

Observations from the Ruhr Valley: Essen's Economic Adaptation to De-industrialisation



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Quinault Travel Bursary Report 2022-23

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1. Introduction: Why Essen?

This research project grew out of my love for cities and their stories, particularly how the winds of economic and social change have shaped each city into its own unique configuration. For the Ruhr Valley, it has long possessed an almost mythological image of the industrial world, myths 'fed by the sweltering work in blast furnaces, steel mills and coking plants' (Zeche Zollverein Museum), accompanied by a larger-than-life representation of its cities as *Giganten an der Ruhr* with their virility, solidarity and capacities for social integration. However, mythology and reality diverge at a point in the present, which sees heavy industry in the Ruhrgebiet on a long and steep decline as Germany fully decouples from hard coal production and eventually even coal consumption. How has the slowly settling blanket of de-industrialisation impacted the region and how they choose to develop?

In this project, I narrow the scope to focus on the city of Essen, which is the Ruhr Valley's wealthiest city per capita (Statistische Ämter des Bundes und der Länder, 2023), to answer the question: What measures in economic diversification did the city take to adapt to the de-industrialisation brought about by decoupling from hard coal mining?

During the research process both on-site at the Zeche Zollverein Museum and online, I discovered how intertwined the region is. There is a whole range of measures that were conceived and undertaken for the Ruhr area as an entire developmental region. Hence, some information in the case studies presented may not be local to Essen's case but were included because they are representative of wider economic efforts that also pertain to Essen.

The report is structured as such: Section two orientates the discussion in Essen's economic history, from its significance in the Hanseatic League, through to the early days of industrialisation and then its gradual decline. It highlights landmark economic and social events, culminating in the renowned *Wirtschaftswandel*. Section three thus discusses the policies and compensatory measures adopted between the 1960s and 1990s to address structural change. In section four, case studies from the tourism, arts and energy industries showcase the city's measures to diversify economically, simultaneously addressing social and ecological concerns for the region.

The report concludes in section five by looking at current challenges faced by Essen and calls for a larger consideration of liveability, a core developmental concern of cities especially given the experiences of the industrial age. It also highlights potential inroads for future research to paint a more comprehensive image of Essen's strategy, since economic policy is just one of the many pillars for successful urban regeneration.

2. Essen's History with Coalmining

Coal extraction in Essen can be traced to the early 14th century in the form of subsistence mining (Hermann & Hermann, 1994), but industrial coal production in Essen took off in the 1700s, with its most iconic representation being the *Zeche Zollverein* that has in common understanding come to symbolise Essen, the Ruhr region and Germany's industrial history. This mine would become the main subject of Essen's diversification strategy into tourism and its significance will be discussed in section four



Figure 1. The iconic Zeche Zollverein's signature headframe. | WOLL Verlag, 2016.

2a. How the Coal Industry Intertwines with Essen's Geography

Historically, Essen was located along the thousand-year-old trading route, the Westphalian Hellweg (Zeche Zollverein Museum). All major cities along the Hellweg were also part of the Hanseatic League. This meant that Essen's social and cultural landscape was also tightly bound up with trade, politics and economic changes. This thoroughfare also ran through other major Ruhr cities like Dortmund and Bochum, which were initially villages that grew into cities

through coal and steel-driven industrialisation (Hamhaber, 2007). As such, settlements in the Ruhr emerged around collieries rather than churches (Zeche Zollverein Museum) and housing estates for workers became a mainstay in these towns. Today, these buildings have been listed for their historical quality.



Figure 2. Zechensiedlung Boshamerweg in Essen-Karnap, an example of an *Arbeitersiedlung* comprising several building layouts and sizes, but otherwise uniformly designed. | Hans Blossey, 2016.

Cultural life was also shaped by the strict work-life division of industrial societies. With labour-intensive work in the collieries, leisure came to hold special significance for the people in the Ruhr. At the end of the 1950s, the *Wirtschaftswandel* was ushered in by Ruhr coal losing its price competitiveness to imported coal, oil and gas. Coal extraction hit its peak in the region in 1957 but went into the red ever since. This is also reflected in Germany's dwindling consumption of hard coal as the so-called 'black gold' plummeted from generating 72% of all energy nationally to only 13% in the mere 50 years between 1950 and 2000 (Zeche Zollverein Museum).

This kickstarted a process of economic and societal transformation that saw Europe's largest coal and steel region move towards a service society (ibid.). In the early years, structural change was held responsible for two problems: high unemployment and social decline. Retrenchments in traditional industries were not compensated for by new jobs in growing industries while available alternative employment was insecure and low-paying.

Concomitantly, this brought about drastic changes to working conditions, family structures and education routes. By the mid 1950s, the *Wirtschaftswandel* was in full swing. Fortunately, preparations for structural change had begun in the 1950s, but their timeliness and adequacy will be discussed more critically in the following sections.

3. *Wirtschaftswandel*: Overarching Policies & Programmes

The German government's initial focus in adapting to the *Wirtschaftswandel* was solely on modernising industries in crisis. Soon after, they widened their scope to include new technologies, housing, leisure, cultural facilities and ecological regeneration (Zeche Zollverein Museum). This exemplifies a re-conception of the scale of measures required to fully respond to de-industrialisation. What began as an economic rescue and recovery initiative had evolved into a comprehensive, multi-sectoral programme to improve the Ruhr's liveability. Simultaneously, preparations to cease mine operations were undertaken by private companies.

3a. *Wirtschaftswandel*: Overarching Policies & Programmes

A string of laws and programmes were rolled out with the first major policy response beginning in 1966 with heavy subsidies for structural programmes (Anderson, 1992).

1968 to 1973 saw the Ruhr Development Programme (EPR) adopted by the federal state of North-Rhine Westphalia (NRW). The EPR was an initiative marking the conscious shift in priorities towards the Ruhr. Previous initiatives were reactive and centred upon securing investment premiums and state aid. The EPR's goal, however, was proactive in the active reclaiming of undeveloped land from colliery owners to make way for new industries (Anderson, 1992).

An example of the policy scope's inclusion of liveability comes in the 1969 strategy paper *Lasst uns den Kohlenpott umfunktionieren*. Published as a PR initiative by the *Siedlungsverband Ruhrkohlenbezirk* and touching on topics of regional identity, history, economics and culture as cornerstones of the 'repurposing' process, this signified a turn away from mere economics-driven policies and acknowledged the wider social and historical context within which the *Strukturwandel* was taking place. While some might contend it was ultimately a PR initiative, I argue that it is precisely *because* of its public-facing, marketing prerogative that signalled the state's agenda pivot via an official narrative change. The 1972 status report on company housing for immigrant workers in NRW is another stellar example of the ever-broadening scope of what constituted restructuring. Interestingly, the oxymoronic combination of 'ausländische Mitbürger' could hint at the positive perception of these immigrant workers as

having integrated and been accepted into local communities, while still distinguishing them from a 'Bürger'.

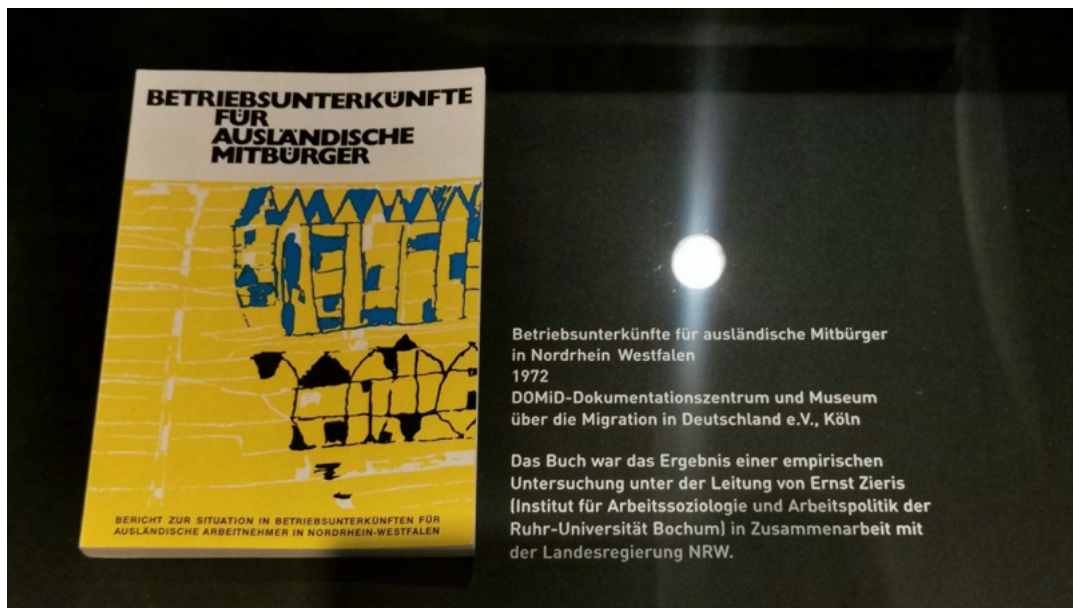


Figure 3. Status report on company housing for immigrant workers in NRW produced by Ernst Zieris in collaboration with the federal state of NRW. | Author's picture.

Action to create more targeted and effective structural policies picked up further in 1979 with the *Ruhrgebietskonferenz*, prompted by the acute structural problems appearing in the Ruhr. Representatives from politics, economics, associations and trade unions presented the challenges of the Ruhr Valley from their perspective, thereby creating the framework for the Ruhr Action Programme that would form an integral component of North Rhine-Westphalia's budget and policies in the years to come (Schlieper, 1980).

The groundwork for economic diversification through tourism in industrial sites was laid in 1989. The International Building Exhibition Emscher Park (IBA) was unique in that it was simultaneously a development programme comprising 120 ecological, economic and social renewal projects and 10 year-long exhibition (Landschaftspark Duisburg-Nord, n.d.). On the basis that 'restructuring should take an holistic view rather than simply trying to attract inward investment and jobs' (Shaw, 2002:77), the project addressed liveability issues from the angle of the built environment, namely the creation of green and open spaces, recovery of polluted water resources and repurposing of brownfield sites for 'new and economically viable uses' (Landschaftspark Duisburg-Nord, n.d). Drawing the public to and retaining their participation in these sites was key. In addition to involving locals in project creation, the IBA

introduced an element of 'festivalisation', continuously celebrating and presenting new renewal projects. This festivalisation strategy would be adopted in the coming decades to promote the arts in the Ruhr, which will be discussed in section four.

3b. *Wirtschaftswandel*: On the Colliery Grounds

Between all these macro-level political policies, huge structural changes were happening on colliery grounds across the Ruhr Valley.

A major step in decoupling was the retrenching and redressing of workers to facilitate mine closures. Trade unions and workers associations negotiated deals with mining companies to support workers that were to be laid off. De-commissioning mines thus presented extensive severance benefits to help cushion the end of their employees' careers (Zeche Zollverein Museum). These plans featured benefits ranging from guaranteed employment at a new company to monthly monetary remuneration according to the worker's position in the colliery, marital status and any occupational diseases they had contracted. This set of initiatives – compensation, retraining and early pensions – initially came as a shock for those affected.



Figure 4. Redundancy packages for workers at the Zollverein cokery were delineated in a booklet. | Author's picture.

	<u>verheiratet</u> <u>bis DM</u>	<u>ledig</u> <u>bis DM</u>
1. Abteilungsteiger unter Tage und Gleichgestellte	700,--	620,--
2. 1. Maschinensteiger über Tage und Grubensteiger	650,--	570,--
3. Sonstige Maschinensteiger über Tage, Fahrhauer und Gleichgestellte	600,--	520,--
4. Meister und Gleichgestellte	550,--	470,--
5. Kaufm. Angestellte A1 und A	650,--	570,--
6. Sonstige kaufm. Angestellte	550,--	470,--

Figure 5. Compensation at Zeche Dahlbusch was allocated according to marital status and position. | Author's picture.

Universities, state government and companies were also involved in providing support to former miners and their families navigating a sudden and forced retirement. For instance, the ZWAR project – Zwischen Arbeit und Ruhestand – was initiated by the University of Dortmund and later supported by IG Metall und Hoesch to help retrenched workers and their families through forced retirement.

Institutionally, a major consolidation project was established in Essen in 1968. Remaining collieries and industrial facilities in the Ruhr were gradually incorporated under the Deutsche Ruhrkohle AG (RAG Aktiengesellschaft, n.d.). For instance, the steel industry transferred its unprofitable pits to RAG. With less intense profit incentives as a state-subsidised company, the RAG could more gradually scale down operations and lay off employees.

4. The Journey into Diversification

With the decline of traditional industries, new economic niches were built atop the city's historical, cultural and social roots began to emerge in Essen, as seen in the tourism, arts and energy sectors.

4a. Diversification into Tourism



With coal-mining operations phased out, major branches of diversification presented themselves in culture, the arts and green energy. Culture has since been dubbed the engine for the Ruhr economy in a post-industrial landscape, particularly manifesting in tourism and the arts. While industrial landscapes are not associated with traditional tourism, the restoration and exploration of industrial artefacts is certainly a form of tourism the Ruhr

government has leveraged on. In 2001, the Zeche Zollverein in Essen was listed as a UNESCO World Heritage site to preserve its architecture and heritage.

As a representative city for the Ruhrgebiet, Essen's subsequent title as the 2010 European Capital of Culture is a further example of the region's economic diversification into culture. The most notable monuments in the Ruhr Valley go on to become major tourist attractions along the Industrial Heritage Trail (Zeche Zollverein Museum). The Zeche Zollverein's management aimed to couple the museum and site's re-developmental success with Germany's de-coupling from hard coal mining in 2018. The Zollverein was to 'function as a role model for structural change and transformation in Europe' (Noll, 2019).

Another architectural landmark was planned into the Zollverein's redevelopment blueprint. This consequently manifested as the iconic SANAA Building designed by the eponymous world-class architectural firm, designed for large-scale events such as exhibitions and symposiums, clearly denoting its function of drawing non-local crowds. This building is however not without its controversies. The building previously housed the Zollverein School of Management and Design which closed due to liquidation in 2009 once state support stopped flowing in (Spletter, 2008), and the building has been due for a 5.5 million Euro renovation that no contractor has taken up since 2017.



Figure 6. The SANAA Building as a planned architectural icon on the grounds of the Zeche Zollverein, today housing the Folkwang University of the Arts. | Thomas Mayer / Stiftung Zollverein

While the Zollverein's grounds were clearly designed with tourism in mind, the Ruhr's approach to reversing the ecological and topographical trajectory caused by centuries of mining created a more subtle conduit for tourism: leisure landscapes and green spaces. This re-wilding of depleted landscapes revives the Ruhr's tradition of greening that began in 1850 with municipal parks, horticultural shows and *Revierparks* (Zeche Zollverein Museum).

Spoil tips have created the signature landscape of the Ruhr, many of which have now been re-forested. Former rail routes serving coal transportation have been repurposed into cycling and hiking paths within green oases, with the signature RuhrtaRadweg spanning the entire valley (Arbeitskreis RuhrtaRadweg, n.d.). On a larger scale, there are six official routes connecting panorama viewpoints atop industrial facilities or spoil tips that have since been established by the Ruhr government.



Figure 7. The Eisenbahnbrücke Kupferdreh is a former railroad bridge that crosses the River Ruhr in south-eastern Essen, today a cycling and hiking path. | Google Street View, 2023.



Figure 8. A map of the viewpoints and routes with different scenic focusses spanning the entire Ruhr region. | Author's picture.

The region's cultural devotion to leisure as mentioned in section two has been cited as the motivation behind such brownfield conversions. Thus, culture and sports drove the re-development of industrial sites into recreational and consequently tourism-friendly spots.

4b. Diversification into the Arts

While a pivot towards the arts might seem uncharacteristic given the Ruhr's image, the region is no stranger to it. *Kultur durch Wandel - Wandel durch Kultur*: This was the slogan under which Essen achieved its European Capital of Culture title, a maxim directly quoting renowned architect Karl Ernst Osthaus. Osthaus was born in the Ruhr and founded several art museums and academies in the region. This motto thereby guided the strategy of placing art and culture in the leading role to transform and re-structure the region, signalling a return to long-entrenched cultural roots. While the Folkwang University of the Arts in Essen was established in the heyday of the coal industry in 1927, the city boasts numerous cultural institutions, events and initiatives that have emerged in its post-industrial era. Two noteworthy examples are the *ExtraSchicht - Nacht der Industriekultur* and the Red Dot Design Museum.



Figure 9. A piano performance on an illuminated Zeche Zollverein compound as part of the ExtraSchicht programme | Jochen Tack / Zollverein Foundation

Taking place at over 40 landmarks of the industrial era, ExtraSchicht is an annual Ruhr-wide cultural event featuring theatre, comedy and music performances. Having launched in 2001, it has since grown in attendance to over 200,000 visitors gathering to celebrate the arts at decommissioned industrial plants, museums and landmarks – a melding of the region's defining industrial history with its future vision of growing through the arts (Ruhr Tourismus, 2023).

On the other hand, a more perennial example of investment into the arts is the Red Dot Design Museum located on the grounds of the Zeche Zollverein. It showcases design pieces that have won the Red Dot Design Award. While the company behind this design accolade presently goes by Red Dot GmbH & Co. KG, it is itself a product of Essen's industrial history as it initially went by Industrieform e.V, an association formed by the public relations team of major steel concern Krupp to celebrate outstanding industrial design. Naturally, the award today focuses on industrial design pieces, and the exhibits range from consumer electronics to household fittings and even aviation. In addition, other halls on the Zeche Zollverein compound have been converted into event venues, such as a poster exhibition that was on during my site visit in July.



Figure 10. The interior architecture of the Red Dot Design Museum has preserved its industrial character. | Author's picture.

4c. Energy: “Wasserstoff ist die neue Kohle”

Despite its strategic direction to branch off into culture and more generally the service industry, Essen and the Ruhr have not relinquished their role in energy. Instead, they have homed in on building up capacity for future-oriented energy sources. This focus on the energy sources of the future was bolstered on the policy front by the 1984 *Nordrhein-Westfalen-Initiative Zukunftstechnologien*, a series of technologically driven programmes to modernise the mining, steel and energy sectors and keep North Rhine-Westfalia's energy and industrial landscape competitive.

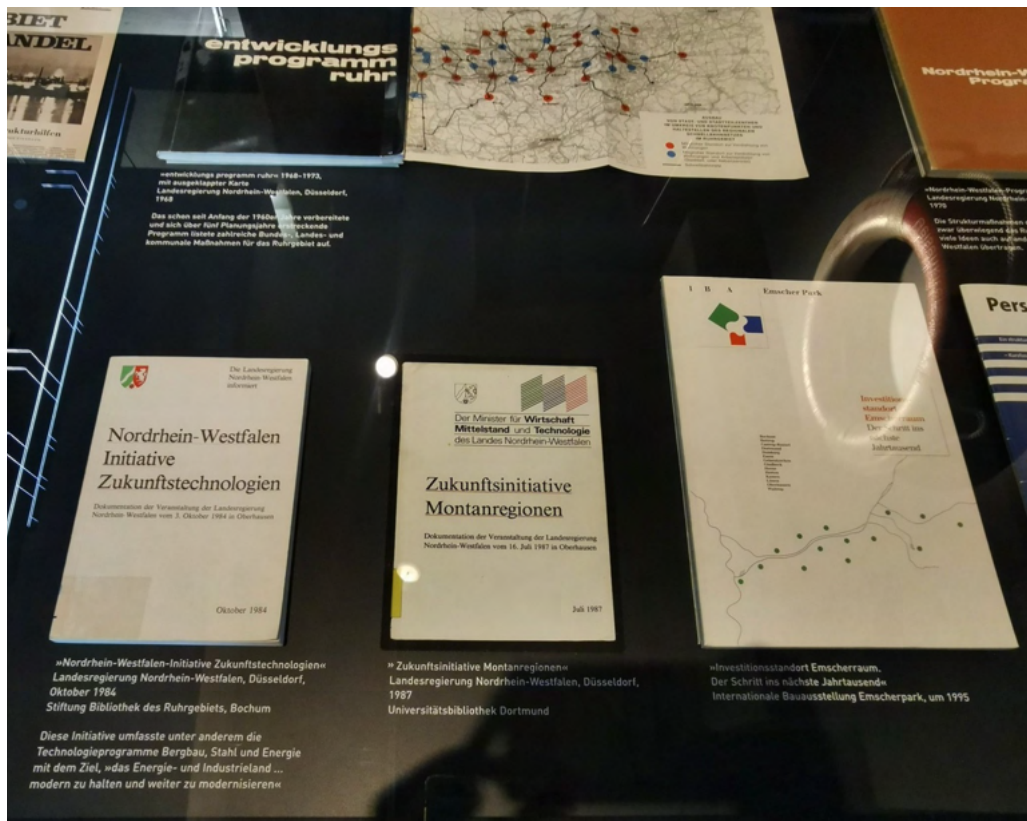


Figure 11. Numerous strategy papers, plans and programmes integral to the Ruhr's de-industrialisation trajectory were on display at the Zeche Zollverein Museum. Top left: Aforementioned Ruhr Development Programme; Bottom left: Nordrhein-Westfalen-Initiative Zukunftstechnologien | Author's picture.

For Essen, the hydrogen industry plays a key role (Stadt Essen, 2023). Today, the vision is to create a 'German hydrogen valley' out of the Ruhr region (Metropole Ruhr, n.d.a). From as early as the 2000s, hydrogen energy companies had begun operating in the area, while the strong local chemical and petrochemical industries have long developed an expertise in hydrogen. Once again, this is a case of the Ruhr region developing a new diversification niche through building on existing foundations and competencies. It is furthermore politically strategic for the area given that the hydrogen industry is a priority of the federal government, allowing the region to link its efforts back to the national *Wasserstoffstrategie* and the *Energiewende* at large (Bundesregierung, 2023; Stadt Essen, 2023).

The narrative of the *Metropole Ruhr* presents the region as a polycentric and congruous metropolitan area, commonly dubbed *die Stadt der Städte* (Metropole Ruhr, n.d.b). This characterisation comes through most strongly in its clustering strategy: the region creates nodes of industry expertise spanning cities. These clusters include research and higher education institutions as well as private companies. Sources in the Zeche Zollverein Museum

even claim that research institutions 'took up the issues of a changing economic world' and the Ruhr today has become 'the home of innovative products and pioneering approaches' – 'a centre of education, science and high-quality research' (Zeche Zollverein Museum). While this claim warrants further investigation to determine the extent to which the Ruhr has become a hub of scientific innovation, there is no doubt about the economic role universities have played for cities in the Ruhrgebiet. On a walking tour guided by Markus Lutter, a representative from Stadt Bochum, Lutter highlighted that the Ruhr Universität Bochum had played an indispensable role in the city's development since 1952. Today, with students comprising one-sixth of its population, Lutter was confident in his claim that 'the city would be nothing without the university'.

It is thus evident that tertiary education and R&D are a foundation block for the Ruhr's new economic configuration. Given the rapid expansion of such an institutional landscape in the region since the 1950s (see *fig. 12*) giving rise to one of the densest educational clusters in Europe today (Zeche Zollverein Museum), this plan has seen substantial execution and could pave the foundations for an economy bolstered by research.

Forschungs- und Bildungseinrichtungen	
<p>UNIVERSITÄTEN</p> <p>1962 Ruhr-Universität Bochum 1968 Universität Dortmund seit 2007 Technische Universität Dortmund 1972 Gesamthochschule Duisburg hervorgegangen aus: Staatlicher Ingenieursschule (ab 1970 Ingenieursschule für Fachhochschulreife, ab 1971 Fachhochschule Duisburg) und Pädagogischer Hochschule Ruhr, ab 1980 Universität-Gesamthochschule Duisburg, ab 1994 Gerhard-Mercator-Universität, seit 2003 Universität Duisburg-Essen 1972 Gesamthochschule Essen ab 1980 Universität-Gesamthochschule Essen ab 2003 Universität Duisburg-Essen 1974 Fernuniversität und Gesamthochschule Hagen seit 2003 FernUniversität Hagen 1980 Universitätsverein Witten/Herdecke seit 1987 gemeinnützige Private Universität Witten/Herdecke GmbH</p>	<p>MAX-PLANCK-GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFT</p> <p>1948 Max-Planck-Institut für Arbeitsphysiologie, Dortmund hervorgegangen aus: 1912 Kaiser-Wilhelm-Institut für Arbeitsphysiologie (Berlin, seit 1929 Dortmund), ab 1973 Max-Planck-Institut für Systemphysiologie, Dortmund, seit 1992 Max-Planck-Institut für molekulare Physiologie, Dortmund 1948 Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr hervorgegangen aus: 1912 Kaiser-Wilhelm-Institut für Kohlenforschung 1956 Max-Planck-Institut für Ernährungsphysiologie, Dortmund Ausgründung aus dem Max-Planck-Institut für Arbeitsphysiologie seit 1992 Max-Planck-Institut für molekulare Physiologie, Dortmund 1981 Max-Planck-Institut für Strahlenchemie, Mülheim an der Ruhr Ausgründung aus dem Max-Planck-Instituten für Kohlenforschung seit 2003 Max-Planck-Institut für Bioorganische Chemie, Mülheim an der Ruhr</p>
<p>FACHHOCHSCHULEN</p> <p>1816 (Private) Technische Fachhochschule Georg Agricola zu Bochum 1963 Folkwang Hochschule Essen 1971 (Private) Evangelische Fachhochschule Rheinland-Westfalen-Lippe, Bochum Fachhochschule Dortmund hervorgegangen aus: Ingenieursschule Dortmund / Werkkunstschule Dortmund Höhere Fachschule für Sozialarbeit, Sozialpädagogik und Wirtschaft Fachhochschule Bochum seit 2007 Hochschule Bochum - Bochum University of Applied Sciences Fachhochschule für öffentliche Verwaltung Nordrhein-Westfalen, Gelsenkirchen 1990 (Private) ISM International School of Management, Dortmund 1992 (Private) Fachhochschule Gelsenkirchen 1993 (Private) FOM Fachhochschule für Dekonomie & Management, Essen 2005 (Private) SRH Fachhochschule Hamm seit 2009 (Private) SRH Hochschule für Logistik und Wirtschaft, Hamm 2009 Hochschule Hamm-Lippstadt 2009 Hochschule Ruhr West, Mülheim an der Ruhr und Bottrop</p>	<p>MITGLIEDER IN DER WISSENSCHAFTSGEMEINSCHAFT GOTTFRIED WILHELM LEIBNIZ E.V. (SEIT 1970ER JAHRE)</p> <p>1943 Rheinisch-Westfälisches Institut für Wirtschaftsforschung e.V., Essen seit 1970er Jahre Mitglied der Leibniz-Gemeinschaft 1952 Institut für Spektrochemie und angewandte Spektroskopie, Dortmund seit 2004 Institute for Analytical Sciences, Dortmund 1964 Forschungsinstitut für Kinderernährung bis 1998 Mitglied der Leibniz-Gemeinschaft 1967 Institut für Arbeitsphysiologie, Dortmund Ausgründung aus dem Max-Planck-Institut für Arbeitsphysiologie, Dortmund, seit 2009 Leibniz-Institut für Arbeitsforschung an der Technischen Universität Dortmund 1976 Deutsches Bergbau Museum Bochum hervorgegangen aus dem Geschichtlichen Museum des Bergbaus, Bochum 2008 ILS – Institut für Landes- und Stadtentwicklungsforschung gGmbH, Dortmund hervorgegangen aus: 1971 Institut für Landes- und Stadtentwicklungsforschung und Bauwesens des Landes Nordrhein-Westfalen, Dortmund</p>
<p>FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.</p> <p>1981 Fraunhofer Institut für Materialfluss und Logistik, Dortmund 1984 Fraunhofer Institut für Mikroelektronische Schaltungen und Systeme, Duisburg 1990 Fraunhofer Institut für Umwelt-, Sicherheits- und Energietechnik, Oberhausen 1992 Fraunhofer Institut für Software- und Systemtechnik, Dortmund und Berlin</p>	<p>INSTITUTE IM WISSENSCHAFTSZENTRUM NORDRHEIN-WESTFALEN (BIS 2007)</p> <p>1988 Institut für Arbeit und Technik seit 2007 Institut der Fachhochschule Gelsenkirchen 1989 Kulturwissenschaftliches Institut Essen seit 2007 Interuniversitäres Forschungskolleg der Universitäten Bochum, Dortmund und Duisburg-Essen</p>

Fig. 12. Zoom in for an extensive list of the tertiary education and research institutions that have been established in the Ruhr Region since the 1800s | Author's picture.

4d. Summary: Essen's Journey Thus Far

The decades from the 1950s to the 2000s were tumultuous but dynamic for the Ruhrgebiet. It saw a record high coal output in 1958 but also a 60% drop in coal usage for energy production within 12 years. While action had been taken in the 1950s, it mainly comprised reactive and reparatory compensation programmes, highlighting the initial lack of a coordinated and comprehensive political and economic response. A much-needed policy pivot only kicked in later in the 1960s with the *Ruhrgebietskonferenz* when social and economic problems had become particularly severe.

In part, the long de-coupling runway was a major reason for the delayed response's success. In the 1960s, closures were limited to the collieries in the southern Ruhr Valley. Most closures only came between 1960 and 1980, which could potentially explain the slow re-pivoting of policy. The pioneering infrastructural move of the 1960s was the establishment of research and higher education institutions, while the first steps into the full-fledged diversification we see today in tourism and the arts began at the turn of the century.

Overall, Essen has charted and made headway into developing niches that allowed it to diverge from coal and build a more future-proof, diversified economy in culture and carbon-free energy based on its past traditions and competencies.

5. Challenges Present & Future

With many of the worst crises arising from the *Wirtschaftswandel* addressed though not fully resolved, this transformation is increasingly being regarded as a unique opportunity for the Ruhrgebiet (Zeche Zollverein Museum), especially considering its coupling onto future-oriented energy industries, service industries and research.

Nonetheless, challenges persist, and these challenges are why the Ruhr Valley possesses a contradictory physical character. Its city centres and suburbs are often dubbed as ugly, while its outskirts along the River Ruhr, the Lower Rhine and Münsterland are naturally scenic, Germany's most socially deprived neighbourhoods and most prosperous suburbs are simultaneously found within the valley, and despite being 'deficient in middle-class ways of life', it boasts one of Europe's densest educational and cultural landscapes (Zeche Zollverein Museum). Presently, the issues lie largely in living standards. For instance, the Ruhr Region sees widespread unemployment of 9.7% (Regionalverband Ruhr, 2023), triple the national average of 3% (Destatis, 2023), while Essen's sits at 10.1% (Statista, 2023). Noise pollution and air pollution are also particularly severe in the region (Mercator Research Center Ruhr, 2019).

With these new economic niches comes their own set of challenges. Both theoretical and empirical examples have pointed to the unpredictability and exclusivity of economies that focus on attracting creative and high value-added industries. This is the problem of the globalised city as expounded by David Harvey (2001), in which cities in a globalised and footloose economic context must rely on attracting creative professionals to stay competitive. Harvey's definition of creative industries includes tourism, the arts and the sciences. The question now is whether Essen and the Ruhr at large would suffer from the same implications of a globalised city, namely gentrification and the sidelining of working-class interests (Harvey, 2007). First impressions suggest that the long timeline of de-industrialisation provided a buffer for structural policies to be consulted with local stakeholders, formulated and executed. This began with the retraining and re-employment programmes of the early days for retrenched mine workers, and manifests today as up-skilling initiatives of the *Zukunftsbildung Ruhr*, which offers courses and certifications in up-and-coming fields like IT, healthcare, and

energy to improve equality of opportunities (Ruhrfutur, 2019). In fact, the new universities established after the 1960s have given a generation of *Arbeiterkinder* the opportunity to grow into *Ausbildungsbürger*, forging new educational and career pathways for a local milieu of young, educated citizens (Zeche Zollverein Museum). The sustainability behind de-industrialisation strategies has also long been in the sights of the *Regionalverband Ruhr* with the 2008 *Konzept Ruhr* plan for sustainable urban and regional development.

Such rapid changes naturally engender a re-imagining of the Ruhr region's identity. While still associated with the giants of heavy industry, the *Metropole Ruhr* has made conscious efforts to re-market itself. Its strategy can almost be interpreted as tongue-in-cheek, as it boldly juxtaposes itself to economically established German cities. It aims to replace its image of a coal region that has passed its heyday with that of a diverse business and cultural conurbation featuring future-oriented technology, education, research, culture and ecology. One of these campaigns involved deploying delivery trucks in the cities of Hamburg and Munich bearing posters that poke fun at these cities for being 'exhausted' or 'depleted' – a pun on the cities having reached their full developmental potential, while promising the Ruhr as a yet-uncharted region brimming with potential.



Figure 13. A truck with a publicity poster of the Metropole Ruhr, parked before Hamburg's Elbphilharmonie | Stadt der Städte, 2022.

This re-writing of local identity and historical narrative alongside the ongoing economic restructuring and the preservation of industrial artefacts certainly deserves further research. Which stakeholders get a say in the re-branding and re-telling of the city's and region's industrial story? How does the local Ruhr population perceive this rapid evolution of its contradictory identity, simultaneously dated by industrial history while buzzing with promise? This is especially pertinent to the source material of this research, most of which was drawn from official narratives presented by museums, city representatives and event organisers that work closely with state bodies.

Beyond the concrete policies of economic diversification, this project has revealed a recurring trend in Essen's adaptation strategies: it consistently looks back on its traditions and builds upon those foundations, be it in the creation of green urban spaces dating back to the 1800s, its history with the arts in the 1920s or its industrial competencies from the 2000s following the decline of coal mining. To more fully and accurately understand Essen's response to its post-industrial position, research must go beyond economic policies and into the region's approach towards its physical environment and social infrastructure. Examples to look into include the reconstruction of the Ruhr region's highways and connectivity links to facilitate its role as a logistics hub, as well as the upskilling and re-training initiatives in the early days that aimed to help retrenched workers adapt to the new industries. Just as the governments of the *Regionalverband Ruhr* and North Rhine-Westphalia have discovered, a region's economic response to globalisation is inextricably linked to every other aspect, be it the social, ecological or cultural.

6. Acknowledgements

I would like to say a huge thank you to the UCL German Department and the Quinault family for the opportunity to carry out this research. In particular, I would like to thank Dr Jeff Bowersox for his ever-insightful guidance in conceptualising the project and for trusting me with the Bursary; Dr Kimon Krenz for his generous expertise which was invaluable to the structuring and refining of the project; Jan Dostál for making accessible crucial insights into the city of Bochum; and of course the Stiftung Zollverein for their inimitable work in preserving and presenting a landmark era of the Ruhr Valley's history, without which this research would not have been possible.

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