



Ordnungspolitische Diskurse

Discourses in Social Market Economy



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**Duisburg and its port,
Endpoint of China's silk road -
Opportunities and risks**

Diskurs 2021 - 1

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Abstract

The question to what extent the EU, Germany, its regional states or individual localities can and should cooperate with China has gained considerable importance recently. This paper discusses the city of Duisburg, an important logistics hub in western Germany, next to the rivers Rhine and Ruhr, as a particularly interesting case study. Its location is ideal as the “western terminus” for the rail services of the “new silk road”, but the precarious economic situation as a former city of steel and coal make Duisburg particularly vulnerable to economic and political risks.

The paper identifies relevant pro and con factors and evaluates the available evidence. The economic heritage and current situation of Duisburg are indeed challenging. Duisburg has noticeably profited from the Chinese interest in its logistics network, but the impetus is not significant enough for the city to fully recover from the decline of coal and steel industries. A large share of the potential benefits has probably already been realized, while current plans to increase the container capacity of the port further should be duly acknowledged. Positive linkage effects with other industries, beyond rail and logistics, still seem rather limited. With respect to the political dimension, the typical risks for local communities often associated with the Belt and Road Initiative were somewhat limited in Duisburg's case, because Duisburg, as a part of Germany, is not in a particularly dire situation and as Duisburg's port activities are profitable even without the China business, so the potential leverage of Chinese actors is limited, and because Duisburg is not the home of many high-tech companies that might be attractive targets. In the case of the Duisburg-Huawei cooperation, which does indeed hold some political risks, the momentum has declined recently, due to the various checks and balances that are in place, while the win-win projects of the agenda will hopefully still be realized. Both the idea of an economic bonanza beckoning on the horizon and the concern about looming political risks seem to have been exaggerated. Currently, the city seems to be in a phase of reconsidering its future options and possible trajectories with respect to China.

Keywords

Duisburg, China, New silk road, Belt and Road Initiative, regional economic development

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Duisburg and its Port

Endpoint of China's Silk Road - Opportunities and Risks

Introduction: Interesting times

In 2020, China was again, for the fifth time in a row, Germany's most important trading partner. Despite the Corona pandemic and its economic effects, the bilateral trade volume actually has increased by 3% compared to 2019 (Statistisches Bundesamt 2021). At the same time, the political relations between the EU and China and also between Germany and China have worsened considerably in recent months. While China and the EU reached a well-publicized draft accord for a bilateral Comprehensive Investment Agreement in late 2020, the ratification was recently put at risk, after Chinese sanctions against European legislators, academics and institutions that followed earlier, considerably more limited European sanctions against a number of Chinese citizens based on human rights issues, the first such sanctions since the Tianmen Incident of 1989. The atmosphere has become quite tense, with important voices like the London-based Economist getting concerned about what they consider China's and its Communist Party's "aggressive diplomacy" (Economist, 3 April 2021). In late March 2021, Günther Oettinger contributed an article to the Berlin-based newspaper "Der Tagesspiegel" with the title "How China is hijacking Europe's ports and container ships" (Oettinger 2021; translated by WP). This is a remarkably assertive wording for someone who has served as premier of one of Germany's major states and later as EU Commissioner for Energy and for Budget.

The question, to what extent the EU, Germany, its states or individual localities can and should cooperate with China has thus gained an unimagined urgency in recent months. For a city like Duisburg, located within the state of North Rhine-Westphalia (NRW) along the rivers Rhine and Ruhr and part of the Ruhr area, this has become particularly acute. It has enjoyed an almost global reputation as the "western terminus of the new silk road", with newspapers like the Washington Post, the Guardian or the NZZ (Neue Zürcher Zeitung) picking up such terminology. The mayor of Duisburg, Mr. Sören Link, has famously proclaimed that Duisburg wants to become the "China city of Germany" ("China-Stadt", e.g. Michel 2019), but one wonders whether in economic and in political terms that is still a feasible option.

The following paper will deal with this open question. In the first part, the economic situation of Duisburg will be outlined and put into perspective. It will turn out that Duisburg has not recovered from the decline of coal and steel industries yet and that profiting from the Chinese interest

in its logistics network is one of the few options to regain some economic strength. In the following part, the relationship between Duisburg's economy and the China rail link will be explored. Our main conclusions are that the majority of beneficial effects has probably already been realized and that positive linkage effects with other regional industries seem rather limited. Finally, we will look at the political dimension of the cooperative relationship, including political risks. The tentative conclusion is that for a city like Duisburg as part of an affluent, democratic and rule-based country like Germany, there are several layers of checks and balances, so the risks seem manageable, but have led to a slow-down of cooperative activities. The paper will close with a number of conclusions.

The framework: Duisburg's difficult local economy

The city of Duisburg has profited from its geographical location since the Middle Ages. Located on the banks of the river Rhine, close to a ford, it was the starting point (or end point) of the Westphalian "Hellweg", a major salt road leading to the east. At some stage, a royal settlement developed into an imperial castle ("Kaiserpfalz"). When the Rhine shifted somewhat westward, the city began to decline, but with the onset of the industrial age, Duisburg's geography proved lucky again. A huge deposit of coal was identified close to the surface of the landscape, roughly parallel to the Ruhr, a small river that flows into the Rhine in, or at least close to, Duisburg. Duisburg thus proved to be an ideal place to disembark iron ore from elsewhere and to produce steel with the coke made from the coal found nearby. Incidentally, only some 30 km away there is one of the largest limestone deposits of Europe around Wülfrath, lime being an important raw material for producing steel. The steel could be processed into other products or sent elsewhere directly, by loading it on ships and sending it upstream to central and southwest Germany or downstream to Holland. Already in the 1840s, Duisburg became part of the emerging rail networks and thus had a head start of being able to reach out to the whole west European region. Major companies were founded in or near Duisburg, like Haniel, Thyssen and Stinnes, all of them related to steel, coal or transport. The Ruhr area, including a string of cities from – roughly – Duisburg in the west to Essen, Bochum and Dortmund in the east, became one of the prime global heartlands of heavy industry and a growth pole of the industrialization age.

The postwar period offered the coal- and steel-producing Ruhr area at first a bonanza for regional growth through the successful reconstruction drive. A recessionary downturn in 1958 pointed out the limits of this growth model. An enquete commission argued in 1960 that the emerging problems of the coal industry were of a structural nature, but only after the parliamentary elections of 1965 did the government acknowledge that Germany and the Ruhr area

were to face a persistent reduction of coal mining (Horn 1977). As for Duisburg, the city responded rather late to these upcoming challenges. The mid 1970s were characterized by protests against the closure of a major steelwork. Moreover, the city government was preoccupied by political trouble about the integration of some smaller neighboring localities (Walsum, Homberg and Rheinhausen) into its jurisdiction. In 1987, the longest labor dispute in West German history started in Rheinhausen, now a part of Duisburg. The incident entered the collective memory of Germans and became part of the image of Duisburg as a prime example for a somewhat grimy rust belt city. Only in 1988 were the city authorities ready to set up “sSTEP Duisburg 2000”, a somewhat bold strategy for local redevelopment looking beyond the traditional industrial set-up (Zimmermann et al. 2017: 442-446).

What was the outcome of such plans and aspirations? In 2019, the German Economic Institute (IW) has published a report on the future of the regions in Germany, which received wide publicity in the media, as it offered a sober – and sobering – view on the opportunities and challenges. The collaborating scholars developed a methodology to create an index that identifies structurally weak regions. The indicators used cover the three fields of the economy, demography and infrastructure. The economic strength variable, for instance, is made up of the sub-indicators of the unemployment rate, the GDP per capita, purchasing power and over-indebtedness of private households. The study distinguishes 96 regions in Germany and finds that for the economic indicator, Duisburg/Essen belongs to the three most vulnerable regions in Germany (chart 1). Among the top 10 regions, actually four belong to the Ruhr area, with Emscher-Lippe, immediately north of Duisburg/Essen, sharing the most negative score. Duisburg/Essen’s problematic rating is particularly due to its high unemployment rate. In an convergence analysis, the authors find that also from the perspective of how the unemployment rate changed in recent years, Duisburg/Essen gives cause for concern: Duisburg/Essen and Emscher-Lippe stand out as the two regions that started out with particularly high unemployment rates in 2011 *and* a conspicuously low reduction during the following years, from 2011 to 2017 (Oberst, Kempermann and Schröder 2019: 95). In 2020, the unemployment rate in Duisburg was 12.1%, which was one of the highest values in NRW with its rate of 7.5%, and compared to 6.5% for whole Federal Republic.

Chart 1: The top 10 economically vulnerable regions in Germany

Region	Index (max. 4)
Duisburg/Essen	1.50
Emscher-Lippe	1.50
Bremerhaven	1.50
Altmark	0.75
Dortmund	0.75
Bremen	0.50
Schleswig-Holstein Ost	0.50
Bonn	0.50
Saar	0.50
Bochum/Hagen	0.50

Source: Oberst, Kempermann and Schröder 2019: 99

If one takes note of all three indicators together, namely the economy, demography and infrastructure, Duisburg/Essen ranks no. 4 in Germany with respect to vulnerability, a little better than neighboring Emscher-Lippe, which occupies the no. 3 slot. While the infrastructure is considered quite weak for Duisburg-Essen as well, particular due to the high indebtedness of the city government, in terms of demography many regions in the east of Germany do much worse than the Ruhr area. With respect to the economic indicator, the report concludes rather mercilessly: potentially left behind (“Potentiell abgehängt”, Oberst, Kempermann and Schröder 2019: 99).

When looking for the reasons for such a dismal development, it is tempting to start by examining the only partially successful efforts to attract young and dynamic entrepreneurs to the Duisburg area. (We had the chance to do a number of interviews in 2018-19, on which the following remarks are based, accompanying a group of Korean economists and business scholars with whom we have collaborated). While there is a start-up scene in the Ruhr area and, more narrowly, in Duisburg, several interview partners suggested it is not particularly lively. In 2017, the Port of Duisburg established a startup accelerator, with a focus on innovation in logistics and supply chain. For such topics, Duisburg does offer some attractiveness for would-be entrepreneurs. There are 550 square meters of co-working spaces, meeting and presentation rooms, no permanent office spaces though. A team of experts is on hand. The idea of a digi(tal)hub, however, did not really take off, while it worked quite well in neighboring Düsseldorf. There are also regional efforts like ruhr:hub, a coworking space funded by the NRW state government and six cities in the Ruhr area. It focusses on digitization (big data, e-

commerce, data security, etc.), includes consulting and pitching and has an accelerator program. Despite such and similar examples, often associated with shiny names, the dynamism seems stronger in places like Düsseldorf or Cologne, and some observers talk about the heritage of an “employee-mentality” in the Ruhr region, of people still having a mentality of feeling like working for big companies, not the mind-set of alert entrepreneurs. It is difficult to substantiate such impressions, and some of this may be exaggerated.

Nevertheless, it is reasonable to conclude that there are some, not negligible aspects of local or regional culture that can either work in favor or against developing a lively entrepreneurial setting. The earlier literature has often focused on the more “technical” relationships between regional industries - upstream and downstream linkages of production processes, character of the local labor market, etc. – in order to identify successful “clusters” (or the lack of them). The somewhat more recent and current literature on so-called “entrepreneurial ecosystems”, however, points to a multitude of important attributes, which can be summarized as material, social and, indeed, cultural attributes (Spigel 2017). While the material endowments at least in principle can change quite fast, this is much more difficult for social and even more so for cultural characteristics. In a number of empirical investigations, the character of entrepreneurial ecosystems has been shown to remain surprisingly sticky, due to strong path dependencies (e.g., Andersson and Kostery 2011). Fritsch and Wyrwich (2013), for instance, were able to show that the differences with respect to entrepreneurial activities between eastern and western Germany, despite the decades-long (intermediate) experience of the German Democratic Republic, remained surprisingly stable between 1925 and 2015.

Such arguments notwithstanding, it would be too easy to ascribe all of the problems of Duisburg to a continuity of local culture that is unfavorable for dynamic entrepreneurialism. After all, the entrepreneurial ecosystems approach argues that the trajectory of the local economic ecosystem is shaped by the complex interplay of cultural *and* material as well as social attributes. From this perspective, it is interesting to compare two cities of the Ruhr area, which started with a similar background of coal and steel, but have developed quite differently in recent years, particularly after the global recession of 2008/2009 (the following is based on Zimmermann et al. 2017). One is Duisburg in the western part of the Ruhr area, and the other is Dortmund in the eastern part of the Ruhr area, which has a reputation of having done better than many other cities in the Ruhr area. The two “dissimilar cases” (on this concept, Gerring 2007) thus promise interesting insights into the role of peculiar conditions that differ between them. As for city planning, Duisburg’s redevelopment strategy of “sSTEP Duisburg 2000” originates from 1988, as already mentioned, while Dortmund had already started with a cooperative “Dortmunder Konsens” (i. e. consensus) in 1982. A technology center and “park” was founded as early as 1983, and again, Duisburg followed several years later.

One question suggesting itself is why Duisburg was lagging Dortmund in moving away from the industrial mono-structure. The municipal restructuring of the mid 1970s was one issue that preoccupied local politicians, another the particularly antagonistic industrial relation troubles that took place in Duisburg. One problem to keep in mind is that on the background of the rather similar structures of the Ruhr cities, already a tiny time advantage of restructuring can lead to considerable differences under the intense competition of localities. By 2008, Dortmund was already much less characterized by heavy industry than Duisburg. Its share of services was 60%, Duisburg's 52%. With respect to knowledge-intensive services, in relative terms the gap was even wider: 24% versus 17%. Based on a somewhat more sophisticated methodology for the "related variety" and the "unrelated variety" of the local economic structures (Frenken et al. 2007), these differences can be confirmed (Zimmermann et al. 2017: 448).

One sector for which rather small initial advantages can turn into significant gaps later on is retailing. Duisburg was rather late in rebuilding its inner city to make it attractive for strollers and shoppers. Thus, the city centers of the somewhat posh neighboring cities of Düsseldorf in the south, the state capital, and even of Essen, another big industrial-era city somewhat east of Duisburg, plus a large outlet area on the outskirts of Oberhausen somewhat north of Duisburg ("CentrO") were able to redirect significant spending power away from Duisburg. To some extent, bad luck may have played a role as well: in 2010, the city tried to organize a party event for several hundreds of thousands youths close to the main station. However, things went terribly wrong, and 21 young people died during the ensuing panic, as was reported all over Germany and beyond. The following search of who had committed the decisive mistakes slowed down pro-active city planning for several years.

The economic interaction: Duisburg and China's new silk road

The role of the Belt and Road Initiative (BRI)

Looking beyond the local economy, we will now turn to the role of the BRI. Regular train services between China and Duisburg were started by China Rail in mid 2011 (on the following, Xinhua 2011). It took 13 days to reach Duisburg from Chongqing, a major city in central China, one of only five independent metropolitan cities in China, with an urban agglomeration of some 13 million inhabitants, although the jurisdictional entity is even bigger. In the very beginning, there were only few trains per month, but this has increased to some 50 to 60 per week from different locations in China to Duisburg currently. One major reason to start regular train services from Chongqing was to deliver consumer electronics from the region to Europe. Foxconn, Acer and Hewlett-Packard had already been in place producing laptops, so it seemed sensible to avoid shipping the goods to the coast first and then by ship to European destinations.

The timing – 2011 – is conspicuous for two reasons. First, the rail connection to Duisburg already existed some ten years before the regular rail service was started. The problem was rather to reduce the bureaucratic hurdles along the track. It is said that before 2011 it took more than 30 days to reach Duisburg from Chongqing by train. One important piece of the jigsaw puzzle in this context was the signing in 2010 of a strategic agreement of China with Russia and Kazakhstan on the use of the rail tracks to open the traffic with Europe. Chongqing itself has a good connectivity to other places in central China, so the direct train link with Europe can be seen as a policy measure to open up China's central and western regions to the dynamic effects of economically opening up beyond the western border. The opening up of China had so far been concentrated on the already prospering coastal regions with their adjoining overseas ports.

The second reason, why the year 2011 is conspicuous, is that the rail line opened actually two years *before* the official start of the Belt and Road Initiative (BRI) in 2013. At this stage, it is meaningful to provide a rough sketch of the highly publicized BRI initiative of the Chinese government, although this is not the place to discuss it in detail (for recent overviews: Fang and Nolan eds. 2019, Li and Taube eds. 2020; the following arguments are based on Pascha 2020a, 2020b). The basic concept was introduced to the world with two speeches of China's President Xi Jinping in 2013, with the core idea of developing a so-called "belt" across Eurasia with three routes and a maritime "road" with two routes. Originally, 58 countries were identified for primarily bilateral cooperation with China. Memoranda of Understanding (MoU), phrased by China in a standard format, were the instrument of choice to initiate concrete cooperation, which were then to lead to concrete contracts between specific partners and Chinese policy banks, companies, local development agencies, etc. While the initial focus was clearly on infrastructure, four other links were also referred to, namely policies, trade, finance, and people. Cooperation was to be based on five principles, in line with the UN Charter: "mutual respect for each other's sovereignty and territorial integrity", non-aggression, non-interference, equality, mutual benefit and peaceful coexistence, according to the principal 2015 document outlining BRI (National Development and Reform Commission 2015). Several finance mechanisms were put in place, both domestic and multilateral schemes. They include the Silk Road Fund, with 40 billion USD from foreign exchange resources, the Chinese sovereign wealth funds and the newly founded multilateral Asian Infrastructure and Investment Bank (AIIB), a Chinese initiative with a capital stock of 100 billion USD.

So far, the experiences made with BRI are mixed. The image of BRI in international public opinion has deteriorated considerably, even before the most recent tensions between China and the West (Garcia-Herrero and Xu 2019). Compared with the expected size of about 1 to 2 trillion USD, actual disbursement is still much lower. Unfair contracts, favoring the Chinese

partners, became a concern, so did questions about the technical quality of project execution by Chinese contractors. Some problems have surfaced for partner countries, among them fears of a debt overburden for borrowing countries (e.g., Herskovitz and Marlow 2019). The AIIB acted much more prudently than some had feared. On the flipside, the size of AIIB lending so far was much smaller than expected. Much criticism is based on the fact that the BRI pursues an entangled mix of geostrategic and economic motives. Being engaged or controlling ports is one case where such an entanglement of interests is not unlikely. According to Oettinger (2021), China now owns, has its own terminals or has shares in 14 European ports, including Piraeus, Rotterdam, Antwerp, Le Havre, Bilbao, Valencia, Marseille and Malta.

When evaluating the role and development of BRI, two points should be kept in mind. First, the initiative is a flexible instrument that serves public relation purposes, namely the bold positioning of China as an aspiring international power, but it lacks a clear and uniform organizational structure; there is, for instance, neither a headquarters nor a consolidated budget (Öztürk 2019, Taube 2020). When, further below, we look at the role of Duisburg in this dynamics more closely, it is therefore meaningful not to relate this to the concept of BRI in a narrow sense only, but to the wider Chinese engagement with Duisburg. We might call this more encompassing context the “new silk road”, thus acknowledging the somewhat fuzzy nature of the interaction.

A second point to be noted is that the idea of BRI and the scope of new silk road-related projects is constantly changing and dynamic. To some extent, this is owed to learning processes within China, but also and possibly more so to the severe competition for international infrastructure projects with Japanese, American and European interests also making an impact (Pascha 2020a). A notable development is the Second Belt and Road Forum of April 2019, in which Xi Jinping took up the challenge to redefine the Chinese approach. The Joint Communique speaks of aiming for “high-quality, reliable, resilient and sustainable infrastructure” (Leaders’ Roundtable 2019), thus reacting to the international critique that emerged after 2013 quite explicitly.

When asking what this evolving dynamics of BRI and the new silk road means for Duisburg, one should start with elaborating why the rail connection between the German city and China has become so attractive in recent years.

The economics of the rail link between Duisburg and China

The main point about the attractiveness of rail transport in comparison to sea or air freight between China and Europe is that it is faster than sea transport, but cheaper than air freight, while of course being slower. It thus offers a niche segment for goods that are not quite urgent

enough to justify the expensive air lift, but should be faster than being shipped beyond the Indian Ocean and through the Suez Canal or even around Africa. According to DSV global logistics provider, a 40-foot container to be sent by train from China to Europe can be expected to cost around USD 8,000, while by sea it would cost around USD 4,000 and by air USD 32,000. The company estimates that door-to-door rail travel will take some 15 and 18 days, roughly half the time compared to ocean shipping (DSV undated). Sending goods by air may take three to five days (TopShipping undated). Obviously, such calculations only offer rough guidance. For instance, it makes a big difference whether one calculates with port-to-port costs and durations or whether one takes a door-to-door view, i. e. from the location of production to the final destination. From that perspective, a convenient “port” in Europe is most important for solving the logistical challenge. Duisburg can conveniently be reached via a southern rail route through Kazakhstan and southern Russia or via a northern route through Siberia and passing through Moscow. The southern route is most suited for freight to and from central China, for instance from Chongqing, whereas the northern route can best serve locations like Beijing and Dalian (DSV undated). From Belarus into Poland (Warsaw) and onwards to Germany (Berlin), the major rail connections basically follow one route. In line with this, Lodz near Warsaw, for instance, has also developed into a logistics hub for rail transport with China. The first service between Lodz and China, namely with Chengdu, started operation in late 2012, and like in the case of Duisburg *before* the official announcement of the BRI (N.N. 2018). Different locations within Europe thus compete for the position as a preferred stop for Chinese freight trains, and Duisburg’s advantages as an early mover mainly depend on three factors: its convenient location, which is a permanent strength, the efficiency of its logistical services, like efficient intermodal services, and the capacity of its facilities. Arguably, a fourth factor might come into play, namely “soft” factors like a China-friendly environment, more on which later.

The economic efficiency of the rail connection between China and Europe as such or, more specifically, between China and Duisburg is thus influenced by a number of important factors. One important issue is the duration of the train journey, for instance between Duisburg and China. According to the CEO of Duisburg’s port, Mr. Erich Staake, trains as of 2018 took on average six days to travel the 1,300 km from the Polish-Belarusian border to Duisburg, but only as little as 5.5 days for the 10,000 km from Chongqing to the border station (Oltermann 2018). The red tape on the European side is obviously still significant. One more impediment that slows down the rail journey is that the wheel spacing of trains has to be laboriously changed twice during the trip, as the Russian gauge is wider. Another consideration is that the containers that return from Europe to China are often not fully loaded, which makes the connection less economical than it could be.

Looking into capacity issues, it is important to realize that a large container ship like the “Ever Given”, which recently got stuck in the Suez Canal, has a capacity of some 20,000 20-foot-containers. A typical train carries only up to 100 20-foot-containers (TBN undated). It thus takes 200 trains from China to Europe to carry the same amount of goods as by a single journey of the Ever Given. It is understandable that rail transport still makes up only 1-2% of total China-Europe trade volume, while more than 95% are still transported along the sea route (Taube 2020). In 2018, on average some 120 trains either left Duisburg or came from China per week according to Chinese data, and since then the number is said to have increased further, despite “a period of less departures due to Chinese restrictions on empty containers” (van Leijen 2019). Duisburg seems to be nearing its capacity limit, and it is said that some trains already had to be redirected elsewhere. Accordingly, the number of train destinations or intermediate stops in Europe has increased considerably in recent years, without taking effective business away from Duisburg due to the surplus demand, though. Duisburg is still involved in some 30% of all China-related freight rail.

Duisport is planning a new „Duisburg Gateway Terminal“, which is to become Europe’s biggest inland container facility. It will involve an investment of about 100 million Euro, on an area of 240,000 square meters (including storage areas) within the port. The final processing capacity will be 850,000 20-foot-containers yearly or 100 trains to China per week. Partners in this venture will be Cosco Shipping Logistics from China, Hupac SA from Switzerland and HTS Group from the Netherlands (Duisport 2019).

Taube (2020) adds the important point that so far the connection is heavily subsidized by the Chinese side, with an amount of several billion US dollars per year; While there were plans to cut this amount significantly in 2020, it is doubtful whether under the condition of Covid-19 this was actually realized. Nevertheless, it is quite conceivable that the Chinese provinces will somewhat reduce their subsidies, which are handed out to promote the regions of inner China, in the future (Giustolisi and Terstriep 2020). This would obviously impede the attractiveness of some connections.

Duisburg’s attractiveness as a China-related business hub

Duisburg has made considerable efforts in recent years to increase its attractiveness as a logistics hub. At the core of such activities is the redevelopment of the port of Duisburg, which has a 300-years history, as a game-changing multimodal logistics hub with a strong focus on containers. Since 2000, the port, with the official name Duisburger Hafen AG, uses the term Duisport for its activities. It is co-owned by the state of NRW (2/3) and by the City of Duisburg (1/3). Already from 1998, the port used the concept of “logport”, with a trimodal involvement of

ship, rail and road, to utilize unused areas for huge logistics and storage facilities. Today, there are six logports, also beyond the city borders. The first of its kind was a 265 ha area, equivalent to 371 soccer fields, that is located on the former site of the Krupp-steel plant in Duisburg-Rheinhausen, the one that had caused so much public unrest in the 1980s (Duisport undated). Today, Duisport is the biggest container terminal in the world with a handling of some 40 million 20-foot-containers per year and a maximum capacity of 50 million. The Port is engaged in a number of other activities; an innovation platform “startport” was opened in 2017, for example. The already mentioned Duisburg Gateway Terminal will be another major cooperation project with China. A 100 million Euro investment obviously involves some business risks, but Duisport is a profitable enterprise, so the risks will be manageable and if the huge project can be development speedily and reliably, it will be an important signal to China and other international partners that Duisburg is a location that can deliver.

Duisport has also moved beyond beyond its own region, actively promoting strategic alliances with relevant Chinese partners, supported by the state government of NRW and by its related agencies. With respect to activities along the new silk road, Duisport owns a 0.67% stake in the “Great Stone” industrial park near Minsk in Belarus, involving a rail terminal and a logistics area (Taube 2020); among others, the China Merchants Group is a partner in this project. Arguably, so far too few German and European players have made a sincere effort to participate in the economic potential of the new silk road. In this respect, Duisport is a welcome frontrunner, although the engagement is relatively small and although opportunities of course also imply potential risks. China is, like in Duisport’s case, one potential partner, while the recent 2018 EU infrastructure initiative “Connecting Europe and Asia: Building Blocks for an EU Strategy” and the 2019 agreement between the EU and Japan “Partnership on Sustainable Connectivity and Quality Infrastructure between the European Union and Japan” will hopefully open further options (Pascha 2020a, 2020b). More competition in this field can be expected to lead to innovative ideas and to more efficient solutions, also in the sense of counteracting potential risks.

When considering the local attractiveness, one should not overlook soft factors that can support or impede closer relations. Duisburg enjoys the oldest twin city agreement with the People’s Republic of China in former West Germany, namely with Wuhan, also a former “steel city”, which started in 1982. Bilateral relations go back to 1978, when a group of Duisburg companies started to build a cold rolling mill in Wuhan. Giustolisi and Terstriep (2020: 9-10) mention the foundation of contemporary Asian studies at Duisburg University in the 1990s (now Duisburg-Essen University) and of a Confucius Institute in 2009 as relevant developments. From a German perspective, Duisburg is surprisingly well-known in China. The Univer-

sity now hosts more than 2,000 students from China, the largest group among German universities. Also during the current pandemic, amicable relations have been nursed further; according to Prof. Dr. Yuan Li of Shandong University, “Duisburg and Wuhan ... timely took actions to help each other. The high school students in Duisburg-Essen sang a song in Chinese to show their support and encouragement to Wuhan, which was broadcast all over China” (personal communication, 24 March 2021).

Regional economic effects

Economic effects for Duisburg and the wider region can be sought on different levels. Here, we first discuss growth and employment effects in general and then turn to the attraction of foreign direct investment from China. (Of course, the effect of such investments from abroad constitutes a part of the general economic effects).

With respect to the growth and employment effects for Duisburg, positive effects through the growth of logistics activities in the port area and of Chinese investments are noticeable. With respect to employment, in 2018 it was estimated that employment related to Duisport, including indirect effects on subcontractors etc., had soared from 19,000 to 50,000 (Oltermann 2018). This is sizable, but it still has to be seen in perspective. Between the mid 1970s and mid 2000s, Duisburg lost more than 30% of its jobs (counted as employment with social insurance contributions). From a level of about 600,000 inhabitants, after the municipal restructuring of the mid 1970s, the number of citizens dropped to around 500,000 currently. From a level of about 160,000 jobs around 2010, this number has risen to 177,000 in 2018, the highest number since the 1990s (Bundesagentur für Arbeit 2019). It seems fair to assume that the positive development of Duisport played a considerable part. The planned „Duisburg Gateway Terminal“ will add to the capacity significantly, when realized, but will not be a game changer. The unemployment rate is still far higher than in the rest of the country, and there is no evidence that Duisburg will be able to rebuild the economic strength it possessed during the earlier postwar period any time soon.

Kleimann, Li and Schmerer (2020) have undertaken a more analytical approach to identify employment effects for Duisburg. They use the so-called synthetic control approach to analyze whether a certain intervention has an impact (here: on employment) compared to other cases where this intervention was not realized. The authors choose the commencement of regular freight train services between China and Duisburg in 2011 as the relevant intervention point. Eventually, they cannot identify a positive employment effect from their econometric analysis, although based on their qualitative analysis, they still expect there to be one.

When considering such growth and employment effects, one aspect that deserves closer attention is whether the region and Duisburg in particular can attract foreign direct investment (FDI) from China. Taking the whole state of North Rhine-Westphalia as a point of departure, new FDI cases from abroad have stagnated somewhat in recent years, with most investors still originating from Europe and the share of Asian FDI cases somewhat declining. While there were 72 new cases from Greater China in 2018, the number declined to 65 in 2019, while in terms of employment, Chinese FDI created 564 new jobs in 2018, but almost twice as much, 1,097, in 2019 (NRW Invest 2019). NRW is by far the most important location for Chinese FDI in Germany, and among the total of more than 1,200 Chinese investments from Greater China in NRW, about half have chosen Düsseldorf (Landeshauptstadt Düsseldorf 2021). While the hype about Duisburg and the new silk road has attracted wide attention, it is noteworthy that the neighboring city of Düsseldorf has attracted by far the highest number of Chinese FDI in the wider region of NRW and has developed into the most popular center for Chinese business activities in Germany (Knieps 2019).

The Ruhr area as a major part of NRW, attracted 74 new cases of FDI in 2019, the second-highest number in NRW, while the region of and around the state capital of Düsseldorf registered 174 new investors. Giustolisi and Terstriep (2020: 9), using their own data search, counted 200 cases of Greater Chinese FDI for the Ruhr area between 2003 and 2020. The highest number (75) was registered for Duisburg, while 43 cases were counted for Essen. Dortmund, discussed earlier, in the Eastern part of the Ruhr area has only 14 cases. Looking at this data in perspective, it is conspicuous that Duisburg could attract a rather high share of Chinese investment. One reason is indeed its status as a logistics hub that is interesting for Chinese producers who want to tap the huge west European market. This is clear when looking at the 75 companies more closely: At least 29 of them are related to wholesale and retail, 9 related to logistics, including forwarding agents, and 7 related to technical and other cases of consulting (ibid.: 10).

The rail connection with China certainly plays a role in this, but it is also Duisburg's geographical attractiveness as a logistics hub as such. An important and well reported event was, for example, that China Rail Container Transport, which belongs to the China State Railway Group, established its European subsidiary in Duisburg in 2019 (van Leijen 2019). As for another example, a Chinese retailer that specializes on Asian food came in 2016 and uses storage space close to the port for distributing its merchandise directly all over Europe. Interestingly, the food does not arrive by rail, but by ship, so the retailer was attracted by Duisburg's position as a logistics hub and by cheap rents (Giustolisi and Terstriep 2020: 10).

Another factor that can be expected to have an impact on Duisburg's attractiveness for Chinese investors is its vicinity to Düsseldorf. It is highly likely that the combination of the international business hub of Düsseldorf and the logistics hub of Duisburg create positive synergies for the region. For instance, it is conspicuous that there are far less Chinese investment cases the further one moves to the eastern side of the Ruhr area. Of course, there could be some competition between Duisburg and Düsseldorf. For instance, TP Link in 2020 started a European logistics center for distributing routers in Düsseldorf, not in Duisburg (Landeshauptstadt Düsseldorf 2021). At the same time, however, rents in Duisburg are much lower than in Düsseldorf, so quite a number of cases have been identified in which Chinese investors preferred the western Ruhr area to settling in the center of Düsseldorf, but remaining close to it (Giustolisi and Terstriep 2020: 8). Eventually, it is probably a win-win situation for both cities, although in terms of economic promotion efforts, they usually do not work closely together. Düsseldorf rather views itself in the context of Cologne and Bonn, sometimes also Aachen, which share a reputation for more contemporary and future-oriented industries compared to the image of Duisburg and the Ruhr area.

Political influences: Risks and challenges

So far, the upside of continuing and profitable relations with business partners in China was discussed. However, there are also downside risks, most of them related to potentially deteriorating political relations.

A first level of such risks is related to a possibly overly optimistic expectation of future business opportunities with China, which could lead to an over-investment and problematic performance of the local economy, if such risks materialize. Interestingly the Business Report of Duisport in its chapter on chances and risks only speaks about the upside potential with respect to China (Duisport 2020). As the capacity utilization of Duisport is already high and because according to reports some traffic already had to be diverted away in the recent past, it is not likely that Duisport and the local economy are currently overexposed to business with China. There is other business that Duisburg could attract, as it has successfully established itself as a leading multimodal logistics center with a still reasonable price level for necessary inputs.

At the same time, it seems to be a fact of life that not all plans with a thriving and dynamic business partner like China (and its companies) move forward as planned. This can also happen to Duisburg, and one can indeed already point to some major example. In 2017, the establishment of a major business park, named "China Trade Center Europe" was announced for the western part of the city, between Rheinhausen and Homberg. The Chinese investor

planned to create 60,000 square meters of office space, including an office tower with 13 stories. In early 2021, it has turned out that the plan has been abandoned, actually already a while ago (Cnotka 2021). An investment volume of 260 million Euro with 1,000 to 2,000 jobs to be created will not be realized. The ground is said to have been problematic for buildings of that size, neighbors were worried about the additional traffic, and the business case was at least doubtful, as one third of the area of the Businesspark Niederrhein, which started 30 years ago in that very area, is still unused.

A second level of risk concerns the question whether China will develop an undue influence over Duisburg and its economy, which could be contrary to Duisburg's more narrow, but even to Germany's and the EU's wider interests. Already in 2018, an article was published on the website of T-Online with the suggestive title "What helps Duisburg can harm the world" (Schai-ble 2018). No explicit case was made against a particular event or business deal related to Duisburg or against any of the organizations or decision-makers involved. This also holds for other publications that voice some diffuse concern about Duisburg's engagement with China (e.g., Investigate Europe 2019). The obvious worry and the context that are addressed in the rather general arguments are the problematic developments in other parts of the world that have been associated with BRI and the new silk road. Negative experiences with Chinese FDI in Germany and elsewhere, related to the exploitation of technological knowledge and other problems, also support such negative evaluations (for a critical study from IW, the German Economic Institute, see for example Matthes 2020). We cannot do justice to such concerns in detail here. As for Duisburg, the risks under discussion seem to be relatively limited, however.

First, Duisburg's port is not in an unfavorable business situation that would make it easy for outsiders to gain undue influence. The port earned a net profit of 13 million Euro in 2019 and could actually raise it further in the corona-year 2020. This is quite different from a port like Piraeus in Greece that had to be privatized in the midst of the European financial crisis and was bought by Chinese investors. The profitable Duisport is co-owned by the state of NRW and by the City, so there is little basis for serious concerns.

Second, the business environment in which Chinese actors may be interested in Duisburg is not the high-tech sector. Retailing and wholesale, storage spaces and related services are not particularly worrisome in terms of technological leakage. Such a rather unproblematic pattern of engagement is also confirmed when looking at regional Chinese FDI in recent years, as discussed above.

There is one more complex issue, however. In late 2017, the City of Duisburg and Huawei signed an agreement according to which they will cooperate in turning Duisburg into a "smart city". Key words in this context are "smart government, smart port logistics, smart education, smart infrastructure, 5G and broadband, smart homes, and urban IoT" (Huawei 2018). In June

2018, Huawei and the Duisburg public utilities company (DVV) signed a “Framework Agreement on the ‘Rhine Cloud’ – the brand name of a smart city and public service cloud platform – and Smart City services” (ibid.). The idea of the cooperation is to supply Duisburg with expertise and sell Huawei’s technological solutions for 5G, Wi-Fi, IoT (Internet of Things) platforms and else. The cooperation had a rather difficult start, as the city government initially refused to publicize the Memorandum of Understanding. In the meantime, the MoU has become available on the internet (Duisburg and Huawei 2017). Indeed, Article 3.2 of the MoU had only allowed the partners to make public the existence and a summary of the agreement. Apart from that, the MoU seems fairly inconspicuous, particularly as it states explicitly that it does not create any obligations, but only summarizes the “current vision” (Article 2.1). Nevertheless, the agreement and the secrecy surrounding it raised concerns that Chinese actors would gain access to and structural information about highly sensitive and important urban infrastructure, possibly also data about individuals and organizations (like companies), which would not be compatible with data security and could, in the worst case, be misused by Chinese state or business actors (e.g., Merten 2020).

Helping Duisburg to build a “digital benchmark city” (Huawei 2018) is not an isolated action for the city at the end of the new silk road, but it fits a more general Chinese strategy followed since 2015 that has been dubbed the “Digital Silk Road”. The idea is to strengthen internet infrastructure and cloud computing, to work on common standards etc. with like-minded partners. A leading Chinese technology firm like Huawei is a central part of such efforts. The International Cyber Policy Center has counted 47 cities all over the world that are related to “Huawei’s smart-city and 5G footprint”, including Duisburg – and the city of Gelsenkirchen, also a part of the Ruhr area (based on: Economist Corporate Network 2019: 11). From a more academic perspective, it has been argued that the strategic support of certain cities is a core component of the “dream of a future order in which China occupies a central position”, namely by creating “urban corridors and smart surveillance cities” (Curtis and Mayer: 2020: 1). On a more mundane level, there is political concern in the US, but also in the EU and Germany, among others, that it would be dangerous for competition and for security to rely on Huawei’s 5G technology (only). (We cannot do justice to this complex debate here. For the nuanced EU position, see for instance: European Commission 2020).

The Duisburg-Huawei MoU has a duration of five years, i. e. until late 2022. Recently, there seems to be very little momentum left to push the agenda forward (for similar view: Verfürden 2021). Why have the actors become more hesitant? I would argue that the various layers of checks and balances in a democratic and rule-based political economy like Germany make sure that a significant deviation from a rather benevolent and safe course of action will be unlikely. First, on the city level there is also the opposition and concerned civil society that

carefully watches developments. For instance the left-wing party “Die Linke” kicked off a question in the City Council about the MoU, relating it to freedom of information-rights, and the website “FragdenStaat” (“Ask the State”) offered templates for citizens who wanted to make use of their individual freedom of information-rights (the website is currently still open: <https://fragdenstaat.de/anfrage/informationsfreiheit-smart-city-abmachung-mit-huawei/>). Second, there is the state level. For example, NRW owns two thirds of the Duisport group, as already mentioned. Third, there is the federal level, and fourth, the EU-level. Moreover, there are the media, and even a rather ordinary municipality like Duisburg can and will be covered by the Washington Post or CNN, for example, in case of political relevance.

Conclusions

On the background of the recent rise of political tension between the EU and China, the question to what extent the EU, Germany, its states or individual localities can and should cooperate with China has gained considerable urgency.

A city like Duisburg promised to be a particularly interesting case study in this context. On the one hand, its location is ideal as the “western terminus of the new silk road”, so considerable economic benefits from closer cooperation can be expected. On the other hand, the precarious economic situation as a former city of steel and coal make it vulnerable to economic and political risks.

The paper has identified relevant pro and con factors and evaluated the available evidence. The economic heritage and current situation of Duisburg has indeed been found difficult. Profiting from the Chinese interest in its strength as a logistics hub was and is one of the few options to regain economic strength. Duisburg has noticeably profited from the Chinese interest, but the impetus is not significant enough to fully recover from the decline of coal and steel industries. A large share of the potential benefits has probably already been realized, while plans to increase the container capacity of the port further should nevertheless be duly acknowledged. Positive linkage effects with other industries, beyond rail and logistics, still seem rather limited. With respect to the political dimension of the relationship, the typical risks associated with BRI are somewhat limited in Duisburg’s case, because Duisburg, as a part of prosperous Germany is not in a particularly dire situation, despite its difficulties, so the potential leverage of Chinese actors is limited, and because Duisburg is not the home of many high-tech companies that might be attractive targets. In the case of the Duisburg-Huawei cooperation, which does indeed involve some political risks, the momentum for the more problematic endeavors has recently declined, due to the various checks and balances that have been in

place, while the win-win projects of the agenda will hopefully still be realized. While some players (including parts of the media) have indulged in the idea of an economic bonanza beckoning on the horizon and others have dramatized the looming political risks, the hype in both directions seems to have been exaggerated during the past few years.

Currently, the city seems to be reconsidering its future options and possible trajectories with respect to China. A research project, financed by various regional and local actors, has just started, based on the initiative of the energetic Mr. Johannes Pflug, the City's special representative for China and a former member of the federal parliament, and executed by members of the Institute of East Asian Studies of Duisburg-Essen University (N. N. 2021).

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