Ideopolis: Knowledge City Region

Munich Case Study

Dr Nicola Duell of Economix

"The once-staid Bavarian capital is currently rivalling big brother Berlin as Germany's most cutting-edge city."

Ian McCurrach, The Guardia

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1. Introduction

This case study looks at the German city of Munich, the capital of Bavaria and an important international city. It looks at whether the city is a knowledge city, drawing on the Ideopolis frame-work developed by The Work Foundation, and reviews how the city has sought to achieve economic success while maintaining a high quality of life. The Work Foundation commissioned this study from Dr Nicola Duell of Economix, who is based in Munich.

About the Ideopolis project

The Work Foundation has conducted a year-long research project looking at the concept of the Ideopolis - a sustainable knowledge city that drives growth in the wider city-region. Based on literature reviews, data analysis and UK and international case studies, the re-search highlights drivers of an Ideopolis. For more information on the Ideopolis project please see: www.theworkfoundation.com..

About this case study

Munich is one of four international case studies that form part of the evidence base for the project, alongside Boston, Lisbon and Dublin. It focuses on the strengths and weaknesses of Munich, and the consequences of these for economic success and quality of life in the city, providing lessons for policymakers in other cities.

The case study is organised into the following sections:

- Introduction
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2. Industrial Structure

Background Information

Munich is a very important economic centre in Germany. In 2004, the number of employees[1] in the city of Munich was 664,000. In the whole agglomeration – which comprises the City of Munich and 8 surrounding districts[2] - it was 1,070,000 in 2004. When civil servants and the self-employed are included in this figure, it is estimated to be 37% higher, in 2003 this was estimated at around 1,4820,000 people in the city-region.[3]

Munich is the capital and the economic centre of the Free State of Bavaria, Germany's second largest "Bundesland" (region) in terms of population. In 2004, Bavaria's Gross Domestic Product amounted to 68 Billion €. The proportion of Bavaria's population living in Munich amounted to roughly 10%, with another 10% of the Bavarian population living in the periphery of the city. However, Munich's GDP accounted for nearly 18% of Bavaria's GDP (in 2003) and the periphery produced nearly 13% of Bavaria's GDP. Thus 20% of Bavaria's populations live in the city-region as a whole, while the share of GDP amounted to nearly 31%.[4]

Munich's economy is characterised by a quite diverse economic structure. As will be shown in this report, several industrial clusters in manufacturing as well as in the service industries are shaping the industrial landscape. Furthermore, Munich's economy is marked by its role as a regional capital city. In the federal structure of Germany, the "Bundesländer" are politically and financially powerful administrative bodies, so the role of a regional capital is important too- especially if the region is as big and important as Bavaria (you can compare it with Belgium or Austria). The table below gives an overview of the structure of "dependent employment"[5] for the year 2004.

The Economic History of Munich

Munich has been the regional capital of Bavaria for many centuries. The fact that Bavaria was an independent State (the Kingdom of Bavaria) during most of the 19th Century and that the German Republic has opted for a federal structure has preserved Munich as an administrative and cultural centre as well as a centre for education and research. The financial sector developed quite well during the 19th century (for example, Hypo-Bank, Vereinsbank, MunichRe). As Munich was not a primarily commercial town (like Hamburg) and had no natural resources, Munich emerged rather late as an economic centre and is now characterized by a dominance of modern industries.

Although Munich is historically the location of some world renowned manufacturing companies like BMW and Linde, the city could not be characterized as an industrial city before World War II. It is mainly after World War II that Munich developed to become a major economic centre. As a consequence of the political division of Germany into two States a number of companies as well as public institutions were relocated from Berlin to Munich, the most prominent being Siemens and the insurance company Allianz. Siemens chose

[1] With regular work contracts and contributing to the public social insurance system

[2] Forming the administrative entity "planning region 14"

[3] These are estimates. On the local level, there are no statistics for the actual number of working population

[4] City of Munich, Department of Labour and Economics, Munich. The Business Location 2005

[5] By "dependent employment" we refer to the statistical category of persons holding an employment con-tract that is subject to compulsory social security system contribution. The data does not include self-employed and civil servants

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Munich because it already had an important Munich Branch, while the Allianz insurance company returned to the City in which it was founded. Among the public institutions there was the German Patent Office, which later attracted the European Patent Office to locate in Munich. Most importantly, the research institution Max-Planck-Gesellschaft relocated from Berlin to Munich, where it expanded to become one of Germany's biggest and best known research agencies.

Munich developed quite dynamically throughout the 60s and this development was accelerated by the Olympic Games of 1972 and the infrastructure investment which was required to hold the games. The local workforce could not meet the labour demand of Munich's rapidly growing economy during this time. Migration flows from North to South Germany (in particular the migration of highly skilled labour) as well as from the South and South East of Europe (mainly low skilled and workers with an intermediate skills level from former Yugoslavia, Turkey, Greece and Italy as well as neighbouring Austria) were the source of population and workforce growth.

Table 1– Employment by Sector in the City of Munich and in Germany, 2004
(Employees registered by the social security system)

Sector	Number of employees	Employment Share
Agriculture and mining	**2,000**	**0.3%**
Manufacturing industries	**135,000**	**20.3%**
Construction industry, energy and water supply	**23,000**	**3.5%**
Trade, hotels and catering, transport	**134,000**	**20.2%**
Trade	83,000	12.5%
Hotels and catering	26,000	3.9%
Transport and communication	25,000	3.8%
Other services	**368,000**	**55.4%**
Banking and insurance	59,000	8.9%
Property, rental and leasing	11,000	1.7%
Business services	91,824	13.7%
Data processing, data banks	24,000	3.6%
Public administration	38,000	5.7%
Health and veterinary sector	65,000	9.8%
Public and private services	50,000	7.5%
Total	**664,000**	**99.7%**

Source: City of Munich, department for Labour and Economics, Munich.

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Export Orientation of the Economy

The manufacturing industry is highly export orientated. The share of exports in the manufacturing sector is about 60%, which is approximately twice as high as the figure for Germany as a whole. There are no comparable figures for the service industries, but we could assume that the export share is also quite important and well above the German average in the service industries, for example, clusters of banking and insurance companies. At the same time, there are Foreign Direct Investment (FDI) flows towards Munich as many foreign companies have either their German or European headquarter in the city or are represented there.

Overall, about 90 large companies are headquartered in Munich, which is the home of global players like Allianz, BMW, Epcos, Infineon, MAN, Munich Re, Siemens, Microsoft Germany, Oracle Germany, ProSiebenSat1Media and many others. The main reasons why these companies chose Munich was the high quality of life (so it is relatively easy to attract highly qualified employees), excellent infrastructure and the fact that Munich was already an important centre of modern industries (for example, the Information and Communication industry, the media and finance).

Knowledge Intensity of the Industries

Munich, like other European Cities, has been marked over the last decades by a trend towards tertiarisation of economic activity. More than three quarters of the jobs are in service industries.[6] Functional tertiarisation is even more advanced: in the manufacturing sector jobs are mainly headquarter and administrative functions, but research and development are also important. In 2004, the proportion of blue-collar workers amounted to only 23.8%.

The proportion of knowledge work in the service and manufacturing industries is difficult to measure. Several indicators could be used to assess the knowledge intensity of an industry, including: the proportion of highly educated employees and the proportion of employees in re-search and development (R&D). Furthermore the proportion of employees within specific sectors such as the media or creative industries as well as the education and training landscape could be used to gain a better picture of the knowledge intensity of a (local) economy. The shift from blue-collar workers (*Arbeiter*, carrying out basically manual work) towards white-collar workers (*Angestellte*, e.g. clerks, engineers, etc) within the manufacturing industry could be used as a raw indicator for the increasing knowledge intensity of tasks carried out within the industry in Munich.

There is evidence to suggest that not only have administrative functions at the headquarters of global players increased but that also the spatial division of labour between high value-added and low-value added activities has increased. BMW is a very good example of this policy - a number of new plants have been built in Bavaria, in the new *Länder* in Eastern Germany but also abroad not only due to cheaper production cost (New EU Member States) but also to be nearer to markets (Spartanburg, USA). At the same time the R&D activities, alongside new service activities (for example, BMW Financial Services) were expanded in Munich.

A further indicator for the increased knowledge intensity of Munich's industry is the comparatively high proportion of workers compared to other German cities that are

[6] 76% of all employees in 2004 (source: Referat für Arbeit und Wirtschaft, Münchner Jahreswirtschafts-bericht), but if also self-employed are included the share might be higher

employed in the "company related services sector", which includes services for companies like consultants and lawyers.

Mix of Industrial Clusters

1) Mechanical engineering / automotive cluster

Linked to the car manufacturer BMW the mechanical engineering / automotive cluster is of great importance to Munich. Other large companies in this cluster are the headquarters of MAN and Meiller-Kipper. The cluster is characterised by a supply chain of SMEs (Small and Medium-Sized Enterprises) and is especially strong in the fields of automobile multimedia and automobile IT. The automotive sector and in particular the car manufacturer BMW is currently performing well.

With its Munich headquarters Siemens is the anchor company in the electronics / IT-technology sector. Microsoft built its German headquarters in the North of Munich and last year General Electric concentrated its European R&D activities in the Munich region. Company officials said this was due to the excellent infrastucture, the existing strength of the IT-Cluster and in order to be close to the market (and obviously to Siemens, the main competitor of General Electric in the European market)[7].Also Apple, Sun, Motorola and Oracle have chosen Munich as the location for their German head offices. Munich accounts for 41% of the nation's entire market volume in the IT-Industry.

However, the IT-sector has recently undergone a crisis from which it has still not recovered. Siemens itself has dismissed thousands of employees in the last few years, especially in the production sector and sold its mobile branch to BenQ. This has been dramatic for Munich in the sense that for the first time an important high technology company has been undergoing economic crisis and a highly skilled workforce has been made redundant. Nevertheless, unemployment rates in Munich have still remained far below the national average and it seems that the dismissed workforce could be absorbed, at least partly, by other companies and sectors.

2) Information Technology and Communication (ITC) Cluster

A recent survey, which covered the Information Technology and Communication (ITC) Cluster found 22,500 ITC companies with 395,000 employees and free-lancers in the Munich region. In 2003, the capital spending reached nearly €9 billion and the turnover was about €70 billion. Munich is leading among German cities in particular in the software industry. In 2003, about 54,000 workers were employed in the city-region in 8,300 software companies[8]. Among the other well-known companies located in the city-region we can see Siemens, Microsoft and Cisco System. Furthermore, there were more than 100 companies operating in the telecommunication sector in the city-region. Large companies in this sector include Siemens, O2 and BT Germany.

23 of the 100 biggest publishers in Germany are to be found in the Bavarian capital. Munich has the biggest publishing industry of any city in Europe and with more than 7,800 new books published each year, Munich is one of the biggest book publishing cities in the world. The city is a relative newcomer to the publishing scene. As in other sectors, Munich was chosen as a new location after World War II because Berlin lost its role as economic and cultural centre, Munich , which had long been

[7] Source: City of Munich / Department for Economic Development and Labour: Munich, the City and its Economy
[8] See City of Munich, Jahreswirtschaftsbericht 2004
[9] City of Munich. Department of Labour and Economics. Munich – the knowledge city. 2005 (*München – Stadt des Wissens*)

considered Germany's "secret capital" and "intellectual metropolis", took Berlin's place.

The Munich media sector comprises a large number of audio-visual media companies and the advertising sector. The number of companies in the media sector in the city-region grew from 11,500 in 1999 to 14,000 three years later while the number of employed and self-employed staff grew from 116,000 to 187,000[9].

3) Finance and Insurance Cluster

With its finance and insurance cluster Munich has the top position in Germany as an insurance centre and ranks just after Frankfurt as a banking centre. Among the banks in the city are Munich Re, the world's biggest re-insurer (which was founded in Munich in the 19th century), the Allianz AG and D.A.S. insurance, Europe's biggest legal protection insurance company. There are 170 German banks in Munich and two of the six largest German banks have their headquarters in Munich. Many of the investment companies and four of the major private suppliers of venture capital are also located in Munich. Having over 35 venture capital companies, Munich has the biggest concentration of these firms in Germany. However, it must be noted that Munich's largest bank, the HypoVereinsbank, one of Europe's leading banks, has undergone major restructuring since 1997. So far the consequences for Munich of this merger are not known, but the risk is obvious that the decision centre will shift from Munich to Milan and this will weaken Munich's position as a leading financial centre.

Over the last few years several social plans were collectively agreed by the social partners in connection with mass dismissals and were implemented in the banking sector. The crisis of the banking sector is new for Munich. The company implemented several innovative measures to alleviate the social consequences of the dismissals and succeeded to place a quite important number of employees within other locations of the bank or in other companies within and out-side the financial services sector.[10] The management of this crisis has succeeded so far be-cause the regional labour market is sufficiently dynamic.

4) Medical Cluster

About 46,000 employees and 50 hospitals with 13,000 beds illustrate the importance of the medical cluster. The clinical institutes of the LMU and the Technical University are extremely important both for medical research and teaching in Germany. About 9,000 people are employed in public medical research and teaching. The medical cluster also comprises a strong pharmaceutical industry. 200 companies with 12,000 employees were counted in the Munich region in the sector of medical technology.[11] The strength of medical technology in Munich is based on the importance of the health sector - so there is an important local market and the innovative high-tech environment - one characteristic of the medical technology companies in Munich is that they are leading in IT-applications.

5) Biotechnology Cluster

Munich has become one of the major locations for biotechnology in Europe. Munich is the leader in this field in Germany. There are a few locations in Munich and the surrounding areas , where biotechnology clusters have

[10] Nicola Düll, The internal organisation of placement and temporary work agency activities: The role of HVB Profil and TransFair during the restructuring process of the HypoVereinsbank. European Foundation for the Improvement of Working and Living Conditions, European Monitoring Centre for Change 2005

[11] Vogler-Ludwig, Simone Leitzke and City of Munich (Landeshauptstadt München - Referat Arbeit und Wirtschaft (Hg.): Wachstumsmarkt Medizintechnik - eine Standortbestimmung für den Wirtschaftsraum München. München 2004

been established. A number of factors have contributed to Munich's success. Of particular importance in the ongoing development of commercial biotechnology is the proximity of high level scientific research institutes, an excellent infrastructure, a sufficient supply of capital, role-models in the form of firms that have already attained success, as well as highly qualified employees. Bodies that assist in the transfer of technology also help to successfully commercialise research ideas.

The Free State of Bavaria played a decisive role in fostering the development of Biotechnology in Munich. In 1997, the German Federal Government initiated a "Bio-Regio" competition, for this a Bavarian BioTech-Initiative was launched and after the success in this competition the Bio^{M} was created. Two biotech accelerators provide office and laboratory space with the BioM acting as a "one stop shop" to support the development of Biotechnology in Munich.

One anchor of this cluster is formed by the proximity of a leading hospital, university departments and research institutions in the area of biochemistry and neurobiology, gene medicine and pharmacy. A competence centre for "green" biotechnology has been established in the North of Munich.

6) Aerospace Cluster

In the Munich Region the aerospace cluster managed, after some difficult years, to develop into a very modern cluster. As with other European aerospace regions Munich had to face the challenge of the structural changes - from military to civil - in this sector. Despite the fact that some smaller companies in the region vanished, Munich could participate in the success of Airbus, because the European Aeronautic Defence and Space Company (EADS) has an important branch in the Munich area. It now accounts for one third of Germany's total output in the aerospace industry. Greater Munich is home to Germany's Centre for Aviation and Space Transport Research Centre, the nation's largest R&D complex in this field. The Satellite Observation centre is located in the region as well. Companies in the region will play a leading role in developing the European satellite-based navigation system GALILEO.

7) Education and Research Cluster

The education and research cluster is also important. There are world-renowned universities and research facilities located in Munich. The universities, professional schools and research institutions offer a large reservoir of highly skilled workforce. About 87,000 students were enrolled in tertiary education in 2005.[12] The impact on the local economy is very important. Of particular importance, the technology-orientated branches of the universities developed a tradition of close co-operation with Munich based companies. This is a strong argument for the location of R&D intensive industries in Munich. The high skill levels of Munich's labour supply is one of the most important strengths of the economy. Furthermore, in addition to universities, there are important independent research associations and institutes located in Munich (see section 5 on innovation).

8) Creative Industries and the Arts Sector

Finally, Munich is also an important location for "creative industries" and for the arts sector. In Germany, Munich is an important location for fashion design, an industry which needs a creative environment, which only large cities

[12] City of Munich, Department of Labour and Economics. Munich. The business Location 2005.

can offer. It is worth mentioning that the market conditions are also quite favourable in Munich as the city has of one of the highest levels of purchasing power per capita as well as a fashion oriented population. Munich has its own design school for fashion and is also home to a number of private fashion schools. Furthermore, Munich is one of Germany's most important locations in the area of theatres and music, in particular for classical music (Munich has one of the most renowned opera houses in Europe). However, over the last years in the course of cuts in public subsidies many small theatres have been threatened and some have had to close. Munich is also a centre for film productions. About 34,000 people work in film production for both television and cinema in about 1,900 companies.[13] It should be added that there is also a concentration of museums (arts and sciences) in Munich.

To conclude, Munich is still a competitive location for the production of goods and services, although during the last few years several sectors have undergone economic crisis and industrial restructuring. This situation is new for Munich as, in the past, it did not have to face restructuring problems linked to the decline of so-called "old industries". To date these crises have been overcome without drama in the labour market and so without threatening social cohesion, although unemployment rates are still low (compared to the national average) they have risen significantly. We would argue that the sectoral mix as well as the location of more strategic functions (like headquarters) together with the high export orientation of both the manufacturing and services industries have been important factors in helping to overcome emerging crises.

3. The Labour Market

Munich's labour market is characterised by a highly qualified work force, high wages and - compared to the labour market in the rest of Germany - relatively low unemployment rates.

Nevertheless, the Munich labour market has seen important changes over the last few years and unemployment has risen quite significantly. In 2004, the unemployment rate was about 6.8%, compared to 11.7% in Germany. In the recent past unemployment grew faster in Munich than in the rest of Germany, although in 2004 Munich still had the lowest unemployment rate of Germany's 7 largest cities.

Table 2 - Unemployment Rate in %

Year	Munich	Germany
1991	3.4	7.3
1992	3.8	8.5
1993	4.9	9.8
1994	5.9	10.6
1995	6.1	10.4
1996	6.5	11.5
1997	7.3	12.7
1998	6.8	12.3
1999	6.2	11.5
2000	5.2	10.7
2001	4.6	10.3
2002	5.7	10.8
2003	7.0	11.6
2004	6.8	11.7
2005	7.2	-

Source, Public Employment Office in: City of Munich, Jahreswirtschaftsbericht 1994 and Public Employment Office in Munich. The data covers the city-region.

[13] The data refer to 1999. Source: Andrea Klee and Marco Püt: München flimmert – Film und Kino; in: München Atlas.

The structure of unemployment is marked by a high proportion of people having neither accomplished formal initial training nor a university degree. In 2002, this proportion amounted to 38.5% of the unemployed. It has thus decreased slightly compared to 1980, 1995 and 2000, where the percentage was above 40%. This fall has to be understood in the light of rising unemployment among skilled workers in the recent past (for example, crises at Siemens and in the financial sector). Nearly a third of those who were unemployed had "health problems", among them many older workers. A third of unemployed are described as "foreigners (see foot-note below)"[14]. A fifth of the unemployed were older workers, aged 55 and above (see table 3 below).

Table 3– The Structure of Unemployment in Munich

	1980	1995	1997	2000	2002	2005
Share of unemployed in age group						
Under 24	13.9%	8.1%	7.6%	6.8%	9.7%	10.3%
55 and over	19.5%	27.8%	30.6%	35.2%	18.8%	16.5%
Share of foreigners among unemployed	17.6%	29.6%	31.3%	30.2%	32.4%	33.0%
Share of unskilled among unemployed	41.4%	40.9%	41.7%	42.3%	38.5%	No data
With health problems	34.5%	27.4%	28.3%	32.3%	23.7%	No data

Source: City of Munich, Department for Social Affairs, München Sozial 2004 and Public Employment Office in Munich Overview of the year 2005

In 2005, the unemployment rates for young people were slightly below the average unemployment rates for the population as a whole. In contrast, unemployment rates were particularly high among blue-collar workers and foreigners (15% and 16% respectively). Unemployment rates for these two groups have risen dramatically since 2004 (when they amounted to 10.5% and 12.4% respectively).

The majority of Munich's workforce however, is **highly skilled**, with a fifth of the workforce holding a university degree. Note that in the German context of the dual system of initial professional training, initial training has a higher weight than in other European countries, where tertiary education plays a more important role.

In 2003, 105 employees out of every 1000 inhabitants of Munich hold a degree of tertiary education, while the corresponding figure for Germany was only 30 employees out of 1000 inhabitants. This difference in education level is not only linked to a higher proportion of highly skilled employees but is also linked to the demographic structure of Munich, which has a higher pro-portion of young and economically active population than the rest of Germany.[15] This demo-graphic structure is based on a permanent inward migration of the economic

[14] Until recently, the common term used in German statistics was "foreigner" (Ausländer). This is because people from Black and Minority Ethnic backgrounds were unable to gain German nationality, which was only available for those of German ancestry. This term has been used here for consistency with the statistics, although a more modern term would be "people from a migration background"

[15] City of Munich, Department for labour and Economics, Jahreswirtschaftsbericht 2004 (annual report and labour market and economic development)

active population from the rest of Bavaria, the rest of Germany and from abroad. In addition to the number of qualified people, which derives from the large number of universities in Munich, from which the majority would stay and work in Munich, the economy is attracting a permanent inward flow of young people who are highly skilled.

Labour market forecasts conducted by Empirica for the City of Munich estimate that, in the long-term, the city-region will benefit from slight employment growth. The estimated future annual growth rates for employment until the year 2015 range between 0.3 and 0.8%. Furthermore, it is forecast that structural change will continue, with declining employment in the manufacturing sector and employment growth in the service industries. Employment forecasts estimate that the demand for skilled and highly skilled labour will continue to increase and thus the structural shift towards higher qualification levels will persist.[16]

Table 4– Employment by Education and Training Level, Labour office districts, 2004

	Employees	Tertiary level education (university and universities of applied sciences)	Share of employees with tertiary level education
Germany	26,381,842	2,490,612	9.4
Hamburg	744,412	88,798	11.9
Bonn	267,124	36,043	13.5
Cologne	441,720	58,594	13.3
Stuttgart	501,937	89,528	17.8
Munich	957,034	173,758	18.2
Berlin	1,035,943	136,500	13.2

Source: Public Labour Office

Labour Market Policies

The main state body with responsibility for employment policy is the Public Employment Office. Nevertheless, since the 1980s the City of Munich has begun to develop its own activities in this area to supplement active labour market policies and to reach specific target groups.

In doing so, the municipality is strongly influenced by both the amount and the type of available financial resources (mainly European Social Fund and, in co-operation with the local employment services, resources from the active labour market policies of the national government).

The Munich Employment and Qualification Programme (MBQ) has the following aim: "The MBQ is designed to contribute to improving the individual prospects of employed and unemployed people in the labour market, at the same time helping to match the skill requirements of the firms, especially in the new employment areas" (City of Munich 1999). The

[16] City of Munich, Department of Labour and Economics, Münchner Jahreswirtschaftsbericht 2004

two pillars of the municipal employment policy are:

- Job promotion for target groups through temporary wage subsidies.
- Promoting initial vocational training as well as further training.

Thus, the City of Munich has created in cooperation with the local employment office, the Programme area "*Arbeitsförderungsinitiative*" (AFI). The target group is mainly the long-term unemployed, but young people also benefit from the programme. Most of the projects are in the cultural, social and ecological sectors. In 1999, about 700 participants took part in about 39 AFI projects, which is a low volume considering that there were 55,000 unemployed in the city (July 1999[17]). Nevertheless, the programme is reported to be relatively successful. This may be linked on the one hand to the attempt to combine the classical wage subsidies with vocational, further and general training and supervision by social workers. Thus, the participants get help with motivation, job orientation and job search in the "first" or regular labour market. On the other hand, the relative success may be due to the dynamic economic environment and the overall low unemployment rate, easing labour market integration.

Between 1984, when the city council established the programmes, and 1999, around 8,000 job placements (annual totals) have been supported. Many participants (40% in 1996) could be integrated into the regular labour market or took part in follow-up training programmes. In this way a large number of people with so-called 'negative careers' (i.e. year long dependence on public assistance, knowledge and skills that are becoming obsolete, long term illness or those living in poverty) were helped to start positive careers.

A further important area for employment policies is linked to managing structural change. Pilot and model vocational training and employment projects are encouraged, encompassing the following measures[18]:

- Providing support for future oriented areas, for example, by providing people with additional training in the media area,
- Cushioning the negative social effects resulting from the loss of obsolete jobs, for example, by teaching semi-skilled and unskilled workers new skills
- Developing and testing of innovative vocational training models to meet the skill needs of firms/areas/branches
- Providing vocational training for employees in small and medium sized firms and to preserve jobs, particularly in areas threatened by structural change
- Supporting the establishment of new firms by providing skills training and advice, in order to create new jobs
- Helping to prevent unemployment through company related measures such as job application training and assistance in finding a new job
- Removing obstacles to employment, for example, through advice about economical renovation potential of old buildings
- Removing structural obstacles to employment, for example, by advice about economical energy saving and other reasonable renovation activities
- Developing innovative approaches for the qualification needs of firms/areas/branches.

[17] City of Munich, Jahreswirtschaftsbericht 2001
[18] City of Munich, Economic Policy Concept

IIn implementing this programme area, the Department of Labour and Economic Development works closely with the municipal consulting and vocational training company *Verbund Struk-turwandel GmbH* VSW (Structural Change Association), which is owned by the city. The Verbund Strukturwandel GmbH carries out the following type of activities:

- Elaborating labour market and occupational analyses
- Developing branch related concepts for vocational training
- Informing firm management and works councils about opportunities for action
- Providing advice about firm specific solutions
- Mediating negotiations concerned with reconciling different interests
- In some cases it takes over project direction and process management

Furthermore, the city is developing additional activities in the area of promoting equal opportunities between men and women (for example, guidance for young women in the area of training) and young people.

4. Business Structure

There are about 80,000 companies in Munich. Munich's enterprises are characterised by a mix of large, medium-sized and small companies. In the first section we named the largest players in the key sectors.

It needs to be stressed that around 400 foreign high-tech companies are located in the city of Munich. Most of them are American companies (255 in 2003), but there are also 54 British companies, 46 Japanese companies and 43 French companies.[19]

Munich has also attracted the headquarters of a range of German and European companies, but as a consequence of the city's economic dynamics it is also known for being an expensive location. Recently, Munich has had the second most expensive rents for offices of any city in Germany, just behind Frankfurt.[20]

[19] City of Munich, brochure: Munich.Because…
[20] City of Munich, Jahreswirtschaftsbericht 2004

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5. Innovation

R&D and Patent Activities of Companies

The innovativeness of companies can be measured by the number of patents and the number of R&D workers.

If we take the number of registered patents in Germany as an indicator for innovation, Munich-based companies are among the leading German companies, with Siemens being at the top.

The number of staff employed in R&D is a further indicator of innovative activity. In 2003, Siemens employed about 10,000 people in their R&D department and BMW 6,000; a further 700 were working for MAN, 800 at MTU and about 500 at Rohde & Schwarz. In 2001, companies spent 3.76% of their gross value-added in R&D and 2.4 % of the economically active population (Erwerbstätige) worked in the area. Among German cities only Stuttgart had a higher proportion of R&D investments made by companies and a higher proportion of staff working in R&D as well as a higher volume of patents of companies.[21]

R&D is mainly carried out by large companies. The city of Munich conducted a survey among 227 large[22] companies located in the city-region in order to investigate their R&D activities. Half of them have invested in R&D over the last 3 years. R&D activities were most likely in the following sectors: ICT, electronics, chemical and pharmaceutical industries, mechanical engineering and automotive industries, as well as aero space industries. Among the surveyed companies other sectors that R&D activities could be registered in were: optical and medical technology, industrial process measurement, measuring and control technologies, the textile and clothing industries, the food industries, the construction industry as well as the printing industries. The study further shows that SMEs carrying out R&D are mainly found in new dynamic sectors, mainly biotechnology, environmental technologies and medical technology. Service industries, in particular financial services, business services and trade are also engaged in R&D.

Although the surveyed companies were organising R&D internally, cooperation between companies as well as with universities or other research centres played a crucial role: 80% of the surveyed companies cooperated with other companies or institutions. A quarter of the companies with R&D activities cooperated with companies and research centres located in the city-region, around 50% had other German cooperation partners while the remaining quarter had international co-operation partners (mainly in Europe). However, it is difficult to disentangle the importance of location from these figures.

Munich is strong in R&D institutes, which undertake considerable research. We have already mentioned the importance of the Max Planck Society, while the Fraunhofer Society is another internationally known research association. The Max-Planck Society employs 3750 people in their 13 institutes in Munich and is mainly active in the area of natural and life sciences. The Fraunhofer Society, with its five institutes is engaged in applied research, specifically in the area of engineering. Besides these two research associations there are further research institutes located in the city-region, which supplement the work of the universities.

[21] City of Munich. Department of Labour and Economics. Munich – the knowledge city. 2005 (*München – Stadt des Wissens*)
[22] Employing more than 500 employees

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Policies to Promote Innovation

The State of Bavaria has taken over some of the responsibility for innovation policy and some of the investment in the area of innovation promotion (*Offensive Zukunft Bayern*), information and communication (*Bayern Online*), and biotechnology (*Innovations- und Gründerzentrum*- IGZ in Großhadern-Martinsried). The associations *'Bayern Innovativ', 'Bayern International',* and *Bayern Kapital Risikokapitalbeteiligungs GmbH*' which were set up with the revenues from privatisation, assist SMEs, particularly with innovation and technology transfer, with international presentation and the search for cooperation partners, and with the implementation of product and process innovations. Concrete examples of this policy include the organisation of events and trade fairs.

The Technology programme "Preparing Bavaria's Future" (*Offensive Zukunft Bayern*) was launched in 1994 with a total budget of 4.2 billion Euros. These funds have been used for large-scaled projects like the reactor for nuclear research FRM II of the Technical University of Munich (150 million Euros).

However, the local development policy in Munich is less strictly structured than one would imagine. There are initiatives from the private sector, the science world, the City-Government and the Government of Bavaria. These initiatives complement each other and the outcome is generally regarded as good. The density of networks and initiatives is remarkable and the link be-tween the science world and the companies is quite close. Also the co-operation between the City-Government and the Government of Bavaria is - despite some fundamental political differences - very constructive in the field of economic development.

For example, Munich's successful participation in the "BioRegio" competition in the 90s of the federal Ministry of Education, Science and Research, demonstrates strong networking and was the starting point of a favourable development. After being selected as "BioRegio" the BioM AG was founded and became the driving force of the development of the Munich's Bio-tech indus-try. BioM, which was founded with the help of the Free State of Bavaria but is now primarily promoted by the business sector. It establishes networks between industry, research, new firms, and the financial world and itself provides seed capital. At the same time the investment in the BioTech incubator in Martinsried was accelerated so a large number of biotechnology firms have been set up in Martinsried near the city border.

Similarly the Biotechnology Innovation and Founder Centre (IZB) in Martinsried in the city-region has proved to be very successful as a seedbed for new enterprises in the area of biotechnology and gene technology. In the last few years the BioTech-Region München has experienced an exceptional rate of development. Munich has a total of 160 Life Science companies and is home to one of the top biotechnology centres in Europe. Together they employ over 2,200 people and have more than 70 products in their development pipelines. The vertical and horizontal co-operation between different public bodies has been important for this industry. So IZB is sponsored by the Bavarian State government within the framework of its "high tech offensive". The Technical University of Munich opened up its own innovation and founder centre in 2001. The city is at present establishing a new technology park with focus on life sciences with around 160,000 m^2 of floor space not far from the existing Biotech centre.

In Munich's IT-Cluster we can observe similar forms of co-operation. The "software-offensive Bavaria" is an initiative driven by the Bavarian State, the industry and science in order to develop and enhance the ICT-industry in Munich and Bavaria. It is focusing on research, development and training. Financial support is part of the Bavarian State Government's High-Tech-Initiative.

A further good example is the "Munich Network", with more than 420 members from the high tech industry, venture capital, banks, consultants and research institutes which are focusing on support of the foundation, expansion, and international connections of high growth innovative business initiatives. Further, technology transfer centres promote knowledge sharing between new technology companies. The technology and knowledge transfer between the individual actors takes place within the framework of technology-oriented initiatives, events, organisations and networks. 15 technology centres in the universities and the Chambers of Trade and Indus-try collaborate in the Technologieverbund Oberbayern (Upper Bavaria Technology Transfer Association) ensuring that intensive networking is taking place between research and the business sector. Finally, the Technology and Founder Centres located in Munich encourage information exchange between business start-ups, innovative SMEs, large companies and R&D establishments. Also the city itself has become active in this area and has initiated the Munich Technology Centre. A new technology centre with 18,000 m^2 of office space is in the planning process.

Finally, Munich's trade fair is one of the leading European locations for technology trade fairs, for example, in the fields of ICT and biotechnology.

6. Public Policy and City Governance

In the German federal system of governance, the "*Länder*" (states) play a major role in regional economic policy. As Munich is the capital and the largest city as well as the economic and cultural centre and probably the only Bavarian city with an international reputation, the Bavarian Government is one of the key stakeholders in the promotion of economic development in Munich and the city-region.

But the City itself is also a player in the field of local economic development policy as the rights of local self-government and self-administration are quite large. However, the budget of the City for economic development is very small. The main tool of the city's policies are spatial policies, investment in public infrastructure as well as infrastructure for companies and business start-ups, education and cooperation with the Public Employment Office in the area of employment policies.

The total budget of the city of Munich is 5 billion Euros. About 2 billion Euros are financed through taxes (German cities get a fixed percentage of income taxes and company taxes earned in their territory).[23] In 2004, the investments made by the City of Munich amounted to 961 Million Euro. This represented 758 Euros per inhabitant. Since 1991 the volume of public investments financed by the City has varied between 633 million Euros (in 1991) and 1120 million Euro (in 1992). Compared to other German cities the level of public investment is quite high. This translates to one of the highest levels of public spending per capita (together with Frankfurt and Cologne).[24]

Traditionally the Council of the City of Munich has a Social Democrat majority and Munich's Mayor is a Social Democrat (in the period after

[23] These are quite complicated systems which cannot be presented in detail in the context of this case study
[24] City of Munich, Jahreswirtschaftsbericht 2004

World War II, Munich had a conservative Mayor for only one election period). Munich has had a "red-green" coalition for over ten years, the oldest in Germany. The political situation on the federal state level is the opposite, Bavaria is traditionally characterised by strong conservative majorities. This political situation has an impact on economic development policy in Munich as the City and the State sometimes co-operate and sometimes compete. However, the outcome tends to be quite positive overall.

Despite their political differences, both the State of Bavaria and the City of Munich are pursuing more interventionist strategies. In the case of the City of Munich this is shown in the high levels of public investment. Furthermore, the State of Bavaria and the City of Munich are financing major infrastructure projects together, in particular the trade fair and the airport. The typical institutional form in this type of co-operation is the creation of a commonly owned company with the City and the Free State of Bavaria being represented on the supervisory board. This co-operation is not free of conflicts and tensions but both City and regional government know that they have to co-operate.

Sometimes the conflict remains unsolved, for example, the City was not willing to make an additional investment in a second terminal on Munich's airport, and eventually Lufthansa made the investment in private form. There is a completely open dispute concerning the high-speed magnetic train, with the City strictly opposed to the project, which would link Munich airport with the city (see 'Infrastructure').

The City of Munich is developing and implementing its own concept in the area of economic development policies and labour market policies, aiming at:

- Promoting economic change by encouraging the development of "new" industries and growth sectors. In this context, the City government seeks to promote a varied industrial structure. The Department of Labour and Economics has developed an action plan for supporting the ICT sector, especially new media and telecommunications, the environmental sector and tourism (note that Munich is Germany's most important tourist destination).
- Promoting the SME sector and business start-ups. Activities encompass: guidance and advice, establishing and supporting networks, developing model training projects adapted to the needs of SMEs, helping with technology transfer, supporting SMEs in entering new markets.
- ·Alleviating the social consequences of structural change, for example, by advising companies on how to manage change and by supporting qualification and training (see employment policies) and by subsidising jobs for disadvantaged population groups (how-ever the latter is on a limited scale as has been shown in the section on employment policies).
- Promoting environmentally sound economic development, for example, further development of markets for environmental goods.
- Securing municipal income through promoting a favourable economic development in Munich.

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7. Infrastructure

As has already been discussed, the City of Munich is investing an important amount of its budget in infrastructure. The high quality of the infrastructure is an important strength of Munich. Key examples are:

- New Munich Airport (Europe's 8th largest airport and Germany's second largest airport, 200 destinations world-wide, 26.8 million passengers, 383,000 aircraft movements in 2004).
- New Munich Trade Fair Centre (2.3 million visitors from some 182 countries per year, 33,500 exhibitors from 95 countries, 30 major events at the Munich Trade Fair Centre, 150 conferences at the International Congress Centre)
- Munich public transport system (passengers: 554,9 Million. p. a., S-Bahn (light railway) 442,0 km, Underground 85,8 km, Tram 71,2 km, City Buses 560,6 km)
- Munich is an important hub in the German railway system and the meeting point of 5 motorways.

Important infrastructure projects which are under construction include 3 tunnels for Munich's ring road.

Furthermore, there is a discussion between the Bavarian Government and the City of Munich about the best way to connect Munich Airport and the City. This is probably the weakest point of Munich's Infrastructure, today the travelling time for the 35 km distance is 40 minutes with the light railway (S-Bahn). The Bavarian Government is opting for a super-speed magnetic levitation train, while the City Government wants the existing light railway connection to be improved.

8. Social and Cultural Capital

The social capital of the city can be said to result from the labour market structure with a high proportion of highly skilled workers as well as a relatively a high proportion of knowledge intensive activities. Munich's universities and professional schools are an important factor in encouraging businesses to locate in the city and grow faster.

Germany's Post-War division in West and East Germany allowed Munich to become the "secret capital" of Germany while the official capital was Bonn. Economic power was concentrated in Munich and so Munich was able to strengthen its position as a cultural capital. This is not the case though for the typically less subsidised sub-culture sector, which in Munich faces the problem that space in all forms is much more expensive than in other German cities, meaning it is extremely difficult for this cultural sector to find niches to survive. So, subculture is definitely less developed in Munich than in other large German cities with lower rents.

Since German unification the competition between Munich and Berlin increased and indeed, during the first years after unification, some institutions were relocated back to Berlin and Berlin has became culturally more important than before. Nevertheless, Munich has kept an important role in Germany's cultural landscape.

Munich has a reputation for being one of the safest big cities in Germany and in Europe. Despite one of the highest proportions of immigrants in Germany (about 24%) and the existence of social inequalities, Munich has so far not seen significant social unrest. This is because the social situation of immigrants is - due to the general situation on the labour

market - much better than in other European cities, so the proportion of unemployed immigrants is relatively low in Munich. Although the prospects of the young immigrants are not as good as they should ideally be, the situation is not as hopeless as in other European cities. In addition, the urban environment is of quite good quality and this remains true in areas that have a higher concentration of immigrants. Finally, the spatial segregation between Germans and immigrants is less pronounced than in other large German cities.

9. The Environment

The dynamic development of the city has led to an increasing use of space in the city-region. This is driven mainly by two factors:

- The growth in inhabitants and workplaces, in particular in the periphery
- The increasing proportion of wealthy people and the change in household structure, with a trend towards smaller households within the city of Munich as compared to the surrounding city-region. This has led to a dramatic increase in used square meters per per-son (38 m^2 in 2005).

These two trends have resulted in an increase in the number of flats within Munich as well as in the periphery. Note that the growth of flats in the city has taken place despite little population growth in Munich.

City planning has addressed the problem of space consumption, as the possibilities for further spatial development within the city are limited. Roughly every 15 years the city decides what further urban development should look like in order to respond to structural changes in the economy and population and draws up an urban development plan.

At the beginning of the 1990s Munich found itself facing two new challenges. In spatial terms the city had more or less reached saturation point: there remained almost no space for further urban development, and real estate prices were rising tremendously. In the context of economic restructuring as well as in the context of political change (opening of Eastern Europe which reduced the need for space used by the military), options for urban development were going to be opened up. In this context a new urban development plan was drawn up through a process which included all relevant

societal groups: different citizens interest groups, economic organisations, the trade unions and a public debate on the future of the city.

The urban development plan addresses spatial, economic, social and environmental problems at the same time and seeks to find solutions to the conflict of interests between these different areas. The basic orientation of this new urban development plan, which was finally adopted in 1998, could be summed-up as "compact-urban-green".[25] In terms of spatial development this means that a higher spatial density for housing and economic use should be obtained while at the same time reserving some space for parks ("green" space). Note, however, that recently Munich's population voted against the further construction of skyscrapers. Urban density is more understood by Munich's population as referring to traditional continental European type of buildings with 4 or five levels. As a consequence all development plans for high-rise buildings were stopped and some big urban development projects have to be revised.

The city of Munich updates its guidelines for urban development on a regular basis. The long-standing planning culture in Munich, with the first integrative development plan worked out and approved by the city council in 1963, has certainly contributed to a smooth and balanced development of the city. Munich's first urban development plan included both economic and spatial elements, with organised deployment of transport and retailing in the downtown area. The second plan, in 1975, was drawn up in close reference to the first one: the policy adopted in the 1960s had contributed to increased employment in the city centre and a concentration of habitat on the periphery, the results being major transport difficulties.

This meant a shift to a strategy of polycentric development (development around multiple centres) and for the first time in Germany social factors joined economic and spatial criteria as a part of an urban development plan, the overall aim being balanced territorial development. In 1983, a further urban development plan was set up introducing the environment as an additional criterion. Although this plan was drawn up in the middle of economic recession, this development plan included a housing creation programme based on the polycentric model, and plans for industrial and retail sites. In the 1990s the present urban development plan was produced (see above).

Furthermore, it needs to be stressed that the majority in the city council has been a coalition between the Green Party and the Social Democrats for many years now. So it is clear that environmental questions are politically important. As there are mainly service industries and "light industries" located in Munich pollution is less important than in other German cities.

Environmental factors and the low levels of pollution relative to other European cities of comparable size are certainly a positive locational factor. Furthermore, Munich's location nearby the Alps makes the city highly attractive for leisure activities. In a wide number of surveys (published in leading economic magazines) Munich has been high on the list of preferred locations in Germany for managers.

[25] Newsletter of the Working Group "Development Strategies in Major European Cities", Eurocties / EDURC, Newsletter No. 4, May 1999, issued by the City of Lyon – Mission "prospective et strategie d'agglomeration" as well as the set of publications of the Urban Planning Department "Perspektive München"

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10. Demographics and Inequality

With 1.3 million inhabitants Munich is the third largest city in Germany, with a metropolitan area of 2.4 million people in all.[26] As will be shown in section 10, the size of the population of Munich has been quite stable over the last two decades, while employment has grown rapidly in the periphery. This development has been linked to two trends:

- Inward migration from other parts of Germany as well as from outside Germany. Migrants have mainly settled within the city rather than in the periphery. As has already been shown, a "brain-drain" from Northern Germany towards Southern Germany (and its capital Munich) has taken place over the last decades. Furthermore migration of low, but also medium skilled workers from South and South-East Europe has been engendered by the city's dynamic development. Due to the relatively low unemployment rates in Munich, compared to Germany, their chances of finding a job are much better. Finally, a smaller group of foreigners has settled in Munich in connection with the globalisation and multinational activities of companies in Munich.
- Families have been opting to live in the periphery. This has occurred for two reasons: lower rents and real estate prices and the dream of having one's own house with a garden (which is only possible in the outer circle within the city of Munich or in the periphery).

These demographic trends have had some consequences on the social structure of the city of Munich. In 2004, the number of foreigners was 293,000 or 23% of the total population. The main population groups among the foreigners were in 2000: 67,000 persons originated from former Yugoslavia, another 46,000 were Turkish, 24,000 Greeks, 22,000 Italians and 22,000 Austrians (note that the Austrian border is near Munich). About 25,000 people have immigrated from the Middle East and Asia (mainly Iraq, Iran, Afghanistan and Vietnam). Only around 9,000 persons came from Africa and another 9,000 from America.[27]

The labour market situation of most foreigners (mainly depending on their origin) differs from that of Germans. Unemployment rates for foreigners in Munich are higher than for Germans: 16.7% as against 6.6% (in 2005), and they represent a third of Munich's unemployed. The proportion of foreigners of all the unemployed has been quite stable over the last 10 years and has increased in the last three years. Previously there was a large increase between 1980 and 1995 from 17.6% in 1980 to 29.6% in 1995 – partly linked to the rising proportion of foreigners in the population.

Furthermore, foreigners have been hit more by industrial restructuring as they have on average a lower skill level. Moreover, they are more often employed in sectors with lower job stability, like catering and cleaning. Foreigners are still disproportionately working in manufacturing industries as blue-collar workers and in person-oriented services, such as in the health care sector.

The skills of the foreign population are improving – in many cases the young foreigners are the children or more rarely the grandchildren of immigrants. But as most

[26] The metropolitan area refers to the administrative borders of the "Planungsregion 14"

[27] In 2000. City of Munich / Economix: the contribution of the foreign population to the economic development of Munich and the city-region, Munich, 2002

groups of foreigners were starting from a low average educational level, the adjustment towards the German educational structure is slow, although educational level increases over the generations. Furthermore, the German schooling system is not very integrative and "educational trajectories" are heavily dependent on the social status of the families of the students.[28] Better integration of foreigners or "persons with a migration background" into mainstream education and training is one of the biggest challenges for the city. On the one hand the average educational and skill levels demanded in the labour market will increase in the future. On the other hand the proportion of foreign children and young people is higher than the average at around 30% (and even above 30% for young men aged between 15 and 29 years), and these people tend to be educated to a lower standard than the indigenous population, although this situation is improving.

Despite the fact that Munich has a relatively high proportion of foreigners, social cohesion is generally regarded as quite high. Urban segregation does exist, as there is a higher proportion of foreigners living in some quarters of the city, but compared to other German and European cities, Munich has no strong communities in spatial terms and foreigners are comparatively well integrated. Most importantly, in a context of a low overall unemployment rate, xenophobia is lower than in cities that have regions with high unemployment rates. However, Munich may face more problems in the future if foreigners cannot achieve higher skill levels and so remain disadvantaged in the labour market.

As regards the German population, the city has a high proportion of single households and households of two people. For young professionals – and especially for young knowledge workers – it is fashionable to live in the city. In 2002, more than half of all households in Munich were single households. A further quarter of all households are for two people. Only 21% of house-holds comprised at least 3 persons and there were children in only 16% of all households.[29]

Due to the dynamic development of the City over the past decades and due to the high proportion of highly skilled workers, Munich is a wealthy city. The purchasing power is about € 24,200 per capita (39% above German average). However, there are also those who lose as a result of economic change. Industrial restructuring has led to long-term unemployment, mainly for low-skilled blue-collar workers.

Economic change and its social consequences are not only reflected in structural unemployment, but also in the type of employment relationships and economic security they can offer. The proportion of regular job relationships ('core employment'), in the sense of lifetime employment is falling. Thus, the number of so called 'normal jobs' subject to social insurance contributions declined by over 73,000, or around 11%, in Munich between 1992 and 1998.

At the same time, however, it can be assumed from the number of new firms and the number of people working on a freelance basis that there are dynamic forces that are driving new job creation. The increase of so-called atypical employment relationships in Munich is partly linked to the dynamic development of sectors where mini-enterprises and freelance work has become common, such as in the media industries and the IT sector. We can assume

[28] This was clearly one of the findings of the so-called "Pisa-study" carried out by the OECD
[29] City of Munich, Department for Social Affairs, München Sozial, 2005

that both employment expansion as well as the substitution of insecure jobs for secure jobs has driven the trend towards a decline in the "regular employment relationship". Thus, not all of these "atypical" jobs represent a problem of a loss of social cohesion. Nevertheless, overall economic insecurity and risk has increased all over Germany and also in Munich.

High wage levels in the dynamic economic sectors contrast with considerably lower wages in the low value-added service industries. Most importantly, the high average level of purchasing power as well as the growing number of single households and "double income, no kids" households have increased the demand for housing space (see above section on environment). As the supply of flats has not kept pace with the growing demand, rents have increased. This has increased the prices of local goods, while the high local inflation rate has increased the problem of social inequalities.

The proportion of people receiving social assistance has been lower than in most other large German cities (data is only available up to 2002).[30] Nevertheless, poverty is an important issue. For the last 10 years, the Department for Social Affairs of the City of Munich has regularly pro-duced a report on poverty in the City. According to this report, in 2002, about 11.6 % of the population could be regarded as being poor. The indicator for poverty is composed by recipients of social assistance and mainly by the Europe-wide used indicator: those people getting less than 50% of the average net income of the population in Germany are considered to be poor.[31]

Poverty rose sharply during the second half of the 1980s[32], continued to grow (at a slower pace) over the 1990s and had been oscillating around 11% until 2002. There is no more recent data, but we can assume that with the recent rise in unemployment, poverty rates have been growing again. The largest group receiving social assistance are children (of which three quarters are from single parent households). However, the proportion of children receiving social assistance in Munich is lower than in other large German cities. Foreign citizens are more likely to be in receipt of social assistance. In particular poverty among older migrants has been increasing recently. 43% of those in the working age population getting social assistance were unemployed.

As already mentioned, an important factor leading to poverty are the high rents and real estate prices in the city, as Munich has the highest rents in Germany.[33] "Social Housing" (this system foresees subsidies for real estate if flats are let at low rates for a certain number of years) is therefore an important issue. The number of subsidised flats under the "social housing" rule is diminishing so one of the major challenges facing the city is providing adequate new social housing. In 2004 about 52,000 flats were classified as "social housing", while in 1995 there were 82,000 flats. However, since the 1980s there have been around 6,480 new flats built per annum of which 1,660 were subsidised, this neither solved the problem of decreasing numbers of "social housing", nor did it supply enough new flats to meet the demand.[34].

[30] City of Munich, Department for Social Affairs, München Sozial, 2005

[31] In 2002, the threshold was at 420 Euro per person and at 720 Euro for single households

[32] Poverty rate rose from 6.5% (in 1986) to 9,8% (in 1989). City of Munich, Department for Social Affairs, Poverty report (*Armutsbericht*)

[33] See City of Munich Jahreswirtschaftsbericht 2004

[34] Florian, Dahme, Der soziale Wohnungsbau – ein Auslaufmodell, in: Der München Atlas, 2003

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Despite some rent decreases in recent years, Munich still has the highest rents in Germany. The waiting lists for social housing are indeed quite long. In 2004, about 39% of these flats were assigned to foreign citizens as they were most in need. It should be noted that in addition to "social housing" there are flats at lower rates for specific professions (for example, nurses and civil servants in low income groups). It should also to stressed that, to date, the City has been relatively successful in spreading social housing across the city and so avoiding the spatial concentration of social problems. So far, this policy appears successful, but it is difficult to disentangle the spatial effects from the comparably good economic situation in Munich, which has certainly contributed to a relatively low level of social conflicts.

One of the guidelines established by integrated urban development planning concerns the development of the different districts in the city. This includes the fostering of participative structures at district level as well as the development of social and cultural services. A central feature of this policy is the creation of a number of so-called "Sozialbürgerhäuser" (citizens social houses), in which different social services are offered at city district level. With its participation in the Federal "Social City" (*Soziale Stadt*) Programme, the city of Munich aims to improve the quality of life in the more deprived districts of Munich.[35] Although these measures are to be appreciated, we would be sceptical about the impacts of these measures in terms of social segregation, as the past has shown that the upgrading of districts - inner city development measures, improvement of local infrastructure, reduction measures on noise and pollution etc. - has led to important increases in land prices and rents and has engendered a substitution process, with the socially more disadvantaged groups moving to other areas, where lower rents are still avail-able, or with rising rents negatively affecting the position of persons and families on low in-comes.

A further guideline of the updated urban development plan is the fostering of social cohesion.[36] This includes actions directed towards a better integration of foreigners and an equal access to education, preventive measures against social exclusion as well as combating crimes. The City of Munich is certainly aware of the importance of social cohesion for the prosperity of the city, however, in the light of the demographic development more efforts could be directed in particular to the integration of children and young people from immigrant backgrounds.

[35] City of Munich, Department for Urban Planning: Münchens Zukunft gestalten. Perspektive München – Strategien, Leitlinien, Projekte. Bericht zur Stadtentwicklung 2005 (Report on Urban Development Planning)

[36] City of Munich, Department for Urban Planning: Münchens Zukunft gestalten. Perspektive München – Strategien, Leitlinien, Projekte. Bericht zur Stadtentwicklung 2005 (Report on Urban Development Planning)

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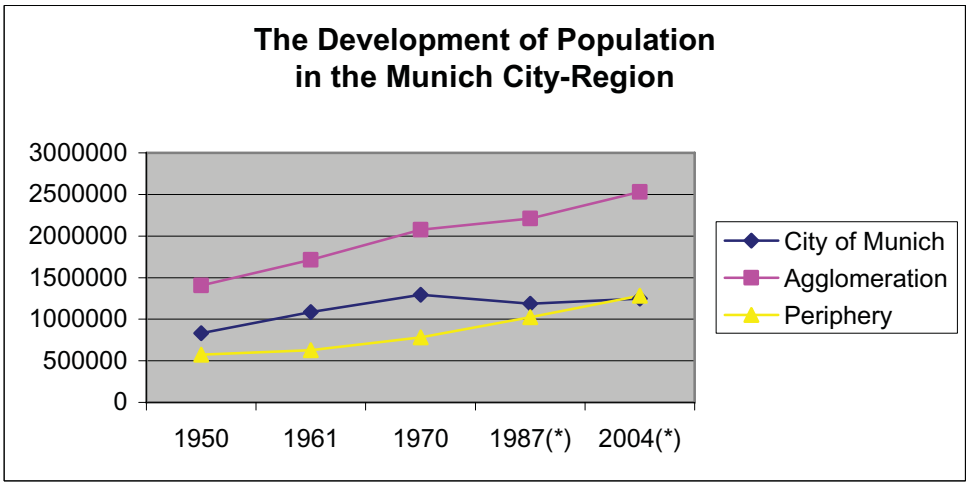
11. Growth within the City-Region

A fifth of Bavaria's inhabitants live in the city-region and a quarter work in the city-region of Munich (the difference is determined by commuting).[37] Munich is located in a monocentric structured area (implying that there is a single core area, in contrast to the German regions which often have more than one city in them, in particular contrast to the group of cities which cluster around Frankfurt). The next big city-region of Nürnberg is about 170 km away. Near Munich (within 100km of the city) there are only small and medium-sized cities like Rosenheim (58,000 inhabitants), Landshut (59,000 inhabitants), Augsburg (255,000 inhabitants) and Ingolstadt (115,000 inhabitants). The economy of these cities is partly orientated towards Munich and also commuting from these cities towards Munich is gaining in importance.[38]

Like many other dynamic city-regions the trend towards suburbanisation of the population and workplaces has taken place over several decades. One of the consequences of this development is an increase in commuting and traffic. The public transport links between the City and the Region are quite good - the backbones are the 8 S-Bahn (light railway) lines running every 20 - 40 minutes) serving an area of 5.159,77 km^2 with 2.5 million inhabitants. Nevertheless the constant passenger growth demands further improvement and enlargement of the system. The fact that the S-Bahn crosses the City centre like an underground is very convenient for the commuters but also creates a bottleneck in the system because all lines have to use the same tunnel - the planning process of a second tunnel has started but its realisation will take years.

Population growth has taken place in the periphery of Munich (Planning region 14 – without the city of Munich), as shown in the chart below.



(*) Refers to "main domiciliary" only, therefore e.g. many students are not counted
Source: statistical Office of the City of Munich

[37] Statistical Office of the City of Munich)

[38] Goggler, Karg, Kreilkamp, Preissler, Vogler-Ludwig, Zängler / Technical University of Munich, Economix, bpu; Telearbeit und Verkehr im Wirtschaftsraum München (teleworking and traffic in the economic region of Munich). Study on behalf of the City of Munich,2003

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Employment growth has also taken place in the region, but to a lesser extent. In 2003, 62% of all employees in the city-region worked within the administrative borders of the city. The proportion of workplaces in the periphery of the agglomeration increased from 24% in 1975 to 30% in 1990 and 38% in 2004. In recent years the growth in employment has slowed down.[39]

For many years spatial specialisation has taken place with a concentration of high-value added services and production in Munich and a trend towards the suburbanisation of lower-value added manufacturing and services. This is partly reflected in the numbers of blue-collar and white-collar workers: in the city of Munich roughly one in four dependent employees were blue-collar workers, while the equivalent figure is one third in the periphery. However, knowledge intensive industries (for example, research centres) have been increasingly finding locations outside the city border because it has been extremely difficult and expensive to find appropriate office space in Munich.

The co-operation structure between the City of Munich and the local governments in the periphery is weak. Although a formal structure exists, its power is limited. As the economic area of Munich covers a larger territory than the administrative borders of the city of Munich or the City-Region covered by regional planning organisation (Regionaler Planungsverband) – which has little power, the network structure "Greater Munich Area" was created. More than 100 members - municipalities, institutions, regional planning authorities and companies - are working in this network dealing with different aspects of regional co-operation (for example regional marketing). But the Greater Munich Area is only an association without administrative power, so the co-operation is limited to fields which are less controversial. To-date, conflicts between Munich and smaller cities and communities in the Munich Region have often remained unsolved and action has been is taken without co-operation.

So there is no powerful institutional body covering the Munich economic area. This definitely causes some frictions concerning planning processes and the discussion about a large proportion of different financial burdens (for example, public transport) continues. These processes could be organised in a more efficient way but the competition and rivalry between the cities in the region leads to a strong effort to offer the best location conditions for investors and this is strengthening the whole region.

[39] City of Munich, Münchner Jahreswirtschaftsbericht 2004

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12. Conclusions

Munich's economic success is a process that started relatively late - after World War II - and is linked with the historical context in which the German capital Berlin lost its dominant economical and cultural position and Munich filled the vacuum. As the capital of the Bavarian State, Munich has historically developed some central functions and cultural heritage, which certainly contributed towards further development. Furthermore, Munich's main resource is human capital, as the region is poor in natural resources. Thus, the city-region never had to struggle with the problems of industrial restructuring as compared to other German agglomerations.

So-called "soft locational factors" which Munich has to offer (such as good social climate, leisure and culture activities) have certainly had an influence on the positive economic development of the city. But one has also to admit that the regional and local policy made an important contribution to turn this opportunity into a long-term successful development. The most important elements of this policy were:

- Major infrastructure investments (airport, trade fair, public transport)
- Investment in universities
- Active industrial policy orientated towards technology and new sectors

Munich's importance as a "knowledge city" is based on two pillars. The first pillar is the concentration of public and private research institutions including two leading German Universities, the Max Planck and Fraunhofer Societies and the German and European Patent Office. The second pillar consists of the characteristics of Munich's economy that make it extremely technology and design orientated.