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GLORY AND DECLINE OF FORMER EUROPEAN TEXTILE INDUSTRY LEADERS: IMPACT ON POPULATION DYNAMICS AND INDUSTRIAL REVITALIZATION IN MANCHESTER, ŁÓDŹ AND BRNO

Kateřina Důbravová*, Josef Kunc*, Michaela Neumannová*

* Masaryk University in Brno, Faculty of Economics and Administration, Department of Regional Economics, Lipová 507/41a, 602 00 Brno, Czechia, 525688@mail.muni.cz, Josef.Kunc@econ.muni.cz, michaela.neumannova@mail.muni.cz

Glory and decline of former European textile industry leaders: Impact on population dynamics and industrial revitalization in Manchester, Łódź and Brno

This paper analyses the rise and fall of the textile industry in three European industrial textile giants: Manchester, Łódź, and Brno, and its impact on population development and industrial transformation in these cities. It examines their transformation following mainly the industry's decline, focusing on demographic dynamics, and, in a partial way, a follow-up economic diversification and industrial revitalization. The methodology includes the study of not only historical and contemporary literature, but also archival and statistical data. The textile industry's boom brought significant population growth, economic prosperity, and social prestige. Its decline led to varying degrees of population stagnation or critical decline and a need to address the industrial legacy. Today, it is crucial to focus on new economic sectors, technological innovation, research and development, while also preserving the cultural and historical heritage of the textile industry.

Key words: textile industry, population development, economic diversification, industrial revitalization, historical heritage, Manchester, Łódź, Brno

INTRODUCTION AND THEORETICAL BACKGROUND

Europe's industrial tradition has played a key role in the continent's economic development. Several industries have served as triggers for Europe's economic growth over the centuries (Horn et al. 2010), with textiles long considered the leading industry in Europe.

The importance and size of the textile industry in Europe can be attributed to several key factors. Firstly, Europe has had a rich history of textile production spanning several centuries. Regions such as Flanders in Belgium, Yorkshire in England, and Lombardy in Italy have been renowned for their textile craftsmanship (DuPlessis 2019). Secondly, Europe was at the forefront of textile innovation and new technology introduction. The region has continuously invested in research and development, leading to the creation of advanced machinery, manufacturing techniques, and textile materials. Such advances have enabled European textile manufacturers to remain competitive, maintain high quality of products, and meet changing market demands (Godley 1997 and Vila and Küster-Boluda 2007).

Thirdly, Europe has always been known for its influential fashion houses and designers who have shaped global fashion trends. The textile industry has played a key role in supporting this thriving fashion ecosystem. (Hiemstra-Kuperus 2010). Next, focus on environmental responsibility, fair labour practices, and social re-

sponsibility further strengthens Europe's position as the continent with the most sustainable approaches in the global textile industry (Costa et al. 2020). Finally, Europe is also a home to a large consumer market with high purchasing power, making it an attractive destination for textile manufacturers (Pal et al. 2018).

In many countries, the textile industry was the leading sector of the Industrial Revolution, which was initiated in Great Britain. Thanks to new spinning technology and the production of textile machinery, Manchester and its surrounding area soon became the dominant textile city in England (Godley 1997 and Derwent Valley Mills 2023). British success was copied by entrepreneurs in both continental Europe and the United States (Oevermann et al. 2022). Several cities in Europe were also called 'Manchester' because of the dominance of the textile industry in their economic base (Kowalski et al. 2018). In Czechia, Brno was considered the centre of woolen production and was later known as the 'Moravian or Austrian Manchester' (Vyskočil 2014).

Continental Europe experienced the highest peak of textile production at the turn of the 20th century, but its importance in the economy and employment in cities was maintained throughout the 20th century. The political and economic conditions of post-war Europe led the textile industry in two directions – textiles declined in the West due to globalisation and pressure especially from Asian competition, while large factories were built in countries under the communist regime in the East to meet the demand of the Eastern Bloc in the second half of the 20th century (Oevermann et al. 2022). Hobsbawm (1999) explains that the UK textile industry was destroyed by the two world wars and new factories in Europe (e.g. Germany or northern Italy). Since World War II, only man-made fibres, medical textiles, and nanotextiles have remained in the British textile sector (Science and Industry Museum 2022). In Central and Eastern Europe, the decline began in the late 1980s, with the greatest impact after the collapse of the communist regime when economic and social transformation took place.

The post-socialist transformation of many cities in Central and Eastern Europe very often resulted in negative population development (Steinführer 2003 and Maas 2009). A number of large and medium-sized cities (around 0.5 million or more inhabitants in the agglomeration) have still struggled with growing trends of suburbanization and population outflow beyond their administrative boundaries (Ott, 2001, Schmidt et al. 2015 and Zévl and Ouředníček 2021).

Post-industrial cities are the ones most affected by these trends. Martinez-Fernandez and Wu (2007) report that significant out-migration from a city can result in a reduced business base and a lower ability to implement innovations in industry and in economy. Population decline in cities also makes both public and private services less efficient. (Vila and Küster-Boluda 2007 and Cudny and Kunc 2022). Cities with a tendency towards depopulation are often called 'shrinking cities' (Scott and Kühn 2012).

A number of authors (Maas 2009, Rumpel and Slach 2014, Glorius 2022, Jakóbczyk-Gryszkiewicz 2022, Lux, 2022, Krzysztofik 2022, Kunc et al. 2023 and many others) view declining populations as opportunities for urban development and perceive abandoned industrial sites as zones for new infrastructure projects. However, urban planning experts and city planners do not link regrowth only to population growth, but also to qualitative change involving new urban forms, mixed economic and spatial use of city quarters and the idea of urban conservation

(Rink et al. 2022). Such strategy is often called ‘smart decline’ (Popper and Popper 2002).

In the 21st century, development strategies have shifted their focus and started to embrace the concept of a creative economy and the use of cultural activities in urban regeneration programmes (Florida 2002 and Landry 2012). These approaches show how ‘cultural activities’ can contribute to urban renewal schemes and enhance the development of urban fabric and space (Imam 2013 and Droba 2015).

In some cases, it can be problematic for cities to create smart strategies or deal with rapid deindustrialization efficiently. As some authors extensively explain in their works (e.g. Rowthorn and Ramaswamy 1997), deindustrialization can influence future development of cities due to the shift of workforce from the industrial sector to services. This may slow down the economic growth and cause problems with unemployment, population shrinkage or public service efficiency and it may entail the need for workforce reskilling. Alderson (1999) further confirms that globalization has had an influence on the amount of manufacturing production in advanced economies since the demand is often met by producers operating in developing countries. Technological advancements then explain why the numbers of employees fall in some manufacturing sectors so rapidly (Rodrik 2016).

Central and Eastern European cities have entered the process of deindustrialization later than cities in the West and thus we can assume that – to a certain extent – their development may still be industrially focused, or path dependent. A path-dependent approach to development is often intentionally chosen due to the availability of skilled workforce and well-established business relations. The concept of path dependence stresses the long-lasting effects of supportive environment (e.g. externalities – Henning et al. 2013). As Martin and Sunley (2006) explain, the theory of path dependence comprises more possible explanations upon which we can assume that not only do past events have the power to direct city development in the future, but they also help other positive events to occur. Since cities with strong industrial tradition can be considered more susceptible to path dependence trajectory of development, this concept will be reflected in presented analysis and interpretations.

Theory and proven practice in our studied cities highlight that change can be difficult because it requires overcoming structural barriers and adaptation to new conditions (David 2007). By analysing, comparing, and interpreting the findings, the case studies of the selected cities can provide information and lessons for other industrial centres in Central and Eastern Europe as they attempt to adapt to changes in a globalised post-industrial society and economy. Similar case studies from post-socialist environment have already been published and include for instance a study by Krzysztofik et al. (2016) which compares cities in the Katowice conurbation and provides insightful suggestions and analysis on the emergence and decline of traditional industries. The closest comparison for our own analysis may be the study by Kowalski et al. (2018) which described the development of five textile industry cities: Chemnitz, Manchester, Łódź, Ivanovo, and Tampere. Authors argue that even though favourable geographical conditions were definitely an advantage, introduction of new legislation in entrepreneurial environment were even more crucial for the growth of these cities.

The aim of this paper is to analyse the boom and subsequent decline of the textile industry in the European textile leaders of Manchester, Łódź and Brno and their

impact on the population development of these cities. Furthermore, the text partially focuses on aspects related to the regeneration and diversification of the economy after the decline or overall collapse of the textile industry.

The paper focused on finding answers to the following research questions:

1) What were the main differences in the population development of Manchester, Łódź, and Brno during the boom and after the decline of the textile industry and what factors contributed to these differences?

2) How did Manchester, Łódź, and Brno manage to transform and diversify their industrial activities after the decline of the textile industry and adapt to changes in a globalized post-industrial society?

STUDY AREA, METHODS AND DATA

A search for expert studies and literature was essential to justify the selection of the studied cities. It turned out that the choice of Manchester, Łódź and Brno was not random, but based on a rich historical, geographical and economic context that is well documented in the literature. All three cities are centres of their respective regions. The choice of Manchester, Łódź and Brno can be further supported by a combination of historical significance, geographical diversity, and their similar yet different approaches to deindustrialisation and urban regeneration. Not only the original industrial dominance of textiles within the whole economy, but also the current similar population size was another key element for all cities. Łódź is the third largest city in Poland with a population of 655,000, Manchester is the fifth largest city in the UK with a population of 550,000 and Brno is the second largest city in Czechia with a population of 400,000. The similarity in population size was important due to the fact that the main aim of this paper was to identify and elaborate on changes in population trends in the studied cities. The cities studied are shown in Fig. 1.

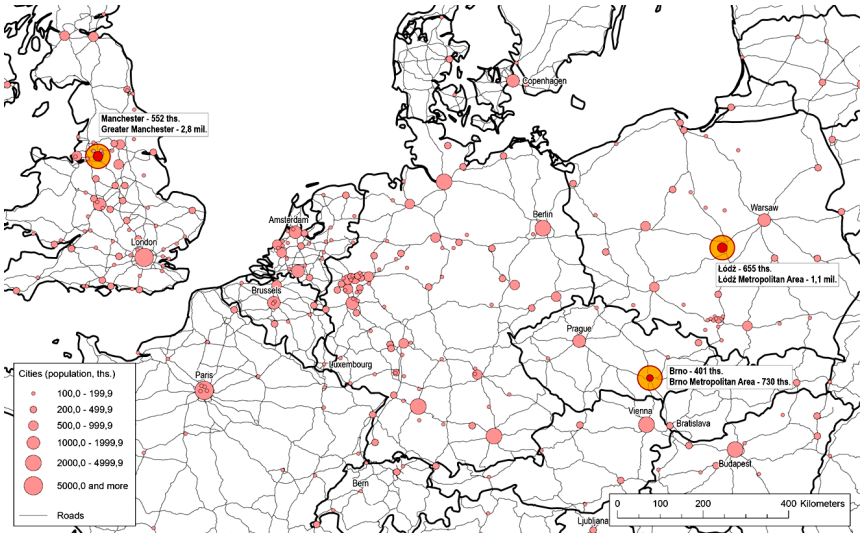

Fig. 1. Cities studied

Source: Authors.

The methodology of this paper is based on case studies of selected cities and a comparative analysis of data and information related primarily to population, industrial development and industrial employment. First, theoretical and factual knowledge was obtained from both historical and contemporary British, Polish, and Czech thematically-focused resources as well as literature with a general socio-economic focus. Desk research was supplemented by visits to selected archives and libraries, including the John Rylands Library in Manchester, the State Archives in Łódź, and the Brno City Archives. The National Statistical Offices were the primary sources for obtaining population trend series. Some of the collected information and data were also verified and confronted with fellow experts from the university environment or from affiliated public institutions. Second, collected historical information and statistical data obtained from national and international statistical databases and collections have been synthesized into comparative tables and graphs. Third, descriptive statistics has been supplemented by the calculation of a basic index for the time series of long-term population development for all studied cities, which enabled to complement and compare trends. The year of 2022 (alternatively 2023) was considered the base period, the data of which was available for all three cities and then it was compared with the data in the other time horizons. And finally, to get a comprehensive and more detailed view of the cities, we held consultations with English and Polish colleagues on particular data and partial information and their verification and made field observations in the cities, including taking up-to-date photo documentation.

RESULTS

Manchester

In the Middle Ages, Manchester was an important trading city. It is located in a highly urbanised part of the United Kingdom and it developed into an urban commercial centre during the Victorian era (Williams 1996).

It was Manchester's advantageous geographical location that destined the city to become a leader in textile production. Numerous waterways (canals and rivers) and its proximity to the port of Liverpool enabled trade to grow. The city's location at the centre of the Liverpool-Leeds-Sheffield triangle made Manchester a major market for the exchange of goods (Kowalski et al. 2018). In the late 18th century, Richard Arkwright's spinning machine (1769) and the world's first steam mill (1781) brought prosperity to Manchester. Cheap cotton imported to England from American plantations and the high demand for cotton fabric, along with important inventions, were the driving forces behind the European Industrial Revolution built on the textile industry (Science and Industry Museum 2019).

The development of industry in Manchester has greatly influenced migration trends. The city's population quadrupled between 1801 and 1851, from 77,000 to 316,000 people, thanks to a century-long prosperity of the textile industry (see Tab. 2). Manchester became a cosmopolitan city with a relatively big share of Asian, Black, and Arab population as well as people of mixed origin. This soon brought difficulties in sanitation and housing conditions. To address this situation, Manchester City authorities issued the Public Health Act and other directives in 1875, and in 1891 the construction of council housing also began (Manchester City Council 1995 and Williams 1996).

Around 1890, only a few textile factories were operating in Manchester city centre, the rest were relocated to neighbouring towns or one of the first industrial parks – Trafford Park. As a result, large numbers of people moved to the suburbs between 1880 and 1921, and the Manchester metropolitan area began to take shape (Williams 1996).

The textile production in Manchester peaked before World War I. In the following decades it only declined and by 1939 it had almost lost its original importance. In this inter-war period, overseas and Asian competition, technological advances in the world and changing consumer preferences were among the most significant factors in the decline of textile production (Nevell 2018 and Science and Industry Museum 2022). Residents of Greater Manchester were forced to commute for work or move back to central Manchester. This was also reflected in Manchester's growing population, which peaked in 1931 (766,000 people – Williams 1996). In this period, unemployment rose sharply not only in Manchester but throughout the UK, ranging from 12% to 15%. It was the north of England that was hit the hardest due to former specialization in traditional industries such as steel, shipbuilding, textiles, and coal mining (Gazeley and Newell 2007).

After World War II, the textile industry in Manchester's economy was represented only by the production of synthetic fibres for the aerospace industry. Industrial dominance was taken over by engineering and other manufacturing industries, supported by warehousing and transport services. The tertiary sector grew significantly and was able to absorb former textile factory workers. From 1950 onwards, city economy focused on media services, commerce, education, sports, and cultural events (Williams 1996). Unemployment estimates for 1961 reached approximately 3% and for 1981 the unemployment rate was 14.9% mainly due to inflation caused by the oil shocks of the 1970s. The reverberation of the shocks, further inflationary and political crises in the early 1990s and a significant loss of manufacturing jobs then affected the unemployment rate in 1991, which rose to 18.7% in Manchester (Office for National Statistics 2024).

Historically, the largest amounts of textiles in Manchester's area were produced in Oldham and Bolton. These cities held the first and second position respectively in the number of spindles that were used in production between 1883 and 1962. Manchester ranked 3rd or 4th most of the time (Williams and Farnie 1992). Figure 2 below illustrates the contemporary position of Manchester within the Greater Manchester area in terms of employment in textiles in 2021, which accounted for approximately 0.2% of total employment (350 people).

The population of the central city fell by 310,000 between 1931 and 2001, which represents an extreme loss of 51% of population (Distribution of Industrial Population 1938 and Office for National Statistics 2023). However, in the new millennium, the population has grown due to immigration, architectural redevelopment and the city's vibrant cultural scene (Kellie 2010). From 2001 to 2022, the population increased by 161,000 and it once again far exceeded the milestone of 500,000 inhabitants (see Tab. 2). Nevertheless, Manchester has suffered from a shortage of jobs for manual workers in the 21st century. The unemployment rate peaked in 2011 (12.9%) and reached its lowest level in 2022 (4.7%), according to data from the Office for National Statistics (2024).

Tab. 1. Milestones of the textile industry in Manchester linked to population trends

Manchester industry milestones	Milestones in Manchester's population development
1760-1790: first artificial water canal, possibility of transporting coal; invention of the spinning machine; the world's first steam mill	1780 – 1799: the start of mass urbanisation of the Manchester area; employees faced an 84-hour working week
1850: Manchester becomes a global centre of cotton production, earning the nickname 'Cottonopolis'	1801-1851: population grows four times from 77,000 to 316,000; rural migration from across the UK and abroad
1870 – 1925: factories were relocated to the suburbs	1880 – 1921: a large number of residents moved from the central city to the suburbs due to poor living conditions
1913: peak of textile production	Turn of the 20th century: Manchester reached more than 500,000 inhabitants
1900 – 1930: development of other industries (chemical, mechanical engineering); growth in services, mainly trade and transport	1931: peak in population size (766,000 inhabitants)
1940 – present: major decline in textile production; dominance of engineering technologies	Since 1930 and mostly since 1945: extensive and rapid depopulation of the city, the population had fallen to 393,000 by 2001
Since 1980: major transformation - diversification of the economy, growing tertiary sector, revitalisation of old industrial areas	The new millennium: population growth due to economic, social and political changes (more than 500,000 people)

Sources: Williams (1996), Science and Industry Museum (2022) and Burlison (2008).

Tab. 2. Population growth in Manchester city between 1801 and 2022

Year	1801	1851	1901	1951	1971	1991	2001	2011	2022
Population (thousands)	77	316	544	703	544	440	393	503	552

Sources: Williams (1996) and Office for National Statistics (2023).

Along with the central city, the surrounding agglomeration naturally developed, and both areas have always had a very intensive migratory exchange. In 1974, following local government reform in England, it was officially designated as Greater Manchester. This metropolitan county is highly urbanized; it is the second most populous area in England. It has a population of 2.9 million (2023), the highest ever, and Manchester accounts for just under 20% of the area's total population. It is made up of ten districts, the largest being Bolton (296,000 inhabitants), Stockport (137,000), Salford (130,000), Rochdale (111,000) and Wigan (107,000). Within an hour's commuting distance there are other metropolitan areas each with more than half a million inhabitants – Liverpool, Leeds, and Sheffield, and together they form the most urbanized part of the UK. In 1801, the area as currently defined had a population of around 330,000 and, with one exception, between 1971 and 2001 its population grew (GB Historical GIS 2024). In this respect, Greater Manchester has replicated the development of the central city, just not to the same extent.

Fig. 2. An entrance of the former textile mill turned into an apartment building; Manchester's waterways now serving as a cultural space

Source: photos by Kateřina Důbravová.

The new city leadership has supported innovations, creative and cultural industries and modern technologies became a decisive factor in the city's renewal. As a result, Manchester has undergone a remarkable transformation in about three recent decades. The city has diversified its economy and attracted investment in sectors such as finance, technology, and creative industries. Former industrial areas have been transformed into vibrant neighbourhoods and cultural hubs. For example, the area around the former canals was recreated (Fig. 2) into the new Castlefield district, or a cultural temple called Bridgewater Hall was built. Development projects carefully combine the industrial tradition with the new, modern concept of the city centre, as can be seen in the case of the Great Northern Warehouse (which houses many services) or the former Victoria Mill (a textile mill converted into flats and doctors' surgeries) – Kellie (2010). The Core Strategy published by city authorities promotes city centre living, pays special attention to higher education development and states that city management has implemented the 'employment-generating development' strategy (Manchester City Council 2012). This strategy together with the focus on culture and creativity has made Manchester a true creative hub of the region.

Łódź

At the beginning of the 19th century, today's Polish city of Łódź, located in the geographical centre of Poland, was only a small agricultural village with no road connection and in 1820 there were less than 800 inhabitants (Liszewski and Young 1997). This changed, however, with the arrival of wealthy industrialists (Ludwig Geyer, Ludwik Grohman, Karol Wilhelm Scheibler, and Izrael Poznański) who started their businesses in the textile industry. At that time, mainly German-speaking weavers from Greater Poland, Silesia, Saxony, Brandenburg, Bohemia, and Moravia came to Łódź. These regions had had a long tradition of the weaving craft but lost markets due to the new political division of Europe after the Napoleonic Wars (Woźniak 2017).

Łódź's industrial and population boom during the 19th century was tied to the huge market of Tsarist Russia, the rule of which had been imposed on the city since 1815. In this respect, Łódź is very similar to Manchester, which exploited the raw materials and markets of the colonies of Great Britain (Liszewski and Young 1997). On the other hand, the rapid and spatially uncoordinated growth of the population which increased almost 400 times was not accompanied by a similarly dynamic growth of the area, which only doubled. The living conditions in the densely populated city (12,000 inhabitants/sq km) were unfavourable also due to the lack of water and sewage systems. Łódź became a mono-functional industrial city of textiles with very poorly developed infrastructure and services (Liszewski 2015).

At the beginning of the 20th century, Łódź was already one of the largest industrial centres in Europe with 400 textile factories employing up to 70,000 workers (Oevermann et al. 2022). Many factory complexes and important architectural buildings were built and determined the size and shape of neighbourhoods or the layout of certain streets (Nowakowska and Walczak 2017 and Sowińska-Heim 2020). The city grew to half a million inhabitants before World War I and became the largest textile industry centre on the European continent (outside England). This is also where the city's nickname 'Polish Manchester' comes from.

The historical clash of four cultures (German, Polish, Jewish, and Russian) influenced the multicultural composition of Łódź's population until 1945, intensified by labour migration in search for jobs in the flourishing textile industry. While in 1839, approximately 78% of the city's total population (about 9,000 people) were German, before World War I, Łódź's population was already 50% Polish, 34% Jewish, 15% German, and 1% Russian. By 1939, the proportion of Poles had increased to about 60% and the Jewish community grew to more than 200,000 people (Horwitz 2008 and Kossert 2010) This ethnic composition resulted, among other things, in the creation of the second largest Jewish ghetto in Poland (after Warsaw) where a total of 160,000 people suffered from severe deprivation and starvation (Trunk and Shapiro 2008). Thanks to the rapid retreat of the German army and population, the city was not significantly damaged. From 1945 on, more people came from destroyed Warsaw and the territory annexed by the Soviet Union.

After 1945, in the socialist era, Łódź gradually became a "monocultural city" again. Similarly to Brno, the industry was nationalised and the number of people employed in the textile industry grew. However, the employment in Łódź's industry declined rapidly after 1989, from 171,000 workers in 1990 to 91,000 in 1996 and to 50,000 workers in 2007, resulting in high rate of unemployment (19% in 1990) in the early 1990s (Jakóbczyk-Gryszkiewicz 2010). In 2018, industry employed about 23% of the total population, 'only' one fifth of whom worked in the textile industry (about 31,000 people) – Jakóbczyk-Gryszkiewicz (2022).

As shown in Tab. 4, the population of the city increased by 200,000 people between 1945 and 1991. The growth was very steep – the city reached its population peak with 854,000 inhabitants in 1988 (Obraniak 2007). Since then, population numbers have declined steadily. The city lost around 200,000 people by 2023 due to low fertility, the loss of tens of thousands of jobs in textile production, and migration abroad and especially to nearby Warsaw which traditionally attracts people from all over Poland (PopulationStat 2023). That is why many experts as well as local politicians call the situation in Łódź a demographic disaster caused by the inability to cope with deindustrialisation and the transition to the tertiary sector of economy. Low quality of the housing stock inherited from previous decades, and

the resulting lower standard of living conditions have also been an issue (Kazimierczak and Szafranska 2019).

Tab. 3. Milestones of the Łódź textile industry with a link to population development

Milestones of Łódź's industry	Milestones in the population development in Łódź
– 1820: The Kingdom of Poland declares Łódź a 'factory town' by government decree	– between 1820 and 1900, an unprecedented increase in population from 800 people to 300,000 inhabitants, a unique example in Europe
1890 – 1900: peak period of the textile industry, up to 70,000 workers employed in 400 factories	– an extremely densely populated city at the end of the 19th century (12,000 inhabitants / sq km), unfavourable living conditions and inadequate infrastructure
1913: a total of 37 banking institutions completed the development of industrial Łódź	– before the outbreak of World War I, it became the second largest city in Poland (0.5 million people)
1914: World War I caused the collapse of industry and halted the development of the city; during the Soviet Revolution, Łódź businessmen and bankers lost their capital deposited in Soviet banks	– multicultural composition of the population until 1945 (Germans, Poles, Jews and Russians) - during WWII, Jewish population was decimated and Germans were evacuated
1970: the spatial structure of industry changed – inner city factories were demolished and new ones built on the outskirts of the city	– the monocultural composition of the population in the post-1945 socialist era
1989: political and economic changes had a negative impact on employment and the very existence of the textile industry	– peak of population growth (854,000 inhabitants), since 1988 a steady and sharp decline (by 200,000 until 2023)

Sources: Liszewski (2015), Obraniak (2007), Oevermann et al. (2022) and Trunk and Shapiro (2008).

Tab. 4. Population development of the city of Łódź between 1801 and 2023

Year	1801	1851	1901	1951	1971	1991	2001	2011	2023
Population	0.4	16	314	646	765	845	787	725	655

Sources: Obraniak (2007) and PopulationStat 2023.

The Łódź Metropolitan Area (LMA) was formally defined and established in 2012. The LMA is made up of five districts and 26 boroughs and has a population (2023) of over 1.1 million, of which central Łódź accounts for over 55%. According to Łódzki Obszar Metropolitalny (2024), the largest cities are Pabianice (68,000 inhabitants) and Zgierz (57,000), followed by Aleksandrów Łódzki and Ozorków (both more than 20,000) . The whole area has a highly centripetal gradient to central Łódź, however, the population stability has been adversely affected by the outflow of inhabitants from Łódź over the last four decades, aided by the proximity (1.5 hours) and catchment area of economically dominant Warsaw.

The transformation activities and ambitions of Łódź's city authorities are directed towards trade, services, and specific kinds of tourism (film and industrial). Several abandoned industrial buildings are now being converted into residential, educational, commercial, cultural or office space. The former Geyer factory now houses the Central Textile Museum with a collection of historical machines and fabrics and commemorates Ludwik Geyer who installed the first steam engine in Łódź in 1839 (Kowalski et al. 2018). Other examples include the former Israel Poznansky factory, transformed in 2006 into the largest shopping centre in Central

Europe called Manufaktura or a residential complex Scheibler Lofts with 400 apartments (Fig. 3) built on the site of the former factory of Karol Scheibler, one of the three richest industrialists, (Masierek 2021).

Fig. 3. Manufaktura shopping centre (former Israel Poznansky factory) and Scheibler Lofts residential complex

Source: photos by Michaela Neumannová.

Contemporary flourishing industries include IT and the production of white goods. Multinational companies such as Dell, BSH, Miele, and Whirlpool have also developed advanced technologies and made Łódź the largest white goods manufacturing centre in Poland (about 30,000 employees). This makes Poland the largest producer of white goods in Europe.

Brno

The history of the textile industry in Brno dates back to the middle of the 18th century (the first textile mill was opened in 1767). Wool was traditionally processed in Brno. It was sourced from suppliers throughout the Moravian region, as raising sheep for wool was a traditional business activity of large landowners. At the end of the 18th century, experts from Scotland and the Netherlands were invited to start the textile production here (Vyskočil 2014). Brno became the largest textile centre in Central Europe and the entire Austrian monarchy also thanks to Napoleon who imposed restrictions on Great Britain, and thus it can be said that Brno began to clothe Europe. Brno's location within the monarchy and its proximity to the Viennese market were very advantageous. Moreover, Brno did not have any established clothmakers' guilds in the past so pioneering entrepreneurs had no competition at that time. (Sklenář 2020)

Brno's textile industry production peaked in 1870 when there were 15,000 workers employed in textiles (Vyskočil 2014). At the turn of the 20th century, 38,000 people worked in industrial plants in Brno, one third of whom were textile workers, while the engineering industry employed only 6,600 workers at that time (Mareš 1983 and Kunc 1999). Brno crossed the milestone of 100,000 inhabitants mainly due to the performance of the textile industry and urbanisation trends.

Engineering and metallurgy were the dominant industries in Brno during the 20th century and the number of inhabitants continued to grow. The census of 1921 lists more than 210,000 inhabitants, almost two-thirds of whom claimed German nationality. This made Brno the most 'German' city in Czechoslovakia, i.e. with

the largest absolute number of ethnic Germans. In 1930, as many as 22,000 people worked in the engineering industry, while the textile industry employed 15,500 workers (Mareš 1983). The highest pre-war population was reported in 1937, at the level of 289,000 people. The last significant population change was the exodus of about 20,000 inhabitants of German nationality after 1945.

The communist takeover in 1948 meant the nationalisation of all industries as well as the concentration of production into large national enterprises – only two textile factories remained in Brno: Vlněna and Mosilana. However, the state leadership considered the consumer industry as 'inferior', while the heavy and armaments industries were preferred. Therefore, textile enterprises were undercapitalised and neglected. Although more than 10,000 people were still working in Brno's textile factories at the end of the 1980s. The inflexibility and obsolescence of their production was already evident (Sklenář 2020).

At the end of the 1980s, the population of Brno exceeded 390,000 inhabitants due to a strong migration of young people to the city. From the mid-1990s onwards, a period of suburbanisation began and people moved to the suburbs or beyond the city boundaries (Mulíček 2002 and Ouředníček 2002). Only in recent years, the younger generation prefers living in the inner city once again. The city's population has got close to 400,000 people, supported by a higher birthrate and a positive migration increase.

The Brno Metropolitan Area (BMA) was formally delimited and established in 2014, and in 2020 its delimitation was revised and currently includes 184 municipalities with 730,000 inhabitants. Central Brno accounts for 55% of the total population of the BMA and is quite dominant economically and population-wise, with the largest towns in the area being Vyškov and Blansko (20,000 inhabitants) – Brněnská metropolitní oblast (2024). Brno's location within Central Europe is quite advantageous – there are not only the capital cities of Prague (1.34 mil.), Vienna (2 mil.) and Bratislava (475,000) situated within a two-hour commuting distance, but so are other large Moravian cities such as Ostrava, Olomouc and Zlín.

After the "wild privatisation" of the 1990s, textile factories gradually closed down. Mosilana was privatised and closed down completely in 1994. Production in Vlněna was stopped in 1996 and fell into disrepair for two decades. In 2016, it was demolished and replaced by the Nová Vlněna office and residential complex (Sklenář 2020). The number of unemployed people rose to 16,000 during the 1990s but the unemployment rate remained below the national average (at 8%) – Czech Statistical Office (2006). Today, only around 1,000 people find work in Brno's textile industry, the vast majority of whom in the very last factory called Nová Mosilana (one of the largest producers of woollen fabrics in Czechia – Kunc and Tonev 2022).

Tab. 5. Population development in Brno between 1801 and 2022

Year	1801	1851	1901	1950	1971	1991	2001	2011	2022
Population (thousands)	25	49	109	285	344	388	376	386	399

Sources: Czech Statistical Office (2016 and 2023) and Kuča (1996).

A number of textile buildings and villas of important manufacturers have been turned into cultural centres, museums or galleries and represent an important part of industrial heritage. The most famous functionalist villa Tugendhat (UNESCO heritage site) as well as the Low-Beer, Arnold, and Stiassni villas can be mentioned (Zapletal and Březinová 2014). Other textile production sites have turned into brownfields in the last 40 years. They often get demolished or revitalised as office and retail space (see Fig. 4). Housing redevelopment has created attractive urban districts and vibrant neighbourhoods, but, in general, the heritage of industrial (textile) factories is irreversibly disappearing (Neumannová and Kunc 2022).

Tab. 6. Milestones of the Brno textile industry in relation to population development

Milestones of Brno's industry	Milestones of Brno's population development
1767: the first textile manufactory, Köffiler's, is opened 1870: the textile industry reaches its peak	increase in population four times in the 19th century, reaching 100,000 people before 1900
1920s: the beginning of the dominance of the engineering industry	by 1938, city population tripled (almost 300,000 inhabitants)
1948: nationalisation and concentration of the vast majority of textile companies into two national companies	post-war displacement of the German population (about 20,000 people) post-war population boom, high natural increase and migration from rural areas in the socialist era; nearly 400,000 inhabitants
2016: demolition of Vlněna; the end of the textile industry in Brno except for two remaining textile production sites	slight decline in population due to suburbanization after 1990, subsequent stabilization and growth to 400,000 people

Sources: Vyskočil (2014), Mareš (1983) and CSO (2016).

Fig. 4. Former textile factories (Mosilana, Vlněna) and construction of a new office and residential complex (Nová Vlněna)

Source: photos by Josef Kunc.

Despite the general trend of deindustrialisation, Brno has become one of the most dynamically developing innovative cities in Europe over the last 30 years and has attracted Czech and foreign workers and investors (also from Vienna and Bratislava) thanks to its excellent infrastructure. Traditional industries have been replaced by new high-tech industries, trade and services, IT, R&D, business incubators, and scientific centres of excellence (Kunc and Tonev 2022). These changes have helped Brno to avoid depopulation so typical of the post-socialist cities and not to become another Central European shrinking city.

COMPARISON OF STUDIED CITIES AND CONCLUSION

The textile industry in Europe played a key role in the states and cities studied, becoming the driving force of the European Industrial Revolution from the end of the 18th century on. Colonial markets, technical water infrastructure, the arrival of foreign experts and workers, and the connection to transport routes (mainly railway) helped the textile industry to flourish. During the 19th century (in Manchester in its first half), all three cities experienced similar historical patterns of migration and population growth in connection with the development of the textile industry, including challenges in terms of improving sanitation and housing conditions. In Manchester and Brno, the textile industry reached its peak in the late 19th and early 20th centuries. Then, its number one position was overtaken by engineering.

Manchester suffered a rapid decline in the textile industry employment after World War I due to the competition in world markets and changes in demand. This led to the depopulation of the city from the mid-1930s onwards and the subsequent search for new economic directions. Economic diversification began to occur in Manchester in the mid-20th century. In Łódź and Brno, these activities took place at a lesser extent approximately 50 years later, at the turn of the millennium, after the transition to a market economy and extensive structural changes.

In the post-World War II period, Manchester has undergone a significant transformation, focusing on economic diversification, revitalisation of former industrial areas, and investing heavily in sectors such as advanced services, finance, information and communications technology, creative industries, but also education and culture. This process has led to renewed population growth and investment after the year of 2000. Manchester has become a modern, economically advanced city with a multicultural population.

The number of workers in textile production in Łódź continued to grow after World War II, while in the case of Brno it was more of a stagnation and gradual decline. The disadvantages of socialist economies (obsolescence and inflexibility of production) began to take their toll and also the increasingly strong competition represented by cheap Asian textile production and the loss of most of the Eastern European markets played a role.

At the same time, Brno began to focus relatively quickly on technological research and development, innovation, information and communication technologies, and established scientific centres of excellence with the support of quality public transport, technical infrastructure, higher education and accessibility via numerous transport routes. Brno has managed to attract new investment and labour from many European countries. That is why Brno has never experienced a major decline in population.

Łódź was not able to cope with the collapse of textile production after 1989 as quickly and efficiently as Brno was. The reasons for the collapse were similar to those in Brno, intensified by the extreme concentration of the textile industry in dozens of production plants with a very significant share on total employment. Thus, since 2000, Łódź, the population of which is larger than Brno's or Manchester's by roughly 200,000 inhabitants, has faced a demographic crisis, i.e. extreme population decline and ageing.

Manchester's population peaked before World War II, while Łódź and Brno witnessed their population peak decades later. As can be seen from Fig. 5 and Tab.

7 with the base indices, the extremely rapid population growth of Łódź came half a century later than in Manchester to reach a peak towards the mid-1980s. The population boom was closely related to the construction of dozens of textile factories and the creation of employment opportunities for tens of thousands of residents. In Brno, the greatest intensity of population growth was achieved at the beginning of the 20th century and especially during the period of the independent Czechoslovak Republic (1918 – 1938) due to intensified housing construction in large cities. Despite the state support of heavy industrial production in Poland and Czechoslovakia after 1945, the population growth in Brno and especially Łódź correlated with the still strong economic and social importance of the textile industry. It employed thousands (Brno) or tens of thousands (Łódź) people until the fall of communism in 1989, but also during the transition years of the 1990s.

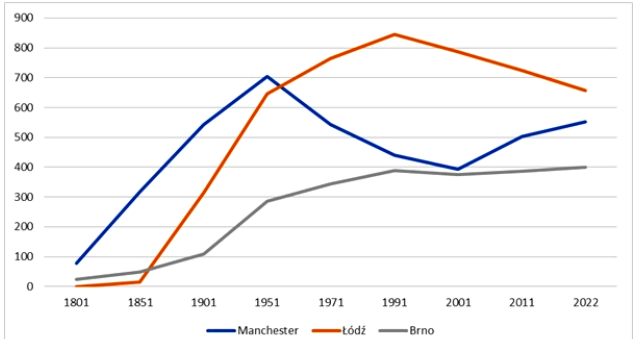

Fig. 5. Population development in the cities studied

Sources: Williams (1996), Office for National Statistics (2023), Obraniak (2007), PopulationStat (2023), Czech Statistical Office (2016 and 2023) and Kuča (1996).

Tab. 7. Baseline population indices for the cities studied (2022 = 100%)

Year/city	1801	1851	1901	1950	1971	1991	2001	2011	2022
Manchester	13.90	57.2	98.6	127.4	98.6	79.7	71.2	91.1	100.0
Łódź	0.06	2.4	47.9	98.6	116.8	129.0	120.2	110.7	100.0
Brno	6.30	12.3	27.3	71.4	86.2	97.2	94.2	96.7	100.0

Sources: Williams (1996), Office for National Statistics (2023), Obraniak (2007), PopulationStat (2023), Czech Statistical Office (2016 and 2023) and Kuča (1996).

All the analysed cities are trying to convert selected abandoned industrial buildings to new uses. Manchester was the first to start these activities, since the decline in the textile industry was already evident there before World War II. Brno and Łódź joined these efforts in the new millennium after the major restructuring of their industrial base was completed. Many valuable industrial buildings could not be saved but a number of former textile industrial buildings are now listed, or turned into theme museums, nature trails, etc. It is therefore hopeful that the historical legacy of the textile industry as the trigger of the European Industrial Revolution will be preserved for future generations.

The most significant risks of the text presented include the lack of up-to-date or harmonized data; it is not realistic to obtain detailed or up-to-date economic data

on the current situation at municipal level (e.g. current employment numbers, investment rates, or details of the structure of the workforce). A partial methodological risk or rather complication lies in the fact that the text compares the development of cities in different historical, political, and economic contexts, which are, however, objectively historically based and cannot be circumvented (e.g. Manchester after 1945 vs. Brno and Łódź after 1989). Due to the lack or absence of relevant more detailed data and data series, the text mainly uses descriptive historical methods and comparisons but lacks more detailed analysis using quantitative or qualitative tools (e.g. statistical analysis and change mapping). Given the focus and scope of the text, an in-depth look at the different development trajectories of the model cities may be lacking. The text emphasizes, among other things, path dependency theory as a framework for interpreting development, but does not always show how specific decisions have influenced the trajectory of individual cities (e.g. the role of local actors or institutions) – again, this cannot be done given the logic of the text's focus and the limited scope and content of the text.

The overall findings illustrate differentiation in the chosen methods of strategic urban development. While Manchester and partly also Brno have gained significance in their new positions as regional leaders, Łódź is currently looking for a way to reverse the negative course in the use of innovations and population development. Both data and development goals specified in the city strategy for the years to come suggest that Łódź still shows characteristics of development which can be considered as path dependent. This is also indicated in Tab. 8 (see Figures for Łódź's textile industry), where we can compare the current numbers and shares of total employees in economy, those in the industry as a whole and in the textile industry.

Manchester was the first city to successfully break out of its dependence on its chosen path. From the mid-20th century onwards, the city's representatives began to promote changes leading to a modern economy and society in the form of hi-tech industries with higher added value, technological innovation, higher services, science, research and education, and generally in the form of cultural and creative industries (CCIs). Brno has joined this approach in the new millennium in a similar but for many reasons (geopolitical, economic etc.) not yet so effective way but its trajectory towards a creative economy and urban revitalization is already yielding results. Łódź has not yet managed to break free from its dependence on the chosen path (despite partial positive signs) and it will be very difficult for the city leaders (and by extension the Polish government) to stop the current negative consequences of the collapse of the textile industry.

Tab. 8. Numbers and shares of workers in the economy, industry as a whole and the textile industry in the cities studied (2023)

Indicators	Manchester		Łódź		Brno	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Employees total	259,300	-	375,000	-	212,000	-
Industry total	11,400	4.4	56,200	15.0	34,400	16.2
Textile industry	350	3.0	19,400	34.5	1,000	2.9

Note: Rel. = Percentage share of industry total in total employment and textile industry in total industrial employment.

Sources: Manchester City Council (2024), Central Statistical Office of Poland (2023) and Czech Statistical Office (2023).

In conclusion, the history of the textile industry and its subsequent decline in the studied cities illustrates the importance of adaptability and economic diversification in search for long-term sustainability and prosperity. Since a number of European cities have lost their exceptional economic and social status as renowned industrial centres over the last 100 years, these cases also offer valuable lessons for other industrial centres in Central and Eastern Europe facing similar challenges in today's globalised post-industrial economy.

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Kateřina D ů b r a v o v á, Josef K u n c, Michaela N e u m a n n o v á

SLÁVA A ÚPADOK BÝVALÝCH LÍDROV EURÓPSKEHO TEXTILNÉHO PRIEMYSLU: VPLYV NA DYNAMIKU OBYVATEĽSTVA A PRIEMYSELNÚ REVITALIZÁCIU V MANCHESTRI, ŁÓDŹI A BRNE

Priemyselná tradícia Európy, najmä v textilnom odvetví, má dlhú históriu, ktorá významne prispela k hospodárskemu rozvoju a kultúrno-priemyselnému dedičstvu regiónu. Textilný priemysel v Európe bol nielen spúšťačom globálnej priemyselnej revolúcie a nebývalého populačného rastu miest a regiónov, priekopníkom technologických inovácií a výroby kvalitných materiálov, ale zohral aj kľúčovú úlohu pri podpore globálnych módnych trendov a v neposlednom rade pri zdôrazňovaní udržateľnosti a environmentálne zodpovednej textilnej výroby. Na druhej strane sa textilná výroba v západnej Európe za posledných približne 100 rokov dostala pod obrovský tlak globálnej (najmä ázijskej) konkurencie. Prejavilo sa to v podobe lacnej bavlny, postupnej straty trhov a privilegovaného postavenia a významu odvetvia a priemyslu ako celku, transformácie hospodárskeho portfólia v prospech sektora služieb, nárastu nezamestnanosti, emigrácie ľudí za prácou po zatvorení väčšiny textilných podnikov a ďalších negatívnych sociálno-ekonomických aspektov. Mestá strednej a východnej Európy si udržali svoj priemyselný (textilný) význam takmer počas celej éry socializmu. Od druhej polovice 80. rokov 20. storočia stagnoval a postupne upadal, čo malo podobné, ale aj odlišné dôsledky ako v mestách západnej Európy, v našom prípade v anglickom Manchestri. S istým zveličením možno tieto udalosti zhrnúť pod pojem deindustrializácia. Na teoretickej úrovni bol text podporený zameraním na teóriu „path dependence“ a koncepciu kreatívnej a kultúrnej ekonomiky a regenerácie miest, ktoré môžu vysvetliť základné trajektórie rozvoja a ich zmeny u všetkých študovaných miest.

Cieľom tohto príspevku je analyzovať rozmach a následný úpadok textilného priemyslu v európskych mestách Manchester, Łódź a Brno a ich vplyv na populačný vývoj týchto miest. Okrem toho sa text čiastočne zameriava na aspekty súvisiace obnovou a diverzifikáciou ekonomiky po úpadku alebo celkovom kolapse významu textilného priemyslu. Metodika príspevku je založená na prípadových štúdiách vybraných miest a na komparatívnej analýze údajov a informácií týkajúcich sa predovšetkým populačnej dynamiky a priemyselného rozvoja (zamestnanosti). Výber modelových miest nebol náhodný, ale podporený kombináciou prehľadu literatúry, historického významu, geografickej rôznorodosti a ich podobných, ale zároveň odlišných prístupov k deindustrializácii a regenerácii miest. Základnými výskumnými metódami boli: „desk research“ – teoretické a faktografické poznat-

ky boli získané z historických a súčasných britských, poľských a českých tematicky zameraných zdrojov (ako aj literatúry so všeobecným sociálno-ekonomickým zameraním), historické aj súčasné informácie a štatistické údaje získané z národných a medzinárodných štatistických databáz a zbierok, deskriptívna štatistika a terénne pozorovania v mestách vrátane zhotovovania aktuálnych fotografií. Rok 2022 (prípadne 2023) bol považovaný za základné obdobie na porovnanie.

Výsledky analýz ukazujú podobnú, ale aj odlišnú trajektóriu vývoja rozmachu a úpadku textilného priemyslu v modelových mestách. Hoci všetky mestá boli na začiatku rozvoja textilného priemyslu súčasťou veľkých impérií s koloniálnymi trhmi, rozdiely vo vývoji sa začali prejavovať pomerne skoro. Zatiaľ čo v Manchestri a Brne dosiahol textilný priemysel svoj vrchol koncom 19. a začiatkom 20. storočia a jeho pozíciu číslo jeden začalo nahrádzať strojárstvo, v Łódźi dominancia priemyslu jedného odvetvia trvala až do konca socialistickej éry. Manchester dosiahol svoj populačný vrchol vďaka domácej a zahraničnej migrácii pred druhou svetovou vojnou a stal sa multietnickým mestom. Na rozdiel od Manchestru po roku 1945 etnicky homogénne Łódź a Brno dosiahli populačný vrchol až o niekoľko desaťročí neskôr.

Potrebná diverzifikácia hospodárstva smerom k hi-tech odvetviam s vyššou pridanou hodnotou, vyšším službám, financiám, informačným a komunikačným technológiám, výskumu, vývoju a vzdelávaniu, alebo obecne ku kreatívnym a kultúrnym priemyslom sa v Manchestri začala uskutočňovať už v polovici 20. storočia. V Łódźi a Brne sa tieto činnosti v menšej miere presadili až o 50 rokov neskôr, na prelome tisícročí, po strate východných trhov, prechode na trhové hospodárstvo a rozsiahlych štrukturálnych zmenách. Nepriaznivý populačný vývoj Manchestru prebiehajúci od roku 1945 sa po roku 2000 zastavil. Vďaka prechodu na trhovú ekonomiku a novým hospodárskym odvetviam (vyššie služby, IT, inovácie, veda, výskum a vývoj) a upevneniu dlhodobo vedúceho postavenia v oblasti presného strojárstva (najmä výroby mikroskopov) sa Brno vyhlo populačnému prepadu a v posledných rokoch dokonca zaznamenalo mierny rast počtu obyvateľov. Łódź prežíva demografickú krízu od polovice 80. rokov 20,storočia a zatiaľ sa jej nepodarilo zastaviť výrazný úbytok. Dáta o zamestnanosti naznačujú, že Łódź je s textilným priemyslom stále spätá a vykazuje známky historicky podmieneného rozvoja (path dependent). Pozitívna je skutočnosť, že v posledných rokoch sa aj toto poľské mesto začalo odkláňať od tradičného obchodu, služieb a špecifickej filmovej turistiky smerom k modernej priemyselnej výrobe tzv. bielej techniky a čiastočne aj k IT odvetviam. Hovorí sa o demografickej kríze tohto mesta, ktorú ešte zhoršuje migrácia obyvateľstva za lepšími podmienkami do zahraničia a najmä do neďalekého ekonomicky dominantného hlavného mesta Varšavy. Úspešná postindustriálna transformácia Manchestru môže byť pre Łódź aj Brno vzorom a inšpiráciou.

Všetky mestá sa tiež snažia revitalizovať, zachovať, vzdelávať a prípadne opätovne využiť vybrané brownfieldy s cieľom zachovať aspoň časť historického textilného priemyselného dedičstva. Nie všetky historicky, urbanisticky alebo architektonicky hodnotné priemyselné budovy sa podarilo zachrániť a v mnohých prípadoch by to vzhľadom na ich fyzický stav nemalo zmysel. Na druhej strane, množstvo bývalých textilných priemyselných budov je v súčasnosti chránených pamiatkami, tematickými múzeami, alebo sú na trase náučných chodníkov atď. Preto treba dúfať, že historický odkaz textilného priemyslu ako spúšťača európskej priemyselnej revolúcie sa zachová aj pre budúce generácie.

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