Le système métropolitaine allemand
Une structure territoriale polycentrique et un système urbaine polycentrique en Allemagne
The 21st century – the "century of the city"?

Over the last 50 years, the world has witnessed an unprecedented growth of its urban population.

The urban population reached
● one billion in 1960,
● two billion in 1985 and
● three billion in 2002.

Today, more than 50 % of approx. 6,5 billion people are living in urban areas.

According to an estimation of the UN Center for Human Settlement, in 2025 approx. 2/3 of the world’s population will be urban dwellers.
Decline and crisis stories prevailed in the discourses on cities in Germany

For some decades, German cities had to face a cumulation of problems difficult to deal with:

- outward migration of urban dwellers and job opportunities
- persistent mass unemployment
- erosion of their financial basis

and after the German unification especially East German cities were faced with

- dramatic forms of urban shrinkage (rétrécissement urbain)
"Medium-term" Settlement Structure Development (employed population)

→ Trend of Suburbanization as well as
→ Trend of Disurbanization

Development of employment per area type from 1980 to 2002

Changes in relation to the old federal territory

1980 = 100

Source: IAB 2003, own calculations, TUHH Urban and regional Economy / S. Kröger
Suburbia, Urban Outskirts or the "Urban Sprawl" –

As a result of the wish of the vast majority, for an affordable dwelling in a green area.

People are slipping away from the constraints of the proximity of urban living.
Unemployment rates in German Cities 1980 - 2007

- Leipzig
- Berlin
- Essen
- Dresden
- Cologne
- Bremen
- Frankfurt/M.
- Hamburg
- Stuttgart
- Munich
Side by side growing and shrinking population:

In approx. 3000 municipalities the population rate grew by 3.2% over the last 6 years, whilst simultaneously falling by 3% in approx. 1760 municipalities.

Growing and shrinking municipalities are often located closely to one another.


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DIETER LÄPPE „Le système métropolitain allemand“
„Shrinking Cities“ – rétrécissement urbain
“Residents moved away, buildings and infrastructure remained.”

À l’année 2000 une million des logements inoccupés à l’Allemagne de l’Est

Démolition des logements inoccupés à Dresde.

(Foto: Benno Brandstetter)
Tendencies toward a Reurbanisation – Population Development

Total migration balance per 1000 inhabitants in German cores und outskirts 1995 – 2003

Outliers: IAB 2003/05, eig. Berechnungen, HCU Institut für Stadt- u. Regionalökonomie, S. Kröger

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DIETER LÄPPLE „Le système métropolitain allemand“
Reurbanization and polarization of the German urban system (West Germany without Hannover)

Changes in the employment figures in German cities 1997 – 2006

- München: 7.2%
- Hamburg: 2.7%
- Frankfurt: 2.0%
- Köln: 0.5%
- Stuttgart: 0.5%
- Bremen: -3.6%
- Dresden: -5.2%
- Essen: -7.2%
- Leipzig: -7.8%
- Berlin: -13.1%
- Ostdeutschland: -18.8%

Reurbanization and polarization of the German urban system (West Germany without Hannover)
 Changes in the employment figures in German cities 2004 – 2006

Leipzig
Hamburg
Dresden
München
Westdeutschland
Frankfurt
Bremen
Stuttgart
Köln
Berlin
Essen
Ostdeutschland

Cities are confronted with a dramatic change from an industry to a knowledge based economy.

Hope for an urban renaissance?
Employment by occupational clusters in West German metropolitan cores

- **Repairing**: 5% 
- **Control of machinery**: 7% 
- **Primary production**: 1% 

In-/decrease 1980-1987 (1,000)

- Primary production: (-7,500)
- Control of machinery: (-9,100)
- Repairing: (-10,100)
- Adjustment: 434,200

Source: IAB 2003/05, eigene Berechnungen, HCU Institut für Stadt- u. Regionalökonomie, S. Kröger
Employment by occupational clusters in West German metropolitan cores

- Primary production: 1% / 78,600 (-20,000)
- Adjustment / control of machinery: 6% / 431,900 (-51,200)
- Repairing: 5% / 337,700 (-6,600)

In-/decrease 1980-1992

Green circles: increase in employment;
Red circles: decrease in employment.

Source: IAB 2003/05, eig. Berechnungen, HCU Institut für Stadt- u. Regionalökonomie, S. Kröger
Employment by occupational clusters in West German metropolitan cores

Increase 1980-1997

- Green circles: increase in employment;
- Red circles: decrease in employment.

Primary production
1% / 66,200
(-32,400)

Adjustment/
control of
machinery
5% 332,500
(-150,600)

Repairing
4% 282,200
(-62,100)

In-/decrease 1980-1997

Source: IAB 2003/05, eig. Berechnungen, HCU Institut für Stadt- u. Regionalökonomie, S. Kröger
Employment by occupational clusters in West German metropolitan cores

- In-/decrease 1980-2002
- green circles: increase in employment;
- red circles: decrease in employment.

Primary production
1 % / 58,200
(-40,400)

Adjustment/control of machinery
4 %
298,000
(-185,100)

Repairing
4 %
252,400
(-92,000)
Employment by occupational clusters in West German metropolitan cores

In-/ decrease 1980-2006

**green** circles: increase in employment; **red** circles: decrease in employment.

Source: IAB 2003/05, eig. Berechnungen, HCU Institut für Stadt- u. Regionalökonomie, S. Kröger
Employment by occupational clusters in West German metropolitan fringes employees 2006

Green circles: increase in employment; red circles: decrease in employment.

Primary Production
- Primary Production 2% / 66,500 employees 2006
- In-/ decrease 1980-2006 (-26,300)

Adjustment/ control of machinery
- Repairing 5% 202,900 (-44,600)
- 6% 257,500 (-93,300)

Source: IAB 2003/05, eig. Berechnungen, HCU Institut für Stadt- u. Regionalökonomie, S. Kröger
Employment by occupational clusters in East German metropolitan cores

- Primary production: 1% of 19,300 employees in 2006, decrease (-8,700) 1993-2006
- Repairing: 4% of 67,600 employees in 2006, decrease (-54,500) 1993-2006

Green circles: increase in employment; red circles: decrease in employment.

Source: IAB 2003/05, eig. Berechnungen, HCU Institut für Stadt- u. Regionalökonomie, S. Kröger
Employment by occupational clusters in East German metropolitan fringes employees 2006

In-/ decrease 1993-2006

*green* circles: increase in employment;
*red* circles: decrease in employment.

Primary production
3 %
38,000
(-21,900)

Adjustment/control of machinery
5 %
61,000
(-12,100)

Repairing
6 %
61,600
(-19,900)

Source: IAB 2003/05, eig. Berechnungen, HCU Institut für Stadt- u. Regionalökonomie, S. Kröger

IHEDATE
DIETER LÄPPE "Le système métropolitain allemand"
Share of knowledge-based services of total occupation
structure rate* 2004 (in percent)

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<tr>
<th>German metropolitan regions</th>
<th>German metropolitan cores</th>
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<td>Rhein-Main</td>
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*Structural rate: Share of persons employed in the considering cluster. SR West/East = metropolitan regions West- and East Germany

Source: IAB 2003/05, eig. Berechnungen, HCU Institut für Stadt- u. Regionalökonomie, S. Kröger
### Anteil der Akademiker/Akademičare an den sozialversicherungspflichtig Beschäftigten in deutschen Städten im Jahr 2006

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Quelle: Bundesagentur für Arbeit 2007, HCU, Institut für Regional- und Stadtökonomie, S. Kröger
Changement de l'emploi salarié avec une formation académique dans des villes allemandes entre 1999 - 2006

Quelle: Bundesagentur für Arbeit 2007, HCU, Institut für Regional- und Stadtökonomie, S. Kröger
Changement de l'emploi salarié avec une formation académique par sexe dans des villes allemandes entre 1999 - 2006

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<th>% Hommes</th>
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<td>Ostdeutschland</td>
<td>-9,6%</td>
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</tbody>
</table>

Source: Bundesagentur für Arbeit 2007, HCU, Institut für Regional- und Stadtökonomie, S. Kröger.
Labour – the decisive production factor in a knowledge economy
→ "Skills matter"

With the transition to a knowledge economy intellectual labour and creativity are becoming the key localization factor.
**Urban labour markets** increasingly function as “urban magnets”:

**Firms** look at the availability of qualified labour force in their choice of location and
**qualified labour force** will look for places with a high variety of employment possibilities and urban living conditions.

This will activate in metropolitan regions a **cumulating dynamic between labour demand and labour offer**.
The urban location pattern of the multimedia and internet-related service firms in the inner-city sites of Hamburg

Quelle: http://www.hamburg-economy.de/newmedia (April 2001), who-is-who in hamburg.newmedia 1.0 (2000),
Kartographie: Jan Rathjen, Stadtk- und Regionaökonomie, TU Hamburg-Harburg
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Places of the Creative Economy

Hamburg Ottensen – Borselhof

Hamburg Bahrenfeld – altes Gaswerk

Hamburg Altona – Phoenixhof

Hamburg Zeisehallen
Greetings from Richard Florida:
Urban creative environment attracts talent – or: city creates jobs

Consumption, entertainment, amenities
In Germany the polycentric urban system forms the historical basis for the development and profiling of metropolitan functions.

The metropolitan functions of diverse metropolises are interlinked in a spatial nexus.
Network of German Metropolitan Regions

Polycentric distribution of metropolitan functions:

- Decision and control,
- Innovation and competition,
- Gateway

"European Metropolitan Regions“ – following a resolution of the conference of the German ministers for spatial planning – in a first step:

Berlin/ Brandenburg, Hamburg, Munich, Rhine-Main, Rhine-Ruhr and Stuttgart, as well as the potential metropolitan region, the so called Sachsendreieck: Halle/ Leipzig, Dresden and Chemnitz; this list was complemented by Hannover-Braunschweig-Göttingen, Bremen-Oldenburg, Rhine-Neckar & Nuremberg.
„Export World champion“ Germany without a „global city“?

Question:
How can we explain the contradiction between
> the key position of Germany in the
global economy and
> the secondary importance of the German cities in the global networks of cities?

Is the German network of metropolises only a special deficient case in the hierarchy of the global network of cities or
is it likely that the „Rheinish Capitalism“ has not only formed an alternative model of production, but also an alternative and effective model of urbanization?
Hierarchy profile of the urban system 1939

*Employment in branches of the tertiary sector with central place function reduced by an estimated ratio of employment oriented towards self-supply of the cities population

Schema following Blotevogel 2002
Hierarchy profile of the urban system 1970
Division of Germany in West (left) and East Germany (right)

Employment in central place function* in thousand

*Magnitude of employment in branches of the tertiary sector with central place function reduced by an estimated ratio of employment oriented towards self-supply of the cities population

schema following Blotevogel 2002
Hierarchy profile of the urban system 1995 after the German reunification

Employment in central place function* in thousand

*Employment in branches of the tertiary sector with central place function reduced by an estimated ratio of employment oriented towards self-supply of the cities population

Schema following Blotevogel 2002

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DIETER LÄPPE „Le système métropolitain allemand“
German traffic flows business purpose
by rail, car and plane

Strong spatial-functional interconnection between the Metropolitan Regions –
The example of business trips

Quelle: LSE, BVWP, Verflechtungsmatrizen 1997

Source: LSE, BVWP, Verflechtungsmatrizen 1997
Traffic interconnection between the German Metropolitan Regions – air traffic

Volume of air traffic passengers and intra German air traffic flows 1999

Source: Institut für Länderkunde Leipzig 2000
Data traffic in the broad-band science network WiN (in GBytes/s)

Science broad-band network:

Frankfurt – intersection node for connections to the European science network and point of interchange with commercial German providers.

Cologne – intersection node for connections to the USA

Source: Rauh 2004
Patent applications at the location of the inventor (1992 – 94)

Spatial distribution and concentration of the knowledge economy and their correspondence with the spatial configuration of the metropolitan system.
The national location pattern of the Internet/E-Commerce Start-ups in Germany

Region: Rhine-Ruhr
3,000 start-ups
Share: 20%

Region: Rhine-Main
1,000 start-ups
Share: 7%

Region: Hamburg
1,100 start-ups
Share: 7%

Region: Berlin
1,000 start-ups
Share: 7%

Region: München
1,400 start-ups
Share: 9%

Region: Stuttgart
600 start-ups
Share: 4%

60% of the VC-financing are concentrated in the 5 most important locations

Quelle: Krafft, 2001

German start ups
foreign contractors
Ranking of location quotients among West German metropolitan regions
Engineering & Architecture (WZ73: 800)

1980

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
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<td>Stuttgart</td>
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2001

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Ranking of location quotients among West German metropolitan regions
Consulting and accountancy (WZ73: 791)

1980

- München
- Hamburg
- Rhein
- Rhein-Main
- Berlin
- Ruhr
- Stuttgart

2001

- Rhein-Main
- Hamburg
- Rhein
- Stuttgart
- München
- Berlin
- Ruhr
- Sachsendreieck

Quelle: IAB 2003/05, eig. Berechnungen; HCU Institut für Stadt- u. Regionalökonomie, A. Kaiser
Ranking of location quotients among West German metropolitan regions
Advertising (WZ73: 820)

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Quelle: IAB 2003/05, eig. Berechnungen; HCU Institut für Stadt- u. Regionalökonomie, A. Kaiser
Employment in Advanced Producer Services and Manufacturing in Metropolitan Regions
Regional Growth Rates 1980 - 2001 in %

Regional „service-manufactural link“ - Correlation between the regional growth of advanced producer services and manufacturing

Source: IAB 2003/05, eig. Berechnungen; HCU Institut für Stadt- u. Regionalökonomie, A. Kaiser

Employment in Advanced Producer Services and Manufacturing in Metropolitan Regions

R² = 0.284

Munich
Rhein-Main
Hamburg
Stuttgart
Rhein
Ruhr
German network of cities and metropolises – part of the European spatial network


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The German Metropolitan System:
Integrated into global, European, national und regional networks
(„multi-tiered networks“)

Employment in central place function* in thousand

*Employment in branches of the tertiary sector with central place function reduced by an estimated ratio of employment oriented towards self-supply of the cities population

Global City Metropolis Regional Metropolis Upper Center