish a Centre of Applied Aeronautical Research (ZAL) and a further €3.7 million for test rigs for aviation-related fuel cell research (2009) - The regional cluster initiative was transformed into a non-profit association – public, corporate and academic partners officially founded the Aviation Cluster Hamburg Metropolitan Region Association (Luftfahrtcluster Metropolregion Hamburg e.V.) (2011) - The Hamburg Centre of Aviation Training (HCAT) was opened – a public–private partnership of the local aviation industry, universities and vocational schools to bundle demand-orientated qualification (2011) - Hamburg Aviation was awarded the Gold Label of the EU Commission's European Cluster Excellence Initiative (2014)	- Collective agreement between Airbus Germany and IG Metall (*Zukunftstarifvertrag*) (2012) - First survey amongst works councils in the aviation industry carried out by IG Metall, the metalworkers' trade union (2012)

Main actors, their interests and motivation

The support for the extension of the Airbus production in Hamburg-Finkenwerder has been actively promoted by the government of Hamburg as well as by the federal government, which had – and still has – a strong interest in stabilising the aviation industry as a knowledge-intensive and growth industry in Germany.

Both at the federal government level as well as in the region of Hamburg, the active support for the aviation industry is a cross-party one. The change of regional government in 2001 from the Social Democratic Party to the Conservatives has not had any visible influence on the basic orientation of supporting the extension of the production site in Hamburg-Finkenwerder, the financial commitments of the city of Hamburg or supportive measures and activities in the field of research and development, training and qualification and the support of the aviation cluster in general.

Apart from public authorities and the major political parties, employer organisations such as the Industrieverband Hamburg (Industry Association Hamburg) and business interests such as the Handelskammer Hamburg (chamber of commerce) also played an important role, although they concentrated on lobbying, organising the aviation sector's interests and actively participating in various initiatives that are described in more detail below. In this context, smaller suppliers in the regional aviation industry started to organise themselves in the 1990s, and in 1996 founded their own association, Hanse Aerospace.

Supplier companies are not the only ones that have had an influence on the development of the aviation industry in Hamburg. The major companies (Airbus, Lufthansa Engineering) are also actively involved in the planning, operationalisation and funding of different initiatives that have been carried out since the end of the 1990s and are leading actors in the flagship initiatives that shape the aviation industry policy in Hamburg today. This strong public–private partnership approach has been highlighted by public and private actors as a key success factor for the positive effects of the anticipation and management of change in the aviation sector in Hamburg.

Given the growing importance of private employment service agencies for HR development and recruitment, in particular at Airbus in Hamburg, service providers have also become an important actor within aviation policy, especially in the context of training, recruitment and HR development initiatives.

Against the strong increase in private and public research and development activities as well as vocational training, associations and providers in these fields have also become an important partner in the elaboration and implementation of various initiatives of the aviation industry.

Finally, with around 40,000 employees, many of whom work in the two major manufacturing companies in full-time and permanent jobs, the aviation industry workforce is perhaps the most important backbone of the metalworkers' trade union in the Hamburg region, IG Metall Küste. Against this, the metalworkers' union as well as the umbrella organisation, DGB, and the service sector union, ver.di (who traditionally organises workers and employees at the Hamburg airport and at Lufthansa Engineering), have actively supported the extension of the Airbus production. It should be noted, however, that the Airbus works council as well as the trade unions are friendly but also critical supporters of structural change in the aviation industry. For example, the extension of flexible forms of work rather than direct employment and the rapid increase of temporary agency work has been addressed by various activities that are described below in more detail.

In general, the intensive cooperation between actors was – and is – based on the joint perception that what is good for the regional aviation industry also benefits Hamburg as a whole.

Detailed description of measures taken

Industrial policy, cluster initiatives and promoting Hamburg as a location for aviation

After the decision was made to locate parts of the Airbus A380 assembly in Hamburg, but also against the background of the growth of the aviation industry in general (at Lufthansa Engineering as well as in manufacturing SMEs and the service suppliers), in 2001 the government of Hamburg founded its own cluster initiative in the field of aviation: Hamburg – The Place for Aviation (Luftfahrtstandort Hamburg), which changed its name to Hamburg Aviation in 2012.

Hamburg Aviation brings together all relevant private and public actors in the field of aviation interests. All relevant employers and business associations of the sector, economic promotion agencies, the city of Hamburg, universities and research institutions, engineering and service providers, public and private vocational training institutions and companies in the field of logistics and overhaul and repair as well as private employer agencies are members of the cluster. As of March 2014, the cluster organisation has 100 corporate members.

Hamburg Aviation is perhaps one of the largest cluster initiatives in Europe and has received several awards, such as winning the excellence cluster competition of the Federal Ministry for Education and Research in 2008 and winning the European Commission's Gold Label for Cluster Management Excellence in the context of the European Cluster Excellence Initiative (ECEI) at the beginning of 2014.

Hamburg Aviation is the most important label and lobbying body of aviation in the national and international context[18] and also implements and coordinates through its own office the acquisition of funds and networking and exchange in fields such as research and development, training and qualification and enterprise support services.

The city of Hamburg has actively promoted the cluster initiative. The economic policy ministry (Behörde für Wirtschaft, Verkehr und Innovation) has its own department for the aviation sector and is a strong actor with regarding interdepartment coordination of government policies in fields such as infrastructure and transport, education and training, research and labour market policy. In fact, various initiatives, such as those described below in the field of vocational education, training and qualification, have been initiated by the ministry's aviation department.

The Behörde für Wirtschaft, Verkehr und Innovation also coordinated the industrial policy guidelines (*Masterplan Industrie*) that were agreed between the government and key employer organisations in 2007. While at that time the trade unions were not involved in forming this strategic document, the revision of the Masterplan in 2014 was also signed by the DGB.

It is quite striking that apart from the significant investment in the Airbus extensions and promotion activities, the most important single policy fields are the support for research and innovation activities in the sector as well as vocational training and qualification initiatives.

[18] Due to the growing internationalisation of the industry, in 2009 Hamburg Aviation initiated the founding of the international European Aerospace Cluster Partnership, which brings together more than 20 cluster organisations from 11 European countries.

Education, qualification and training

During the last decade, Hamburg has become the leading centre for vocational education and training in aviation technology occupations and qualifications in Germany. The impressive development in the number of aviation or aviation-related courses, vocational programmes, academic courses, R&D infrastructures as well as private engagement in this field would not have been possible without the proactive support from the regional government (with financial support often provided by the federal government).

A major qualification initiative (*Qualifierungsoffensive Luftfahrt*) was launched in 2000 by the then existing authority for economics and labour (Behörde für Wirtschaft und Arbeit) in response to the increasing demand for skilled workers and experts. The qualification initiative started with a retraining programme for 30 engineers from other sectors who received an aviation-specific qualification during a period of five months. The students were selected directly by the involved companies (they actively participated in the initiative from the beginning), which also co-financed the initiative. Out of the total number of participants, 15 were selected and paid for by Airbus and a further 15 participants were qualified in order to fill demands in SMEs. While the curricula were developed by a regional technical university in cooperation with companies, the infrastructure, teachers and trainers were financed jointly by the city of Hamburg and the private companies involved in the programme.

Since then, a number of further initiatives have been implemented in order to provide the aviation sector with qualified personnel. Today, there is a dense network of private companies, technical colleges and universities and relevant authorities (education and training, research, employment) coordinated by the authority for the economy, transport and innovation. The European Commission has awarded the Best Practice label to the qualification initiative.

An outstanding recent training initiative is the Hamburg Centre of Aviation Training (HCAT), which was launched officially in 2011. As a new kind of public–private partnership, the HCAT is unique in Europe. While the lead role is played by the Behörde für Wirtschaft, Verkehr und Innovation, ministries and authorities for science and research and schooling and vocational training are also involved, as are public vocational training institutions and vocational colleges, the University for Applied Sciences (HAW) and the training departments at Airbus and Lufthansa Technik. While most of the costs of HCAT are financed by the Behörde für Wirtschaft, additional funding is provided by the federal ministry for education and research (BMBF) and the Hamburg Institute for Vocational Education (HIBB) as well as the two companies (Lufthansa Technical Training and Airbus Operations).

Consequently, HCAT is based on broad partnerships and learning cooperation, bringing together all relevant actors in order to provide a combination of initial and continuing education, research and teaching under one roof (three in one). While training and research contents are strongly orientated towards the industry's concrete needs, it is not just the two large companies that profit from HCAT – all the aerospace companies and supplier companies of the Hamburg metropolitan region can benefit from the initiative.

Research and innovation programmes

Hamburg has been quite successful in the acquisition of national research funds and co-funding of regional R&D funds. Such funds were used and concentrated on the fields where key aviation competences of regional actors exist or should be extended, for example cabin interior technology and engineering, lightweight material technology and construction as well as more resource-efficient power trains (for example, fuel cells).

During 2001 to 2006, for example, Hamburg was able to spend a total amount of nearly €64 million for more than 90 single public as well as private R&D projects in the context of a regional Aviation Research Programme (*Luftfahrtforschungsprogramme*, LuFo) that is financed by the ministry of research (BMBF). Parts of this funding were used to develop the qualification initiative in the aviation sector as well as for the development of a competence centre, called Cabin, and international cooperation (€0.6 million).

After the successful participation in the Cluster Excellence Initiative of the German federal government in 2008, €40 million of public funds plus the same amount of private co-funding provided by companies was available for another round of lighthouse R&D activities that again included cabin technology and innovative fuel cell applications, innovations in maintenance, repair and overhaul and efficient transport systems (with the involvement of Airbus, Lufthansa Technik and Hamburg Airport as well as SMEs, research institutions and other institutions).

Today, Hamburg can rely on stable, established and well-coordinated cooperation between public political authorities (with the ministry for economics, transport and innovation in the driver seat), private business (the Hamburg Aviation Association plays a key role here in coordinating and articulating interests) and research institutions. An effective research network has been built in the metropolitan region during the last decade, including the Hamburg-Harburg Technical University (TUHH), Hamburg University of Applied Sciences (HAW), Helmut Schmidt University (HSU), Hamburg-Finkenwerder Technology Centre (THF) and many other university-level institutions; important partners outside the region include the technical university in Brunswick and the German Centre for Aviation and Aerospace (DLR).

Not only the aviation industry profits from the R&D competences and results – research as well as academic and other vocational education and training, for example in fields like design, engineering, carbon fibre technology and materials or fuel cell technology, spills over into other industries and services.

In addition to existing research institutions, the funds received when Hamburg won the federal excellence cluster initiative were used to found the Centre for Applied Aviation Research (ZAL) in 2008. This initiative is a public–private partnership that focuses on R&D in aircraft interiors and air transport systems. The Fuel Cell Lab (FCL) is spatially integrated, in which tests are being conducted on fuel cell technology as an alternative energy source in aircraft. The centre is located at the sites of Lufthansa Technik and Airbus, but its facilities and workshops can be used by other companies and research institutions.

Role of trade unions and works councils in the aviation sector

As employee representatives in boards of directors, works councils at local (*Betriebsrat*), national (*Gesamtbetriebsrat*) and (as in the case of EADS/Airbus) group level (*Konzernbetriebsrat*) play an important role in influencing corporate decisions, in particular on recruitment, HR development, training and social issues. In Airbus, during the last decade the works council has played a key role in developing and fostering initiatives that aimed at cushioning the effects of the various rounds and programmes of internal restructuring and reorganisation of employment and working conditions. In addition, the works council has its own successful agenda, with initiatives in the field of gender equality, integration of migrant workers, working conditions and occupational health and safety that contributed to the improvement of working conditions, quality and labour relations at the company level. However, perhaps the most important objective (which also reflects the priority interest of the employees) has been job security and the development of agreements at company level that include the management's commitment to avoid economic redundancies.

Though dating back to the 1990s, the first large restructuring and cost-saving programme that was implemented at Airbus after 1995, called Dolores,[19] still has important repercussions on the works council as a striking example of bad practice in restructuring because it resulted in the loss of 1,900 jobs in Hamburg (in Germany as a whole, 8,000 jobs were lost). While the overall need to reduce costs and increase efficiency was supported by the Airbus works councils, the implementation (closing single sites with a loss of qualified and experienced employees) was strongly opposed. Accompanied by nation-wide campaigns and protests as well as political support for the employee demands, the Airbus works council's alternative suggestion for a gentler and equally spread reduction

[19] The background of the Dolores programme was a rapid slump in turnover that resulted from a weak dollar. As a reaction, the Airbus management announced the need to reduce personnel costs by 30%, to increase efficiency by 30% and to create a risk reserve fund of 30 million German marks.

of employment at all sites was finally agreed by the management and the job reduction was carried out without any economic dismissals.

Though Airbus experienced a long period of employment growth after the Dolores restructuring programme, restructuring and internal reorganisation has still been on the agenda of the international as well as German Airbus management, perhaps more intensively and continuously then ever before. The cost-saving programmes in response to the delays in the A380 programme included massive outsourcing of functions (especially in engineering and logistics) as well as the sale or transfer of single production sites. The management also originally intended to dismiss thousands of workers across Europe, but this plan was modified against the background of strong opposition of German and French trade unions and political actors. In the end and after further industrial action, the most important result of the Power 08 restructuring programme was the transfer of three German Airbus sites into a new company (Premium Aerotec). This affected 6,000 employees who now found themselves working for another company that was 100% owned by Airbus. Though this transfer did not result in a worsening of contractual conditions (wage levels, working hours, holidays), it created an atmosphere of uncertainty amongst the affected workers about the future as well as the 'stayers' at Airbus companies (who were asking themselves who would be next).

The offshoring or transfer of single production sites that were implemented between 2008 and 2010 as well as further measures of reorganisation and efficiency optimising were accompanied by a continuous increase in employment at Airbus as well as at its direct suppliers, in particular in engineering, planning, procurement and other white-collar occupations but also in production.

In this context, the Airbus works council was confronted with a number of challenges. Perhaps the most important one was the trend that in the production/assembly works and in engineering, employment creation happened not through direct contracts with Airbus, but by a huge increase in temporary agency jobs and service contracts with engineering companies. At its peak level in 2005/2006, there were around 6,000 temporary agency workers employed at the main site in Hamburg-Finkenwerder. The integration of such a large number of temporary workers has had a significant effect on workplace labour relations and organisation.

Against this, during the last decade the Airbus works council has developed and implemented (through company-based collective agreements) a number of measures that not only aim to reduce the share of temporary workers, but also to improve and stabilise working conditions and labour relations. The priority was to improve temporary agency workers' situation through equal pay and equal treatment agreements, to support the transfer into direct jobs and to reduce the overall share of temporary agency work. The works council was very successful and, for example, reached an agreement for equal pay after four months of temporary employment. It should be mentioned that the agreements on equal pay for temporary agency workers would not have been possible without the IG Metall campaign on the issue during the last 10 years.

Furthermore, thousands of agency workers were transferred into direct employment at Airbus (for example, 600 in 2013 alone) and the overall number was reduced significantly (in 2013, there were 2,500 agency workers at the main site in Hamburg-Finkenwerder, that is, a share in overall employment of less than 10%).

The works council also achieved certain consultation and co-determination rights in the field of service contract employment (*Werkverträge*), which has increased in fields such as engineering and development functions, construction and repairs, logistics, IT and business services.[20]

The works council at Airbus and the regional metalworkers' union, IG Metall Küste, concluded two major collective agreements on working conditions (*Firmentarifvertrag*) with the Airbus management as well as further company-based agreements (*Betriebsvereinbarungen*) that are examples of good practice in combining the management's interest in increasing internal flexibility with the employees' interests in decent working conditions and job/employment security.

[20] This is a remarkable achievement, as this form of employment in Germany does not have any legal obligations with regard to information and consultation rights of employee representatives and has been growing significantly recently as a result of the stricter regulation of temporary agency work (TAW) and the introduction of a minimum wage for the TAW.

In 2006, the national collective agreement between IG Metall and Airbus on Security through Flexibility (Siduflex) was concluded. It consisted of a bundle of measures focusing on the increase of working time flexibility, such as extending the flexible work scheme (with larger bandwidths of shortening as well as extending the weekly working time) and the working time accounts that the company had already introduced in 2003. In turn, the management agreed to significantly reduce the number of temporary agency workers. Though the agreement covered other locations in addition to the Hamburg Airbus location, the works council at the Finkenwerder site was a major driver of this agreement.

After the Siduflex agreement was terminated by the Airbus management at the end of 2011, the works council and IG Metall, after nearly two years of negotiations and campaigning (including strike action), succeeded in concluding a regional collective agreement in 2012 (*Zukunftstarifvertrag*) that covers around 16,000 employees at the Airbus locations in northern Germany (Hamburg, Bremen, Stade and Buxtehude) and includes a number of regulations aimed at safeguarding employment, improving working conditions, flexible work, working time and other aspects:

- temporary agency work will be reduced to a maximum of 20% until 2015 and 15% after that in the production process (in 2013 the share was around 19% of the workforce at the northern German manufacturing sites);
- after four months, temporary agency workers will receive equal pay;
- Airbus commits itself to an apprenticeship rate (that is, share of apprentices in the total workforce) of 5% (in 2013 the rate was around 4.5% in the northern German sites) and will offer every apprentice a direct job after the successful completion of vocational training;
- the agreement includes a number of measures implemented jointly by the works council and the management aimed at increasing productivity above the annual target (joint optimising process) and the active participation of the works council in the context of work optimisation and productivity;[21]
- Airbus rules out any economic dismissals until the end of the agreement in 2020 and also guarantees that the northern German locations as well as their key competences will be sustained;
- the information and consultation of the works council in decisions on outsourcing and the contracting out of functions and services will be intensified.

In addition to the sector-wide collective agreements that have been concluded between the Airbus management in Germany and IG Metall, the Airbus works council has concluded a number of company agreements (*Betriebsvereinbarungen*) with the management on various issues related to working conditions, company-based employment policy and work organisation. One initiative that was awarded in the context of the annual competition of the German Works Council Prize was an agreement to promote technicians' further training amongst female workers (Meisterinnen-Förderprogramm) that was introduced in 2011 jointly with the management.

In contrast to Airbus (as well as the other large manufacturer in the aviation industry in Hamburg, Lufthansa Technik), which have strong works councils due to a strong union organisation rate, the situation of employee interest representation at the hundreds of smaller supplier companies in the region is different. While larger SMEs in the manufacturing sector are also characterised by a strong trade union membership rate and coverage by the sectoral collective agreement, smaller SMEs and those providing white-collar services in the fields of engineering, IT or other services often lack a works council. Also – though no analysis has been carried out so far on this issue – it is likely that temporary agency workers' wage and payment levels and other aspects of working conditions (for example, working time accounts or further training provisions) are lagging behind the standards of the larger companies.

[21] These measures were designed and agreed by company agreements (Betriebsvereinbarungen) between the Airbus management and the works council. For example, they involved the introduction and extension of self-organised teamwork. According to the chairman of the Airbus works council in Hamburg-Finkenwerder, in the first 18 month after the launch of the agreement, more than 20,000 suggestions on single optimisations were made by employees.

At sector level, IG Metall has also intensified its activities of organising smaller companies in the aviation sector and thus reflecting developments in the supply chain and supplier relationship by establishing a sector network for the aviation industry, called airconnect, that organises the exchange between works councils, carries out questionnaire-based surveys amongst works councils and conducts analyses that should contribute to employee-orientated forms of innovation, structural change and sector growth (IG Metall, 2012). However, as representatives of the Airbus works council in Hamburg-Finkenwerder have highlighted, so far structured and regular exchanges between works councils at the larger companies and the SME suppliers do not take place at the regional level.

Apart from the local, regional and national Airbus works councils, the EWC also plays an important role in the articulation of employee interest representation to the central European Airbus management, the coordination of interests, the exchange of experience and information, and the consultation between trade union representatives in Europe. Due to the accelerated transnational cooperation in the A380 programme as well as in the area of supply chain organisation (which also includes more competition between production, supplying, assembling and delivering sites), the need for internal cooperation within the group has increased during the last decade and the EWC plays a crucial role here. It should be noted that there is no separate EWC for Airbus, but an Airbus committee consisting of 22 delegates has been formed within the EADS EWC.[22] Traditionally, the Airbus committee is chaired by a German and French employee representative. The current German EWC chairman is also the chairman of the EADS EWC and the German Airbus group works council. Currently, there are four annual full-plenary meetings with the EADS/Airbus management as well as four employee-only meetings.

The Airbus EWC committee is also an important arena of exchange with the European management on strategic orientations and corporate planning, such as management's target, announced at the end of 2013, to increase the operating profit margin from to 4.7% to 10% in 2015 as a result of the far-reaching restructuring of the EADS group. [23]

Elements of good practice and lessons learned

The management of restructuring in the aviation industry in Hamburg contains many elements of good practice. In particular, it illustrates the added value of a comprehensive and integrated regional approach that not only combines all relevant policy fields (this is exemplified by the cluster concept), but goes beyond the immediate effects of the restructuring 'event' and aims to systematically develop the regional potential in order to support sustainable growth and job creation in the longer term.

The case of aviation in Hamburg also illustrates the added value of a wider concept of industrial policy, qualification and labour market policy as a framework not only for the aviation sector, but also for spill-over effects and business development in other industries and areas, such as research and development, in order to broaden the labour market effects and reduce the risk of crowding-out effects.

Another element of good practice has been that the adopted approach has not just concentrated on the large business players, but from the beginning has tried to take into account and involve the interests and needs of the more than 300 SMEs that are involved in the aviation value chain as suppliers and service providers.

Regarding job transitions, skills development and qualification, the Hamburg Centre of Aviation Training, with its unique combination of vocational training, workplace orientation and research, as well as its nature of public–private ownership and the direct involvement of companies, is another element of good practice. Several other initiatives also illustrate the added value of proactive measures in the field of education (even within schools), vocational training and qualification not only for the aviation industry, but also for educational attainment and qualification in the whole region.

At the same time, the employment growth in the aviation industry in the region illustrates that job transitions between unemployment and employment seem to be rather limited (no studies on this topic

[22] For more on the history of the EADS EWC, see Eurofound's European Works Council EADS case study that was undertaken in 2005.

[23] See, for example, 'EADS streicht 5800 Stellen'.

have been carried out), which mainly results from the mismatch between the skills and qualification profiles of those who are unemployed in Hamburg (especially the long-term unemployed) and the high skills and competence demands of the aviation industry.

The success story of aviation in Hamburg has been made possible by the strong commitment of political actors and all major economic players (including the trade unions) in favour of the sector. This has contributed to further elements of good practice, such as clear and identifiable objectives and targets, a highly visible and well-communicated vision for the sector and sustainable funding for the hundreds of various measures carried out during the last decade under the umbrella of Hamburg Aviation. Apart from active public relations work that is carried out by the different key actors of the aviation industry for economic promotion, networking, awareness raising and for promoting initiatives, aviation in recent years has also become a strong issue in the field of initial education (projects between companies and schools, even kindergartens) and higher education institutions (open days, recruitment fairs, further training initiatives) that are actively promoted and supported by the Hamburg government and ministry of the economy.

The fact that Hamburg also plays a leading and initiating role in European cluster initiatives for the aviation sector illustrates this strength in terms of partnership, visibility and public–private commitment towards the sector.

Trade unions and works councils have concentrated on labour relations at the company level and have not been involved directly in the industrial policy and cluster initiatives described in this report, including initiatives in the field of training and qualification. Trade unions and works councils have focused their resources on campaigning for equal treatment of flexible workers and avoiding economic dismissals in the context of the cost-saving programmes.

A success factor of the initiatives established by the trade unions and works councils was their strong membership base and ability to undertake industrial campaigns and action in critical negotiation phases, as this enabled them to conclude collective and company-based agreements with the management that have positively influenced labour relations and working conditions, especially of flexible workers, and extended the influence on corporate practice at local level. At the same time, these agreements have also increased the internal flexibility and efficiency of work organisation.

Given the success achieved in this context (namely the collective agreements on equal pay for temporary agency workers), trade unions' rather passive role on anticipating and managing industrial change in the aviation industry may change in the future, as indicated recently by the involvement of the cross-industry trade union organisation DGB in the revised industry Masterplan 2014, which on the trade union side included a comprehensive industrial policy analysis (see Wilke, Maack and Partner, 2014), or the launch of a regular survey amongst works councils in the aviation industry by IG Metall in 2002.

Commentary and conclusions

There are number of conclusions that can be drawn from this case study on regional effects of restructuring, with a specific focus on business expansion and job creation:

- Although this has been an issue of major political and public concern, the likely as well as actual effects of the Airbus extension on the regional economy and the local labour market had not been studied (either before or after the extension) before this case study attempt. Thus, the exact effects on employment/unemployment, regional income and expenditure (that is, the public investments) and social conditions can at best only be discussed on the basis of qualitative assessments and the general 'feeling' that the region has profited significantly from the net job creation of nearly 10,000 job in the aviation cluster during the last decade.
- The various initiatives, measures and activities show what is possible in terms of proactive industrial policy, qualification and skills development, innovation, and research and development as well as lobbying, marketing and practical business support and networking when a key regional actor – the government of Hamburg – is driven by a strong vision (which was – and still is – making Hamburg a location for aviation).
- The success of the restructuring process and the spill-over effects that were achieved (in particular in the fields of vocational education and training, R&D and innovation systems) was made possible by the strong commitment of regional political actors as well as the sustainable funding they received from the federal government. However, the efficient implementation of the various initiatives and measures – though coordinated and driven by the regional government – would not have been possible without the active involvement of all the key actors, in particular the companies of the sector, and a consequent application of public–private partnership and 'ownership' principles.
- A key challenge for the future will be to make spill-over effects more sustainable by supporting smaller businesses and fostering innovation and business developments in other industries outside aviation as well as knowledge-intensive services, thereby reducing the strong dependency of the regional economy on the two major industrial companies.
- At the same time, the fact that employment creation in the aviation industry (both at the large companies as well as at suppliers) was mostly in the form of an increase in flexible work (temporary agency work, contract labour) involves the challenge of negative spill-over effects in terms of the labour market segmentation and working conditions. In other words, other companies/industries also reduce core staff and increasingly use temporary agency work and service contracts not only due to the need for external flexibility, but also for cost reasons.
- This latter issue of labour market trends and working conditions in the sector – which so far have not been researched – also shows the need to foster exchange and networking between employee representatives within the regional aviation industry.

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Annex: Interviews

Interviews with representatives of the following institutions and organisations were carried out between August 2013 and January 2014:

- AgS Institute
- Airbus Works Council
- Avation cluster management, Behörde für Wirtschaft, Verkehr und Innovation
- DGB Northern Region
- Hamburg Aviation
- Hamburg Centre of Aviation Training
- Hanse Aerospace Association
- IG Metall Küste
- Secretary of State, Behörde für Wirtschaft, Verkehr und Innovation
- Süderelbe e.V.

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EF/14/41/EN 5

