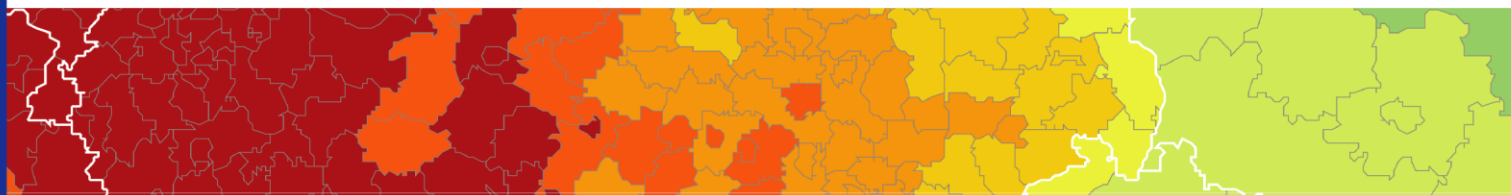


Inspire policy making by territorial evidence



The Geography of New Employment Dynamics in Europe

Applied Research

Annex to Chapter 6

**Case Study – BERLIN (DE)
Final Version**

9.3.2018

This applied research activity is conducted within the framework of the ESPON 2020 Cooperation Programme, partly financed by the European Regional Development Fund.

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.

This delivery does not necessarily reflect the opinion of the members of the ESPON 2020 Monitoring Committee.

Authors

Simone Buseti, Serena Druifuca, Erica Melloni, Monica Patrizio, Manuela Samek Lodovici (project leader), Cristina Vasilescu, IRS- Istituto per la Ricerca Sociale (IT)
Lucia Barbone, Stefan Speckesser, Kari Hadjivassiliou, Rosa Marvell, Chiara Manzoni, Martha Green, Institute for Employment Studies (UK)
Andreas Brück, Felicitas Hillmann, Leibniz IRS / TU Berlin (DE)
Johannes Gajewski, Leibniz IRS (DE)
Ewa Ślęzak, Cracow University of Economics (PL)

Advisory Group

Project Support Team: Adam Dennett (UCL, London, UK); Bruno Dente (Politecnico Milano, IT); Claudio Lucifora (Università Cattolica, Milano, IT), Felicitas Hillmann (Leibniz IRS / TU Berlin DE)

Technical Support

Karen Patient, Institute for Employment Studies (UK)

Acknowledgements

Sophie Hedges, Andreina Naddeo, Institute for Employment Studies (UK)

Information on ESPON and its projects can be found on www.espon.eu.

The web site provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

This delivery exists only in an electronic version.

© ESPON, 2017

Printing, reproduction or quotation is authorised provided the source is acknowledged and a copy is forwarded to the ESPON EGTC in Luxembourg.

Contact: info@espon.eu

The Geography of New Employment Dynamics in Europe

Table of contents

List of Tables	ii
List of Figures	ii
Executive summary	I
1 Motivation for the selection of this case	1
2 The hypothesis under analysis.....	5
3 Profile of Berlin	6
3.1 Population and migration	6
3.2 Economy and labor market	7
3.3 Education and Institutional characteristics in relation to the KE and skilled migration	9
4 Policy features affecting the performance in relation to the KE and high skilled migration flows	12
5 Testing the evidence: main results achieved and shortcomings.....	15
6 Conclusion and lessons learnt for EU Cohesion Policy	20
References	23

List of Tables

Table 3.1: Comparison of Berlin and London as examples for urban areas with highly competitive KE based economies (Cluster 1) 10

List of Figures

Figure 5.1: Website of the Berlin TXL Project promoting the future vision of a science and technology park specialised in urban technology (to be established after the Tegel Airport is closed). 16

Figure 5.2 Visualization of Berlin TXL project proposal. In the back one can appreciate the airport run field. 17

Figure 5.3: Website of the Adlershof Science & Technology Park..... 18

Figure 5.4: Aerial view of Adlershof (Science Park on the left) 18

Figure 5.5: Overview-Map Adlershof and WISTA Innovation Hubs across Berlin (small map). 19

Executive summary

As the knowledge economy (KE) tends to locate in urban areas – like Berlin, which according to this research belongs to Cluster 1; meaning it has a “highly competitive and KE-based economy” – the German capital represents an example to contextualise migration to urban centres and the factors and policies affecting and or triggering these developments.

On one side, the case study identifies potentially important parameters like Berlin’s welcome culture, the still relatively low cost of living (compared to other European metropolises), high quality of life, and an international environment in the arts and culture, etc. These elements make Berlin an attractive location for the highly educated and mobile workforce of the KE. The analysis of economic and demographic developments shows that Berlin is (finally) thriving and its population growing. Also, its educational and institutional characteristics – specifically its well established scientific landscape – make it a destination for high-skilled KE workers.

On the other side, the research analyses Berlin’s strategies when investing in further development of its KE sectors – e.g. through urban regeneration projects and the establishment of innovative technology parks and urban KE hubs. Berlin officially followed, and still follows, multiple strategies to strengthen the KE as well as the transition from more traditional fields of the economy towards more future proof models. All of this is especially targeted towards the KE (digital and creative economy, science and technology, etc.). Therein, urban redevelopment areas – like Berlin Adlershof or the projected Berlin TXL Airport redevelopment project (both including relocation services, R&D infrastructure and related services) – are a focus of the city’s efforts to attract human and financial capital. The attractiveness of Berlins scientific landscape is evolving and increasingly offers opportunities in a variety of fields related to the KE. On top, the city’s policy for education and research entails a clear commitment to innovation, and is unmistakably oriented towards both European and international networks and exchange.

The case study concludes, that Berlin will probably continue its recent success story as an important metropolis in central Europe – as well as a KE hotspot. The years since the establishment of the EU, the reunification of Germany, as well as the recent spike in international investments, mushrooming start-ups and the variety and multiplicity offered in this city has made Berlin grow and flourish. Yet, and due to arising crises and potential conflict – e.g. with the euro crisis, the refugee crisis since 2015, Brexit; but also raising rents and prizes, as well as a growing dependency on risk-capital (at least in the start-up and entrepreneurial scene) – it is still to be seen whether Berlin will be able to (again) use its creative potential, human/social capital and existing strengths to further thrive on the way to a future in which science, technology, (higher) education and knowledge production are key.

1 Motivation for the selection of this case

Berlin is a metropolis with more than 3.5 million inhabitants, with a rich history and some unique features/settings that make it an interesting case of an urban area betting on the KE as a major economic factor while being open to (or even highly interested in encouraging) immigration from within and outside of Europe. As explained earlier in this report, the expansion of the KE across Europe has supported the growth of highly skilled employment with high wages (as well as spillover effects in other sectors); but it has also had a polarising effects across the EU, with a large share of activities concentrated in technologically more advanced regions where sufficient agglomerations of knowledge activities are present.¹ The KE tends to locate in urban areas that offer high levels of social capital, networks, technology, agglomeration of knowledge and good physical accessibility.² Urban areas – like Berlin – have become the growth engines and attractors of investments, particularly intense in the old Member States.³ Therefore – as the second case study from Germany – Berlin represents an example to contextualise migration to urban centres in the context of the knowledge economy in Europe.

Meanwhile, and as stated in this report, Europe's future economic dynamism is closely connected to its capacity to adopt – or even spearhead – new technologies and innovations; and Berlin is a good example for a European metropolis highly dependent on knowledge-based economies. Berlin's KE is diversified, internationally connected and banking on its creative-, cultural- and human-capital to induce economic success. According to the cluster-analysis undertaken in this work, Berlin belongs to Cluster 1 – meaning it is/has a “highly competitive and KE-based economy”. In relation to the EU average and compared to the pre-crisis period (before 2008), Cluster 1 regions show improvements and growing values in all KE relevant indicators; including very good labour markets and socio-economic conditions, high levels of employment in R&D sectors, high investments in R&D activities and ICT infrastructures, as well as a growing, young and often high-skilled population. Yet, Berlin might be an exception in many ways due to its unique characteristics.

Other factors are also important when understanding Berlin's economy and the attractiveness it has for KE firms and workers.⁴ The welcome culture of the city, still relatively low entry levels and a comparatively low cost of living⁵, high quality of life, and an international environment in the arts and culture, make Berlin a relatively easy and attractive location in which to settle for

¹ See also Paddison & Hutton (2014)

² See e.g. Kujath (2005), Krätke (2011)

³ When we speak about discrepancies and persisting gaps in terms of technology, knowledge-intensity, and innovation between Old Member States (OMS) – with a high level of KE and high skilled (young) workers – and New Member States (NMS) – catching up in terms of income and productivity – we have to bear in mind, that Berlin is an exception: As a formerly divided city and capital of two Germanies, it shows characteristics of both OMS and NMS.

⁴ See also Hospers (2003)

⁵ The highest average housing prices e.g. are not recorded in Berlin, which is more affordable than e.g. Munich or Frankfurt a.M.

the highly educated and mobile workforce of the KE. With its good academic and R&D focused landscape, innovative companies and entrepreneurial spirit, Berlin is increasingly being perceived internationally as an economic hub and considered to be leading a variety of fields: e.g. in the areas of energy- and environmental-technology and related services, or the mobility sector.⁶ All in all, Berlin sports great potential for innovation, an agglomeration of educational infrastructure (especially higher education like universities, etc.) and latent knowledge spillovers, as well as high levels of economic growth; all combined with vibrant migrant neighbourhoods.

To put Berlin into context: Germany includes regions that are experiencing very different patterns of employment, migration and population distribution. In addition, the country has been experiencing both inter-regional and international immigration over recent decades, with a consequent dramatic change in the distribution of human capital and skills across regions. Three main phenomena are currently happening in the country: first, a significant outmigration from north-east and coastal regions, and a consequent depopulation trend in these areas (Wirth, 2013); second, a substantial immigration towards urban centres, with an increase in their population; and third, immigration flows from both EU and non-EU-countries. As the capital city, Berlin is one of the preferred destinations of migrants, e.g. for highly qualified youth from Eastern European regions or from Southern Europe. The city's economy is growing constantly and outperforming the rest of the country⁷; and, recently, Berlin reached the highest level of employment since reunification.⁸

Nevertheless, the purported success story of Berlin is a relatively new phenomenon.⁹ In the past, Berlin had to struggle with slow growth and conflicting reports on its economy did not give a clear picture. For example, the city was not believed to be very competitive, or at least was ranked the only capital region with a competitiveness index below its national average.¹⁰ The metropolitan region of Berlin is almost the same size as the Ruhrgebiet and both recorded similar levels of productivity; however, these were not – as in most other EU Member States – the highest productivity levels in the national economy.¹¹ The city had to reinvent itself: its post-unification economic growth had to include a dramatic shift in the skills distribution of its workforce, from an economy dominated by subsidised manufacturing when the city was divided, to a dynamic KE today. In recent years, the city was the focus for various programmemes and policies designed to specifically strengthen the knowledge-based economy of the region, a strategy that has been successful so far. Therefore, Berlin is investing in further development of its KE sectors – e.g. through urban regeneration projects and the

⁶ McKinsey & Co. (2016)

⁷ See e.g.: <https://de.statista.com/infografik/8749/bip-wachstum-bundeslaender/>

⁸ See e.g.: Stüber (2017)

⁹ See e.g.: Krätke (2004), Brown (2014), Growe (2016)

¹⁰ See e.g.: Petzinger (2016), O'Sullivan (2016)

¹¹ European Union (2016a)

establishment of innovative technology parks and urban KE hubs – and is hoping to further attract human and financial capital towards it.

For now, Berlin seems to still be thriving after a long period of separation and closure, followed by a slower than expected economic recovery, and being confronted by new challenges (e.g. gentrification)¹² All in all, the city seems well equipped for a successful future development, even in times of uncertainty and rapid change on the national, European and global scales, with challenges still ahead.

¹² See e.g.: Benevides et.al. (2014)

2 The hypothesis under analysis

Berlin has gained from its unique situation and great potential after the end of the Cold War, German Reunification, and EU extension towards the east – making Berlin a metropolis in the centre of Europe, as opposed to being at the farthest edge of two concurring world models. In recent years – and after some decades of stagnation and much slower than expected development – Berlin has gained not only attractiveness, but has also witnessed population increase, economic growth and higher investments (e.g. in the real-estate market or creative and tech sectors) – making it an ever improving location for the KE.

HYPOTHESES	EXPECTED RESULTS	MECHANISM	EVIDENCE
Urban redevelopment areas in Berlin are a focus of the city's strategies (including relocation services, R&D infrastructure and related services) to attract investments which enhance the KE.	Number of companies settling in Berlin is steadily growing and urban redevelopment areas are bustling.	Economic and other incentives for firms in the KE sector (especially relocation services to science parks and urban redevelopment areas)	Number of company registrations increasing AND urban redevelopment projects are closely linked to other policies and services.
The attractiveness of Berlin's scientific landscape is evolving and is increasingly offering professional development opportunities in a variety of fields related to the KE.	Number of KE workers is growing and the reasons for moving to Berlin are seen connected to possibilities in the city.	Berlin builds on its reputation as an attractive city and tries to broaden offers for KE professionals and related fields.	KE workers move to Berlin to seek a career and professional development (not only a job) and are happy about what the city offers.
Berlin has created a highly attractive offer for (graduate and post-graduate) education and is especially investing and/or betting on programmes focused on KEs (e.g. digitalisation)	Number of (foreign) students registered in Berlin-based higher education facilities (universities, etc.) is rising.	Higher education is prioritised and policies targeted at strengthening Berlin as an attractive education location.	Berlin is seen as a good place for education (specifically in regards to the KE) that is attractive on an international level (EU and further). Number of students rising.

These trends are expected to continue in the coming years, although there are also critical voices warning of oversimplified assumptions and hyper-positive expectations. Although it is pretty accurate to assume Berlin would not be in the situation it is now if it had not been for extensive help-programmes throughout its decades of relative isolation – starting with the famous Airlift by the Western Allies (USA, GB, France) and later on with numerous subsidies and incentives (e.g. tax-incentives, military draft exemptions for Berliners) – as well as later in the 1990s when Berlin became the German capital again and numerous investments and programmes were targeted towards the city.

Although it is unclear how much EU cohesion policies have contributed to Berlin's recently apparent success; one of the specificities of Berlin seems to be the integrative and long-term oriented policies linking urban redevelopment programmes with economic incentives and services. Urban redevelopment areas in Berlin are a focus of the city's strategies (including relocation services, R&D infrastructure and related services) to attract investments which enhance the KE. The main hypothesis under analysis here, is that this strategy of linking urban redevelopment projects with policies fostering KE's can be seen as a successful, in that it has helped Berlin establish itself as an attractive location within the EU.

3 Profile of Berlin

After being heavily destroyed in World War II, and subsequently divided between east and west during the Cold War; Berlin has developed into a world city and European centre for politics and culture since its reunification in 1990. Its economy today – based on a diverse range of industries in science, research and high-tech (e.g. IT & electronics, pharmaceuticals and biotech¹³) as well as in the service sector (especially creative-, media, and film-industries, etc.) – is highly dependent on the KE.

Berlin is the largest city in Germany (approx. 3.6 million inhabitants) as well as its capital. It is the third biggest city in Europe after London and Paris. Located in the north-eastern part of Germany, Berlin is surrounded by the Land of Brandenburg, which in combination with the German capital makes up the Berlin-Brandenburg Metropolitan Region; yet the city itself is an independent city state and at the same time one of the 16 Länder (states) comprising the Federal Republic of Germany.

Its uniqueness today results from many different factors. Very decisive circumstances have emerged from its history and resulting urban features: not only did Berlin have to be re-built after the second world war, but also it was a divided city for almost 30 years. This cannot be accentuated enough, as it is responsible for many characteristics which may be unique to Berlin. An in-depth analysis of its features shows that its profile is very unique – making the potential transferability of concepts or strategies to other cities quite difficult. The understanding of Berlin as a metaphor for a constant 'work in progress' or a city that is never finished and constantly re-defining itself has been expressed in different ways and by many authors (e.g. Carmen-Francesca Banciu for DW 2017).

3.1 Population and migration

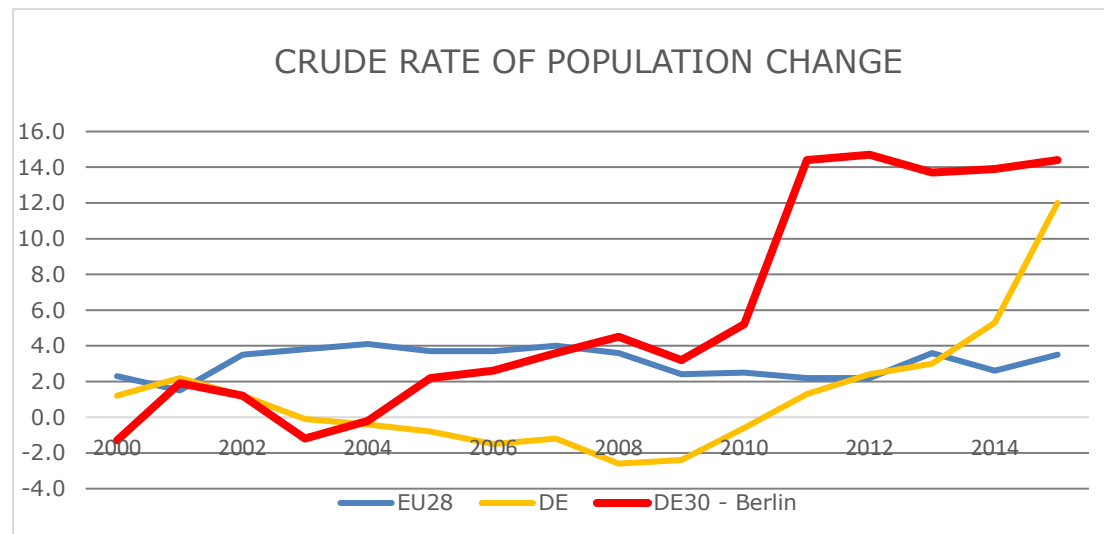
Berlin is growing in population size, and this is expected to continue until 2030¹⁴. Although in total numbers, the city has not grown dramatically, its crude rate of population change¹⁵ has been positive since 2004 and rose considerably after 2008, hinting at an increased influx of people. It also figures among five capital cities (the others being London, Madrid, Wien and Brussels) where non-EU nationals accounted for slightly more than one in ten of the population. Its international and diverse environment attracts large numbers of migrants: more than 14% of its population does not have German citizenship, with people from almost every country in the world, and almost three-fourths of them coming from other European countries (especially

¹³ The pharmaceuticals and biotech sectors were not a center of attention of this case study, as the other German example (Mecklenburg Vorpommern) was specifically focused on the health industry.

¹⁴ Berlin Senate (2016)

¹⁵ The *crude rate of population change* is the ratio of the population change during the year to the average population in that year. The value is expressed per 1 000 persons. Population change is the difference between the population sizes on 1 January of two consecutive years. Source: EUROSTAT 2016

Poland). This, in turn, hints at factors attractive to foreigners – for which they would move to the German capital.



Source: Eurostat

At the same time, Berlin had the lowest average household size among EU capital cities over the last years – with each household composed, on average, of 1.7 persons – and has the highest share of one-person households among EU cities, with almost half (49.0%) of all households in Berlin composed of a single person.¹⁶ In parallel, figures show a healthy growth in population aged 30-34 with a tertiary education. The number has steadily increased since 2000 (from 33% to 43% in 2015), as well as the number of persons with tertiary education (ISCED) and/or employed in science and technology (from 48% to 54% in 2015). Equally important – and in relation to education – is the fact that in Berlin roughly 70% of the population aged 20-24 years are students in tertiary education (ISCED 5-6). All of this suggests a growth in existing and future KE workers.

3.2 Economy and labor market

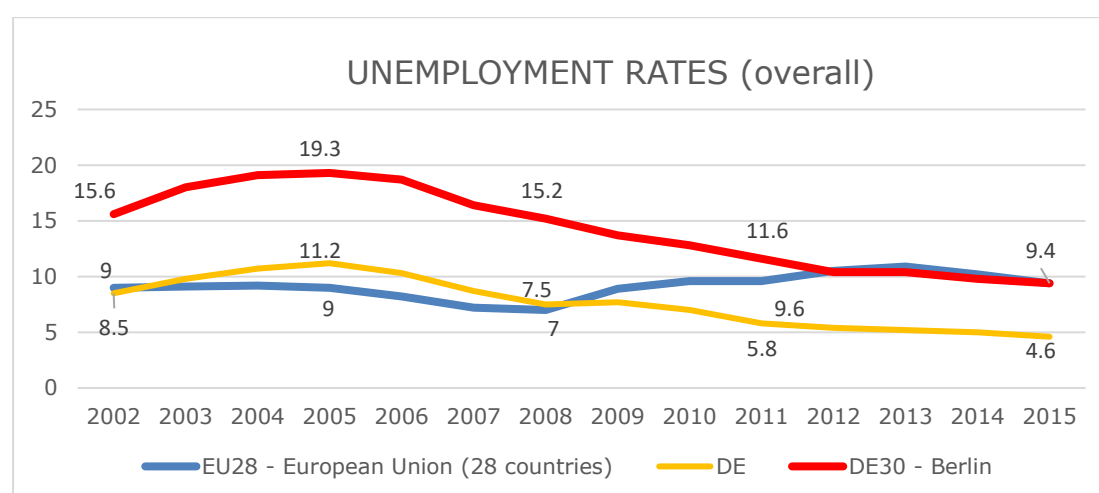
Berlin has developed into an important metropolis in the European context since the fall of the Berlin wall, the reunification of Germany and the expansion of the EU towards the east. Today, Berlin possesses a dynamic, open economy, specialised in the service, technology and creative sectors. The city prides itself on being among the largest and most diverse regions for science¹⁷ – with a high concentration of internationally renowned universities and institutional research facilities, institutions and infrastructures – as well as being an ideal location for young and technology-oriented companies, a hotspot for founders of companies and venture capital.¹⁸ Not only has the number of companies established in Berlin grown substantially in the last five

¹⁶ European Union (2016)

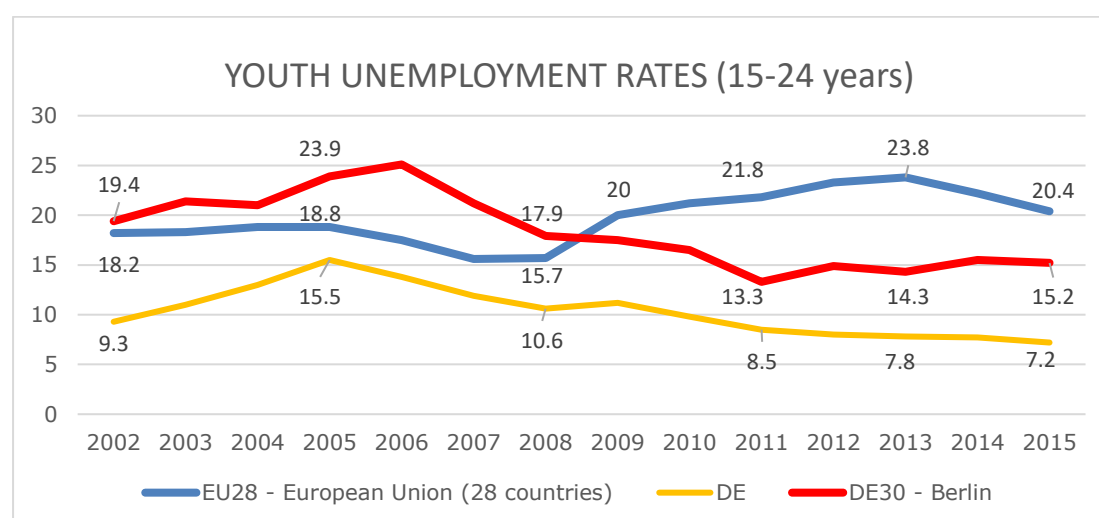
¹⁷ <http://www.businesslocationcenter.de/science>

¹⁸ <http://www.businesslocationcenter.de/en/business-location/business-location/start-up-capital>

years, but also real GDP rose (e.g. +2.7% in 2016, compared to 2015) at a faster rate than the nationwide average. The unemployment rate has significantly dropped since the mid 2000s (from almost 20 to under 10%), while youth unemployment (ages 15-24) has also steadily decreased, although it is still high compared to the national level.¹⁹ Both of these statistics are contrary to the overall EU levels, which did see a rise, especially in youth unemployment, following the 2008 financial crisis. The change in regional employment rates showed almost half of EU NUTS 2 regions experiencing a fall in employment rates since the economic crisis began in 2008. Yet, despite the economic crisis, Berlin recorded one of the highest increases in employment, with growth rates of more than 4 percentage points.²⁰



Source: Eurostat



Source: Eurostat

¹⁹ In 2015, the unemployment rate in the EU-28 average, as well as that of Berlin stood at 9.4 %, making it the only German NUTS level 2 region that did not record a rate below the EU-28 average. Source: EUROSTAT 2016.

²⁰ Europe 2020 Indicators – Employment. See: http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_indicators_-_employment

At the same time, data suggested that the EU-28 mainly developed (in employment terms) in and around (capital) city regions; and Berlin is no exception. For example, the city was included in the top 20 regions with high numbers of employment within three sectors: administrative and support service activities²¹; information and communication²²; as well as professional, scientific and technical services sector²³. Also, in many European countries, R&D activity is often focused in capital city regions. In Berlin, the total intramural R&D expenditure (GERD) as a % of GDP in 2013 was at more than 3.5% – way above the values for Germany (2.8%) and the EU28 (2%). Another sign of R&D efforts and potentially the role of KE's is the number of patent applications (per million inhabitants), a value which in Berlin varied between 150 and 220 patents per year in the last decades – compared to e.g. only between 55-80 in London or on average around 110 in the EU28. Nevertheless, compared to the entirety of Germany (225-295 p.a.), Berlin's values are far below other regions with higher R&D efforts.

3.3 Education and Institutional characteristics in relation to the KE and skilled migration

In terms of the educational setting – especially related to higher education facilities – Berlin is well equipped and an analysis of the human capital (e.g. education levels of people, number of students enrolled in the universities) shows that it is an attractive destination for national and international students, a fact that was also asserted by many interviewees. The city is home to a great variety of universities and research institutions; including high profile facilities associated with research conglomerates like the Fraunhofer-Gesellschaft (FhG), the Wissenschaftsgemeinschaft Gottfried-Wilhelm-Leibniz (WGL), the Helmholtz-Gemeinschaft Deutscher Forschungszentren e.V. (HGF), and the Max-Planck-Gesellschaft (MPG). Also, Berlin has followed a strategy of internationalisation, cooperation between educational facilities and universities and support for more and better educational settings – all through a campus strategy (Warnecke 2010).

Berlin's universities and research institutes are highly involved in internationalisation efforts; their vivid participation in the major mobility programmes of the European Union (e.g. ERASMUS, ERASMUS Mundus) being just one example and an important element of European and international networking (which will gain in importance in the new funding period until 2020). An additional example – more related to research than teaching – is the Technical University of Berlin's involvement in two "Knowledge and Innovation Communities" (KICs) of the European Institute of Technology, the "Climate Change KIC" and the "ICT KIC". In addition to research and teaching, the direct cooperation with the business community is particularly

²¹

http://ec.europa.eu/eurostat/statistics-explained/index.php/Administrative_and_support_service_statistics_-_NACE_Rev._2

²²

http://ec.europa.eu/eurostat/statistics-explained/index.php/Information_and_communication_service_statistics_-_NACE_Rev._2

²³

http://ec.europa.eu/eurostat/statistics-explained/index.php/Professional,_scientific_and_technical_activity_statistics_-_NACE_Rev._2

important to Berlin's universities. These partnerships ensure the transfer of knowledge and ensure the implementation of research results at many levels. Also, the institutions are particularly committed to the promotion of start-ups through their respective EXIST Founder Colleges – funded by the Federal Ministry of Economics and Energy – where students, graduates or scientists who want to translate their learning and research results into products and services find tailor-made support. The initiatives are e.g. the Profund - Founding Center of Freie Universität Berlin, the Founding service of the Humboldt-Universität zu Berlin, the Center for Entrepreneurship at the Technical University of Berlin, as well as similar programmes at other institutions like the University of Art in Berlin (UdK), the Beuth University, the University of Applied Sciences Berlin (HTW) or the University of Economics and Law (HWR).

Table 3.1: Comparison of Berlin and London as examples for urban areas with highly competitive KE based economies (Cluster 1)

CLUSTER 1 Compared	London (UK)		Berlin (DE)		Average
"Highly competitive and KE-based economies"	2004-2007	2012-2015	2004-2007	2012-2015	2012-2015
Labour Market and Education					
NEET rate (18-24)	13.4	11.8	18.6	13.1	10.1
Employment rate (25-64)	73.0	76.5	65	73.9	78.5
Youth employment rate (15-24)	43.2	40.1	35.9	38.4	43.1
Youth Unemployment rate (15-24)	19.3	21.1	23.4	15.0	14.8
Unemployment rate (25+)	5.5	5.7	17.5	9.6	5.4
Knowledge Economy					
Total intramural R&D Expenditure (GERD) as % of GDP	0.7	0.8	3.2	3.5	3.1
Human resources in science and technology (HRST, % of active population)	32.7	42.6	38.0	43.2	40.5
Patent Applications (per million of inhabitants)	68.2	56	215.6	164	193
% population 30-34 with tertiary education	46.4	63.1	37.9	42.6	48.6
Population and Migration Dynamics					
Crude rate of natural change	9.0	9.0	-0.5	1	3.3
Crude rate of net migration	4.2	6.3	3.3	29.2	9.1
Crude rate of population change	13.2	15.3	2.8	30.1	
Old-age dependency ratio	n.a.	12.8	24.4	28.0	24.5

All in all, Berlin is considered to be one of the leading scientific regions in Europe. Four universities, the Charité - Universitätsmedizin Berlin, four Fachhochschulen, three art colleges, two denominational and more than 30 private colleges offer more than 30,000 scientists attractive opportunities for research and teaching. There are also cooperations with the numerous non-university research institutes based in Berlin. Berlin has more than 165,000

students. Some 48,000 employees work in the universities.²⁴ The universities are thus among the most important economic factor in the region. Therefore, Berlin is an attraction for numerous international scientists, who find attractive working conditions in the universities, either as part of a temporary stay or permanently. The cooperation possibilities in the institutions and with companies in the free economy are substantial, and make Berlin a lively and internationally attractive start-up location.

²⁴ Numbers provided by the Berlin Senate. See: <http://www.berlin.de/sen/wissenschaft/wissenschaftspolitik/>

4 Policy features affecting the performance in relation to the KE and high skilled migration flows

Berlin officially followed, and still follows, multiple strategies to strengthen the KE as well as the transition from more traditional fields of the economy towards more future-proof models of economic development. These strategies included – since early on after the fall of the Wall (in the early 2000s), then still within a strategy for a ‘Berlin-Brandenburg Region’ becoming one state (an idea later dropped)²⁵ – a focus on KE as an engine for economic growth and future development. Programmes focus on developing strategies for Berlin as a location and seek to build platforms, initiate networks, develop new support instruments, compile studies, implement innovative projects (e.g. setting up or enabling innovation and creative labs, coworking spaces) and facilitate investments as well as company relocations and set-up. All of this is especially targeted towards the digital and creative economy, science and technology, etc.

Policy features are multi-layered, as Berlin it is not only Germany’s capital – which guarantees an inter-relationship (or connection) with the central/national government and overall German – as well as European – politics. It is also a city (i.e. municipality) as well as an independent state (Land) within the Union (Bund) of German Länder, which gives Berlin a high level of autonomy in different ways regarding policy, regulatory frameworks for business creation and taxation, etc. Yet, this general setting did not change between 2000 and 2016 in relation to the KE and migration has not changed fundamentally. This also encompasses national or European regulations and frameworks concerning e.g. the labour market, the welfare system, education, the justice system, immigration regulations or governance parameters relative to the KE. Internal Berlin politics though have particularly focused on the KE sectors since the 1990s.

The city’s policy for education and research entails a clear commitment to innovation, and is unmistakably oriented towards both European and international networks and exchange of ideas. For example, the European Research Framework Programme – an important instrument for promoting European cooperation in science and research – provided Berlin with grants totaling more than 500 million euros for 1,500 projects during the funding period 2007-2013. Meanwhile, the Horizon 2020 Research Programme (2014-2020) is the most important instrument supporting research on urgent social challenges such as an aging society, neurodegenerative diseases, climate change, sustainable use of raw materials or the future of cities.

The German “Initiative for Excellence” is another important policy and funding source for the KE in Berlin. The funding programme of the Federal Government and the Länder was announced in 2005²⁶, with the aim of strengthening universities by contributing to a

²⁵ JBBPD 2006

²⁶ There were a total of three application rounds, which took place in 2005, 2006 and 2011 respectively; the programme is expected to run out in 2017. The total budget is roughly 4.6 billion Euros; regional governments have to provide 25% co-funding for the successful applications of their universities. The share of the state of Berlin in co-financing amounts

diversification of the German higher education landscape, and helping the German scientific community to gain greater visibility in the international arena. Within the programme, there are three funding lines or schemes for which universities can apply:

- Graduate schools for the promotion of young academics;
- Clusters of Excellence for the Promotion of Advanced Research;
- Future concepts based on long-term strategy and specific profiling measures.

Applications by Berlin Universities were made in close consultation with the Berlin Senate, and were a great success: all three mayor universities – Freie Universität (FU) Berlin, Humboldt-Universität (HU) zu Berlin and Technische Universität Berlin – were able to secure funding for either graduate schools or so called “clusters of excellence”; making Berlin the most successful State in Germany and proving the quality and research strength of its universities. In addition, the FU and HU Berlin were successful with their future concepts and thus belong to the exclusive circle of “universities of excellence”.

Furthermore, only recently, the state of Berlin announced a digitalisation strategy consisting of the establishment and financing (38.5 Million Euro in 6 years) of the “Einstein Center Digital Future”²⁷ – focused on digital infrastructure, methods and algorithms, digital industry and services, digital society and humanities, as well as digital health. The strategy includes the provision of 50 professorships with emphasis on digitalization – related to a broad variety of disciplines that are expected to work in an interdisciplinary fashion. Research is projected to go e.g. into the realms of Smart Housing, Smart Cities, Smart Mobility, Digital Education, the Internet of Things (IoT), wearable technology, bioinformatics, and much more. Besides Berlin’s Universities, a dozen different research institutes. including, for example, the Berlin Institute of Health, Fraunhofer FOKUS, Heinrich-Hertz-Institut, the German Aerospace Center (DLR), or the Konrad-Zuse-Center for information technologies and more than twenty private companies (including heavy-weight ICT related firms like Intel, SAP, German Telekom, etc.) will be involved in this effort. Finally, also recently, Berlin is trying to actively attract companies and talent from Great-Britain, as the uncertainty after the Brexit referendum increased and start-ups and tech-firms, for example, from London might be looking for alternatives and considering moving to mainland Europe, e.g. to Frankfurt am Main or Berlin (DW 2016a and 2016b).

All in all, the attractiveness of Berlin’s scientific landscape is evolving and is increasingly offering professional development opportunities in a variety of fields related to the KE. Indeed, Berlin builds on its reputation as an attractive city and tries to broaden offers for KE professionals and related fields. Moreover, with its highly-attractive offer for (graduate and post-graduate) education, the city is especially investing and/or betting on education programmes

to around 80 million euros over the entire funding period. For more information, see: <http://www.dfg.de/foerderung/programmeme/exzellenzinitiative/>

²⁷ See: <http://www.digital-future.berlin/the-einstein-center-digital-future/> and <http://www.berlin.de/sen/wissenschaft/wissenschaftspolitik/digitale-hauptstadt/>

focused on KE and related fields and/or topics (e.g. digitalisation). This way Berlin has been able to not only attract firms and start-ups, but also KE workers seeking career and professional development opportunities (i.e. not only a job) as well as national and international students (from the EU and beyond); i.e. the KE workers of the future that will eventually stay in the city and one day contribute to Berlin's success story.

5 Testing the evidence: main results achieved and shortcomings

On top of the policies mentioned above, Berlin's strategies and policy towards encouraging and fostering KE's – followed by the former, as well as the current government – are closely linked to urban redevelopment projects.²⁸ Such projects have accompanied Berlin all the way since the fall of the Wall, as many areas once constituting a closed off military zone – stretching through the very centre of the city – became prime locations for urban development, real-estate investments and thriving sub-cultures that use these locations as "spaces of opportunity". While in the 1990s construction focused more on closing the gaps within the urban fabric of Berlin central locations along the separation line, other opportunities emerged and potential redevelopment was planned in relation the closure of big infrastructures and existing brownfields; for example, the centrally located Tempelhof airport²⁹ (>380ha, closed in 2008) and the area surrounding today's "Gleisdreieck"³⁰ park (>30ha).

Today, there are several urban redevelopment projects that specifically target the KE and form a significant part of Berlin's future economic strategy. Based on a 2013 "Berlin Today: Status Report", the city has put forward the *Urban Development Concept Berlin 2030*, and has introduced "Projekt Zukunft"³¹ – the initiative of *Berlin's Senate Department for Economics, Energy and Public Enterprises* to support the growth areas of information and communication technology, media and creative economy. The city is also making efforts to push "Technology sites and other sites of the future in Berlin".³² These sites are (smaller) technology parks with business incubators, as well as (bigger) urban development areas like the future Tegel airport "Berlin TXL"³³, or the "Science and Technology Park Berlin-Adlershof" (another former airport). The latter might be seen as special strategies for development through urban regeneration. Both are examples of technology parks combining the re-use of urban areas with policies aimed at establishing KE hubs with a clear focus on science and technology, R&D, education, and related sectors. In addition, both projects are related to smart city concepts and sustainability focused or "green" industries.

²⁸ See, for example.: OECD (2003)

²⁹ The area of the former Tempelhof Airport was supposed to be opened for construction in 2014; yet Berlin's citizens decided to keep using the field as a public park through a referendum – organized by the "*Bürgerinitiative 100 % Tempelhofer Feld*", stopping further development and change in the built environment.

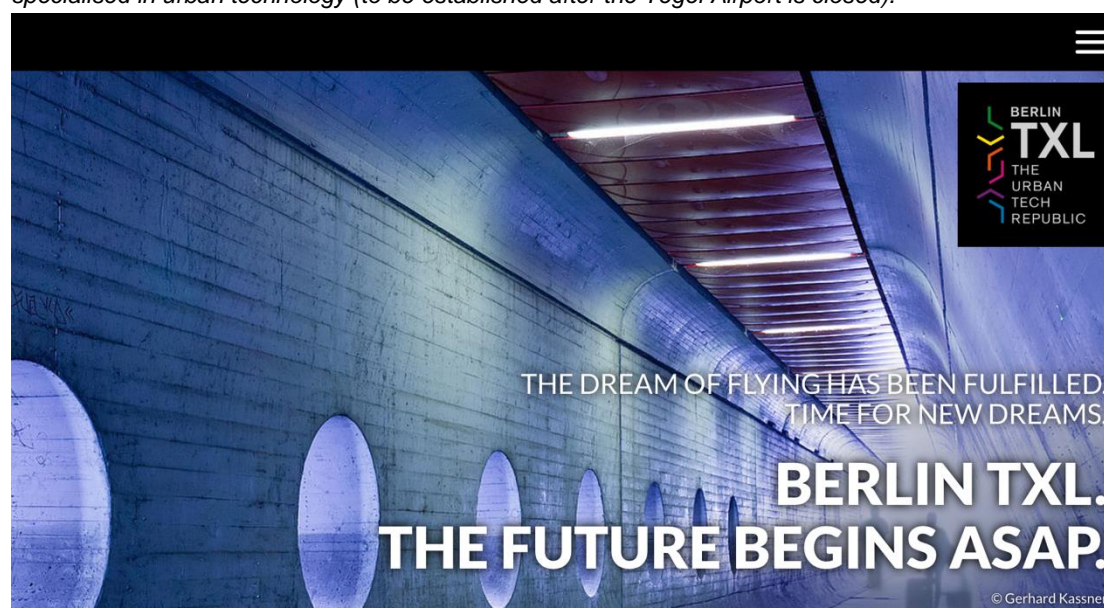
³⁰ The area south of Berlin's city centre was rail-brownfields of the former goods stations and railway tracks of Potsdamer, Anhalter and Dresdner Bahnhof – all closed after the Second World War or subsequently during the Cold War and not touched until 1990.

³¹ <http://www.berlin.de/projektzukunft/en>

³² See also SWTF (2013)

³³ Berlin's largest industrial park is the CleanTech Business Park Marzahn; smaller but similar projects include: EUREF-Campus, Campus Berlin-Buch, Tempelhof Airport, Berlin's Southwest, CITY WEST, Schöneeweide, Technology Park Humboldthain, Wuhlheide Innovation Park, Clean Tech Business Park. See: <http://www.businesslocationcenter.de/en/zukunftsorte>

Figure 5. 1: Website of the Berlin TXL Project promoting the future vision of a science and technology park specialised in urban technology (to be established after the Tegel Airport is closed).



Source: Berlin Senate, See: <http://www.berlintxl.de>

Berlin TXL which is an effort to recycle the almost 500ha area of Tegel Airport (TXL) –expected to close once Berlin new airport (BER) opens – includes the development of a new city quarter and a mixed use neighbourhood called “Schumacher Quartier”³⁴ as well as the development of “The Urban Tech Republic – Berlin TXL”³⁵ within the premises of the terminal building and adjacent airport infrastructures and areas. The concept foresees a research and industrial park (including commercial use and a higher education campus) focused on the design and production of urban technologies. Berlin TXL – although still awaiting an official start-date – is being promoted by the city as a future place “for founders, students, investors, industrialists, and researchers to meet and develop the cities of tomorrow.”³⁶ Once completed, the area is projected to host more than 17,000 employees daily and substantially contribute to the city’s tax revenues.³⁷ However, at present, activities are more or less frozen and have not progressed further than the planning phase as Berlin is still on a hold, waiting for its new airport terminal and BER-International Airport to finally open its doors, after more than six years’ delay and large financial losses.³⁸

³⁴ See: <http://www.schumacher-quartier.de>

³⁵ See: <http://www.berlintxl.de/en/press/detail/berlin-txl-the-urban-tech-republic.html>

³⁶ See: <http://www.berlintxl.de/en/about-berlin-txl.html>

³⁷ According to estimates, over €150 million p.a. – See: <http://www.berlintxl.de/en/about-berlin-txl.html>

³⁸ Berlin-Brandenburg Airport (BER) was intended to become the single commercial airport serving Berlin and the surrounding state of Brandenburg – which, at the same time, would have meant the closing of Tegel Airport (TXL) and the re-use and redevelopment of the area. The BER opening was scheduled for October 2011; yet, the terminal building has been under construction ever since due to various complications in project planning and execution as well as a series of delays and cost overruns due to poor management, and corruption cases. Currently, BER is not estimated to open before 2019, although estimates vary.

Figure 5.2 Visualization of Berlin TXL project proposal. In the back one can appreciate the airport run field.



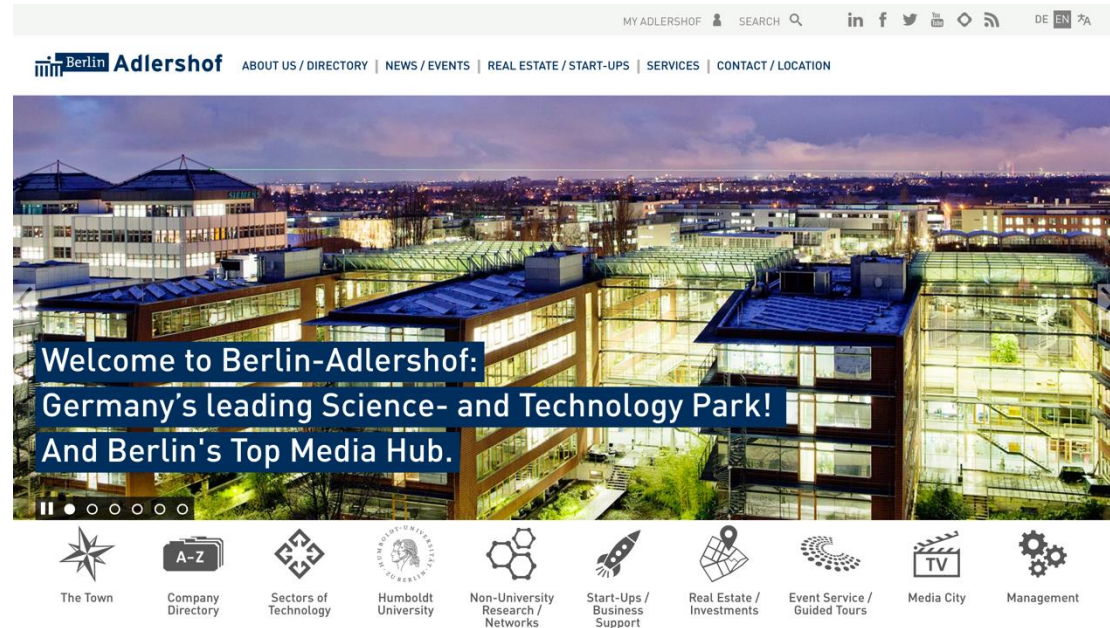
Source: *Berlin Business Location Center* – ©Tegel Projekt GmbH. See: <http://www.businesslocationcenter.de/txl>

Meanwhile, Adlershof³⁹ – and its integrated urban planning concept – is moving forward (see figures 5.3, 5.4, 5.5). A former aviation site, it is now being developed into a science and media hub – including housing for approximately 17,000 inhabitants and projected to offer employment and study opportunities to more than 20,000 people. Moreover, the WISTA Science and Technology Park – considered to be the largest (> 4km²) facility of its kind in Germany – is intended to facilitate company relocation, and is today home to more than 1,000 companies.

The site used to host the *East German Academy of Science* (with different scientific institutes and R&D facilities, especially working in the fields of physics and chemistry) operating in close connection with the industry. The Academy was closed after the German reunification and the research facilities were subjected to a extensive evaluation process by the *German Council of Science and Humanities*. Some institutes were kept and continued their activity under the responsibility of other bodies, while hundreds of new companies were funded on that location. This site conversion was mainly financed by Berlin and the Federal Republic of Germany through the “Adlershof Development Society” (EGA), from which WISTA-Management GmbH emerged – which now manages the park, helps developing companies (partly like a business incubator), and provides acceleration for startups in special technology fields. The goal was (and still is) to create synergies between science and industry, and to encourage innovative businesses to settle there; with the total investment in the 1990s estimated at more than 300 million Euros. Modern specialized centers – for example, the “Innovation and Business Incubation Centre” (IGZ) – were established; and additionally, further knowledge oriented institutions and facilities were moved or (re-)located there: the Humboldt University of Berlin (HU Berlin), for example, decided to relocate six natural science departments to Adlershof. The new HU Berlin campus is expected to foster cooperation and networking between public and private research institutions on one hand, and high-tech companies on the other.

³⁹ See: <http://www.adlershof.de/en/>

Figure 5.3: Website of the Adlershof Science & Technology Park



Source: Berlin Senate, see: <http://www.adlershof.de/en/>

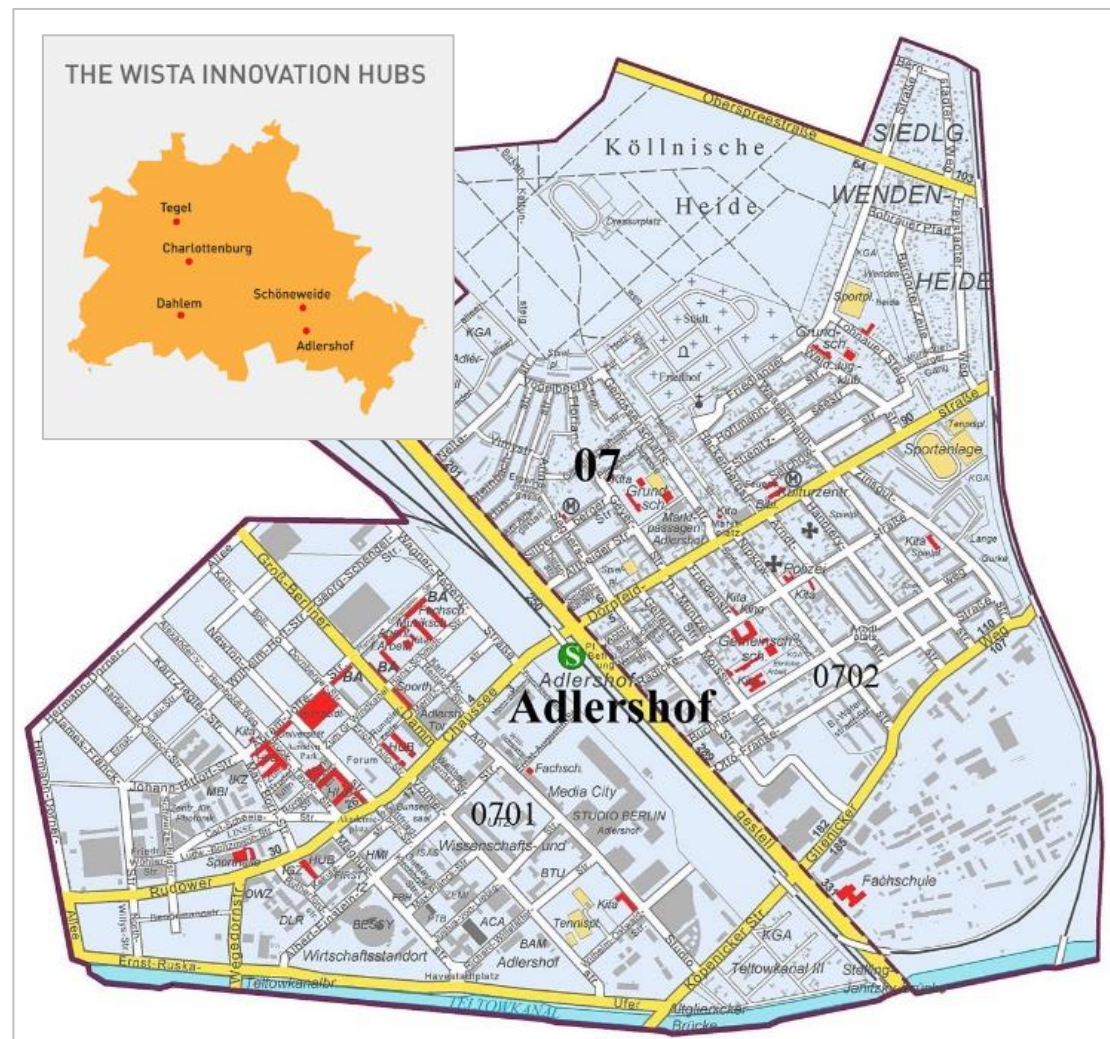
Figure 5.4: Aerial view of Adlershof (Science Park on the left)



Source: Berlin Senate, see: <http://www.adlershof.de/en/the-location/overview/>

Both Berlin TXL and Adlershof are seen as potentially innovative projects and urban development masterplans that can drive positive development in the coming decades; especially, when it comes to R&D, the relocation of start-ups and companies in the KE's, as well as the attraction of young professionals to Berlin.

Figure 5.5: Overview-Map Adlershof and WISTA Innovation Hubs across Berlin (small map).



Sources: Berlin Senate. See: <http://www.adlershof.de/en/> and <https://www.berlin.de/ba-treptow-koepenick/politik-und-verwaltung/service-und-organisationseinheiten/sozialraumorientierte-planungskoordination/artikel.101947.php>

6 Conclusion and lessons learnt for EU Cohesion Policy

In terms of cohesion policy and EU funding, it is difficult for experts to tell how much this has specifically contributed to Berlin's success. First, because Berlin received – and still receives – all sorts of funding (EU, National/German, regional). As a result, it is difficult to disentangle the specific impact of EU funds. Moreover, because the policies that are really seen as having an impact, for example, on the creative economy (as an example within the KE) are more local policies and involve the re-use of existing spaces and potential. Often, the general “creative potential” of Berlin and its DYI attitude are named as more important to its success story, than any policy and/or funding (although the monies obviously play a role).

Interviewees from non-European backgrounds (e.g., Turkey, Ghana) working in the KE in Berlin emphasised the good conditions in Berlin (for example, in terms of employment opportunities, cost of living compared to other European metropolises, or the welcoming culture of the city and its inhabitants); yet, they also pointed out difficulties and factors they struggled with while living and working there which Berlin could address. Two main issues – mentioned almost unanimously – were (i) a perceived housing shortage (for example, due to rising rents in certain neighbourhoods, or general difficulties in housing availability for migrants with unclear legal status or other bureaucratic hurdles); (ii) the language (German) and the associated barriers for high-skilled labour moving to Berlin – at least when compared to, for example, London, where English is the common working language. Meanwhile, the most critical point mentioned concerning the future of Berlin – and the question if its success story is going to continue (or not, or in a different direction) – had to do with rising costs (housing and living expenses) and a perceived shrinking in “spaces of opportunity”.

Although bureaucratic processes upon arrival (e.g. residency or work-permits) were mostly regarded as quick and unproblematic – most interviewees had relatively good experiences with the provision of a smooth service by the authorities – there were suggestions on improving or making certain aspects of living and working in Berlin more flexible. KE workers from abroad are sometimes left in limbo, for example, when fearing that a work visa extension will not be granted while waiting for a new job or contract (especially considering the often usual short-term contracts in academia and R&D). Uncertainties like these makes it difficult for one to plan for and necessitate a high degree of flexibility and will to stay. As a result, it was suggested that policies and strategies allowing for more opportunities to, for example, bridge contracts or grant extended residency rights to highly skilled KE workers looking for opportunities to stay in Berlin could help overcome some of the above mentioned problems.

Migrants with European backgrounds, meanwhile, are obviously free to stay and look for opportunities in Berlin for longer (unrestricted) periods of time thanks to the freedom of movement for workers within the EU. Yet, aside of this legal advantage, the arguments and parameters discussed by interviewees from the EU28 were similar (if not the same) to those already mentioned: Berlin is attractive due to the good conditions the city offers. Recently

though, these factors are under threat as housing prices are rising and have peaked dramatically in the last decade – both rents and house prices. Gentrification and the financialization of the real estate market have been connected to various factors, yet, independently of its reasons, rising costs and the increasing shortage of housing might have adverse effects on the Berlin's attraction factors and its ability to draw people there.

Experts meanwhile also assess that brownfields (e.g. old military areas in the city centre, airports, rail brownfields,) are shrinking constantly on a city-wide scale, and see rising rents and prizes (e.g. living expenses), as well as a growing dependency on risk capital (at least in the start-up and entrepreneurial scene) as problematic. These trends are expected to continue; yet experts are divided whether this will have negative effects on Berlin (or not). Meanwhile, in terms of employment dynamics and the attraction of people interested in working in the KE (or associated) the attractiveness of Berlin is not seen as being at risk or changing in any way. To the contrary: the appeal of the city (the famous “poor but sexy” – paraphrasing the city's former mayor Klaus Wowereit) seems unaffected – especially among young people coming for studies at one of the many academic institutions as well as KE workers looking for employment in R&D, the service-sector as well as in the steadily growing art-, media-, culture- and start-up economies.

In the meantime, city and regional policies and urban redevelopment efforts targeting the attraction of R&D facilities, (new) technology companies – specifically in the urban technology sector (energy, mobility, digitalisation, etc.) – as well as international capital (financial and human) are trying to build upon past successes; yet, at the same time, they involve clear goals and strategic milestones on the way to a KE based future in which science, technology, (higher) education and knowledge production play the main role. Moreover, Berlin has used – and still uses – branding to portray itself as the new capital of Germany, a cool place yet to become (Colomb 2012) and, recently, a major hotspot for the start-ups in the tech industry (“Silicon Alley”). Not only did its former mayor, Klaus Wowereit (2001-2014), coin the already mentioned phrase for the city to be “poor but sexy”, but also eventually contributed to Berlin's image as an open and diverse city with its own public coming out (“I'm gay, and that's a good thing.”). Meanwhile, with the BeBerlin campaign (www.sei.berlin.de), the city promotes itself following a clear strategy to strengthen its positive image, promote the city on a national and international level as a great place to live – open to other cultures and languages. Emphasis is, also, put on depicting Berlin as “Digital Capital”, “Brain City”⁴⁰ and “the place to be” for future industries.⁴¹ In a similar way, urban redevelopment projects specifically targeted at the KE are promoted and branded accordingly: for example, Adlershof is promoted as leading science and technology park, or Berlin TXL as the “The Urban Tech Republic”.

⁴⁰ See: <http://braincity.berlin-sciences.com/en/the-campaign/>

⁴¹ See: <https://www.youtube.com/watch?v=rBDLzyGdsml>

To sum up: Berlin will probably continue its success story as an important Metropolis in central Europe – as well as a KE hotspot. The years since the establishment of the EU, the reunification of Germany (and the subsequent move of the government from Bonn to Berlin), as well as the recent spike in international investments, mushrooming start-ups and the variety and multiplicity offered in this city (from the world known party and bohemian scene to cultural events – for example, related to the film industry) has helped Berlin grow and flourish over the past decades. Yet, and due to occasionally occurring crises and potential conflict (for example, the Eurozone crisis, the refugee crisis since 2015, Brexit), it is still to be seen if Berlin will be able to – again – use its creative potential, human/social capital and existing strengths to further thrive.

References

- Annoni, Paola & Dijkstra, Lewis** (2013): EU Regional Competitiveness Index – RCI 2013. Available at: http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/6th_report/rci_2013_report_final.pdf
- Benevides Lima, Carolina; Mahmood, Kamran & Abraham, Juan Antonio** (2014): *Berlin: A Window into Germany's Future?* IN: The Lauder Global Business Insight Report 2014 – Rebalancing the Global Economy. 74-76.
- Berlin Senate** (Senatsverwaltung für Stadtentwicklung und Umwelt in Zusammenarbeit mit dem Amt für Statistik Berlin-Brandenburg) (2016): *Bevölkerungsprognose für Berlin und die Bezirke 2015-2030*. Available at: <http://www.stadtentwicklung.berlin.de/planen/bevoelkerungsprognose/de/download/>
- Berlin Senate** (Senatsverwaltung für Wirtschaft, Energie und Betriebe) (2017): *Konjunkturbericht: Zur wirtschaftlichen Lage in Berlin – 4. Quartal 2016. Rückblick 2016 und Ausblick 2017*. Available at: <https://www.berlin.de/sen/wirtschaft/wirtschaft/konjunktur-und-statistik/wirtschaftsdaten/>
- Brown, Stephen** (2014): *After decades of disappointment, Berlin's economy looks up*. In: Reuters Special Reports – JULY 13. Available at: <http://www.reuters.com/article/us-germany-berlin-economy-insight-idUSKBN0FI07O20140713>
- Colomb, Claire** (2012): *Staging the New Berlin: Place Marketing and the Politics of Urban Reinvention Post-1989*.
- Deutsche Welle** (2016a): *Brexit spurs British startups to look to Berlin. With UK firms keen to secure their access to the European single market in the wake of the Brexit vote, Berlin is stepping up efforts to promote itself as an affordable and creative alternative to London*. Video available at: <http://www.dw.com/en/brexit-spurs-british-startups-to-look-to-berlin/av-36490686> (retrieved July 2017).
- Deutsche Welle** (2016b): *Berlin trying to attract British startups. As British companies continue to face uncertainty following Britain's vote to leave the European Union, Berlin is launching an audacious bid to lure London's top talents and startups to the German capital*. Video available at: <http://www.dw.com/en/berlin-trying-to-attract-british-startups/av-36485910> (retrieved July 2017).
- Deutsche Welle** (2017): *My Europe: Berlin as a metaphor, a work in progress. Great things are expected of Berlin: a bastion of freedom and creativity, a laid-back city where being different is accepted. But the city is still looking for itself, says guest columnist Carmen-Francesca Banciu*. Video available at: <http://www.dw.com/en/my-europe-berlin-as-a-metaphor-a-work-in-progress/a-38640512> (retrieved July 2017)
- European Union** (2016a): *Eurostat Regional Yearbook – 2016 edition*. Statistical Books, EUROSTAT. See: <http://ec.europa.eu/eurostat/documents/3217494/7604195/KS-HA-16-001-EN-N.pdf/76c007e9-6c1d-435a-97f8-e5ea700aa149>
- European Union** (2016b): *Urban Europe — statistics on cities, towns and suburbs*. Statistical Books, EUROSTAT.
- Frankfurter Allgemeine Zeitung (FAZ)** (2011): *Reicher werden aber sexy bleiben*. Available at: <http://www.faz.net/aktuell/politik/berlin-reicher-werden-und-sexy-bleiben-11530405.html> (retrieved June 26th 2017)
- Growe, Anna** (2016): *Knowledge Hubs in the Polycentric German Urban System between Concentration Processes and Conurbation Dynamics*. IN: Derudder, Ban & Witlox, Frank (eds.): *Hub Cities in the Knowledge Economy: Seaports, Airports, Brainports*: 55-76.
- Hospers, Gert-Jan** (2003): *Creative Cities in Europe. Urban Competitiveness in the Knowledge Economy*. IN: *Intereconomics* 38(5): 260-269.
- Joint Berlin-Brandenburg Planning Department (JBBPD)** (2006): *Model Capital Region Berlin-Brandenburg*. Potsdam.
- Krätke, Stefan** (2004): *City of talents? Berlin's regional economy, socio-spatial fabric and 'worst practice' urban governance*. IN: *International Journal of Urban and Regional Research* 28(3): 511-529.
- Krätke, Stefan** (2011): *The Creative Capital of Cities: Interactive Knowledge of Creation and the Urbanization Economics of Innovation*. IN: *Studies in Urban and Social Change* 32
- Kujath, Hans-Jürgen** (2005): *Knoten im Netz: zur neuen Rolle der Metropolregionen in der Dienstleistungswirtschaft und Wissensökonomie*.
- McKinsey & Co.** (2016): *Urban mobility 2030: How cities can realize the economic effects. Case study Berlin*. Available at: https://www.mckinsey.de/files/urban_mobility_english.pdf

OECD (2003): *Urban Renaissance Berlin: Towards an Integrated Strategy for Social Cohesion and Economic Development*.

O'Sullivan, Feargus (2016): *Would Germany Be Wealthier if Berlin Didn't Exist? A new report suggests Berlin costs more money than it produces.* – August 9th. Available at: <https://www.citylab.com/equity/2016/08/germany-economy-without-berlin/495098/>

Paddison, Ronan & Hutton, Tom (2014): *Cities and Economic Change: Restructuring and Dislocation in the Global Metropolis*.

Petzinger, Jill (2016): *Capital Concern. Berlin is the only capital city in Europe that is a drag on its country's economy.* – August 10. Available at: <https://qz.com/753244/berlin-is-the-only-capital-city-in-europe-that-is-a-drag-on-its-countrys-economy/>

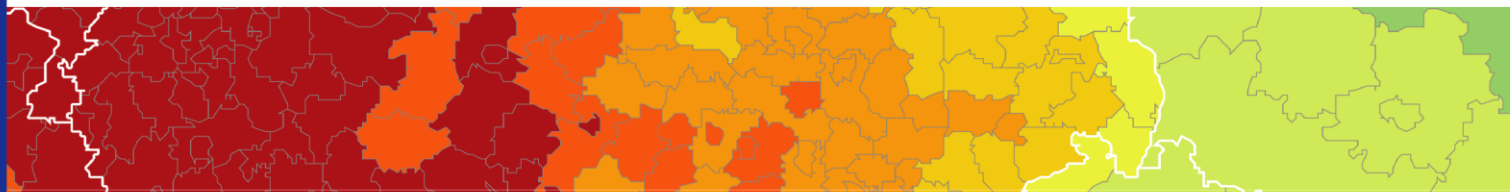
Senatsverwaltung für Wirtschaft, Technologie und Forschung – Landesinitiative Projekt Zukunft (SWTF) (2013): *Innovations- und Kreativlabs in Berlin – eine Bestandsaufnahme. Räume und Events als Schnittstellen von Innovation und Kreativität*.

Warnecke, Tilmann (2010): *Berlin will in die Harvard-Liga. Berufsorientierte Studiengänge, global denkende Forscher, exzellente Unis, mit Betrieben kooperierende Wissenschaftler – das ist die Campus-Strategie der Hauptstadt.* IN: ZEIT ONLINE, Tagesspiegel – August 4th 2010.

List of interviewees

Name	Position	Organisation
Prof. Dr. Suntje Schmidt	Economic Dynamics Expert	IRS Erkner & Humboldt-University Berlin
– Anonymized –	KE worker recently moved and employed in Berlin from Non-EU28 background	R&D Institute (undisclosed)
– Anonymized –	KE worker recently moved and employed in Berlin from Non-EU28 background	R&D Institute (undisclosed)
– Anonymized –	KE worker / senior researcher from a EU28 country	Independent / Self employed
Various	Interviews from TUB Student works 2017 ⁴²	Various (e.g. on creative economies, science & technology, migration)

⁴² Various actors in Berlin's KE were interviewed for the Seminar "Global Processes & Urban Transformation" with Prof. Dr. Felicitas Hillmann (TU Berlin, Winter-Term 2016/17).



ESPON 2020 – More information

ESPON EGTC

4 rue Erasme, L-1468 Luxembourg - Grand Duchy of Luxembourg

Phone: +352 20 600 280

Email: info@espon.eu

www.espon.eu, [Twitter](#), [LinkedIn](#), [YouTube](#)

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.